

## **Merkel & Associates, Inc.**

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March 10, 2008  
M&A #06-049-06

Eileen Maher  
San Diego Unified Port District  
P.O. Box 120488  
San Diego, CA 92112

### **Re: Debris removal at the San Diego Unified Port District's A-8 Anchorage**

Dear Eileen:

This letter reports the findings of the second phase (Phase 2) of the program to search for and remove contaminated debris items at the A-8 Anchorage in central San Diego Bay (Figure 1). The first phase (Phase 1) of the search and removal effort occurred in June 2006 and covered 55% of the project area (M&A 2006). Prior to the Phase 2 work effort, 248 targets had been identified with side-scan sonar; 152 of those targets were surveyed during Phase 1.

For the present work, Merkel & Associates re-surveyed the entire project area with side-scan sonar. The results of the sonar survey revealed an additional 109 targets, bringing the total number of survey targets up to 357. In December 2007, Merkel & Associates (M&A) SCUBA divers surveyed the remaining 45% of the project area, along with the associated 96 targets remaining after completion of the Phase 1 work (Figure 2). Following this, the team proceeded to survey as many of the additionally identified targets as possible. It was not possible to survey all of the additionally identified targets. The team selected the largest and most likely targets to contain environmentally hazardous debris items. At each of the surveyed target sites, divers searched for items that caused sonar returns during the side-scan sonar survey. During their searches, the divers described the debris items observed. Special attention was given to any items that may have contained petroleum products or other contaminants. M&A divers and Port of San Diego General Services Divers removed an estimated 3,300 pounds of debris as of February 29, 2008. Most of the items removed were known or believed to contain petroleum products or other contaminants. As of this date, the General Services dive team is still working to further inspect and remove debris items from sites believed to still contain additional environmental debris items or to survey the additionally identified targets which could not be surveyed by the M&A team.

Removed items included 665 pounds of batteries, 10 tanks totaling 2,175 pounds, 6 small motors totaling 330 pounds (4 outboards, 1 generator, 1 leaf blower), and 136 pounds of electronics and mixed debris (refer to photo pages). Of the removed tanks, two were confirmed to contain at least a mixture of fuel.

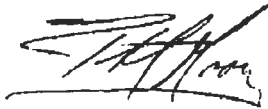
Removed items were placed within a 40-yard dumpster at the Pepper Park launch ramp. Ocean Blue Environmental Services provided sorting and disposal services for the recovered items and provided an emergency containment boom in the event of a petroleum spill.

In addition to the debris items that were removed, the dive team reported on numerous items that require further investigation. General Services currently has 44 targets to investigate. Some of these targets were surveyed by M&A and require further investigation to determine the nature of any potential environmental debris. Other remaining targets are simply small debris items identified on sonar that have not yet been surveyed with SCUBA. Finally, it should be noted that some of the targets identified during Phase 1 had been removed by General Services divers prior to initiating Phase 2. These targets were large vessels previously marked by General Services for removal. The removal of these vessels represents a significant improvement to the health of San Diego Bay but is not included in this report.

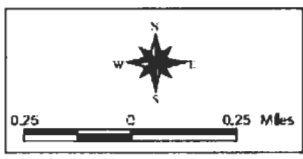
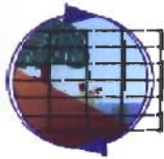
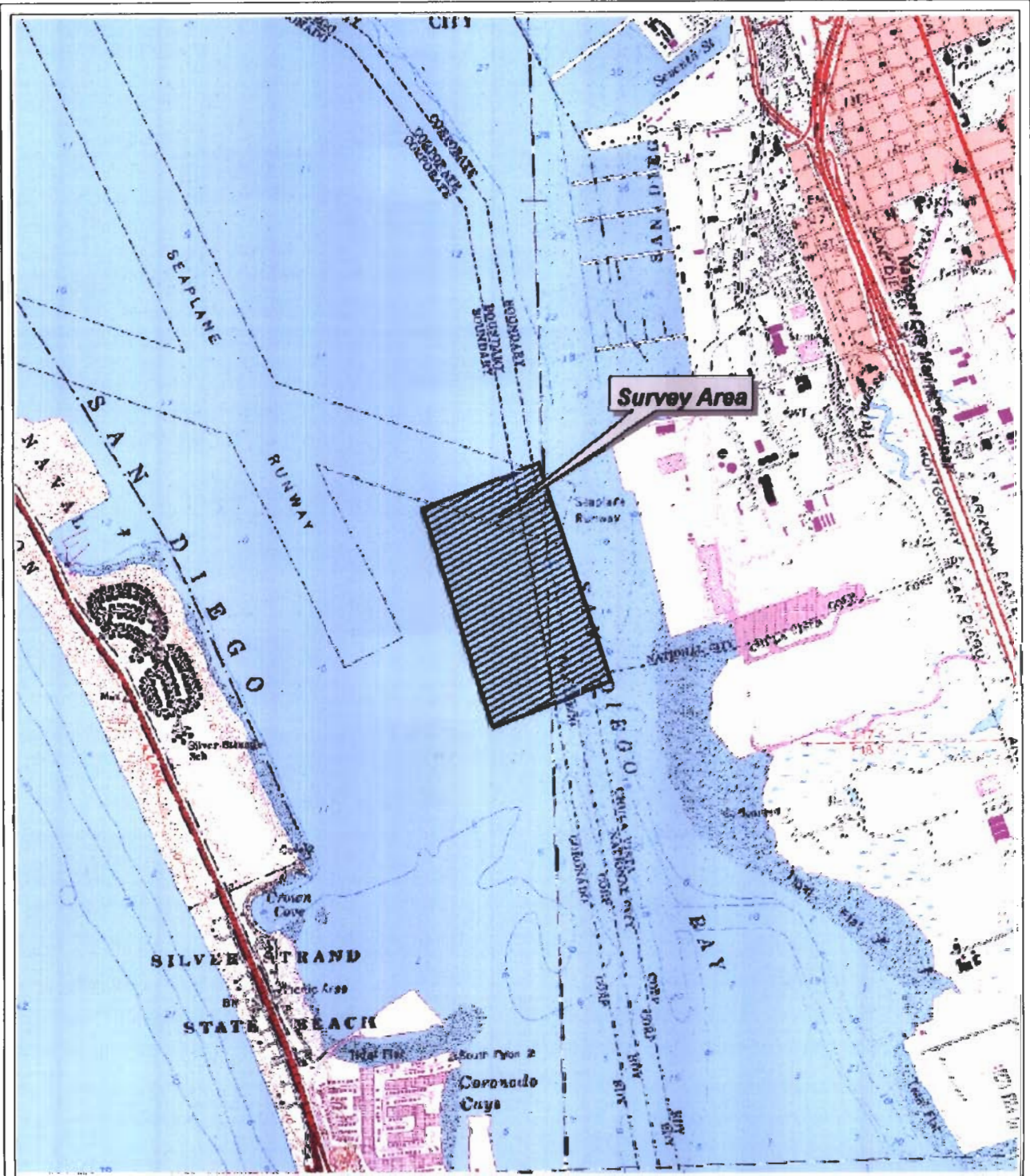
We believe that the debris removal program was a success. Numerous items were removed that presented an impediment to the environmental health of San Diego Bay. In addition to removing two tanks known to contain fuel, it is also likely that the recovered outboard engines and other small engines contained substantial quantities of petroleum products. Additionally, we believe that the 44 targets to be surveyed by General Services will continue to yield additional environmental debris items.

If you have questions regarding the information in this letter or require additional information, please contact me at 858-560-5465.

Sincerely,

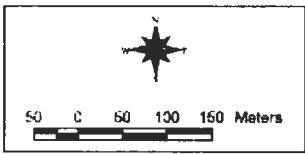
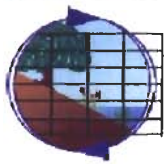
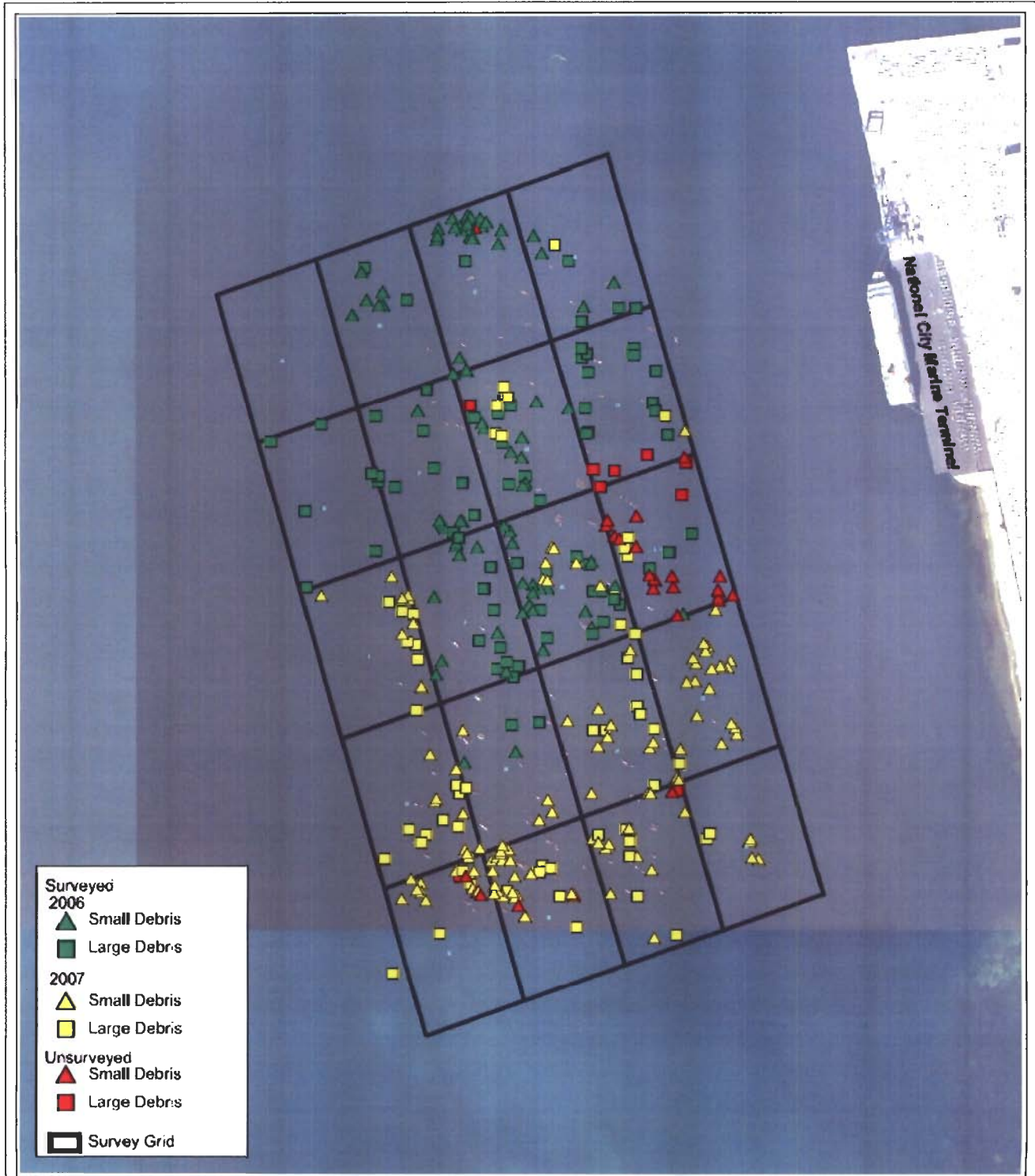
A handwritten signature in black ink, appearing to read "Robert Mooney", written over a horizontal line.

Robert Mooney  
Senior Research Scientist



**Project Vicinity Map**  
San Diego Unified Port District  
A-8 Anchorage Debris Removal Project

**Figure 1**



**Clean-up Status Map**  
San Diego Unified Port District  
A-8 Anchorage Debris Removal Project

**Figure 2**



Photo Page 1. Environmental debris items recovered from the A-8 Anchorage in December 2007, large marine battery (upper left), outboard engine (upper right), miscellaneous debris including an outboard engine and battery (lower left), tank with unknown contents (lower right).



Photo Page 2. Photos taken during environmental debris removal from the A-8 Anchorage in December 2007, miscellaneous tanks with unknown contents (upper left), Port of San Diego staff transferring debris items into the temporary holding container (upper right), miscellaneous debris items including fuel cans, a battery, and small engine (*Hippocampus ingens*) being returned to the water, lower right.

Waypoint	Ground-truth Description	Hazardous Materials Present	Materials Removed (weight in lbs.)	Notes
35	Anchor	none	anchor (20)	This point should be resurveyed because the sonar clearly shows a boat hull which was not found by the diver.
39	Upside-down fiberglass boat (sport cabin).	Maybe (see notes)	none	No engine was found, but the vessel size means an inboard fuel tank may be present. Needs reassessment to check for this tank and to remove any potential free product.
46	Two large partially buried engines, one w/o cylinder heads.	Maybe (see notes)	none	Engines may have oil pans and should be removed. Requires 1000lb lift equipment.
53	Wood sailboat / rigging	Not observed but possible fuel tank.	none	Marked with Port hazard buoy, should be visited for further assessment for possible removal.
65	Engine with wires and cable	Engine with potential oil and grease.	none	Position marked with revised waypoint. We need to revisit and remove this engine with 1000lb lift capacity.
66	Fiberglass pontoon boat	Possible gas tank.	none	No engine but should revisit and assess for possible lift and inspection for gas tank.
68	Fiberglass sailboat	Inboard fuel tank.	none	Contains inboard fuel tank. Should be reassessed for other hazardous materials. Vessel can be strapped for complete removal.
76	Buried boat hull	Possible?	none	Buried in sediment. Excavation needed to assess further.
80	upside down fiberglass boat surrounded by mussel mats	possible?	none	Potential for gas tank or other items underneath. Needs to be reassessed to decide what to do. No surrounding debris only mussel mats.
96	Misc. boat debris. Wood, fiberglass, metal, engine	Old engine	none	There was a single piece of hull measuring 5x6x3. The engine is not attached and could be lifted.
97	Intact fiberglass hull, most likely a powerboat	Likely inboard fuel tank, but no engine seen.	none	Could be strapped and lifted

Waypoint	Ground-truth Description	Hazardous Materials Present	Materials Removed (weight in lbs.)	Notes
109	Wood boat and debris field (see notes)	2 inboards with outdrives, possible tanks, battery (may be others)	Battery (30)	Large broken down wooden vessel. Possible intact tank off port side of primary wreck. May be two wrecks or one with large debris pile on port side. Debris includes electric motor, misc appliances. Engines are exposed and would rip out with enough lift. Not sure if there is an additional gas tank within the primary wreck.
119	Large wreck, metal, fiberglass, and wood.	Battery, inboard engine	Battery (25)	No notes originally offered by divers. Given the size of the debris area, this point should be revisited for more thorough investigation.
129	Fiberglass boat hull	Batteries, inboard engine, 2 fuel tanks, oil filter	oil filter (3)	Boat hull intact, need to revisit for removal. Boat could be probably be lifted but tanks should be drained first.
130	Debris field, electronics	Electronic waste - stereo, microwave	none	May want to revisit to remove electronic waste.
131	Large wooden boat	inboard engine, welding equipment, tank	Water tank/heater (30)	This is considered to be with 132 in the original notes. 133 also seems to be considered by other staff to be part of this wreck although they refer to two wrecks. NAV hazard.
133	Metal side of boat	4 marine batteries, metal tank	Large Battery (85)	Tank appears to be approximately 200 gallon fuel tank; need to revisit to remove it and the engine from 131. Also need to figure out if there are additional batteries or if the described 4 batteries were actually 1 large battery.
157	Wood boat debris	Fuel Tank, small engine (4 hp briggs), electronic waste	Fuel tank (40), Briggs (30), misc electronic waste (20)	Revisit to look for more items.
160	wood boat	Batteries, engine, fuel tank	Vent tube (10), Tank (water?) (270), Fuel tank (720), console with electronic waste (80)	Need to revisit. More tanks to remove, engine, and potentially more batteries.
191	Intact 18 ft sail boat - no mast	none	Anchors (50)	SJJ says we should revisit this one to be certain there are no hazmats.

Waypoint	Ground-truth Description	Hazardous Materials Present	Materials Removed (weight in lbs.)	Notes
192	Vessel with inboard/outboard, tanks likely	Engine, possible tanks	none	Revisit to evaluate. GJD noted that entire boat could be lifted.
193	Fiberglass boat hull	None seen, but possible	none	Need to revisit to excavate from surrounding sediment and look through adjacent debris.
196	Fiberglass boat hull, tanks likely	possible	none	Revisit and evaluate for potential hazardous materials.
197	Large debris area, found corner of stainless tank (buried), two deep cycle batteries, 10 non-traditional batteries.	Batteries, Possible Tank	2 batteries (50), 10 batteries (150)	Need to excavate around the tank to determine if removal is necessary.
199	Engine block, misc debris, electronics, unknown tank	engine block, battery, tank	Engine (400), battery (30), misc. debris (50)	Revisit to assess whether or not to remove the tank.
200	Small debris field, buried fiberglass box.	Possible, what is the box?	none	Revisit and evaluate what the box is made of, is it a box or a tank of some sort?
222	Large metal wreck with 2 large tanks and engine	engine, tanks, others likely	Circuit board, Battery (100)	Revisit for more recovery. Engine and tanks, which are approximately 200 gallons, need to be removed. Tanks likely need to be siphoned prior to removal.