

Environmental Program	SIGNIFICANT ENVIRONMENTAL ASPECT	ProcessName	Description	Ranking
Hazardous Materials	Chemical Usage (Worker Safety) - formalin/xylene/alcohols	Mortuary Operation	Commercial embalming fluids composed of significant amounts of formaldehyde, methanol, xylenes, etc. for tissue preservation. General ratio of "30 - index" strength fluid is one gallon per 50 lbs. of case gross body weight. Due to formaldehyde being a suspect human carcinogen, morticians have effective general mechanical dilution ventilation control measures for their embalming room; and locally-exhausted ventilated embalming tables to capture embalming fluid vapors at their source. NH Rota embalming frequency VERY low (approximately 2 cases per YEAR). Morticians also provided Powered Air Purifying respiratory (PAPR) protection. This aspect managed by OSHA 1910.1048 Formaldehyde Standard, NH Rota HAZMAT spill SOPs, etc.	235
Regulated Medical Waste	Waste Generation - bodily fluids	Laboratory (General)	Approximately 30 to 50 urine, sputum & fecal lab samples analyzed per week. Fecal, sputum samples disposed of as medical waste per SOP. Aspect managed via FGS Spain Medical Waste chapter & NAVSTA Rota Medical Waste Management Plan (MWMP), NH Rota Infection Control Manual, internal lab SOPs, etc.	195

Regulated Medical Waste	Waste Generation (Medical Waste)-Liquids	General Surgery	<p>Approximately 200 milliliters (ml) of potentially "infectious" suction wastes containing blood collected per surgery case; which is solidified with special agent and then disposed of in medical waste containers for incineration. Maximum of 5 liters of suction canister liquid wastes generated weekly. Local Andalucian wastewater regulations permit up to 100 ml of such blood-containing wastes to be discharged down sanitary sewer drains. Collected in approved spill-tight containers for incineration by certified medical waste disposal contract firm at an incinerator facility fully certified by the Spanish government in meeting all applicable European Community regulations.</p>	195
Regulated Medical Waste	Waste Generation (Medical Waste)-Pathological	General Surgery	<p>Relatively small medical waste volumes generated by NH Rota (in relation to much larger local Spanish hospitals).                  Approximately 200 milliliters (ml) of potentially "infectious" suction wastes containing blood collected per surgery case; which is solidified with special agent and then disposed of in medical waste containers for incineration. Maximum of 5 liters of suction canister liquid wastes generated weekly. Local Andalucian wastewater regulations permit up to 100 ml of such blood-containing wastes to be discharged down sanitary sewer drains. Waste incinerated by certified medical waste disposal contract firm at an incinerator facility fully certified by the Spanish government to all applicable EC standards.</p>	195

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Hazardous Materials	Chemical Usage - acids and corrosives	Hazardous Material (Chemical) Usage & Storage	Various acid corrosive product usage concentrated in building 1802 laboratory & pharmacy spaces.	185
Hazardous Materials	Chemical Usage - formalin/xylene/alcohol	Hazardous Material (Chemical) Usage & Storage	Very small amounts of formalin used to preserve tissue specimens sent to Germany for pathological analysis; typically 30 ml in small sealed specimen cups. Isopropyl alcohol used throughout patient care clinics & wards for disinfection.	185
Regulated Medical Waste	Potential Spillage - medical waste	Lab - Microbiology	Small volume patient sample specimen cups.	185
Tanks	Soil contamination	Fuel Storage - UST	Contamination of soil surrounding the two 4100 gallon bldg. 1802 underground diesel storage tanks possible from leakage of accidental spills during their periodic truck filling evolutions. 2010 host installation NAVFAC audit found SATISFACTORY contractor UST maintenance & repair program.	185
Regulated Medical Waste	Waste Generation - biomedical waste	Lab - Microbiology	Approximately 35 patient blood, body fluid specimens received, prepared & analyzed per week. From this about 80 agar media microbiological culture plates are cultured and subsequently discarded.	185
Regulated Medical Waste	Waste Generation - biomedical waste	Patient Care - Birth Labor & Delivery	Each vaginal birth delivery generates one green biomedical waste container; with 5-6 deliveries occurring in a typical month. 1 to 5 red wall sharps containers generated per month.	185
Regulated Medical Waste	Waste Generation - medical sharps waste	Immunization Clinic	Approximately 500 to 700 spent immunization needles generated each week by NH Rota immunizations clinic.	185

Natural Resources	Resource Consumption-Water	Grounds Maintenance	Potable water consumption for irrigation of NH Rota external landscaping a significant env. aspect to manage better due to inherent drought conditions of our southern Spain location. For the summer 2010 watering season the NH Rota Env. of Care Committee (EOC) approved the EMS Mgr.'s proposal to shorten the sprinkler system's timer run-time by 20% to hopefully effect a concurrent 20% water consumption savings. This had a major effect for FY-10 consumption, as NH Rota cut its consumption 38% over FY-2009; and by 33 % over FY-2008.	180
Energy	Resource Consumption - Thermal System Operation	Building Infrastructure - Resource Consumption	NH Rota utilizes boiler-generated steam for water and workspace thermal heating. Boilers fired with diesel fuel stored in two onsite underground storage tanks. In FY-2005 approximately 51,000 gallons of diesel fuel were burned for water & space heating. For FY-2009, 60,659 gallons of diesel fuel consumed in boilers.	175

Energy	Resource Consumption-Electricity	Building Infrastructure - Resource Consumption	<p>FY-2010 NH Rota electricity usage was 3853 megawatt hours (MWHs); which showed an 8.4% drop from FY-2009 NH Rota consumption of 4203 MWHs. This handily beat the base's target of 5% annual reduction in electricity usage (i.e., from 2007 values). The reduction in total electricity used saved the Hospital over \$80,000 -- which could be rediverted to other patient support needs. Use of electricity dependent equipment incurs energy usage predominantly supplied by power plants that obtain that energy from burning fossil fuels. The Navy requires the purchase of energy efficient equipment, whenever possible, in order to help reduce the use of and demand for energy.</p>	175
Affirmative Procurement	Resource Consumption-Water	Building Infrastructure - Resource Consumption	<p>In FY 2010 approximately 3,660,000 gallons of water were consumed; a significant DEcrease from the 5,874,000 gallons used in FY-09. This 38% decrease in water consumption represented a \$9,431 savings in our water bill for FY-10. Primary factor in such increased consumption beleived to be closely monitoring the hospital grounds irrigation system around building 1802.</p>	175

Solid Waste	Waste Fluorescent Tubes/Halogen Bulbs Storage	Solid Waste Generation and Disposal	NH Rota's maintenance contract specified our approximately 5,000 fluorescent bulbs be changed every 18 months per preventative maintenance schedule. Spent bulbs taken to local NAVFAC Rota maintenance yard for processing in a tube crusher. Our tubes are specified to be "ecologic" with low-mercury and lead - free content. They still can, however, present a significant impact to the environment and to human health if not disposed of properly.	156
Pesticides	Chemical Usage - pesticides	Grounds Maintenance	Approximate annual application volume of pyrethrum-based insecticides = 165 liters over NH Rota's exterior landscaping. These environmental aspects managed vis Facilities dept. contractor Quality Assurance rep. per Naval Station Rota Pest Control Management Plan, NH Rota HAZMAT Control Program Policy, HAZMAT Spill SOPs, Hazardous Waste disposal procedures, OSHA "Right-to-Know" Std., NFPA & OSHA chemical storage regs and/or FGS for Spain, etc.	151
Hazardous Materials	Potential Spillage - general hazmat spills	Flammable locker - storage	Low potential for small volume (i.e., flammable lockers contain minimal 7-day working volumes by policy) HAZMAT spill incidents. Absorbant spill materials present in close proximity to all storage lockers	151
Hazardous Materials	Chemical Usage - amalgam	Dental Cleaning and Surgery	Pre-measures dental amalgam capsules used for cavity repair. Minimal, daily average of	146

Hazardous Materials	Chemical Waste - amalgam scrap	Dental Cleaning and Surgery	Pre-measures dental amalgam capsules used for cavity repair. Minimal, daily average of 10 to 20 total fillings applied by two general dentists. VERY few old fillings removed. In 2010 new mercury filter units installed on every dental chair. Waste filters and all scrap amalgam collected for proper DRMO HAZWASTE disposal per BUMED Hg-control instruction 6260.30 series; considered controlled. Other regulatory controls include: Command HAZMAT Control Program Policy; HAZMAT Spill SOPs; Hazardous Waste disposal procedures; OSHA "Right-to-Know" Std.; NFPA & OSHA chemical storage regs; and/or FGS for Spain, etc.	146
Tanks	Diesel Fuel Spill Potential	Fuel Storage - UST	Fuel/oil spills can impact human health, air, soil, and water, especially if not handled and contained properly. Primary spill hazard potential exists during periodic truck delivery of diesel fuel; which would involve relatively minor amounts that would be immediately noticed, quickly contained and promptly cleaned up before any really deep, significant soil / ground water contamination could occur.	146
Affirmative Procurement	Energy usage - Diesel fuel consumption	Boiler Operations	Boilers burned approximately 32,457 gallons of diesel fuel in FY-2009. In March 2010 a NAVFAC Europe energy conservation expert performed a boiler efficiency study of NH Rota's units. Report attached.	146

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Tanks	Fuel/Oil Spill Potential	Fuel Storage - AST	Fuel/oil spills can impact human health, air, soil, and water, especially if not handled and contained properly. AST has impervious Cement containment berm around it	146
Hazardous Waste	Fuel/Oil Spill Potential	Generator Operations/Maintenance	Fuel/oil spills can impact human health, air, soil, and water, especially if not handled and contained properly.	146
Hazardous Waste	Hazardous Waste Generation	Patient Care	Hazardous waste disposal contributes to the demand for landfill space and, over time, may leak out of disposal containers and impact soil and water.	146
Affirmative Procurement	Potential Spillage - pesticides	Building Infrastructure - Operations & Maintenance		146
Solid Waste	Solid Waste Generation	Vehicle Usage and Maintenance	Oily rags, fan belts, and filters are among the solid waste generated. Solid waste is disposed in landfills or incinerated and may impact land and air.	146
Hazardous Waste	Waste Generation - general hazmat	Biomedical Repair	Majority of checmical products consumed during their application & usage--with insignificant HAZWASTE volume generation.	146
Hazardous Waste	Waste Generation - general hazmat	Laboratory (General)	VERY minimal, insignificant amounts of lab Haz Waste generated due to the almost 100% consumption of the very small volumes (ml) of pre-packaged reagents used by automated analyzers.	146
Hazardous Waste	Waste generation - Hazardous waste	Dental Care - Prosthetics	Very little waste generated, as products used in their entirety until containers empty.	146

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Regulated Medical Waste	Waste Generation - Regulated Medical Waste	Patient Care	In CY-2008 NH Rota produced 3,982 kilograms of RMW; which dropped to 3,606 KG in FY-2009. Latest FY-10 value rose to 4,604 KG, as hospital population steadily grew. Medical waste is regulated at the provincial level by the "Junta de Andalucia" Spanish authorities (e.g., the transport & incineration). Sharps the prime medical waste generated in non-surgical patient care areas. NH Rota Spain's internal environmental controls for RMW management include the Infection Control manual procedural SOPs for staff training, container labelling, proper RMW handling & it's temporary storage in the Biowaste storage room prior to contract transport hauler removal, etc.	146
Hazardous Materials	Chemical storage - fuels/oils	Building Infrastructure - Operations & Maintenance		141
Hazardous Materials	Chemical Usage - general laboratory chemicals	Lab - Microbiology	Almost all volatile & liquid chemical product volume expended / evaporated during product usage--with very little remaining waste residue. Aspect managed via CNH Rota HAZMAT Control Program Policy,	141
Hazardous Materials	Fuel/Oil Spill Potential	Boiler Operations	Fuel/oil spills can impact human health, air, soil, and water, especially if not handled and contained properly.	141
Hazardous Waste	Hazardous Waste-Asbestos Materials	Industrial Hygiene Lab	Approximately 5 to 30 samples analyzed monthly. Less than 5 kilograms total asbestos waste generated every two years. NH Rota's asbestos lab waste consolidated with the asbestos waste shipments of	141

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Solid Waste	Used Electronic Equipment	Solid Waste Generation and Disposal	Electronic equipment contributes significantly to solid waste generation and the demand for landfill space.	141
Solid Waste	Waste Batteries Generation	Solid Waste Generation and Disposal	Waste batteries contribute to solid waste generation. In NH Rota's host nation of Spain, disposal of batteries as "hazardous waste" is mandatory to reduce the risk of impacting the air, soil, and water with heavy metals. Historical Battery Disposal Volumes for NH Rota Spain: --FY 2007 = 118 pounds -FY 2008 = 211 lbs	141
Solid Waste	Waste Battery Generation	Vehicle Usage and Maintenance	Lead/acid vehicle batteries that are disposed in landfills or incinerated contribute to heavy metals in air, soil, and water. NH Rota vehicle batteries recycled locally or disposed of as HAZWASTE to reduce these environmental impacts.	141
Hazardous Waste	Waste Generation - battery (lead acid, NiCad)	Biomedical Repair	Spanish / EC regs to dispose of "normal" alkaline consumer batteries as "hazardous waste." At NH Rota the Medical Repair dept. serves as the collection & processing point for all battery waste to the local DRMO.	141
Hazardous Waste	Waste generation - Electronic Eqpt. & parts	Biomedical Repair	Defective electronic components and medical equipment past serviceable life disposed of via local Defense Reutilization & Marketing Office (DRMO). Minimal scrap electronics parts volumes. all batteries processed as hazardous waste. Circuit boards returned to their original manufacturers whenever possible.	141
Affirmative Procurement	Waste Generation - medical equipment	Patient Care	Disposal of medical equipment past its serviceable life; majority electronic waste.	141

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Regulated Medical Waste	Waste Generation - Micro Lab Culture Media	Laboratory (General)	Approximately 80 agar culture plates disposed of weekly as regulated medical waste in approved disposal bins after microorganism culturing complete.	141
Solid Waste/ Recycling/ Green Procurement	Waste Oil Generation	Vehicle Usage and Maintenance	Waste oil/sludge generation may eventually impact air, soil, and water depending on the disposal methods. Oil from NH Rota vehicles (serviced at base NAVFAC transportation garage) properly recycled on local market.	141