CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

FACT SHEET

ORDER NO. R9-2003-0008
NPDES PERMIT NO. CA0109185

WASTE DISCHARGE REQUIREMENTS

FOR

U.S. NAVY

NAVAL BASE CORONADO COMPLEX

SAN DIEGO COUNTY

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Memorandum dated 22 July 2002; Hull Coating Leachate, underwater hull coating cleaning (*underwater ship husbandry*), and radioactivity concerns mentioned during workshop on 27 June 2002.

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BACKGROUND

The U.S. Navy installations in the San Diego area are under the command structure of the *U.S. Navy, Commander, Navy Region Southwest* (CNRSW) and are aligned into three (3) major complexes:

- *Naval Base Point Loma*,
- *Naval Base San Diego*, and
- *Naval Base Coronado*.

A separate NPDES Permit has been or is being developed for each complex. The *Naval Base Coronado* (NBC) Complex has various point source discharges and industrial storm water discharges. The *point source* discharges identified by the Navy at NBC are grouped into five general industrial processes:

- Steam Condensate;
- Utility Vault & Manhole Dewatering;
- Engine Cooling/Sprinkler Water;
- Miscellaneous Discharges Associated with Facility Maintenance; and
- Pier Cleaning.

An additional waste discharges included in this Fact Sheet and prohibited in Order No. R9-2003-0008 are the discharges associated with:

- Ship repair and maintenance activities.

The additional discharge is based on the information contained in the Regional Board's administrative records. The administrative record includes: inspection reports for the Navy complexes in San Diego; Notice of Violation (NOV) No. 2000-118, dated May 24, 2000, issued to the Navy for paint chip discharges from the USS Essex; and industrial storm water annual monitoring reports for Naval Air Station, North Island, Naval Amphibious Base, Naval Radio Receiving Facility, and commercial shipyards in San Diego (i.e. National Steel & Shipbuilding Co., SouthWest Marine, and Continental Maritime).

The diverse discharges from ship repair and maintenance activities could occur at several locations, including aboard ship when docked, on the piers, or on shore locations. Ship repair and maintenance activities include abrasive blasting, hydroblasting, metal grinding, painting, tank cleaning, removal of bilge and ballast water, removal of anti-fouling paint, sheet metal work, electrical work, mechanical repair, engine repair, hull repair, and sewage disposal.

The ship repair and maintenance activities may be conducted by Navy personnel (ships' force), civil service personnel, or civilian contractors. Berth side maintenance on the surface ships, support vessels or barges may include all of the activities listed in the first paragraph describing the ship repair activities. Berth side ship repair activities are generally less complex than the ship repair activities conducted at a shipyard. Ship repair activities may also be conducted on the piers. Boats, ship sections, or parts can be placed on the piers or adjacent lands for repairs.

Another point source discharge from the NBC is the industrial storm water discharges. The industrial storm water discharges will be regulated by this Order.

On October 30, 2002, the CNRSW submitted a *Report of Waste Discharge* (RWD) for a *National Pollutant Discharge Elimination System* (NPDES) permit for the NBC Complex. The administrative file for this Fact Sheet and for Order No. R9-2003-0008 contains the RWD dated October 30, 2002. Over the past several years, the Navy has submitted various RWDs for NPDES permits for the different Naval Base operations in the San Diego Region. Order No. R9-2003-0008, NPDES Permit No. CA0109185 is the third NPDES permit developed for a complete Naval Base Complex operation in the San Diego area.

The first two NPDES permits for a complete Naval Base Complex are Order No. R9-2002-0002, NPDES Permit No. CA0109363, for the Naval Base Point Loma (NBPL), which was adopted at the Regional Board's October 9, 2002 meeting, and Order No. R9-2002-0169, NPDES Permit No. CA0109169 for the Naval Base San Diego (NBSD), which was adopted at the Regional Board's November 13, 2002 meeting.

I. FACILITY DESCRIPTIONS

This *Fact Sheet* is for Order No. R9-2003-0008, which will regulate the discharges from the installations included as part of the NBC Complex. The NBC Complex includes the Navy installations listed below:

- Naval Air Station, North Island (NAS North Island);
- Naval Amphibious Base, Coronado (NAB);
- Naval Outlying Landing Field, Imperial Beach (NOLF IB);
- Naval Radio Receiving Facility (NRRF);
- Naval Auxiliary Landing Field, San Clemente Island (NALF SCI);**
- Survival, Escape, Resistance and Escaper Training School (SERE) ; and
- La Posta Mountain Warfare Training Center (La Posta MWTC).

**The NALF SCI is located in the Los Angeles Regional Water Quality Control Board jurisdictional area. This Fact Sheet does not contain information regarding the NALF SCI facility or any discharges therein.

A location map showing the different NBC installations is attached to the Order as *Attachment A*. The SERE and the La Posta MWTC do not have any point source discharges and do not have any industrial storm water discharges. Therefore, the location of the SERE and La Posta MWTC are not identified on the location map. Order No. R9-2003-0008 does not regulate any discharges from either the SERE or the La Posta MWTC.

a. Naval Air Station, North Island (NAS North Island)

Installation Location and Description

The NAS North Island is located on the northern end of the Coronado Peninsula just west of the city of San Diego and adjacent to the city of Coronado. San Diego Bay borders NAS North Island on the north and east, and the Pacific Ocean borders it to the west. The base consists of 2,803 acres (2,397 on land and 406 acres in water). The NAS North Island is located within the *Coronado Hydrologic Area* (910.10) in the *Otay Hydrologic Unit* (910.00).

The mission of NAS North Island is to arm, repair, provision, service, and support the U.S. Pacific Fleet and other operating forces. It is the only aviation industrial complex on the West Coast and the only Naval air station in California with an airfield having 24-hour support capabilities.

The NAS North Island is also the only military installation in southern California capable of berthing and maintaining a *Nimitz* Class aircraft carrier. It is distinguished as headquarters for several major military flag staffs: Commander, Naval Air Force; U.S. Pacific Fleet; Commander Third Fleet; Commander Carrier Group One; and Commander Carrier Group Seven. The U.S. Navy's largest Naval Aviation Depot and the Defense Distribution Center are located at NAS North Island.

The NAS North Island provides aviation support shore facilities, three aircraft carrier piers, industrial maintenance support, aircraft maintenance, bachelor quarters and dining facilities, training facilities and the attendant support infrastructure of utilities, roads and grounds. The airport at the NAS North Island has two runways. One runway is 7,500 feet long the other runway is 8,000 feet long. Approximately 70% of the total area is impervious to storm water infiltration. Industrial storm water discharges from NAS North Island are currently regulated pursuant to NPDES Permit No. CAS000001 (Statewide General Industrial Storm Water Permit). The storm water discharges from the runways and flight lines, the industrial facilities, and the berthing areas are monitored.

The California Coastal Commission (CCC) required the Navy to install storm water treatment systems as part of the CCC's conditions for building the Joliet (J) pier. There are seven storm water treatment systems installed at the J pier. The storm water systems are *Aqua Shield*™, *AquaSwirl* systems. The systems are a *rotational deflective* type system used to treat storm water for removal of sediment and free-floating oil and debris. The storm water is supposed to enter the treatment vault and spin to remove the trash or oil. The vaults are located beneath the surface of the pier and may be subject to tidal influence.

The Navy has not evaluated the effectiveness of the storm water treatment systems at the J pier. The CCC did not require evaluation or monitoring of the storm water treatment system. The storm water monitoring conducted for the general industrial storm water permit does not include upstream and downstream sampling of the storm water treatment system. The Order will require monitoring to evaluate the *Aqua Shield*™, *AquaSwirl* systems.

The three piers at NAS North Island are used to berth aircraft carriers, support vessels, and barges. The aircraft carriers, support vessels, and barges receive various ship support services such as supplies and minor repair or maintenance when berthed. Ship support services on the three piers include loading supplies and equipment onto the ships. Berth side ship repair and maintenance (that is, maintenance while the vessel is docked at the pier) may include abrasive blasting, hydro-blasting, metal grinding, painting, tank cleaning, removal of bilge and ballast water, removal of anti-fouling paint, sheet metal work, electrical work, mechanical repair, engine repair, hull repair, and sewage disposal. Berth side ship repair activities are generally less complex than the ship repair activities conducted at commercial shipyards or at the Navy's graving dock or floating drydock. Berth side maintenance may be conducted by Naval personnel (ships' force), civil service personnel, or civilian contractors.

Ship repair activities may also be conducted on the piers. Boats, ship sections, or parts can be placed on the piers or adjacent lands for repairs. The ship repair activities may be conducted by Navy personnel (ships' force), civil service personnel, or by civilian contractors. The breadth of work performed by the civilian contractors is typically greater than the work performed by ships' force. Some complex ship repair work is conducted inside various support buildings near the piers. Typically, civilian contractors will store materials and supplies on the piers while working aboard the ships.

The NAS North Island has an Industrial Wastewater Treatment Plant (IWTP), which discharges treated industrial waste waters to the San Diego Metropolitan Sanitary Sewer System (SDMSSS). The waste waters are from metal plating facilities etc. The IWTP is permitted by the City of San Diego to discharge to the sanitary sewer up to 0.00443 million gallons per day (MGD).

The NAS North Island also has an Oil Recovery Plant (ORP), which discharges treated oily waste water to the SDMSSS. The oil waste waters are from the ships, ballast and bilge water, and other facilities at NAS North Island. The ORP is permitted by the City of San Diego to discharge to the sanitary sewer up to 0.0839 MGD.

The IWTP and ORP are located on the same facility plot. The storm water at the IWTP and ORP facility is collected and diverted to the sanitary sewer system.

Industrial Storm Water Discharges

The industrial storm water discharges from the NAS North Island are currently regulated by the *State Water Resources Control Board (State Water Board), Water Quality Order No. 97-03-DWQ, National Pollutant Discharge Elimination System (NPDES), General Permit No. CAS000001 (General Permit), Waste Discharge Requirement (WDR) for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities* (General Industrial Storm Water Permit), WDID 937S004712. After the adoption of the Order, enrollment pursuant to Order No. 97-03-DWQ will be superseded.

All industrial storm water discharges will be regulated by this Order. There are high concentrations of copper and zinc in some of the industrial storm water discharges from the NAS North Island. Therefore, effluent limitations for toxicity are included in the Order. Additional information regarding the industrial storm water discharges at NAS North Island is included in the *Industrial Storm Water Discharge, Section III* of this Fact Sheet.

Point Source Discharges

Point source discharges (ship repair and maintenance activities, steam condensate, engine cooling/sprinkler water, utility vault & manhole dewatering, miscellaneous discharges associated with facility maintenance, and pier cleaning) from the NAS North Island are described in the *Point Source Discharge* section of this *Fact Sheet*. The *Point Source Discharge* section describes those discharges identified by the CNRSW in its NPDES application or identified by the Regional Board during inspections of the NBC Complex.

b. Naval Amphibious Base (NAB) and Silver Strand Beaches

Installation Location and Description

The NAB is located on a sand-spit strip known as the Silver Strand in the north central section of the Coronado Peninsula just west of the city of San Diego. The NAB is within the city of Coronado. The Glorietta Bay area of San Diego Bay borders NAB on the north and San Diego Bay borders the NAB on the east and the Pacific Ocean borders it to the west. The base consists of 1,006 acres

including 257 beachfront acres leased from the State along the Pacific Ocean. The NAB is located within the *Coronado Hydrologic Area* (910.10) in the *Otay Hydrologic Unit* (910.00).

The NAB Coronado is a major shore command. The mission of the NAB is to provide on-base facilities and services for the support of U.S. and allied forces engaged in amphibious, inshore, clandestine, unconventional and special warfare training operations. The primary land uses include the administrative areas, training beaches, California least tern preserve, recreational marina, and housing. There are 21 piers and a fuel pier at NAB. The piers are used to berth coastal patrol boats, MK-5 boats, Mike 8 Boats, LCU boats and ferry barges.

The bay side administrative area consists of over 170 buildings for housing, administration, operations, recreation, community support facilities, utilities, and maintenance facilities. The ocean-side administrative area houses Naval Special Warfare Command. Approximately 60% of the total area is impervious to storm water infiltration.

Industrial Storm Water Discharges

The industrial storm water discharges from the NAB are currently regulated by the General Industrial Storm Water Permit, Order No. 97-03-DWQ, WDID 937S001522. After the adoption of the Order, enrollment pursuant to Order No. 97-03-DWQ will be superseded. There have been high concentrations of copper and zinc in some of the industrial storm water discharges at the NAB. Therefore, effluent limitations for toxicity are included in the Order. Additional information regarding the industrial storm water discharges at NAB is included in the *Industrial Storm Water Discharge, Section III* of this Fact Sheet.

Point Source Discharges

Point source discharges (ship repair and maintenance activities, utility vault & manhole dewatering, miscellaneous discharges associated with facility maintenance, and pier cleaning) from the NAB are described in the *Point Source Discharge* section of this *Fact Sheet*.

c. Naval Radio Receiving Facility (NRRF)

Installation Location and Description

The NRRF occupies approximately 548 acres on the southern tip of the Silver Strand. The city of Imperial Beach adjoins the facility on the southern end, while Silver Strand State Beach is adjacent on the north. State Highway 75 parallels the eastern end of the facility. This facility does not include any waterfront property. There are a few structures on the facility, and only one, a maintenance shop is in use on a daily basis. The *Wullenweber* antenna at the NRRF is not working. The NRRF facility is primarily used for Naval Special Warfare training. The NRRF facility is located within the *Coronado Hydrologic Area* (910.10) in the *Otay Hydrologic Unit* (910.00).

Industrial Storm Water Discharges

Storm water discharges from NRRF are non-industrial and are not regulated pursuant to the Statewide General Industrial Storm Water Permit.

South and southwest of the Naval Radio Receiving Facility (NRRF) is Camp Surf, a YMCA aquatic activities and education camp for youth on land leased from the Navy. On Camp Surf is a wetland that fills with storm water runoff during the rainy season. A concrete lined swale drains the wetland area of excess rainwater to the ocean. This swale also brings storm water runoff from an Imperial Beach residential area south of Camp Surf. Since the wetland area and swale are below sea level, a water level controlled pump house is activated to pump the storm water to an ocean outfall at approximately 20 gallons per minute. The storm water outfall is located on the beach adjacent to Camp Surf.

Point Source Discharges

Point source discharges (utility vault & manhole dewatering, and miscellaneous discharges associated with facility maintenance) from the NRRF are described in the *Point Source Discharge* section of this *Fact Sheet.*

d. Naval Outlying Landing Field Imperial Beach (NOLF IB)

Installation Location and Description

The NOLF IB is located ten miles south of NAS North Island and 1.5 miles north of the U.S. Mexican border and is within the *San Ysidro Hydrologic Subarea* (911.11) of the *Tijuana Valley Hydrologic Area* (911.10) of the *Tijuana Hydrologic Unit* (911.00). The NOLF IB contains approximately 1,295 acres in the Tijuana River Valley, south of the Silver Strand peninsula. Approximately 283 acres of NOLF IB is part of the *Tijuana River National Estuarine Sanctuary Management Authority*. This area and certain adjoining lands of the Tijuana River Valley have been designated a *National Natural Landmark.*

The mission of NOLF IB, an extension of NAS North Island, is to provide a practice field for helicopter operations and miscellaneous personnel support facilities that serve the military population in the Imperial Beach area. Naval helicopters from NAS North Island conduct daily landing practice and lift-training operations at NOLF IB. Helicopters are not stationed at NOLF IB. Approximately 30% of the total area is impervious to storm water infiltration.

Storm Water Discharges

The General Industrial Storm Water Permit currently regulates the industrial storm water discharges from the NOLF IB, WDID 937S 0004714. All industrial storm water discharges from the NOLF IB will be regulated by this Order and enrollment pursuant to Order No. 97-03-DWQ will be superseded.

Point Source Discharges

The point source discharges (engine cooling/sprinkler water, and miscellaneous discharges associated with facility maintenance) are described in the *Point Source Discharge* section of this *Fact Sheet*. The *Point Source Discharge* section describes those discharges identified by the CNSWR in its NPDES application.

e. Survival, Evasion, Resistance and Escape Training School (SERE)

Installation Location and Description

The SERE Training School is located in Cleveland National Forest in northern, inland San Diego County, near the community of Warner Springs. The school teaches military personnel the skills to survive and evade capture, or if captured, to resist interrogation and plan their escape. The SERE Training School is not shown on the Naval Base Coronado Complex Location Map because it is a remote facility with no point source discharges. The SERE Training School is located within the *Warner Hydrologic Subarea* (903.31) of the *Warner Valley Hydrologic Area* (903.30) of the *San Luis Rey Hydrologic Unit* (903.00).

Storm Water Discharges

Storm water discharges from SERE are non-industrial and are not regulated pursuant to the General Industrial Storm Water Permit.

Point Source Discharges

The SERE facility does not have any point source discharges. Order No. R9-2003-0008 does not regulate any discharges from the SERE facility.

f. La Posta Mountain Warfare Training Center (La Posta MWTC)

Installation Location and Description

La Posta MWTC is a Navy Special Warfare Command facility located on approximately 1,079 mountainous acres in eastern San Diego County. It is bordered by National Forest lands on the north, and Bureau of Land Management (BLM) lands on the remaining three sides, with a small parcel to the southwest being privately held. The facility primarily supports training for SEAL teams and platoons, but is occasionally used by Explosive Ordnance Disposal Units, Marines, and the Army and California National Guard for training. La Posta MWTC is not shown on the Naval Base Coronado Complex Location Map because it is a remote facility with no point source discharges. The La Posta MWTC is located within the *Canyon City Hydrologic Subarea* (911.82) of the *Campo Hydrologic Area* (911.80) of the *Tijuana Hydrologic Unit* (911.00).

Storm Water Discharges

Storm water discharges from La Posta MWTC are non-industrial and are not regulated pursuant to the General Industrial Storm Water Permit.

Point Source Discharges

The La Posta MWTC facility does not have any point source discharges. Order No. R9-2003-0008 does not regulate any discharges from the La Posta MWTC facility.

II. POINT SOURCE DISCHARGES

The *point source* discharges identified in the RWD are grouped into five general industrial processes:

- Steam Condensate;
- Utility Vault & Manhole Dewatering;
- Engine Cooling/Sprinkler Water;
- Miscellaneous Discharges Associated with Facility Maintenance; and
- Pier Cleaning.

Latitude and longitude coordinates for *Point Source* discharges were included in the RWD. The latitude and longitude coordinates and maps identifying the discharge locations are included in *Attachment B* to the Order.

Additional waste discharges included in this Fact Sheet and prohibited in Order No. R9-2003-0008 are the discharges associated with:

- Ship repair and maintenance activities.

The additional discharge is based on the information contained in the Regional Board's administrative record. The administrative record includes inspection reports for the Navy complexes in San Diego; Notice of Violation (NOV) No. 2000-118, dated May 24, 2000, issued to the Navy for paint chip discharges from the USS Essex; and industrial storm water annual monitoring reports for NBC Complex, and commercial shipyards in San Diego (i.e. National Steel & Ship Building Co., SouthWest Marine, and Continental Maritime).

The diverse discharges from ship repair and maintenance activities could occur at several locations, including aboard ship when docked, on the piers, or on shore locations.

Descriptions of the waste discharges from the NBC are provided below. The descriptions are taken from information in the administrative record as explained above and in the RWD submitted by the Navy.

a. Ship Repair and Maintenance Activities

Ship repair and maintenance activities include abrasive blasting, hydroblasting, metal grinding, painting, tank cleaning, removal of bilge and ballast water, removal of anti-fouling paint, sheet metal work, electrical work, mechanical repair, engine repair, hull repair, and sewage disposal.

The ship repair and maintenance activities may be conducted by Navy personnel (ships' force), civil service personnel, or civilian contractors. The specifications, prohibitions, and monitoring requirements in Order No. R9-2003-0008 apply to all ship repair and maintenance activities at NBC conducted under the control of the U.S. Navy.

Berth side maintenance on the surface ships, support vessels or barges may include all of the activities listed above. Berth side ship repair activities are generally less complex than the ship repair activities conducted at a shipyard. Ship repair activities may also be conducted on the piers. Boats, ship sections, or parts can be placed on the piers or adjacent lands for repairs.

Prohibited discharges—Ship repair and maintenance activities result or have the potential to result in discharges to San Diego Bay of wastes and pollutants which are likely to cause or threaten to cause pollution, contamination, or nuisance; adversely impact human health or the environment; cause or contribute to violation of an applicable water quality objective; or otherwise adversely affect the water quality or beneficial uses of waters of the state and waters of the United States. Such discharges include the following:

- water contaminated with abrasive blast materials, paint, oils, fuels, lubricants, solvents, or petroleum;
- hydroblast water;
- tank cleaning water from tank cleaning to remove sludge and/or dirt;
- clarified water from oil/water separator;
- steam cleaning water;
- demineralizer and reverse osmosis brine;
- oily bilge water;
- vessel washdown water;
- pipe and tank hydrostatic test water;
- miscellaneous low-volume water;
- saltbox water;
- paint chips;
- paint over spray;
- paint spills;
- hydraulic oil leaks and spills;
- fuel leaks and spills;
- abrasive blast materials;
- trash;
- miscellaneous refuse and rubbish;
- fiberglass dust;
- swept materials; and
- ship repair and maintenance activity debris.

Information regarding the industrial storm water discharges associated with the ship repair and maintenance activities is included in the Industrial Storm Water Discharges section for NAS North Island, and NAB.

b. Steam Condensate

The U.S. Navy uses a pressurized steam system for both shore and afloat operations. Within NBC, only the NAS North Island has an on-base steam system. The steam system at NAS North Island produces a steam condensate that is discharged to land and to San Diego Bay.

Steam is produced at NAS North Island at an on-site cogeneration plant that is operated by *Sithe Energy*, a Navy contractor. During the production of steam, chemicals are injected into the boiler feed water or directly into boilers. The boiler chemicals never leave the boiler process.

Only the Trident 2301 chemical leaves the boiler and can be present in the steam condensate. Copies of the Material Safety Data Sheets for each of the chemicals and a flow diagram showing the steam generation process were included in the RWD.

After leaving the plant, the steam enters the distribution system, which consists of high and low pressure steam lines; pressure reducing valve stations; and expansion joints. The steam is provided to buildings and surface ships. The steam system has traps in the steam lines designed to discharge steam condensate to ensure the steam supplied to users meets quality assurance specifications and is free of condensate. When water collects in the steam lines it is essential for the system to remove the water as soon as possible.

The only steam condensate discharge at NBC to San Diego Bay is from NAS North Island. There are 66 steam discharge points and nine are located on the quay wall. The majority of the discharge locations release steam condensate from traps in a cloud of steam that has a temperature in excess of 100^{o} Celsius. A portion of this steam discharge evaporates prior to forming a condensate and discharging to the land or San Diego Bay.

The pier discharge points, in addition to releasing steam, drip small amounts of water to the bay between steam discharges. The estimated discharge rate for the steam lines is one ounce per minute per discharge point. The total discharge volume is approximately 750 gallons per day based on a discharge rate of one once per minute per discharge point. Only a portion of the total volume is discharged to San Diego Bay. Between 100 to 375 gallons per day of steam condensate is discharged to San Diego Bay, that is nine to 33 discharge point respectively.

Steam condensate discharges on the shore side are typically discharged to steam vaults and steam manholes where the discharge may evaporate or is routed to the sanitary sewer system.

As shown in *Table 1. Steam Condensate Discharge Analyses, Steam Manhole* and *Table 2. Steam Condensate Discharge Analyses, Quay Wall* the NPDES application included laboratory analyses for the steam condensate discharges from the identified locations. The *Steam Manhole*

discharges occurred into a utility vault manhole. The discharges from the manholes will be regulated as a utility vault and manhole discharge. Because the reported chemical concentrations in the discharge are low and the discharge flow rates are low, the *Steam Condensate* discharges are not a significant threat to water quality.

By e-mail dated March 21, 2003, and by comment letter dated March 26, 2003, the Navy reported that 1-2 Tank does not discharge to waters of the state. The 1-2 Tank steam condensate either recycles to the steam plant or is discharged to the sanitary sewer system. The 1-2 Tank was resampled on March 14, 2003 and the copper concentration was reported as 0.09 mg/L and the zinc concentration was reported as 0.02 mg/L. The steam condensate for 1-2 Tank is from the condensate return line of the steam system.

Table 1. Steam Condensate Discharge Analyses, Steam Manhole.

Analytical Parameters	Steam Condensate 1-2 Tank 8/10/00	Steam Condensate B653 08/10/00	Steam Condensate B653 08/24/00
Cadmium (mg/L)	ND	ND	ND
Copper (mg/L)	0.12	0.03	ND
Lead (mg/L)	ND	ND	ND
Mercury (mg/L)	ND	ND	0.0005
Nickel (mg/L)	ND	ND	ND
Zinc (mg/L)	0.37	ND	ND
Ammonia as N (mg/L)	0.15	0.13	0.21
BOD (mg/L)	ND	ND	6
COD (mg/L)	42.0	67.0	83
pH	8.82	8.72	8.41
TPH Diesel (mg/L)	ND	ND	ND
Temp. ^{o}C	57.2	56.1	56.1
TOC (mg/L)	4.6	3.7	5.4
TSS (mg/L)	ND	ND	ND

ND = not detected

Table 2. Steam Condensate Discharge Analyses, Quay Wall.

Analytical Parameters	Steam Condensate LP Quay Wall 08/24/00	Steam Condensate Quay Wall 8/10/00	Steam Condensate Quay Wall 8/24/00
Cadmium (mg/L)	ND	ND	ND
Copper (mg/L)	ND	ND	ND
Lead (mg/L)	ND	ND	ND
Mercury (mg/L)	ND	ND	ND
Nickel (mg/L)	ND	ND	ND
Zinc (mg/L)	ND	ND	ND
Ammonia as N (mg/L)	0.23	0.33	0.34
BOD (mg/L)	ND	ND	5
COD (mg/L)	100.0	77.0	196.0
pH	8.41	8.66	N/A
TPH Diesel (mg/L)	ND	ND	ND
Temp. ^{o}C	29.8	27.5	N/A
TOC (mg/L)	5.1	6.1	5.1
TSS (mg/L)	ND	ND	ND

ND = not detected
N/A = not applicable, not tested

Any steam condensate discharged from a vault or manhole is regulated as a utility vault discharge as described in the following section on utility vault and manhole dewatering.

The low volume steam discharges are subject to regulations pursuant to the *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (Implementation Policy). MRP No. R9-2003-0008 requires monitoring for evaluating compliance with the Implementation Policy.

MRP No. R9-2003-0008 requires annual monitoring of the steam condensate discharge for certain chemicals to monitor the quality of the discharge and to evaluate potential impacts to water quality.

c. Utility Vault & Manhole Dewatering

The NBC has electrical and steam utility vaults and manholes that may discharge wastes to surface waters. The utility vaults and manholes are located at NAS North Island, NAB, and NRRF. Only the NAS North Island has steam vaults. The NAB and NRRF only have electrical switch or substation vaults.

Utility companies, or agencies, such as the Public Works Center (PWC) for the NBC, supply resources, excluding water, as necessary for day-to-day living and operations. This includes, but is not limited to supplies of natural gas, electricity, and telephone service. Electrical and steam utilities are owned and maintained by the PWC. The utility vault discharges are short-term intermittent discharges of pollutants from utility vaults and underground structures.

Typically, utility companies must de-water the vaults and underground structures prior to performing any repair, maintenance and/or installation of equipment, for safety reasons. Water is pumped from the vaults or structures when the volume of water interferes with the safety or quality of the work to be done. The volume of discharge could vary from a few gallons to thousands of gallons. The duration of discharge and pump rates for the discharge could also vary greatly.

Navy installations in San Diego require electrical power for both shore and afloat operations. The on-base electrical power is carried through an extensive underground conduit system. Electrical utility vaults and manholes contain high voltage electrical equipment, transformers, switchgear, and/or below grade cables.

The steam utility manholes can also accumulate steam condensate water. High-pressure steam lines are also located in underground conduit systems and are accessed through utility manholes.

There are 28 electrical vaults located at NAS North Island that can have point source discharges. Twenty of the 28 vaults are located on the quay walls at the piers. The quay wall vaults are subject to Bay water intrusion. At high tide, Bay water routinely flows into and out of the vaults. The quay wall vaults do not have dewatering or sump pumps.

The remaining eight vaults are located on land inside buildings, and are associated with electrical switching or substations. These vaults can also accumulate ground water and storm water and are dewatered using automatic sump pumps. The sump pumps discharge the water on to the ground surface around the vault building. Depending on the discharge volume these discharges could reach a storm drain inlet and discharge to San Diego Bay.

In addition to the vaults, electrical and steam utility manholes are located on all of the NBC installations. Both the electrical and steam utility manholes can accumulate groundwater and storm water that must be removed when maintenance or emergency work is required. Steam utility vaults are located at NAS North Island. The steam utility vaults can also accumulate steam condensate water.

All manholes at the NBC are manually dewatered, when necessary, using a portable pump or pump truck. Prior to 1998, the PWC implemented procedures to eliminate manhole dewatering discharges to surface waters. The PWC either pumps the water into an adjacent utility manhole or transfers the water to the sanitary sewer system. Although there could be an emergency situation that would require dewatering a manhole onto the ground surface, PWC has not had to do this in over two years.

There are two electrical switch or substations located at NAB. The two vaults are located inside buildings and are away from the quay walls and piers. There are also electrical utility manholes at NAB.

There is one electrical switch or substation at NRRF. This substation is located inside a building and has an automated sump pump to dewater ground water seepage and storm water. The sump pump prevents the water from contacting the electrical equipment. The sump discharges to the ground surface around the building. Depending on the volume of discharge these discharges could reach a storm drain and flow to the Pacific Ocean. There are also various electrical manholes at the NRRF.

As shown in *Table 3. Utility Vault Discharge Analyses, M-1 and M-5*, and *Table 4. Utility Vault Discharge Analyses, M-12* the NPDES application included laboratory analyses for the steam condensate discharges from the identified locations.

Table 3. Utility Vault Discharge Analyses, M-1 and M-5.

Analytical Parameters	Utility Vault Quay Wall M-1 (electrical) 08/08/00	Utility Vault Quay Wall M-1 (electrical) 08/25/00	Utility Vault Quay Wall M-5 (electrical) 08/08/00	Utility Vault Quay Wall M-5 (electrical) 08/25/00
Cadmium (mg/L)	ND	ND	ND	ND
Copper (mg/L)	ND	ND	0.39	0.03
Lead (mg/L)	ND	ND	0.14	ND
Mercury (mg/L)	ND	ND	ND	0.0004
Nickel (mg/L)	ND	ND	0.01	ND
Zinc (mg/L)	0.03	0.02	0.23	ND
Ammonia as N (mg/L)	0.18	0.15	1.20	0.11
BOD (mg/L)	ND	ND	7	ND
COD (mg/L)	60	104	62	144
pH	N/A	8.78	N/A	8.77
TPH Diesel (mg/L)	ND	ND	ND	ND

Analytical Parameters	Utility Vault Quay Wall M-1 (electrical) 08/08/00	Utility Vault Quay Wall M-1 (electrical) 08/25/00	Utility Vault Quay Wall M-5 (electrical) 08/08/00	Utility Vault Quay Wall M-5 (electrical) 08/25/00
TPH Gasoline (mg/L)	ND	ND	ND	ND
Temp. ^{o}C	N/A	24.9	N/A	25.0
TOC (mg/L)	11.0	10.0	11.0	12.0
TSS (mg/L)	ND	7	44	11

ND = not detected N/A = not applicable, not tested

Table 4. Utility Vault Discharges Analyses, M-12.

Analytical Parameters	Utility Vault Quay Wall M-12 (electrical) 08/08/00	Utility Vault Quay Wall M-12 (electrical) 08/25/00
Cadmium (mg/L)	ND	ND
Copper (mg/L)	0.19	0.16
Lead (mg/L)	0.02	ND
Mercury (mg/L)	N/A	0.0011
Nickel (mg/L)	0.02	0.01
Zinc (mg/L)	0.03	0.02
Ammonia as N (mg/L)	0.09	0.11
BOD (mg/L)	ND	ND
COD (mg/L)	67	208
pH	N/A	8.63
TPH Diesel (mg/L)	ND	1.1
TPH Gasoline (mg/L)	ND	ND
Temp. ^{o}C	N/A	30.4
TOC (mg/L)	15.0	15.0
TSS (mg/L)	6	13

ND = not detected
N/A = not applicable, not tested

The discharges from the NBC electrical utility vaults and manholes are regulated by *California State Water Resources Control Board, Water Quality Order No. 96-12-DWQ, Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges from Utility Vaults and Underground Structure to Surface Waters, General Permit No. CAG990002, Waste Discharge Requirements* (General Utility Vault Permit), WDID 9000U000058. On July 19, 2001 the State Board adopted *Order No. 2001-11-DWQ* to supersede *Order No. 96-12-DWQ*. As of September 26, 2002 the USEPA as not approved *Order No. 2001-11-DWQ*. After the adoption of the Order, enrollment pursuant to Order No. 96-12-DWQ will be superseded.

In accordance with the *General Utility Vault Permit*, the PWC has developed pollution prevention practices for utility vault and manhole discharges. The pollution prevention practices include inspections of utility vaults and manholes for potential pollutant sources and the dewatering of utility manholes into adjacent utility manholes or the sanitary sewer system. Th Navy will conduct a case study during the 2002/2003 wet season to characterize any discharges from the utility vaults and manholes.

Order No. R9-2003-0008 incorporates the pertinent specifications, limitations, and monitoring requirements of the General Utility Vault Permit (Order No. 2001-11-DWQ). By including the discharges from the *Utility Vaults and Manhole Dewatering* in the Order, the NBC will have one NPDES permit for all of its surface water discharges except for discharges regulated pursuant to Order No. R9-2002-0020, NPDES No. CAG6790001 (i.e., Hydrostatic Test Water and Potable Water discharges) or other applicable NPDES permits.

The State Board, in Finding 13 of the General Utility Vault Permit (Order No. 2001-11-DWQ), granted the utility vault discharges an exception to *Sections 1.3 and 1.4* of the *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (Implementation Policy) because numeric effluent limits are infeasible for discharges from vaults and underground structures.

This Order does not require monitoring of the Utility Vault and Manhole Dewatering discharges pursuant to the requirements in the Implementation Policy. If the USEPA does not approve *Order No. 2001-11-DWQ*, the Order may need to be revised to include monitoring pursuant to the Implementation Policy.

MRP No. R9-2003-0008 includes monitoring for chemicals, and requires the submittal of a log of the discharges to identify any potential impacts to beneficial uses.

d. Engine Cooling/Sprinkler Water

There are five emergency fire sprinkler stations at NAS North Island. The five emergency fire sprinkler stations use diesel motors to supply water to the fire suppression system (sprinklers). A weekly pump test is performed at each of the five NAS North Island emergency fire sprinkler stations. The once-through cooling water for the sprinkler pumps is discharged to the storm drains or storm channels and eventually flows to the Bay or Pacific Ocean.

The fire sprinkler stations pump either non-contact cooling water from San Diego Bay (B812) or non-contact cooling water from the potable water system at NAS North Island (B348, B499, B554, and B1357). The testing is conducted to ensure the fire sprinkler pumps are operational.

During an emergency, the pumps supply water to the fire sprinkler systems in adjacent buildings. During these weekly tests, the cooling water discharges directly into a storm drain, or to an area that flows within a storm drain channel and into San Diego Bay.

At NAS North Island, the emergency fire sprinkler pump stations are located in Building 348, Building 499, Building 554, Building 812, and Building 1357. The pump station in Building 812 pumps salt water directly from San Diego Bay, all other locations use water from the potable water system. The total non-contact cooling water discharge is approximately 227,000 gallons per week (GPW).

There is one fire emergency sprinkler station at NOLF IB. This emergency fire sprinkler station (B186) uses three gasoline-engine powered pumps to supply potable water to the fire suppression system. The once-through cooling water for the sprinkler pumps is discharged outside the building and eventually flows into the storm drain channel and to San Diego Bay. The NOLF IB fire sprinkler station is tested once per month.

Building 348 Discharge

Building 348 has four diesel engine powered pumps. During the weekly test, non-contact cooling water from the NAS North Island potable water system flows through a steel 12-inch diameter, 8-foot long pipe to the four diesel-powered pumps. Since the fire sprinkler system is not actuated, this test water is pumped through a steel 12-inch diameter pipe to a sump in the building that leads directly into a storm drain. Each of the four diesel engine powered pumps is rated at 500 gallons per minute per pump. The weekly pump test takes approximately 15 minutes. The total weekly discharge volume for this station is approximately 30,000 gallons of non-contact potable water.

Since chlorine is added to the NAS North Island potable water system, a field test for chlorine was performed. The chlorine residual in the discharge to the storm water system was 0.04 mg/L.

Pollutants that may be found in the discharge include contaminants in the potable water supply to the diesel engines; any contaminants that the water contacts as it circulates through the system; and heat from the diesel engines. As shown in *Table 5. Engine Cooling/Sprinkler Water, Discharge Analyses, Building 348* the NPDES application included laboratory analyses for the engine cooling/sprinkler water discharges from Building 348.

Table 5. Engine Cooling/Sprinkler Water Discharge Analyses, Building 348.

Analytical Parameter	Cooling Water 04/07/00	Cooling Water 04/21/00	Cooling Water 06/09/00	Cooling Water 12/29/00
Cadmium (mg/L)	ND	ND	ND	ND
Copper (mg/L)	ND	ND	0.008	ND
Lead (mg/L)	ND	ND	0.013	ND
Mercury (mg/L)	ND	ND	ND	ND
Nickel (mg/L)	ND	ND	ND	ND
Zinc (mg/L)	ND	ND	0.12	ND
Ammonia as N (mg/L)	ND	N/A	N/A	ND
BOD (mg/L)	N/A	N/A	N/A	ND
COD (mg/L)	N/A	N/A	N/A	5
pH	8.24	8.36	N/A	8.9
TPH Diesel (mg/L)	ND	N/D	ND	N/A
Temp. ^{o}C	25.9	22.8	N/A	20.5
TOC (mg/L)	N/A	N/A	N/A	3.0
TSS (mg/L)	N/A	N/A	N/A	ND

ND = not detected
N/A = not applicable, not tested

Building 499 Discharge

Building 499 houses two diesel engine powered pumps. During the weekly test, single pass non-contact cooling water from the NAS North Island potable water system flows through a steel 10-inch diameter, 24-foot long pipe to the two diesel-powered pumps. Since the fire sprinkler system is not actuated, this test water is pumped through a steel 10-inch pipe to a small sump in the building that leads directly into a storm drain. Each of the two diesel engine powered pumps is rated at 1,500 gallons per minute per pump and the weekly pump test is approximately 15 minutes. The total weekly discharge volume for this station is approximately 45,000 gallons of non-contact potable water.

Since chlorine is added to the NAS North Island potable water system a field test for chlorine was performed which showed a result of 0.01 mg/L of chlorine in the discharge to the storm water system.

Pollutants that may be found in the discharge include contaminants in the potable water supply to diesel engines any contaminants that the water comes into contact with as it circulates through the system, and heat from the diesel engines. As shown in *Table 6. Engine Cooling/Sprinkler*

Water Discharge Analyses, Building 499 the NPDES application included laboratory analyses for the engine cooling/sprinkler water discharges from Building 499.

Table 6. Engine Cooling/Sprinkler Water Discharge Analyses, Building 499.

Analytical Parameter	Cooling Water 04/07/00	Cooling Water 04/21/00	Cooling Water 06/09/00	Cooling Water 12/29/00
Cadmium (mg/L)	ND	ND	ND	ND
Copper (mg/L)	ND	0.03	0.016	ND
Lead (mg/L)	ND	0.01	0.013	ND
Mercury (mg/L)	ND	ND	ND	ND
Nickel (mg/L)	ND	ND	ND	ND
Zinc (mg/L)	0.30	0.25	0.07	ND
Ammonia as N (mg/L)	N/A	N/A	N/A	ND
BOD (mg/L)	N/A	N/A	N/A	ND
COD (mg/L)	N/A	N/A	N/A	7
pH	8.23	8.33	N/A	9.19
TPH Diesel (mg/L)	ND	ND	ND	ND
Temp. ^{o}C	16.9	17.6	N/D	14.9
TOC (mg/L)	N/A	N/A	N/A	3.0
TSS (mg/L)	N/A	N/A	N/A	8

ND = not detected
N/A = not applicable, not tested

Building 554 Discharge

Building 554 houses four diesel engine powered pumps. During the weekly test, single pass non-contact cooling water from the NAS North Island potable water system flows through a steel 12-inch in diameter, 10-foot long pipe to the four diesel powered pumps. Since the fire sprinkler system is not actuated, this test water is pumped through a steel 12-inch pipe to a small building sump that leads directly into a storm drain. Each of the four diesel engine powered pumps is rated at 1,200 gallons per minute and the weekly pump test is approximately 15 minutes. The total weekly discharge volume for this station is approximately 72,000 gallons of non-contact potable water.

Since chlorine is added to the NASNI potable water system, a field test for chlorine was performed which showed a result of 0.02 mg/L of chlorine in the discharge to the storm water system.

Pollutants that may be found in the discharge include contaminants in the potable water supply to diesel engines; any contaminants that the water contacts as it circulates through the system, and heat from the diesel engines.

As shown in *Table 7. Engine Cooling/Sprinkler Water Discharge Analyses, Building 554* the NPDES application included laboratory analyses for the engine cooling/sprinkler water discharges from Building 544.

Table 7. Engine Cooling/Sprinkler Water Discharge Analyses, Building 554.

Analytical Parameter	Cooling Water 04/07/00	Cooling Water 04/21/00	Cooling Water 06/09/00	Cooling Water 12/29/00
Cadmium (mg/L)	ND	ND	ND	ND
Copper (mg/L)	0.016	0.04	0.005	0.03
Lead (mg/L)	0.013	0.013	0.122	ND
Mercury (mg/L)	ND	ND	ND	ND
Nickel (mg/L)	ND	ND	ND	ND
Zinc (mg/L)	ND	ND	0.3	0.3
Ammonia as N (mg/L)	N/A	N/A	N/A	ND
BOD (mg/L)	N/A	N/A	N/A	ND
COD (mg/L)	N/A	N/A	N/A	NA
pH	8.45	8.45	N/A	8.8
TPH Diesel (mg/L)	ND	ND	ND	ND
Temp. ^{o}C	N/A	29.1	N/D	23.9
TOC (mg/L)	N/A	N/A	N/A	4.0
TSS (mg/L)	N/A	N/A	N/A	6

ND = not detected
N/A = not applicable, not tested

Building 812 Discharge

In Building 812, there is one diesel engine powered pump. During the weekly pump test, seawater is pumped from San Diego Bay through a steel pipe that is approximately 48 feet long

and 15 inches in diameter. The emergency diesel-powered pumps discharges 1500 gallons per minute of single pass non-contact seawater for 15 minutes. The emergency diesel powered pump discharges seawater through a steel 2-inch pipe that runs approximately 12 feet into a sump that flows into the storm drain and channels into San Diego Bay. The total discharge volume is approximately 22,500 gallons of seawater per weekly test.

Pollutants that may be found in the discharge include contaminants in San Diego Bay water supplied to the diesel engines; any contaminants that the water contacts as it circulates through the system, and heat from the diesel engines.

As shown in *Table 8. Engine Cooling/Sprinkler Water Discharge Analyses, Building 812* the NPDES application included laboratory analyses for the engine cooling/sprinkler water discharges from Building 812.

Table 8. Engine Cooling/Sprinkler Water Discharge Analyses, Building 812.

Analytical Parameter	Cooling Water 03/07/00	Cooling Water 04/21/00	Cooling Water 06/09/00
Cadmium (mg/L)	ND	ND	ND
Copper (mg/L)	ND	ND	0.049
Lead (mg/L)	ND	ND	0.007
Mercury (mg/L)	ND	ND	ND
Nickel (mg/L)	ND	0.02	0.022
Zinc (mg/L)	ND	ND	0.03
Ammonia as N (mg/L)	N/A	N/A	N/A
BOD (mg/L)	N/A	N/A	N/A
COD (mg/L)	N/A	N/A	N/A
pH	7.82	7.96	N/A
TPH Diesel (mg/L)	ND	ND	ND
Temp. ^{o}C	17.8	17.5	N/A
TOC (mg/L)	N/A	N/A	N/A
TSS (mg/L)	N/A	N/A	N/A

ND = not detected
N/A = not applicable, not tested

Building 1357 Discharge

Building 1357 has five diesel engine powered pumps. During the weekly test single pass non-contact cooling water from the NAS North Island potable water system flows through a steel 72-inch diameter, 25-foot long pipe to the five diesel-powered pumps. Since the fire sprinkler system is not actuated, this test water is pumped through PVC piping 10 inches in diameter and approximately 48 feet in length to a discharge outlet outside the building onto a paved surface which then flows along the street and is adsorbed into the ground or discharged into a storm drain. Each of the five diesel engine powered pumps is rated at 1500 gallons per minute and the weekly discharge volume for this station is approximately 112,500 gallons of non-contact potable water. The discharge sheet flows along a paved area and through a roadside depression prior to reaching the storm drain. Due to depression and detention storage, and evaporation, it is estimated that a maximum of half of the discharge, or approximately 56,250 gallons, would reach the storm drain and discharge to San Diego Bay.

Since chlorine is added to the NASNI potable water system a field test for chlorine was performed which showed a result of 0.14 mg/L of chlorine in the discharge to the storm water system.

Pollutants that may be found in the discharge include contaminants in the potable water supply to diesel engines any contaminants that the water contacts as it circulates through the system, and heat from the diesel engines.

As shown in *Table 9. Engine Cooling/Sprinkler Water Discharge Analyses, Building 1357 (NAS North Island), and Building 186 (NOLF)* the NPDES application included laboratory analyses for the engine cooling/sprinkler water discharges from Building 1357.

Table 9. Engine Cooling/Sprinkler Water Discharge Analyses, Building 1357 (NAS North Island), and Building 186 (NOLF).

Analytical Parameter	Cooling Water (Bldg 1357) 03/24/00	Cooling Water (Bldg 1357) 04/21/00	Cooling Water (Bldg 1357) 06/09/00	Cooling Water (Bldg 186) 03/24/00
Cadmium (mg/L)	ND	ND	ND	ND
Copper (mg/L)	ND	ND	0.034	ND
Lead (mg/L)	ND	ND	0.015	ND
Mercury (mg/L)	ND	ND	ND	ND
Nickel (mg/L)	ND	ND	ND	ND
Zinc (mg/L)	0.03	ND	0.02	0.03
Ammonia as N (mg/L)	N/A	N/A	N/A	N/A

Analytical Parameter	Cooling Water (Bldg 1357) 03/24/00	Cooling Water (Bldg 1357) 04/21/00	Cooling Water (Bldg 1357) 06/09/00	Cooling Water (Bldg 186) 03/24/00
BOD (mg/L)	N/A	N/A	N/A	N/A
COD (mg/L)	N/A	N/A	N/A	7.0
pH	8.15	8.27	N/A	7.58
TPH Diesel (mg/L)	ND	ND	ND	ND
Temp. ^{o}C	20.4	22.7	N/A	19.6
TOC (mg/L)	N/A	N/A	N/A	4.9
TSS (mg/L)	N/A	N/A	N/A	N/A

ND = not detected
N/A = not applicable, not tested

NOLF IB Discharge

At NOLF IB a monthly test is performed in the one emergency fire sprinkler station in Building 186 to ensure the fire sprinkler pumps are operational.

Building 186 has three gasoline engine powered pumps. During the monthly test, non-contact cooling water from the NOLF IB potable water system flows through a steel 12-inch diameter, 12-foot long pipe to the three gasoline-powered pumps. The non-contact test water is then pumped through three 12-inch steel pipes from the fire sprinkler pump and is discharged outside the building onto a paved surface that flows to a storm drain. Each of the gasoline pumps is rated at 775 gpm and the monthly pump test is approximately 15 minutes. The discharge of non-contact potable water is 35,000 gallons per month.

Pollutants that may be found in the discharge include contaminants in the potable water supply to diesel engines any contaminants that the water contacts as it circulates through the system, and heat from the diesel engines.

As shown in *Table 9. Engine Cooling/Sprinkler Water Discharge Analyses, Building 1357 (NAS North Island), and Building 186(NOLF)* the NPDES application included laboratory analyses for the engine cooling/sprinkler water discharges from Building 186.

The discharge of thermal waste must comply with the *SWRCB, Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan). The *Specific Water Quality Objectives for Enclosed Bays* from the Thermal Plan (pp. 4 & 5) for the discharge of thermal waste states the following:

A. Existing discharges

(1) Elevated temperature waste discharges shall comply with limitations necessary to assure protection of beneficial uses.

B. New discharges

(1) Elevated temperature waste discharges shall comply with limitations necessary to assure protection of beneficial uses. The maximum temperature of waste discharges shall not exceed the natural temperature of the receiving waters by more than 20°F.

(2) Thermal waste discharges having a maximum temperature greater than 4°F above the natural temperature of the receiving water are prohibited.

Since the discharge of the diesel cooling water is not included in the definition for an existing discharge in the Thermal Plan, the discharge is a new discharge.

The more stringent prohibition of . . . *having a maximum temperature greater than 4°F above the natural temperature of the receiving water* . . . has been included in the Prohibitions of Order No. R9-2003-0008.

The MRP No. R9-2003-0008 includes monitoring requirements for the discharge and the receiving waters to assess compliance with the thermal specification.

e. Miscellaneous Discharges Associated with Facilities Maintenance

The following miscellaneous discharges can occur at all of the NBC Complex installations:

- Fire hydrant flushing;
- Fire suppression sprinkler system flushing;
- Potable water system operation, maintenance, and testing;
- Emergency eye wash/shower station maintenance;
- Air conditioner condensate; and
- Landscape watering.

Fire Hydrant Flushing

Fire hydrants are periodically flushed to remove stagnant water in the line to ensure that the proper chlorine residual is maintained in the distribution system. Hydrants are also flushed when maintenance on valves is conducted; when tests to determine hydraulic pressure and flow rates are performed; and when any rust or sediment in the line requires removal.

Fire Suppression Sprinkler System Flushing
Recurring maintenance of building fire suppression sprinkler systems includes draining and flushing the sprinkler piping to remove stagnant water; inspection and maintenance of the valves, sprinkler heads, and manual actuators, and alarm infrastructure.

Potable Water System Operation, Maintenance, and Testing
As part of the Navy's backflow prevention and water system maintenance programs, backflow prevention assemblies and other potable water equipment must be tested and maintained on a regular basis. Discharges of potable water may occur during testing and maintenance.

Emergency Eye Wash/Shower Station Maintenance
Proper maintenance of the emergency eye wash/shower station is essential for maintaining a safe work environment. Eye wash/shower stations are flushed when maintenance is conducted. Water released from the station during maintenance is discharged to the ground and has the potential to enter the storm drain system.

Air Conditioner Condensate
Air conditioners are located throughout the NBC Complex and are used for environment and equipment cooling. Condensate is regularly discharged from air conditioners, however, most discharges are at an extremely low flow rate.

Landscape Watering
Landscape watering constitutes a significant portion of the potable water usage on Navy installations. Runoff from landscape water can flow into the storm drain system or directly into San Diego Bay.

Best Management Practices have been developed to reduce or eliminated pollutants in the miscellaneous discharges. These discharges could be subject to regulations in the Implementation Policy. MRP No. R9-2003-0008 requires monitoring for evaluating compliance with the Implementation Policy provided the miscellaneous discharge is not regulated pursuant to Order No. R9-2002-0020, NPDES No. CAG6790001 (i.e., Hydrostatic Test Water and Potable Water discharges) or other applicable NPDES permits.

Annual reporting of any significant changes in these discharges is required by the MRP.

f. Pier Cleaning

The ammunition pier known as *Bravo* pier at the western shore of NAS North Island is located southeast of the bait barges, which supply bait for the commercial fishing operations for San

Diego Bay fishermen. Consequently, the area has a significant marine bird population. The marine birds roost at the Bravo pier and create a significant amount of guano. To minimize health and safety issues resulting for the accumulated guano, the pier is washed with fire system potable water once a week.

The pier is swept with a street sweeper prior to the wash down. A pump located on the pier is used to supply potable water for the wash down. The pump is rated at 240 gpm and the pier washing takes approximately 120 minutes to complete. The discharge volume for the pier is approximately 28,800 gallons for each washing and 1.5 million gallons annually. The wash water discharges to the Bay from several drains located on the pier.

An analysis of the pier cleaning water discharges from the *Bravo* pier was not submitted. The Navy submitted the analyses of the pier cleaning water discharges from the *Magnetic Silencing Facility* at the *Naval Base Point Loma*. The pier cleaning discharges from the Magnetic Silencing Facility should be similar to the discharges expected from the Bravo pier. As shown in *Table 10. Pier Cleaning Water Discharge Analyses, Magnetic Silencing Facility* the NPDES application included laboratory analyses for a similar pier cleaning operations at the *Naval Base Point Loma Magnetic Silencing Facility*. The wash water used to remove the guano from the pier should have similar characteristics.

Table 10. Pier Cleaning Water Discharge Analyses, Magnetic Silencing Facility.

Parameters & Units	Pier Cleaning Water 1	Pier Cleaning Water 2
Cadmium (mg/L)	ND	ND
Copper (mg/L)	ND	ND
Lead (mg/L)	ND	ND
Mercury (mg/L)	ND	ND
Nickel (mg/L)	ND	ND
Zinc (mg/L)	0.02	ND
Ammonia as N (mg/L)	1.4	0.06
BOD	20	ND
COD	ND	ND
TPH Gas (mg/L)	ND	ND
TPH Diesel (mg/L)	ND	ND
pH	7.78	7.91
TOC (mg/L)	7.9	4.0

Parameters & Units	Pier Cleaning Water 1	Pier Cleaning Water 2
TSS (mg/L)	37	9
Total Coliform MPN/100mL	>1600	>1600
Fecal Coliform MPN/100mL	>1600	>1600

ND = not detected

The discharge of pier wash water is subject to the Implementation Policy. MRP No. R9-2003-0008 requires monitoring for evaluating compliance with the Implementation Policy.

The MRP No. R9-2003-0008 requires notification and monitoring of the pier wash water discharge to protect water quality.

III. INDUSTRIAL STORM WATER DISCHARGES

The NBC Complex includes six Navy installations within the jurisdictional area of the San Diego Regional Board. The Navy submitted Notices of Intent (NOIs) to comply with the *State Water Resources Control Board (State Water Board), Water Quality Order No. 97-03-DWQ, National Pollutant Discharge Elimination System (NPDES), General Permit No. CAS000001 (General Permit), Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities* (General Industrial Storm Water Permit) for three of the six installations. The General Industrial Storm Water Permit establishes NPDES waste discharge requirements for industrial storm water discharges and requires the discharger to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) and a Monitoring and Reporting Program.

Storm water discharges from the *Naval Radio Receiving Facility* (NRRF), the *La Posta Mountain Warfare Training Center* (La Posta MWTC), and the *Survival, Evasion, Resistance and Escape Training School* (SERE) are non-industrial and do not have facilities or operations requiring regulation by an Industrial Storm Water Permit.

The *municipal storm water discharges* from the NBC will be subject to regulation by the Regional Board in March 2003. The municipal storm water discharges may be regulated by the current San Diego County municipal storm water permit, or may be regulated by a separate municipal permit.

Upon adoption, the Order will supersede the General Industrial Storm Water permit. Industrial storm water discharges occur from the following three *Installations*:

The discharges from ship repair and maintenance activities may result in industrial storm water discharges with a *high risk* potential to impact water quality. *High risk areas* are areas where significant quantities of wastes or pollutants (including abrasive blast grit material, primer, paint, paint chips, solvents, oils, fuels, sludges, detergents, cleaners, hazardous substances, toxic pollutants, non-conventional pollutants, materials of petroleum origin, or other substances of water quality significance) are subject to exposure to precipitation and runoff.

The Order requires the NAS North Island and NAB facility to terminate the first ¼ inch of industrial storm water discharges from all high-risk areas within two years of adoption.

Effluent limitations are included in the Order for industrial storm water discharges from the NAS North Island and NAB. The effluent limitations require the industrial storm water discharges from the NAS North Island and NAB be free from toxic materials in toxic amounts (CWA, Section 101(a)(3)). The specifications for storm water toxicity are a performance goal for four years and are an enforceable limit after four years from the adoption of the Order.

a. Naval Air Station, North Island (NAS North Island)

There are 50 industrial storm water outfalls identified at NAS North Island. During the wet weather season of 2001/2002, 31 of the 50 outfalls were sampled pursuant to the General Industrial Storm Water Permit, WDID 937S004712. The NAS North Island developed and has implemented an industrial storm water pollution prevention plan and a monitoring program since 1994.

b. Naval Amphibious Base (NAB)

There are 57 industrial storm water outfalls identified at the NAB. During the wet weather season of 2001/2002, 27 of the 57 outfalls were sampled pursuant to the General Industrial Storm Water Permit, WDID 937S001522. The NAB developed and has implemented an industrial storm water pollution prevention plan and a monitoring program since 1994.

c. Naval Outlying Landing Field Imperial Beach (NOLF IB)

There are three industrial storm water outfalls identified at NOLF IB. During the wet weather season of 2001/2002, all of the outfalls were sampled pursuant to the General Industrial Storm Water Permit, WDID 937S004714. The NOLF IB developed and has implemented an industrial storm water pollution prevention plan and a monitoring program since 1994.

d. Storm Water Working Group

To improve the Navy's storm water management program in the San Diego area, CNRSW has formed a *Storm Water Working Group* (SWWG). The SWWG meets on a quarterly basis to discuss storm water issues. The SWWG membership includes a wide spectrum of Navy activities including personnel associated with environmental compliance, port operations, facility maintenance, ship support services, ship operations, facility planning and others. Through the SWWG, the Navy has developed a storm water geographic information system (GIS) for all of the bases in San Diego covered by the General Industrial Storm Water Permit. The SWWG is also testing the use of new BMP such as storm water filtration systems, and mechanical sweepers and scrubbers.

CNRSW has surveyed the storm water conveyance systems associated with industrial storm water discharges to identify illicit connections. The surveys included dye and smoke testing, and the use of video cameras. Based on those surveys, all known illicit connections have been eliminated.

e. Multi-Sector Permit and Industrial Storm Water Monitoring Data

The USEPA has adopted a *general industrial storm water permit* for various industrial facilities under its jurisdiction. The USEPA permit, the *Final Reissuance of National Pollutant Discharge Elimination System (NPDES) Storm Water, Multi-Sector General Permit for Industrial Activities, Federal Register, Monday, October 30, 2000,* (Multi-Sector Permit) can be used to evaluate the significance of the chemical concentrations in NBC's storm water discharge to San Diego Bay.

The Multi-Sector Permit, *Sector R*, includes requirements for *Ship and Boat Building or Repair Yards*. According to the Multi-Sector Permit (p. 64766-69), when the industrial storm water discharge has concentrations greater than the *USEPA Benchmark Values* (p. 64767, Table 3), the industrial facility is required to increase monitoring frequencies. Additionally, the Multi-Sector Permit states that the facility operators should review and modify their storm water pollution prevention plans (SWPPP) and best management practices (BMP) at their facility to try to improve the quality of the storm water discharge when discharge concentrations are greater than the *USEPA Benchmark Values*. The USEPA Benchmark Value for copper concentrations is 63.6 µg/L. The USEPA Benchmark Value for zinc is 117 µg/L.

While the *USEPA Benchmark Values* are not an enforceable numeric limit, they are used to indicate concentrations of concern and to alert the regulated discharger to take actions to lower the concentrations in its discharge. When comparing the chemical concentrations identified in the NAS North Island and NAB storm water discharges to the *USEPA Benchmark Values,* some of the copper and zinc concentrations were significant.

The CNRSW has submitted monitoring reports pursuant to the General Industrial Storm Water Permit. From a review of the monitoring reports, copper and zinc concentrations at NAS North Island and NAB are of concern. As shown in *Table 11. Naval Air Station, North Island, Industrial Storm Water Discharge Analyses, 2000/2001 and 2001/2002*, and in *Table 12. NAB, Industrial Storm Water Discharge Analyses, 2000/2001 and 2001/2002* the copper and zinc

concentrations in the storm water discharges at the NAS North Island and at the NAB often exceed the USEPA Benchmark Values for copper (63.6 µg/L) and zinc (117 µg/L). Some industrial storm water discharges from the NAS North Island and at NAB had significantly higher concentrations. At the NAS North Island there were 28 outfalls sampled for copper and zinc concentrations in the wet weather season 2001/2002. At the NAB there were 24 outfalls sampled for copper and zinc concentrations in the wet weather season 2001/2002.

Table 11. NAS North Island, Industrial Storm Water Discharge Analyses, 2000/2001 and 2001/2002.

Outfall Date of event	Copper (µg/L)	Zinc (µg/L)	Discharge Location & Associated Industrial Activities
5			10-foot wide gunite ditch located near Gate 8 along South Moffet Road; discharges into the Pacific Ocean
1/11/2001	4.7	4.0	
1/26/2001	12.2	31.3	
11/29/2001	28.3	158	
12/14/2001	72.4	341	AIMD test cell; flight lines and runways; north & south wash racks; PWC transformer building; Red label area; refuse transfer station; small arms range; support equipment reworks
10			36-inch diameter concrete pipe located west of Target and Pinger Facility (Building 1293); discharges to SD Bay
10/27/2000	36.4	287	
1/8/2001	63.3	177	
11/29/2001	28.3	158	
12/14/2001	72.4	341	Flight lines and runways; deep submergence unit; GCA radar facility and maintenance and ready room; naval undersea warfare detachment, San Diego
11			36-inch diameter concrete pipe located west of NAS Flying Club (building 432); discharges to SD Bay
10/27/2000	34.0	318	
1/24/2001	58.8	187	
11/24/2001	8.2	103	
12/14/2001	26.1	235	Flight lines and runways; hot fuel area 1; NAS Flying Club; special boat squadron unit 12 operations and maintenance facility
12			36-inch concrete pipe south of Pier 1305; discharges to SD Bay
10/27/2000	76.4	386	
1/8/2001	33.1	170	
11/29/2001	13.6	138	Federal fire dept.; flight lines and runways; fuel tank farm; GSE vehicle storage; helicopter hangar; hot fuel area 1; midway museum; NADEP stricken aircraft center; reserves hangar; U.S. Customs hangar
12/14/2001	28.2	100	

Outfall Date of event	Copper (µg/L)	Zinc (µg/L)	Discharge Location & Associated Industrial Activities
14			72-inch diameter concrete pipe, north of runway
10/27/2000	70.9	423	No. 18 and west of Pier 1308 (Fishing Pier);
1/8/2001	195	657	discharges to SD Bay
11/24/2001	31.9	194	
12/14/2001	29.7	170	Aircraft accessories overhaul facility; aircraft maintenance hangar; avionics; composites remanufacture and repair ; container repair facility; engineer laboratory; flight lines and runway; hangar; helo main blade whirl test; lamps MKIII training center; landscapers; NADEP bulk storage warehouse; PWC environmental chemistry laboratory; PWC industrial waste pump station
16			36-inch concrete pipe, north f east-most end of
10/27/2000	21.8	92.8	Taxiway No. 10; discharges to SD Bay
1/8/2001	101	473	
11/24/2001	27.1	135	Construction battalion unit-405; crane rework;
12/14/2001	32.4	183	flight lines and runways; gasoline service station; hoist and forklift repair facility; modification hangar; PWC transportation dept. automotive shop; weapons elevator support unit
17			36-inch diameter concrete pipe; north of Line
10/27/2000	50.3	314	Operation Shelter (building 337); discharges to SD
1/8/2001	87.2	347	Bay
11/24/2001	21.4	153	
12/14/2001	38.9	236	Aircraft painting; fleet hangar; flight lines and runways; hoist and forklift repair facility; mobile facilities compound; NADEP aircraft rework shop; NAVTRAGRU Det, aviation support equipment; PWC industrial waste pump stations; PWC transportation dept. automotive shop; weapons elevator support unit
21			
10/27/2000	126	504	36-inch diameter concrete pipe under CVN Pier
1/8/2001	598	1670	northeast of Building 2013; discharges to SD Bay
11/24/2001	22.6^{dissolved} 58.0^{total}	328 --	Equipment laydown; CVN pier; PWC industrial
3/7/2002	319^{dissolved} 454^{total}	3260 --	waste pump stations.
22A			30-inch diameter concrete pipe under CVN pier
10/27/00	58.0	521	southeast of Building 2012; discharges to SD Bay
1/8/01	543	2900	
11/24/2001	81.2^{dissolved}	591	CVN pier, (sheet flow from CVN pier at 1st u/s
12/14/2001	54.0^{total}	--	catch basin)

Outfall Date of event	Copper (µg/L)	Zinc (µg/L)	Discharge Location & Associated Industrial Activities
	51.7 dissolved 59.1 total	735 --	
22B 12/14/2001 3/7/2002	 51.5 dissolved 142 total 541 dissolved 641 total	 1040 -- 4100 --	30-inch diameter concrete pipe under CVN pier southeast of Building 2012; discharges to SD Bay NADEP administration/warehouse (pipe flow at the 1st u/s catch basin)
23A 10/27/2000 1/8/2001 11/24/2001 3/7/2002	 82.6 595 20.0 dissolved 24.6 total 595 dissolved 1190 total	 176 1140 145 -- 1760 --	30-inch diameter concrete pipe under CVN pier northeast of Building 2004; discharges to SD Bay Waterfront operations facility, CVN pier (sheet flow from CVN pier at catch basin east of bldg 2004)
23B 10/27/2000 1/8/2001 11/24/2001 12/14/2001	 51.8 167 21.5 27.5	 1200 1440 163 162	30-inch diameter concrete pipe under CVN pier northeast of Building 2004; discharges to SD Bay NADEP administration/warehouse; Waterfront operations facility, and boom storage facility (pipe flow at parking lot east of bldg 94)
24 10/27/2000 1/8/2001 11/24/2001 12/14/2001	 237 1070 10.9 dissolved 12.8 total 67.6 dissolved 56.2 total	 178 922 79.8 -- 385 --	30-inch diameter concrete pipe under the CVN pier southeast of bldg 2006; discharges to SD Bay Aircraft accessories overhaul facility; CVN pier; NADEP administration/warehouse; NADEP bearing and storage; Navy primary standards laboratory; pipe shop/voyage repair team; SE maintenance and repair; waterfront operations facility and boom storage facility
25 10/27/2000 1/8/2001 11/29/2001 12/14/2001	 118 332 289 94.0	 411 831 624 431	24-inch diameter concrete pipe east of bldg 275; discharges to SD Bay Aircraft accessories overhaul facility; fuel dock; fuel tank farm; metal components shop; NADEP bearing and storage; Navy primary standards laboratory flow calibrations facility; paint shop and lead foundry; pipe shop/voyage repair team; PWC maintenance shops; SE maintenance and repair
26 10/27/2000 1/8/2001 11/29/2001 12/14/2001	 85.1 50.2 39.5 ND	 389 185 411 23.2	Three 36-inch diameter concrete pipes east of bldg 384 and at station 0+40 on the quay wall that discharge to SD Bay Air compressor plant; aircraft maintenance

Outfall Date of event	Copper (µg/L)	Zinc (µg/L)	Discharge Location & Associated Industrial Activities
			hangars; fuel tank; pavements control bldg; hobby shop garage; Navy primary standards laboratory flow calibration facility; PWC storage; quay wall; pray paint booth and sandblasting facility; warehouse
29 11/24/2001 12/14/2001	 14.7 dissolved 12.1 total 33.2 dissolved 36.5 total	 -- -- -- --	24-inch diameter concrete pipe at station 700 on quay wall; discharges to SD Bay Co-generation plant; PWC oily waste pump station; quay wall
33 10/27/2000 1/8/2001 11/24/2001 12/14/2001	 158 31.2 36.1 dissolved 39.8 total 44.6 dissolved 54.9 total	 1120 148 340 -- 473 --	24-inch diameter concrete pipe at station 1600 on the quay wall; discharges to SD Bay Quay wall; ship supply storage facility
35 11/24/2001 11/14/2001	 15.9 dissolved 14.5 total 83.9 dissolved 122 total	 -- -- -- --	Two 24-inch diameter pipes at station 2200 on the quay wall; discharges to SD Bay Material division shipping and receiving; quay wall; SERVMART; ship supply storage facility
38 10/27/2000 1/8/2001 11/24/2001 12/14/2001	 64.0 126 16.9 dissolved 20.1 total 58.3 dissolved 58.6 total	 718 253 188 209	24-inch diameter concrete pipe at station 3100 on quay wall; discharges to SD Bay Quay wall; underpavement fuel storage tanks
40 10/27/2000 1/8/2001 11/24/2001 3/7/2002	 58.7 373 26.5 397	 386 1890 226 1310	Three 42-inch diameter concrete pipes at extreme east end of quay wall; discharges to SD Bay Material division shipping and receiving; NEX auto service center
43 10/27/2000 1/8/2001 11/24/2001 12/14/2001	 11.0 30.7 4.7 10.9	 44.7 98.0 22.1 107	36-inch diameter concrete pipe northeast of bldg 710 (CPO Club) and southwest of the intersection of Rogers Road and L Road; discharges to Pacific Ocean and pavement Flight lines and runways
53 10/27/2000 1/8/2001	 41.8 58.3	 371 427	18-inch diameter corrugated plastic pipe north of the PWC waste pumping station 1349; discharges to SD Bay

Outfall Date of event	Copper (µg/L)	Zinc (µg/L)	Discharge Location & Associated Industrial Activities
11/24/2001	9.9	167	
3/7/2002	49.6	156	Flight lines and runways; fuel tank farm
62			24-inch diameter concrete pipe east of 1302 (ramp
10/27/2000	65.7	526	10) and north of bldg 352; discharge to SD Bay
1/8/2001	964	1730	
11/24/2001	108	414	NAVTRAGRU Det, aviation support equipment;
12/14/2001	36.0	340	SH-60F training facility
CVN-1			12-inch diameter plastic pipe north of bldg 73;
1/8/2001	--	614	discharges to SD Bay
1/24/2001	--	1360	
11/24/2001	--	322	ship maintenance facility and maintenance support
12/14/2001	--	642	bldg
CVN-5			12-inch diameter plastic pipe north of bldg 71;
10/27/2000	55.6	536	discharges to SD Bay
1/8/2001	365	302	
11/24/2001	49.1	67.6	Controlled industrial facility and mixed wastes
12/14/2001	117	156	storage facility; ship maintenance facility and maintenance support bldg
CVN-9			18-inch diameter concrete pipe under CVN pier
10/27/2000	253	926	east of bldg 2012; discharges to SD Bay
1/8/2001	249	1000	
11/24/2001	$6.7^{dissolved}$ 64.6^{total}	333 --	CVN pier
12/14/2001	$134^{dissolved}$ 160^{total}	1970 --	
CVN-13A			Storm drain inlet on CVN pier between crane
10/27/2000	2010	1020	tracks and east of main CVN pier entrance gate
1/8/2001	1130	2040	
11/24/2001	$11.8^{dissolved}$ 17.7^{total}	107 --	CVN pier
3/7/2002	$175^{dissolved}$ 208^{total}	430 --	
CVN-13B			Storm drain inlet between crane tracks and east of
10/27/2000	223	1540	outfall 22
1/8/2001	681	1920	
11/24/2001	$14.4^{dissolved}$ 19.0^{total}	160 --	CVN pier
3/7/2002	$384^{dissolved}$ 433^{total}	695 --	

Table 12. NAB, Industrial Storm Water Discharge Analyses, 2000/2001 and 2001/2002.

Outfall Date of event	Copper (µg/L)	Zinc (µg/L)	Discharge Location & Associated Industrial Activities
4			12-inch diameter pipe at quay wall north of
1/8/2001	2380	1300	Tarawa Road and east of Rendova road
1/24/2001	2160	1030	
11/24/2001	317	296	PWC repair shop; paint and fiberglass shop; repair
12/14/2001	172	199	bldg
5			6-inch diameter PVC pipe at quay wall north of
10/27/2000	391	323	Tarawa Road and at north end of Kwajalein Road
1/26/2001	40.2	85.9	
11/29/2001	417	927	special boat squadron one/special boat unit twelve
12/14/2001	130	175	
6			18-inch diameter RCP at quay wall north of
1/8/2001	346	1370	Tarawa Road and east of Eniwetok Road
10/26/2001	44.2	158	
11/24/2001	157	498	waterfront operations bldg; applied instructions
12/14/2001	70.3	237	bldg; special boat squadron one/special boat unit twelve supply warehouse; explosive ordinance disposal unit three headquarters
8			Overland flow to a concrete swale east of Inchon
10/27/2000	66.6	360	Road and south of Bouganville Road
1/26/2001	51.2	269	
11/24/2001	45.4	251	Operational storage bldgs
12/14/2001	26.1	228	
9			18-inch diameter PVC pipe, south of Tulagi Road
10/27/2000	25.4	180	and east of Eniwetok Road
1/8/2001	505	3320	
11/24/2001	95.8	673	abrasive blast facility; boatfitting/sail loft bldg
12/14/2001	63.3	378	
11			24-inch diameter PVC pipe, south of Tulagi Road
10/27/2000	97.7	1710	and west of Eniwetok Road
1/24/2001	140	1130	
11/24/2001	28.9	207	boatfitting/sail loft bldg
12/14/2001	37.1	282	
18			18-inch diameter PVC pipe along the beach north
10/27/2000	81.1	424	end of Rendova Road
1/8/2001	379	1340	
11/24/2001	60.5	428	PHIBCB one supply warehouse; solid material
12/14/2001	108	476	recycling center
30			2-inch iron pipe north of Tarawa Road and west of
2/23/2001	1800	1730	Makin Road
			boat engine repair shop; bilge oily wastwater

Outfall Date of event	Copper (µg/L)	Zinc (µg/L)	Discharge Location & Associated Industrial Activities
			treatment center
31 10/27/2000	70.6	127	Two 2-inch diameter iron pipe (valved) north of Tarawa Road and east of Makin Road Barge ferry school hazardous material storage area 1
33 1/26/2001 2/23/2001 12/14/2001	92.4 365 211	225 486 355	2-inch diameter iron pipe (valved) north of Tarawa Road and east of Roi Road boat painting area 1 and boat painting area2; air compressor plant
52 10/27/2000 1/24/2001 11/24/2001 12/14/2001	65.4 159 118 21.8	286 672 600 191	Curb break east of Inchon Road at entrance to Pier 20 Explosive ordinance disposal mobile unit three headquarters
108 1/8/2001 1/24/2001 11/24/2001 12/14/2001	256 157 75.9 29.8	1290 644 352 192	24-inch diameter PVC pipe north of Tarawa Road and east of Kwajalein Road Hot water boiling plant; fire station and patrol coastal headquarters; vehicle maintenance facility; beach master unit one maintenance facility
OLF4 11/24/2001 12/14/2001	216^{dissolved} 250^{total} 87.0^{dissolved} 111^{total}	-- -- -- --	Overland flow on fuel pier northwest of bldg 346 Fuel pier
OLF9 10/27/2000 1/26/2001 11/24/2001 12/14/2001	46.6 67.4 26.6^{dissolved} 37.1^{total} 18.0^{dissolved} 21.4^{total}	403 352 246 -- 217 --	Overland flow from Pier 19 through multiple outlets in pier south of Tulagi Road and east of Eniwetok Pier 19
OLF10 10/27/2000 1/24/2001 11/29/2001 12/14/2001	43.2 663 80.4 45.5	432 2340 297 236	Overland flow from southeast corner of NAB to the boat ramp south end of Inchon Road and east of Tugali Road Abrasive blast facility
OLF11 10/27/2000 1/26/2001 11/24/2001	1370 414 314	1090 304 445	Overland flow between bldg 346 and JR1 north of Tarawa Road and west of Makin Road Repair building

Outfall Date of event	Copper (µg/L)	Zinc (µg/L)	Discharge Location & Associated Industrial Activities
12/14/2001	165	194	
OLF13			Overland flow between Piers 2 and 3 north of
10/27/2000	316	847	Tarawa Road and east of Makin Road
1/24/2001	359	980	
11/24/2001	176	514	
12/14/2001	54.7	89.7	Explosive ordinance disposal VSW; boat engine repair shop
OLF15			Overland flow between Piers 5 and 6 north of
10/27/2000	168	1210	Tarawa Road and west of Roi Road
1/24/2001	320	1060	
11/24/2001	79.4	206	Assault craft unit 1 warehouse; operational storage
12/14/2001	37.7	141	bldg; machine/welding shop; special boat training department
OLF23			Overland flow from Pier 3 through multiple outlets
11/24/2001	53.2 dissolved	--	in pier north of Tarawa Road and east of Makin
	122 total	--	Road
12/14/2001	47.8 dissolved	--	
	57.4 total	--	Pier 3
OLF25			Overland flow from Pier 5 through multiple outlets
10/27/2000	91.0	221	in pier north of Tarawa Road and east of Makin
1/24/2001	349	1110	Road
11/24/2001	31.7 dissolved	106	
	36.6 total		Pier 5
12/14/2001	17.2 dissolved	70.3	
	22.1 total		
OLF37			Flow running off of north side of Rendova Road
10/27/2000	197	1060	just west of the quay wall and eat of rip-rap,
1/24/2001	230	1180	northeast corner of Tarawa Road
11/24/2001	45.1	518	
12/14/2001	61.5	480	Staff civil self help repair shop/gas station; central hazardous waste accumulation site
OLF38			Overland flow from parking lot and pump station
10/27/2000	43.1	290	to catch basin just north of entrance to pier, at
1/24/2001	148	561	Coronado sail association
11/24/2001	103	653	
12/14/2001	130	604	Coronado sail association
OLF39			Overland flow from north of bldg 326, north of
10/27/2000	2950	522	fueling pier
1/24/2001	16000	1310	
11/24/2001	532	136	Repair bldg; dyno-engine test bldg
12/14/2001	310	170	
OLF42			Overland flow from bldgs 306 and 800 at earthen
10/27/2000	141	856	boat ramp

Outfall Date of event	Copper (µg/L)	Zinc (µg/L)	Discharge Location & Associated Industrial Activities
1/26/2001 11/29/2001 12/14/2001	66.6 72.5 40.8	298 195 121	Automotive vehicle maintenance bldg

The discharge of industrial storm water containing copper concentrations greater than 63.6 µg/L and zinc concentrations greater than 117 µg/L are a significant concern.

Storm water monitoring data submitted by other industries located along San Diego Bay can be used to evaluate the significance of the chemical concentrations in the storm water discharges from NAS North Island and NAB to San Diego Bay. The commercial shipyards, NASSCO (Order No. R9-2003-0005), Southwest Marine (Order No. R9-2002-0161), and Continental Maritime (Order No. R9-2002-0282) are subject to NPDES permits that require monitoring of storm water discharges to San Diego Bay.

The industrial storm water discharges with copper or zinc concentrations significantly greater than the USEPA Benchmark Values are not expected to achieve a 90% survival rate when the undiluted industrial storm water is subject to toxicity analyses using standard test species and methods. Data for a comparison of the NBC copper and zinc concentrations and toxicity can be found in three reports for commercial shipyards located around San Diego Bay; *Analysis of Administrative Civil Liability for Complaint No. 2001-24, National Steel and Shipbuilding Company; Analysis of Administrative Civil Liability for Complaint No. 2001-138, SouthWest Marine; and Analysis of Administrative Civil Liability for Complaint No. 2001-113, Continental Maritime*.

The storm water monitoring data from the NAS North Island, the NAB and from the shipyards in the San Diego Region indicates that the concentrations of copper and zinc in the storm water are potentially toxic. The Order requires that industrial storm water discharges from the NAS North Island and NAB achieve a toxicity survival rate of 90% survival, 50% of the time and not less than 70% survival, 10% of the time. The Order allows the U.S. Navy four years from the adoption date of the Order to achieve the specified toxicity survival rate. For the interim period, the specified toxicity survival rate is a performance goal.

The industrial storm water discharge toxicity requirement and monitoring program is similar to the requirements included in the NPDES permits for the commercial shipyards in the San Diego Region, for the Naval Base Point Loma, and for the Naval Base San Diego. The NPDES permits for the shipyards require compliance with the toxicity specification. The *interim performance goal period* for compliance with the toxicity specifications for the commercial shipyards was included in the general shipyard permits, which were adopted in 1997. The current NPDES permits for the shipyard require compliance with the toxicity specification.

Order No. R9-2003-0008 includes monitoring requirements for determining the quality of the industrial storm water discharges and requires the discharger to perform an evaluation of the discharges. Whenever the analyses of an industrial storm water discharge from a particular catchment basin contains a copper concentration greater than 63.6 µg/L or a zinc concentration greater than 117 µg/L, the Order requires the discharger to perform the following tasks:

a) review and modify the SWPPP as necessary to reduce the concentrations of copper and zinc;
b) after modifying the SWPPP, sample and analyze the next two storm water runoff events;
c) document the review and the modifications to the SWPPP, and document the sampling analysis.

IV. RATING

Pursuant to the *NPDES Permit Rating Worksheet*, the proposed discharge from the Naval Base Coronado has a point score of 515. The Point Score includes a rationale to make the facility a *discretionary major*. The rationale for a discretionary major classification is that the facility includes a large area and includes significant industrial storm water discharges.

Accordingly, the NBC Complex is classified as an NPDES *Major Discharger*.

The reported flow rates for the discharges at Naval Base Coronado are listed in *Table 13. Discharge Flow Rates for Naval Base Coronado.*

Table 13. Discharge Flow Rates for Naval Base Coronado.

Discharge	**Daily flow (million gallons)**	**Annual flow (million gallons)**
Utility Vault and Manhole dewatering	varies	varies
Steam Condensate	0.000375	0.137
Diesel Engine cooling/sprinkler	0.235	12.2
Miscellaneous Discharges (landscape watering runoff, portable water & fire system maintenance, etc.)	0.00	0.00
Total flow =	0.235	12.3

V. BASIS FOR CONDITIONS IN THE WASTE DISCHARGE REQUIREMENTS (WDR)

a. Beneficial Uses for San Diego Bay

The Basin Plan (p. 2-47, *Table 2-3. Beneficial Uses of Coastal Waters*) established the following beneficial uses for the waters of San Diego Bay:

a. Industrial Service Supply;
b. Navigation;
c. Contact Water Recreation;
d. Non-contact Water Recreation;
e. Commercial and Sport Fishing;
f. Preservation of Biological Habitats of Special Significance;
g. Estuarine Habitat;
h. Wildlife Habitat;
i. Rare, Threatened, or Endangered Species;
j. Marine Habitat;
k. Migration of Aquatic Organisms; and
l. Shellfish Harvesting.

b. Enclosed Bays and Estuaries Policy, Nonmunicipal Waste Discharges

The State Water Resources Control Board (hereinafter State Board) adopted a *Water Quality Control Policy for Enclosed Bays and Estuaries of California* (*Bays and Estuaries Policy*) on May 16, 1974. The *Bays and Estuaries Policy* establishes principles for management of water quality, quality requirements for waste discharges, discharge prohibitions, and general provisions to prevent water quality degradation and to protect the beneficial uses of waters of enclosed bays and estuaries. These principles, requirements, prohibitions, and provisions have been incorporated into this Order.

The *Bays and Estuaries Policy* contains the following principle for management of water quality in enclosed bays and estuaries, which includes San Diego Bay:

> *The discharge of municipal wastewaters and industrial process waters (exclusive of cooling water discharges) to enclosed bays and estuaries shall be phased out at the earliest practicable date. Exceptions to this provision may be granted by a Regional Board only when the Regional Board finds that the wastewater in question would consistently be treated and discharged in such a manner that it would enhance the quality of receiving waters above that which would occur in the absence of the discharge. For the purpose of this policy, treated ballast waters and innocuous nonmunicipal wastewater such as clear brines, washwater, and pool drains are not necessarily considered industrial process wastes, and may be allowed by Regional Boards under*

discharge requirements that provide protection to the beneficial uses of the receiving water.

As explained in the *Point Source Discharge* section, the point source discharges, other than industrial storm water runoff, can be considered to be innocuous because of the nature of the discharges or the volume of the discharges. If a significant or material change occurs in the discharges (i.e. chemical concentrations, physical properties, location, volume, or frequency), the potential impact to beneficial uses may change or cause a violation of the Order No. R9-2003-0008. Any change in either the nature or volume of the discharges can be readily identified and evaluated through the monitoring requirements specified in *Monitoring and Reporting Program No. R9-2003-0008*.

For the purpose of the *Bays and Estuaries Policy* and Order No. R9-2003-0008, the discharge of the following wastes will be considered innocuous nonmunicipal wastewaters and, as such, will not be considered industrial process wastes:

- Utility Vault & Manhole Dewatering;
- Steam Condensate;
- Diesel Engine Cooling/Sprinkler Water;
- Miscellaneous Discharges Associated with Facility Maintenance(landscape watering runoff, potable water & fire system maintenance); and
- Pier Cleaning.

Therefore, the discharges of such wastes may be allowed by the Regional Board under waste discharge requirements that provide protection of the beneficial uses of the receiving waters. Order No. R9-2003-0008 includes requirements, prohibitions, provisions, and monitoring that protect the beneficial uses of the receiving waters.

c. California Toxics Rule and Implementation Policy

On May 18, 2000, the *U.S. Environmental Protection Agency* (USEPA) promulgated the *California Toxic Rule* (CTR), 40 CFR 131.38. The CTR restored California's water quality standards for inland surface waters. The previous inland surface waters plan, which contained water quality criteria for priority toxic pollutants, was dismissed in 1994 when a State court overturned the State Board's plan.

The water quality criteria established in the CTR, 40 CFR 131.38, is legally applicable in the State of California for inland surface waters, and enclosed bays and estuaries for all purposes and programs under the Clean Water Act.

On March 2, 2000, the State Board, in *Resolution No. 2000-15*, adopted a *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (Implementation Policy). The Policy implements the criteria for the 126 priority

pollutants in the CTR. The State Board's Policy became effective on April 28, 2000, as applied to the *National Toxics Rule* and to the CTR.

The Policy establishes:

a) implementation provisions for priority pollutant criteria promulgated by the USEPA through the National Toxic Rule (NTR) and the CTR, and for priority pollutant objectives established in the Basin Plan;

b) monitoring requirements for 2,3,7,8-TCDD (tetrachlorodibenzo-p-dioxin) equivalents; and

c) chronic toxicity control provisions.

MRP No. R9-2003-0008 requires the discharger to conduct an initial sampling of the discharges and the receiving waters for the priority pollutants and dioxin congeners as specified in the Implementation Policy. The discharger shall conduct one initial sample analyses of the discharge for the pollutants listed in the Implementation Policy.

The discharger is required to conduct sampling analyses of the following discharges and receiving waters:

- Steam Condensate;
- Diesel Engine Cooling/Sprinkler Water;
- Utility Vault and Manhole Dewatering;
- Miscellaneous Discharges Associated with Facility Maintenance; and
- Pier Cleaning.

Once the monitoring for the priority pollutants is submitted to and evaluated by the Regional Board, the Regional Board may either:

- request additional priority pollutant monitoring pursuant to Section 13267 of the Porter-Cologne Water Quality Control Act;
- determine that there is no reasonable potential for the discharge to cause an exceedence of the water quality criteria; or
- reopen the Order and recommend discharge limits for priority pollutants in the discharge that have a reasonable potential to cause an exceedence of the water quality criteria.

Pursuant to *Section 1.4.4 Intake Water Credits* (p. 17) of the Implementation Policy, a Regional Board may consider priority pollutants in the intake water on a pollutant-by-pollutant and discharge-by-discharge basis when establishing water quality-based effluent limitations. Certain discharges from the NBC may qualify for Intake Water Credits.

d. 303(d) List

In February 1998, the Regional Board included portions of San Diego Bay and the Pacific Ocean as an impaired water body pursuant to the Clean Water Act, Section 303(d). For the 1998 Section 303(d) list, the Pacific Ocean Shoreline from the border of Mexico to 3.2 miles north of the border was listed as being impaired by bacterial indicators. In 2002 this Regional Board sent a *draft* Section 303(d) list for the State Board to consider. The State Board has not yet adopted the recommended Section 303(d). The *draft* Section 303(d) did not include any other water bodies near the NBC, other than the Pacific Ocean as previously mentioned.

Also in 2002 this Regional Board compiled a list, *Constituents \ Water Bodies of Potential Concern,* of water bodies that need to be monitored for potential impairment. One area identified in this list was the *North Island Aircraft Platform*. The site identified as the *North Island Aircraft Platform* is not a Naval installation and is located approximately 500 yards off the shore at the northern most tip of Coronado. The location is about 250 yards from the *Commercial Ship Anchorage* area in the Bay. The rationale for the site's identification name is not known.

e. Metals

The metal concentrations in the industrial storm water discharges from NAS North Island and NAB are significant and are a potential impact to water quality and beneficial uses of San Diego Bay.

Industrial storm water discharge requirements and specifications, and storm water monitoring and reporting requirements are included in Order No. R9-2003-0008. The requirements are described in the *Industrial Storm Water* section of this Fact Sheet.

f. Toxicity

The Basin Plan includes the following narrative as a water quality objective, which is applicable to the discharge:

Water Quality Objectives for Toxicity:

All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the Regional Board.

The survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality factors, shall not be less than that for the same water body in areas

unaffected by the waste discharge or, when necessary, for other control water that is consistent with requirements specified in U.S. EPA, State Water Resources Control Board or other protocol authorized by the Regional Board. As a minimum, compliance with this objective as stated in the previous sentence shall be evaluated with a 96-hour acute bioassay.

In addition, effluent limits based upon acute bioassays of effluents will be prescribed where appropriate, additional numerical receiving water objectives for specific toxicants will be established as sufficient data become available, and source control of toxic substances will be encouraged.

Toxicity monitoring for the point source discharges is not necessary. Toxicity monitoring for the storm water discharges is explained in the *Industrial Storm Water Discharges* section of this Fact Sheet.

g. Radiological

Attached is a memorandum dated 22 July 2002, written for the Fact Sheet for *Order No. R9-2002-002, Waste Discharge Requirements for U.S. Navy, Naval Base Point Loma, San Diego County*. Radiological concerns are explained and identified in the 22 July 2002 memorandum.

h. Prohibitions

As noted previously, the Basin Plan and the Enclosed Bays and Estuary Policy directly apply to the proposed discharge. The applicable prohibitions from the *Basin Plan*, and the *Enclosed Bays and Estuary Policy* are incorporated into the Order and MRP.

i. Public Hearing

Order No. R9-2003-0008 is scheduled to be considered by the San Diego Regional Board at a public hearing on:

May 14, 2003, beginning at 09:00 at the following location:

Water Quality Control Board
Regional Board Meeting Room
9174 Sky Park Court, Suite 100
San Diego, California

j. Waste Discharge Requirements Review

Any person may petition the State Board to review the decision of the Regional Board regarding the final Order. A petition must be made within 30 days of the Regional Board hearing.

FOR ADDITIONAL INFORMATION

For additional information regarding Order No. R9-2003-0008, interested persons may write to the following address or call Mr. Paul J. Richter of the Regional Board staff at (858) 627-3929.

Regional Water Quality Control Board, San Diego
9174 Sky Park Court, Suite 100
San Diego, California 92123-4340
858 627-3929
e-mail: richp@rb9.swrcb.ca.gov

VII. REFERENCES

1. Analysis of Administrative Civil Liability, Complaint No. 2001-24, National Steel and Shipbuilding Company, January 30, 2001.

2. Analysis of Administrative Civil Liability, Complaint No. 2001-138, SouthWest Marine, May 14, 2001.

3. Analysis of Administrative Civil Liability, Complaint No. 2001-113, Continental Maritime of San Diego, June 15, 2001.

4. California Toxics Rule, 40 CFR 131.38.

5. Chemistry, Toxicity and Benthic Community Conditions in Sediments of the San Diego Bay Region, Final Report, September 1996.

6. Department of Defense, UNDS Homepage, http://unds.bah.com.

7. Fact Sheet, Phase I, Uniform National Discharge Standards (UNDS) for Vessels of the Armed Forces, EPA-821-F-99-009, April 1999.

8. Final Reissuance of National Pollutant Discharge Elimination System (NPDES) Storm Water, Multi-Sector General Permit for Industrial Activities, Federal Register, Monday, October 30, 2000, (Multi-Sector Permit).

9. Notice of Violation No. 2000-118; Request for Information; letter from Regional Board, May 24, 2000, J.H. Robertus.

10. Phase I, Uniform National Discharge Standards for Vessels of the Armed Forces, Technical Development Document, EPA 821-R-99-001, April 1999.

11. Plan for California's Nonpoint Source Pollution Control Program, State Water Resources Control Board, California Coastal Commission, January 2000.

12. *Policy for the Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (Phase I of the Inland Surface Waters Plan and the Enclosed Bays and Estuaries Plan) 2000, State Water Resources Control Board.

13. Regional Board file number 03-495.02/03, for U.S. Navy, Naval Base Coronado.

14. Regional Board file number 11-0058.02, for U.S. Navy, Navy Public Works Center (Utility Vault file).

15. Regional Board Inspection Reports
    - Naval Station 32nd Street, inspection conducted on April 24, 2000, P.J. Richter.
    - North Island Naval Air Station, inspection conducted on July 12, 2000, P.J. Richter.
    - Navy Base, Point Loma, inspection on July 26, 2000, P.J. Richter.
    - Naval Station 32nd Street, inspection conducted on August 8, 2000, P.J. Richter.
    - Naval Station 32nd Street, inspection conducted on September 6, 2000, P.J. Richter.
    - Navy Graving Dock—Sediment Sampling, inspection conducted on March 15, 2001, P.J. Richter.
    - Naval Base, Point Loma, inspection conducted on April 16, 2002, P.J. Richter.
    - North Island Naval Air Station, inspection on January 21, 2003, P.J. Richter.

16. Regional Board's Industrial Storm Water Files:

    - Naval Air Station, North Island, San Diego, file number 10-004712;
    - Naval Amphibious Base, Coronado, file number 10-001522; and
    - Naval Outlying Field, Imperial Beach, file number 10-004714.

17. Report of Waste Discharge and supplemental information received on October 30, 2002: *Commander, Navy Region Southwest, National Pollutant Discharge Elimination System (NPDES) Permit Application and California Application/Report of Waste Discharge for Naval Base Coronado; Submitted to: Regional Water Quality Control Board, San Diego Region*.

18. SWRCB, Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan).

19. SWRCB, Water Quality Order No. 97-03-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001 (General Permit), Waste

Discharge Requirements (WDRs) for Discharges of Storm Water Associated With Industrial Activities Excluding Construction Activities.

20. SWRCB, Water Quality Order No. 2001-11-DWQ, Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges from Utility Vaults and Underground Structures to Surface Waters (General Permit), General Permit No. CAG990002, Waste Discharge Requirements.

21. USEPA NPDES Permit Writers' Manual, EPA/833/B-96/003, December 1996.

22. Water Quality Control Plan for the San Diego Basin (9), 1994, as amended (Basin Plan).

California Regional Water Quality Control Board

San Diego Region

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Phone (858) 467-2952 • FAX (858) 571-6972

Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

TO: **Attachment to Fact Sheet for tentative Order No. R9-2002-0002**

File #03-538.02
U.S. Navy, Naval Base Point Loma (NBPL)

FROM: **Paul J. Richter, WRCE**
SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

DATE: **22 July 2002**

SUBJECT: Hull coating leachate, underwater hull cleaning (*underwater ship husbandry*), and radioactivity concerns mentioned during workshop on 27 June 2002

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This memorandum will be attached to the Fact Sheet for tentative Order No. R9-2002-0002. During the workshop for the Naval Base Point Loma, the interested parties discussed hull coating leachate, underwater ship husbandry, and radioactive discharges.

Regulation and monitoring of hull coating leachate, and underwater ship husbandry will not be included in the tentative Order. Hull coating leachate, and underwater ship husbandry will be regulated pursuant to the *Uniform National Discharge Standards for Vessels of the Armed Forces*.

Radioactive discharges are not subject to regulation by the Regional Board. The Navy and the Department of Energy have jurisdiction for discharges of radioactive material. The *Naval Nuclear Propulsion Program* has a quarterly monitoring program for radioactive discharges. The United States Environmental Protection Agency (USEPA) has also conducted a separate, one-time monitoring program for radioactivity.

The monitoring conducted by the *Naval Nuclear Propulsion Program,* and by the USEPA identified radioactivity at naturally occurring background levels, at levels from atmospheric nuclear testing, and at levels associated with the Chernobyl reactor accident in 1986. Low level cobalt radioactivity was found in one sediment core sample at the Submarine Base (SUBASE) at the Naval Base Point Loma complex. The radioactivity level found at SUBASE was not at a level that would pose a threat to the environment or human health.

Radioactivity monitoring will not be included in the tentative Order. The *Naval Nuclear Propulsion Program* conducts quarterly monitoring of sediments, surface water, and marine life for its environmental monitoring program for the nuclear propulsion program. The Regional Board can review the *Naval Nuclear Propulsion Program* reports.

Provided below is a brief description of the documents reviewed and included in the Regional Board's administrative file regarding hull

coating leachate, underwater ship husbandry, and radioactive discharges and monitoring.

Hull Coating Leachate

Phase I of the Uniform National Discharge Standards for Vessels of the Armed Forces (UNDS) has identified *hull coating leachate*, and *underwater ship husbandry* as discharges determined to require a *marine pollution control devise* (MPCD).

Hull coating leachate is the ablative discharge of anti-corrosion (AC) and anti-fouling (AF) paints from ship hulls to the surrounding waters. In the UNDS, Phase I study, three bays: San Diego, CA; Mayport, FL; and Pearl Harbor, HI, were analyzed and were included in calculations to determine the increase of copper concentrations from Navy Vessels for the respective Bay. The increase was based upon the calculated copper and zinc ablative discharges from the hull surfaces and upon the tidal prism of the respective Bay. The MPCD for hull coating leachate is being developed in Phase II of the UNDS.

For San Diego Bay, the increase of copper from hull coating leachate was calculated to be 0.19 µg/L. For San Diego Bay, the increase of zinc from hull coating leachate was calculated to be 0.074 µg/L (*Nature of Discharge (NOD) report, Hull Coating Leachate, Table 5. Estimated Copper and Zinc Contributions to Some Ports of the Armed Forces, . . .Technical Development Document.*)

Underwater ship husbandry discharges include underwater hull cleaning, propulsor (i.e., propeller) lay-up, welding, sonar dome repair, non-destructive testing, masker belt repair, and painting operations. These ship husbandry operations are normally conducted pierside.

Underwater hull cleaning and propulsor lay-up are the most frequent husbandry operations and have the highest potential for water quality impacts. The other ship husbandry operations were identified as having a low potential impact to water quality.

Divers using mechanical brush systems conduct underwater hull cleaning. According to the Phase I study, copper and zinc are released during the cleaning at concentrations that may exceed State water quality standards. The copper and zinc discharges are from the AC and AF hull coatings. The UNDS has identified this discharge as needing MPCD. The underwater hull cleaning will be regulated as an *underwater ship husbandry discharge* pursuant to UNDS.

Propulsor lay-up requires the placement of a vinyl cover over the propulsor to reduce fouling of the propulsor when the vessel is in port for extended periods. Chlorine-produced oxidants are generated from impressed current cathodic protection systems and can buildup within the cover. The discharges from the propulsor lay-up are infrequent and low volume. The propulsor lay-up will be regulated as an *underwater ship husbandry discharge* pursuant to UNDS.

In UNDS, Phase II, the EPA and other federal and state organizations shall develop MPCD (performance standards) for the 25 identified

discharges, which include underwater hull cleaning and underwater ship husbandry. The MPCD performance standards may include best management practices (BMP), administrative practices, or engineered systems.

In UNDS, Phase III, the MPCD performance standards will be codified. Upon the completion of UNDS, Phase III, the States or local political subdivisions, may not adopt or enforce any State or local statute or regulations with respect to the discharges identified as requiring MPCD, except to establish a no discharge zone (CWA §312(n)(6)).

Radioactivity

Navy Monitoring Program

The U.S. Navy has an environmental monitoring program to assess the effect of disposal of radioactive wastes from U.S. naval nuclear propulsion plants and their support facilities. The *Naval Nuclear Propulsion Program* monitoring program consists of analyzing sediment, surface water, and marine life samples for radioactivity associated with naval nuclear propulsion plants and their support facilities. The sampling is conducted quarterly. Additionally, shore facilities are continually monitored for airborne gamma-emitting radioactivity.

San Diego Bay is one of the harbors included in the Navy's nuclear monitoring program. The most current radiological monitoring results were published in *Environmental Monitoring and Disposal of Radioactive Wastes from U.S. Naval Nuclear-Powered Ships and Their Support Facilities, Report NT-02-01, March 2002.* The monitoring data was collected in 2001.

The radioactive material expected to be released and detected in the environment is cobalt 60 and other gamma-emitting radionuclides. In and around the Point Loma SUBASE, the U.S. Navy monitored 25 sediment locations, 8 water sampling locations, and 2 marine life sampling locations. Numerous shore line locations were also monitored for airborne gamma-emitting radioactivity (see attached Figures 1 through 3).

According to the environmental monitoring data, the naval nuclear propulsion plants and their support facilities have not caused a measurable increase in the general background radioactivity in the surface water environment of San Diego Bay. Low level cobalt 60 radioactivity in a core sediment sample was identified at the SUBASE. The low level cobalt 60 radioactivity level was not considered a threat to the environment or human health.

USEPA Radiological Survey

The USEPA conducted a radiological survey of San Diego Bay. The results were published in *Radiological Survey of Naval Facilities on San Diego Bay, EPA-402-R-98-011, January 1999*. Conclusion #6, from the USEPA is copied below.

6. Based on this Radiological survey, practices regarding nuclear-powered warship operations at San Diego Harbor have resulted in no increases in radioactivity causing significant population exposure or contamination of the environment.

The USEPA survey included surface water samples, harbor sediment and shoreline samples, sediment core samples, drinking water samples, and biota samples. These samples were taken at the U.S. Naval installations where nuclear propulsion vessels are located and where nuclear support facilities exist. Background sample locations were selected to be representative of levels of naturally occurring or existing radionuclides were present but not related to the U.S. Navy facilities. A total of 132 sample were collected. Many samples were split for independent comparisons by the Navy. For approximately 5% of each type of sample, a quality control duplicate sample was collected.

The USEPA survey also indicated that a sediment core sample from the piers at SUBASE contained low-level cobalt 60 radioactivity. The levels were not considered a significant threat to the environment or human health.

References

Environmental Monitoring and Disposal of Radioactive Wastes from Nuclear Powered Ships and Their Support Facilities; Report NT-96-1, March 1996; Report NT-97-1, March 1997; Report NT-98-1, February 1998; Report NT-99-1, March 1999; Report NT-02-01, March 2002.

Phase I, Uniform National Discharge Standards for Vessels of the Armed Forces, Technical Development Document, EPA 821-R-99-001, April 1999.

Occupational Radiation Exposure from U.S. Naval Nuclear Plants and Their Support Facilities; Report NT-98-2, February 1998; Report NT-99-2, March 1999.

Radiological Survey of Naval Facilities on San Diego Bay, EPA-402-98-011, January 1999.

The United States Naval Nuclear Propulsion Program, Over 114 Million Miles Safely Steamed on Nuclear Power, August 1998.

The United States Naval Nuclear Propulsion Program, Over 124 Million Miles Safely Steamed on Nuclear Power, March 2002.