Naval Station North Island

Location: North Island Naval Air Station, Coronado, CA 92135

Facility Contact: Public Affairs Officer – (619) 545-8167

Facility Description: Naval Station North Island suplies, hosts, corrdinates and maintains fleets of naval aircraft, naval aircraft carriers, and support vessels at its facility located in San Diego, California.

Health Risk Assessment Summary

Year:	1993	1998
Cancer Risk:	31 in a million	15 in a million
Chronic Index:	0.2	0.2
Acute Index:	1.8	0.8

Pollutants of Concern

Cancer Risk:
Hexavalent chromium (ARB compound summary, EPA hazard summary)
Benzene (ARB compound summary, EPA hazard summary)
Methyl tertiary butyl ether (MTBE)
(ARB compound summary, EPA hazard summary)

Acute Non-cancer Risk:
Nickel (endpoint = respiratory system)
(ARB compound summary, EPA hazard summary)
Acrolein (ARB compound summary, EPA hazard summary)

Air Toxics 'Hot Spots' Program

1998 Health Risk Assessment Summary for Naval Station North Island

Coronado, California

Executive Summary

The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) requires facilities that may cause a significant increase in public health risks due to the emissions of air toxics from their operations to assess those impacts in a health risk assessment (HRA). This HRA evaluates potential health risks from the Naval Air Station (NAS) North Island due to emissions of AB 2588-listed air toxic substances. The HRA is based on the NAS North Island air toxics emissions inventory for 1998 and was prepared in accordance with state and local guidelines for preparing a health risk assessment pursuant to AB 2588 requirements.

Health effects evaluated in this HRA are cancer risk, acute non-cancer and chronic non-cancer risks. Cancer risk estimates are expressed in units of increased occurrences per million individuals. Non-cancer health hazard impacts are expressed as a health hazard index (HHI) value for a specific target organ (toxicological endpoint).

Table 1 – Health Risk Levels at the Maximum Impact Points

Health Risk	Impact Level at the PMI	Impact Level at the MEIR	Impact Level at the MEIO
Cancer Risk (per million)	20.86	15.43	2.631*
Acute Non-cancer HHI	0.5849	0.3722	0.3429
Chronic Non-cancer HHI	0.1597	0.1561	0.1241

* includes a 46 year/70 year exposure adjustment factor

Locations of Maximum Health Risks

Maximum impact locations include the point of maximum impact (PMI), the maximum exposed individual resident (MEIR), and the maximum exposed individual occupation (MEIO). The PMI is the offsite location with the highest estimated impact level for each health effect and does not necessarily coincide with the presence of an individual. The PMI typically occurs on or near the property fenceline, where air toxic concentrations are highest. The MEIR and MEIO are the off site location of a residence and business, respectively, that have the highest estimated impact for each health effect. Table 1 summarizes impact levels at the maximum impact points for each health effect.

Zone of Study

The zone of study (ZOS) for cancer risk is the area subject to an added cancer risk of more than 5 in one million and is used to identify sensitive receptors and population-wide cancer burden to include in the analysis. The cancer risk ZOS extends approximately one-half kilometer to the southeast from the property boundary, near the PMI and MEIR for cancer risk. The ZOS for non-cancer acute or chronic health hazard impacts is the area subject to a health hazard index of 0.5 or greater. Results of the HRA show that the acute ZOS extends just beyond the facIlity fenceline at the location of the PMI. which is located in the waters of San Diego Bay. Chronic health effect values were all below the ZOS level threshold.

The 10 in one million isopleth identifies the area that has an increased cancer risk of 10 in one million or greater. Results of the HRA show that the 10 in one million cancer risk isopleth extends approximately 120 meters (approximately 400 feet) to the southeast from the facility fenceline. This isopleth is shown in Figure 1. Acute or chronic HHI values do not exceed the isopleth threshold of 1.0 thus an isopleth is not shown for these impacts.

Population Cancer Burden

Population cancer burden is the population-weighted number of excess cancer cases based on the population of residential and occupational individuals within the 5 in one million ZOS. Excess cancer burden (value expressed as increased cancer risk per million capita) for the worker population within the ZOS is estimated at 0.03 after a 46/70 year adjustment, and 0.05 for residential populations within the ZOS. The total population excess cancer burden (the sum of the worker and residential burdens) is estimated at approximately 0.08.

Sensitive Receptors

No offsite sensitive receptors such as schools, day-care centers, nursing homes, retirement homes, health clinics, and hospitals are located within the ZOS for cancer risk or non-cancer hazard indices.

On-Site Receptors

The cancer risk for on-base housing adjusted for a 46/70-exposure factor is between 0.74 and 12.3 in one million. A total of four on-site receptors have a cancer risk estimate over 10 in one million: Sithe Energies, NEX Gasoline Station, the Rice King, and a fitness center. Also, one receptor, the Rice King, exceeds an acute HHI index of 1.0.

Conclusions

Offsite health effect impacts at maximum exposed individuals (not including PMI) are below regulatory thresholds for public notification, except for cancer risk impacts at the MElR. The primary emission source contributing to this increased cancer risk is the gasoline service station operated by the Navy Exchange. The service station is a verified emission source operating at NAS North IsIand but does not represent the industrial activities performed at the facility and is similar in its operations and throughput to commercial gas stations everywhere. If the health effect impact from the gasoline station is deducted, the impact level at the maximum exposed individual is reduced by half and is well below the public health risk notification level.

During the past four years, NAS North Island has implemented a number of measures to reduce health risks from its industrial operations. These have included installing 3-stage filters on aircraft paint spray booths, baghouse control devices on foundry operations, replacement of chromated primers with non-chromated substitutes, and installing mesh pad scrubber on chrome plating. As a result, there has been a significant decrease in the health impacts to surrounding communities. As shown in Figure 1, the public notification area barely extends past the facility fenceline. The Navy is committed to continue implementing sound strategies to reduce risk impacts from operations as these opportunities are identified.

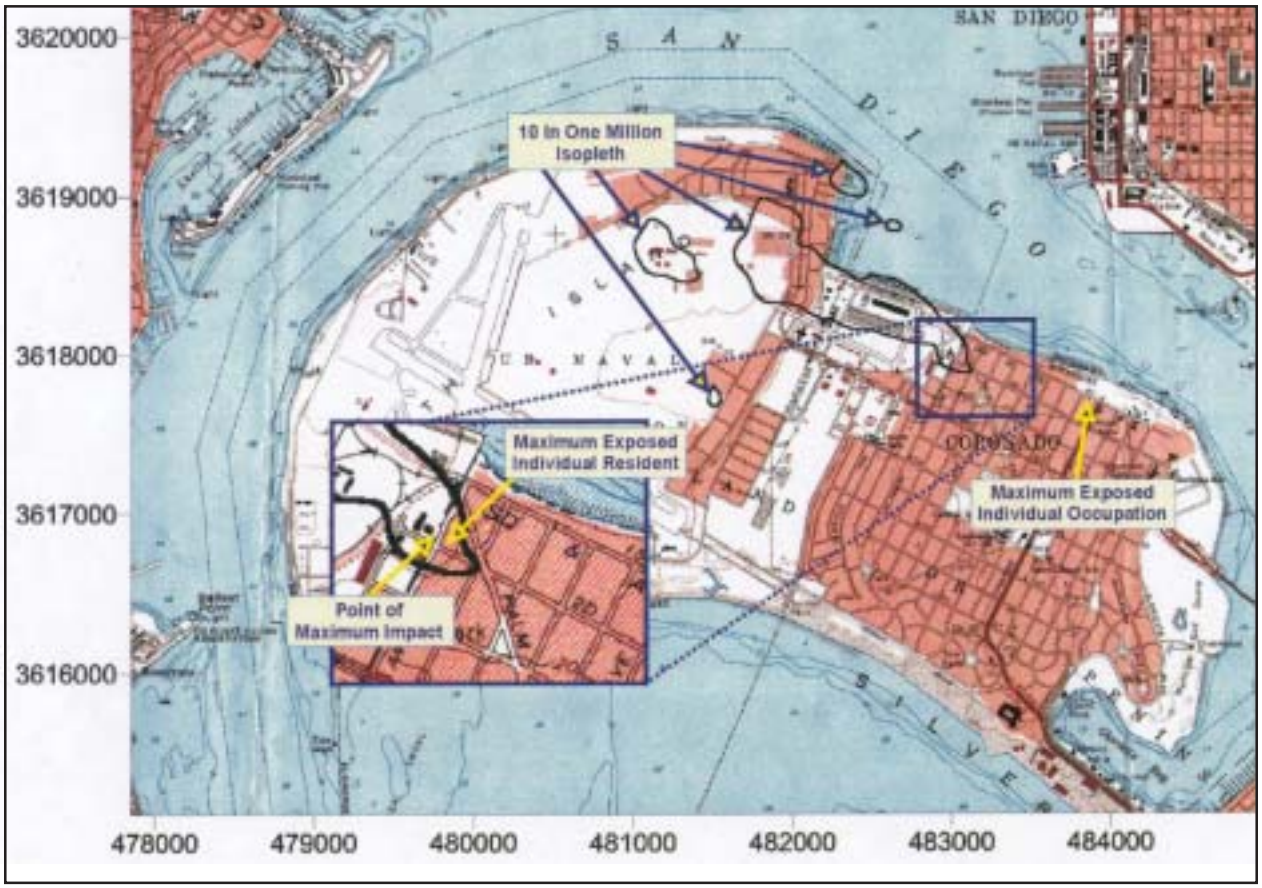

Figure 1 – Cancer Risk Isopleth and Maximum Impact Points – 1998 Health Risk Assessment