DEPARTMENT OF ECOLOGY
State of Washington

State of Washington Department of Ecology

Cruise Ship Memorandum of Understanding, Cruise Operations in Washington State Inspection Report

Northwest Regional Office
3190 160th Ave SE
Bellevue, WA 98008
Phone: (425) 649-7000
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Inspection Date	Permit Number	County	Receiving Waters	Ecology Inspector
September 7, 2014	NA	King	Marine Waters	Amy Jankowiak

Entry Time 8:58 am	Photos Taken	Samples Taken	Inspection Announced	Discharges to: ☒ Surface Water
Exit Time 11:20 am	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No	☐ Ground Water ☐ Dewater ☐ POTW

Name and Location of Site Inspected:
AMSTERDAM, Holland America Line
Pier 91
Seattle, Washington

Additional Participants/Inspectors:

On-Site Representative(s): ***Name/Title/Phone/e-mail***
Jonathan Bailey, Safety, Environment and Health Officer
AMDM-SEH_Officer@HollandAmerica.com
Jonathan Turvey, Director, Strategic Planning & Analysis
206-298-3849

Responsible Official(s): ***Name/Title/Address/Phone/e-mail***
Michael D. Inman, Vice President – Safety and Environmental Management Systems
Holland America Line
300 Elliott Ave. West, Seattle WA 98119
206-281-3535 Minman@hollandamerica.com

Other Facility Data:
Notification made to Jonathan Turvey on September 2, 2014

Section A: Areas Evaluated

☒ Black/Gray Wastewater System	☒ Residual Solids	☒ Records/Reports	☒ Hazardous Waste/ Solid Waste	☒ Sampling/Monitoring
☒ Discharge Locations	☒ Operation & Maintenance	☒ Sludge Handling/ Disposal	☒ Oily Bilge Water	☒ Other

Section B: For Vessels Discharging ≥ 1nm from Berth and ≥ 6 Knots Only [2.1.3(A)]

☐	Schematics Match Black/Gray Wastewater System	
☐	Operations as Described in Submitted Documentation	
☐	Daily 24-hour Continuous Monitoring for Turbidity or Equivalent Monitoring	
☐	Turbidimeter or Equivalent Monitoring Equipment Functioning Properly	
☐	Auto Shut Down or Operational Controls to Insure System Shut Down if High Turbidity Occurs	
	Turbidity or Equivalent: Last Calibration: Trigger Level for Early Alarm: Trigger Level for Shutdown Recorded Turbidity/Equivalent Levels Above Triggers:	NOT APPLICABLE
☐	Daily 24-hour Continuous Monitoring for Disinfection Effectiveness	
☐	Disinfection Effectiveness Monitoring Equipment Functioning Properly	
	Disinfection Effectiveness Monitoring:	
☐	Auto Shut Down or Operational Controls to Insure System Shut Down if Disinfection System Upset Occurs	
☐	Disinfection System Operated and Maintained Properly	

	Disinfection System:	

Section C: For Vessels Discharging Continuously [2.1.3(B)]

☐	Schematics Match Black/Gray Wastewater System	
☐	Operations as Described in Submitted Documentation	
☐	Daily 24-hour Continuous Monitoring for Turbidity or Equivalent Monitoring	
☐	Turbidimeter or Equivalent Monitoring Equipment Functioning Properly	
☐	Auto Shut Down or Operational Controls to Insure System Shut Down if High Turbidity Occurs	
	Turbidity or Equivalent: Last Calibration: Trigger Level for Early Alarm: Trigger Level for Shutdown: Recorded Turbidity/Equivalent Levels Above Triggers:	
☐	Daily 24-hour Continuous Monitoring for Disinfection Effectiveness	
☐	Disinfection Effectiveness Monitoring Equipment Functioning Properly	
	Disinfection Effectiveness Monitoring:	
☐	Auto Shut Down or Operational Controls to Insure System Shut Down if Disinfection System Upset Occurs	
☐	Disinfection System Operated and Maintained Properly	
	Disinfection System:	

NOT APPLICABLE

Section D: General (Approved to Discharge)

☐	No Discharges Within ½ Miles From Shellfish Beds/ Protocol (President's Point, Apple Tree Cove, Tyee Shoal, Middle Point (near Pt Townsend))	
☐	Discharges Immediately Stopped When High Turbidity Occurs	
☐	Discharges Immediately Stopped When Disinfection System Upset Occurs	
☐	Immediate Notifications Made to WA Department of Health for Disinfection System Upset	
☐	Sampling Conducted 2/month, 1/month in Seattle (BOD, TSS, Fecal Coliform, pH, Chlorine Residual)	
☐	Whole Effluent Toxicity Testing 1 per 2 Years (homeported) or 1/40 Calls for Continuous	

Section E: General

☒	Wastewater Discharge Records Review	Discharge records were reviewed (blackwater/graywater/residual solids) and are maintained properly. No discharges appear to be in the OCNMS, MOU waters or Washington state waters (MOU related waters). Further review will be done at the end of the season for all records.
☒	Wastewater Discharges protocol per MOU and managed properly	The discharge protocols appear to be consistent with MOU requirements to not occur in MOU related waters.
☒	Residual Solids Managed Properly/Disposal Protocol per MOU	Residual solids appear to be handled per MOU requirements.
☒	Hazardous Waste Managed Properly	Hazardous waste appears to be handled per MOU requirements.

☒	WA Hazardous Waste Guidelines Followed (Appendix vii)	Hazardous waste guidelines appear to be handled per the MOU and guidelines.
☒	Solid Waste Managed Properly (zero garbage discharge)	Solid waste appears to be managed per MOU requirements.
☒	Photo/X-Ray Waste Managed Properly (fluids, cartridges,…) and landed ashore	Photo and x-ray waste appears to be handled per MOU requirements.
☒	Dry-Cleaning Wastes and Byproducts (fluids, sludge, filter materials…) Managed Properly (PERC – haz waste – landed ashore)	Dry cleaning waste products are managed per MOU requirements.
☒	Unused/Outdated Pharmaceuticals Managed Properly (safely disposed of)	Unused or outdated pharmaceuticals appear to be managed per MOU requirements.
☒	Fluorescent and Mercury Vapor Lamp Bulbs Managed Properly (prevent release of mercury)	Fluorescent and mercury vapor lamp bulbs appear to be managed per MOU requirements.
☒	Waste Reduction/Reuse/Recycling Opportunities Maximized (glass, cardboard, aluminum & steel cans)	Waste reduction/reuse/recycling opportunities appear to be maximized per MOU requirements.
☒	Batteries Managed Properly (recycled, reclaimed, disposed of properly)	Batteries appear to be managed per MOU requirements.
☒	Incinerator Ash Managed Properly and minimized volume (haz waste segregation and annual testing)	Incinerator ash appears to be managed per MOU requirements.
☒	Oily Bilge Water Managed Properly (<15 ppm, no visible sheen and underway)	Oily bilge water appears to be managed per MOU requirements.
☒	Ballast Water Managed Properly (per Wash regs –reporting, treated or if open sea exchange >200 nm from outside EEZ, 50nm if not EEZ)	Ballast water exchanges are reported to not occur on this route.
☒	OCNMS rules and regs followed	The discharge protocol appears to be consistent with MOU requirements to not occur in the OCNMS.
	Additional General Questions	
☒	How is deck runoff and hull cleaning handled (scuppers…) (non-toxic/phosphate free cleaners, biodegradable)	Deck runoff and hull cleaning appears to be handled per MOU requirements.
☒	How is maintenance performed on the outside of the vessel (paint chipping, painting, etc)	Outside vessel maintenance appears to be handled per MOU requirements.
☒	Sculleries and Galleys – type of detergents and degreasers used (phosphate free and non-toxic)?	Galleys appear to use phosphate free and non-toxic detergents and degreasers.
☒	How are food waste discharges handled (prevention of erroneous materials)?	Food waste appears to be handled per MOU requirements.
☒	Medical sinks/floor drains, chem. stor areas wastes go where (plugged, blackwater, bilge)?	Medical sinks/floor drains appear to be handled per MOU requirements.
☒	Where is pool and spa water discharged? Dechlorinated/debrominated and underway?	Pool and spa water appears to be handled per MOU requirements.
☒	What type of fuel is used and percent sulfur content?	Fuel sulfur content meets requirements.

Other:

Section F: Sampling Results

Parameter	Results
Biochemical Oxygen Demand 5-Day (BOD_5)	
Total Suspended Solids (TSS)	
Fecal Coliform	
Residual Chlorine	
pH	
Ammonia, Nitrogen	

NOT APPLICABLE

Section G: Summary of Findings/Comments

Introduction

Amy Jankowiak, Washington State Department of Ecology (Ecology) Northwest Regional Office, Water Quality Program (NWRO-WQ), conducted the inspection of the Holland America Line (HAL) AMSTERDAM on September 7, 2014. The main contact on board the AMSTERDAM was Jonathan Bailey, Safety, Environment and Health Officer (SEH) for the AMSTERDAM. Jonathan Turvey, Director, Strategic Planning & Analysis with HAL headquarters was also there for the inspection. Prior notification of the visit was given on September 2, 2014 for security protocol. The purpose of the inspection was to evaluate compliance with the *Memorandum of Understanding Cruise Operations in Washington State* (MOU), as amended. The AMSTERDAM is not approved to discharge wastewater in MOU waters.

The AMSTERDAM was delivered in 2000, is 780 feet long, with about a 26-foot draft. Passenger capacity is about 1380 with about 615 crew.

The AMSTERDAM is scheduled for 15 port calls in Seattle and conducts one week or two week cruises to Alaska turning around on Sunday's between May 18, 2014 and September 21, 2014.

Inspection

I arrived and boarded the ship (photo #01) at 8:58 am and first met with Jonathan Bailey, SEH at the top of the crew entrance where paint touch up work was being done directly overhead (photo #02). I noted the good secondary containment around the cherry picker, but noticed that staff on the picker was reaching beyond the secondary containment with the roller and noted this to Mr. Bailey. He immediately called out to the worker to keep the roller over containment. We then met with Mr. Turvey and headed to a lounge area to meet and discuss discharge protocols. We then went to the Bridge to view and discuss navigational aspects of discharge protocols and notification numbers (photo #05) and viewed the fuel bunkering (photo #06). We reviewed the various discharge and environmental records in the SEH office and the Engine Control Room (ECR). We toured the garbage and recycling areas, and then went below deck to view the blackwater marine sanitation devices (MSDs) and oily water separators. Next we toured the dry cleaning and laundry area and the medical facility. We viewed the hazardous waste storage and then finalized with a debriefing and disembarked the vessel at 11:20 am.

Discharge Types and Protocols:

All discharges occur outside of 12 nautical miles, outside of MOU waters, Washington State waters and the Olympic Coast National Marine Sanctuary (OCNMS) (MOU related waters). A pre-season plan which looked at the vessel's itinerary and holding capacities was put into place. And if a discharge is to occur, the bridge notifies the ECR when they are in and out of special areas and discharge areas. Navigational staff on the bridge have paper maps with MOU waters and OCNMS waters clearly identified and posted with the navigational maps (photo #04). Any discharge is logged into the electronic system which can be viewed from the Bridge, the ECR and by key staff. The bridge also has a "Valve Monitoring System" (photo #03) where they control whether or not they are in special areas (no discharge areas) or areas where discharges can occur. At the time of the inspection it was on "special areas". If a discharge port were to be opened while in "special areas" status, an alarm would sound. Discharge ports are also padlocked and some are green tagged. The ECR engineer is in control of the discharge port keys. And the Bridge has the keys for the food chute. For black water and gray water, the latitude and longitude coordinates are recorded in the electronic *Sewage and Graywater Discharge Record Book.* The date, time and location of both the start and the stop of the discharges are recorded, along with port location, effluent type, and volumes. The vessel has about 3.5 days of holding capacity for wastewater. All wastewater discharge records that were reviewed appeared to be in compliance with the MOU and did not occur in MOU related waters.

The biomass or solids from the black water MSDs is collected in drums and offloaded in Victoria about once every six months.

Oily bilge water is first treated with one of two FACET oily water separators (OWS) (photos #18 and #19) down to 50 ppm oily water content and is then sent to a SERAP OWS (photos #20 and #21) which treats to a level of less than 15 ppm. Prior to discharge (photo #22), any OWS effluent goes through a white box (photo #17) confirmation. The OWS system was inspected the week prior to this inspection. Discharges of treated oily bilge take place outside of MOU related waters.

The AMSTERDAM has 2 swimming pools and 3 spas, one using salt water with the remaining fresh water. They all use bromine for disinfection and pools are emptied out at sea, outside of MOU waters and spa discharges first go to the graywater tanks which are also discharged outside of MOU related waters.

Ballast water exchanges do not occur with this vessel near shore.

Food waste is sorted at the source in galleys and sculleries and is then collected and taken to the SOMAT food pulper

(photo #10). Water from the press is sent to the graywater tanks for discharge outside of MOU related waters and food from the pulper is discharged via chute outside of MOU related waters (photo #11). Food items that can't go to the pulper are collected in composting bins and offloaded in Victoria for composting. Used cooking oil is collected, filtered (photo #07) and used as bunker fuel. Grease is collected and incinerated. Galleys use Ecolab phosphate free and non-toxic detergents and degreasers.

Decks and windows/hull are kept clean and washed with fresh water/no chemicals. Underwater hull work was last done 2 weeks ago in Alaska. If planning to do underwater hull work, the line obtains prior approval. Paint chipping and painting is done in port occasionally. If painting and chipping occurs, weather conditions are first checked and drop cloths and catchers are attached to the cherry picker as was observed during the inspection. The Bosun, Chief Engineer and SHE oversee the work.

Laundry water is sent to the graywater tanks for discharge outside of MOU related waters. Laundry (photo #34) uses Ecolab phosphate free, non-toxic cleaning products. Any illness contaminated laundry is separated and sent to a dedicated washing machine. Dry cleaning uses a wet system (photo #30) with no chemical byproduct. The system uses Wetclean Texturizer 57 (photo #31) and Wetclean Detergent 34 (photo #32). The MSDS (photo #33) for the detergent was on hand. This system eliminates the byproduct of PERC.

X-rays are done digitally (photo #37) and therefore do not have a waste product. Photo waste goes through a silver recovery system, and is treated to less than 5 ppm and is then drummed and offloaded as hazardous waste (photo #39). Fluorescent bulbs go to a bulb crusher with a mercury vapor removal system. The bulbs and filters are offloaded as hazardous waste and other types of bulbs are offloaded as special waste. Hazardous waste materials typically include items such as used cartridges and filters, bulbs, paints, thinners, chemicals, incinerator ash, some aerosols. Bio-hazardous waste includes sharps (photo #38) and red-bagged (photo #35) medical waste. Hazardous waste (photo #40) is offloaded in Victoria. Hazardous waste logs were reviewed and appear to be consistent with MOU requirements. Oily sludge is offloaded in Victoria.

Unused or outdated pharmaceuticals are off-loaded back to the vendor, Belgrove in Seattle. Narcotics are incinerated with witness. Drains in the medical facility go to the blackwater tanks.

Solid waste (garbage, recyclables, etc) is collected and sorted (photo #08) and either reused, recycled, incinerated or offloaded to shore as appropriate. Recycling (photo #13) is typically offloaded in Victoria, but occasionally in Seattle. Glass (photo #14), most cardboard, compacted aluminum, scrap metal, wood, some plastics, some paper, batteries, electronics and other items are recycled. Reduction, reuse and recycling progress is tracked and minimization improvements are constant. The minimization efforts vary by Port call, length of itinerary (2 week voyages have space constraints for offloads) and by staff efforts. The SEH had multiple methods of detailed tracking of various wastestreams with improvements shown.

Oily rags, some food contaminated materials, medical white bagged waste (photo #36), some cardboard, grease and some plastics are incinerated (photos #09 and #12)). Incinerator ash is offloaded as hazardous waste as is tested regularly. Incinerators are turned off before reaching Victoria on the way in from sea and are turned back on after the Seattle port call in the Strait. One of the incinerators is being removed to make room for the new air scrubber system.

The AMSTERDAM uses shore power when in Seattle and 0.1 MGO in Port. HAL has been at the for front of air scrubber technology testing out new systems and advancing technology. Due to this, EPA, the USCG and the Dutch flag ship has provided exemptions for the AMSTERDAM and certain other vessels that are putting in new scrubber technology from the sulfur content requirements of <1% sulfur content for fuel. Oil sludge is sent ashore in Victoria. The vessel was bunkering fuel during the inspection. The ECR has new monitors (photo #15) which were showing the bunkering occurring as well as a live shot of the air stacks (photo #16).

Freshwater is produced via a new reverse osmosis system (photo #23) and is not bunkered on this itinerary.

There have not been any outbreaks of Norovirus on the vessel thus far this season. The vessel takes a number of precautions to prevent outbreaks such as "code orange" which is no self service for food in the first 2.5 days of a cruise in case anyone came on the vessel with illness and illness are isolated, alongside extra cleaning.

Black water and Gray water System:

Blackwater, which includes toilet waste, is treated by a traditional marine sanitation device, and graywater, which includes sink and shower water, laundry water, galley and pulper water and spa water, is always discharged outside of MOU related waters. There are three Hamworthy MSDs on board (photos #24 through #28) which are original to the vessel. Blackwater is collected by vacuum to a tank, then goes through prefiltration. Liquid moves to the next part of the tank for

aeration. The liquid is then chlorinated and held until discharge (photo #29). Although chlorine is not always used as it is not required for discharge outside of 12 miles. No monitoring is required per the MOU (or USCG) and does not occur on the MSDs. The MSDs are checked and cleaned out twice a year on a two month cycle for each unit. Chipping and painting is also conducted every 6 months. Approximately 50 gallons of solids from the MSDs are collected and drummed for offload in Victoria about once every 6 months.

Conclusions and Recommendations

The protocols and procedures for discharge are clear and inclusive of verification.

The staff was very knowledgeable of the systems and procedures related to compliance with the MOU. A current copy of the MOU should replace the older versions available on the vessel.

Waste minimization tracking and reductions were especially thorough.

Attachments:
Photographs

Copies to:
Jonathan Turvey, HAL
Jonathan Bailey, SEH, HAL
Mark Toy, Health
Greg Wirtz, CLIA-NWC
Stephanie Jones Stebbins, Port of Seattle
Kevin Fitzpatrick, Ecology
Mark Henley, Ecology
Amy Jankowiak, Ecology
Central Files: Holland America Line – AMSTERDAM; WQ 6.1

Name and Signature of Inspector:	Agency/Office/Telephone:	Date
Amy Jankowiak	Department of Ecology Northwest Regional Office Water Quality Program Municipal Compliance Specialist 425-649-7195	9/11/14
Name and Signature of Reviewer:	Agency/Office/Telephone:	Date
Mark Henley	Department of Ecology Northwest Regional Office Municipal Unit Supervisor 425-649-7103	9/11/14

PHOTO #:01 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010002
DESCRIPTION: VESSEL

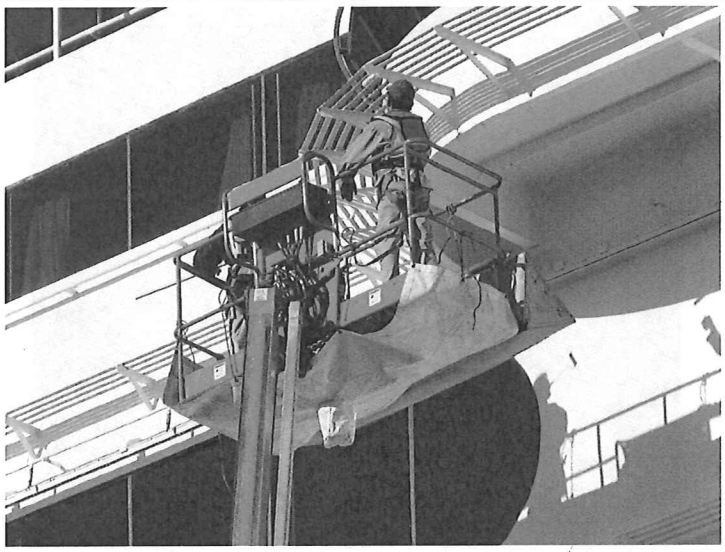

PHOTO #:02 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010003
DESCRIPTION: VESSEL, PAINT WORK

PHOTO #:03 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010004
DESCRIPTION: BRIDGE – VALVE MONITORING SYSTEM

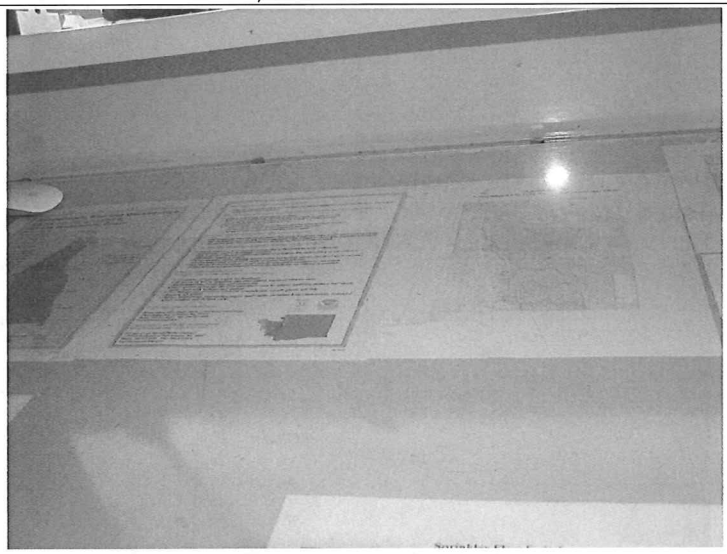

PHOTO #:04 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010005
DESCRIPTION: BRIDGE – MOU MAP, OCNMS MAP, WA INFO

PHOTO #:05 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010006
DESCRIPTION: BRIDGE – WA NOTIFICATION NUMBERS

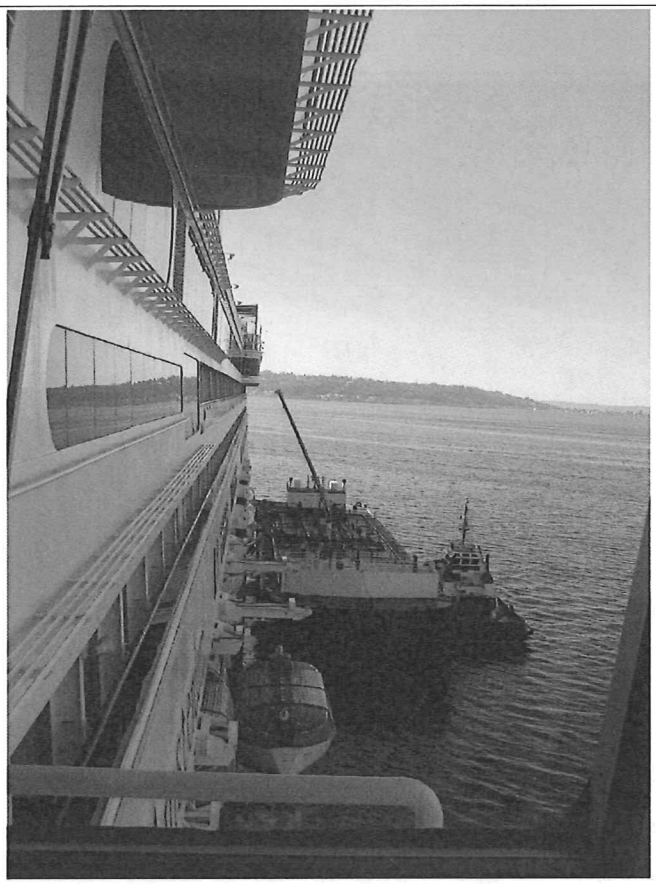

PHOTO #:06 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010007
DESCRIPTION: BRIDGE – VIEW OF BUNKERING

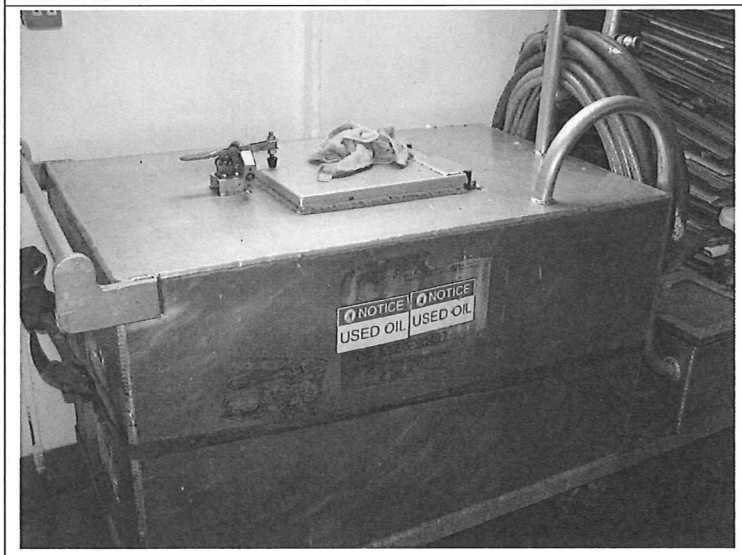

PHOTO #:07 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010008
DESCRIPTION: USED COOKING OIL/FILTER

PHOTO #:08 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010009
DESCRIPTION: GARBAGE/RECYCLING: SORTING

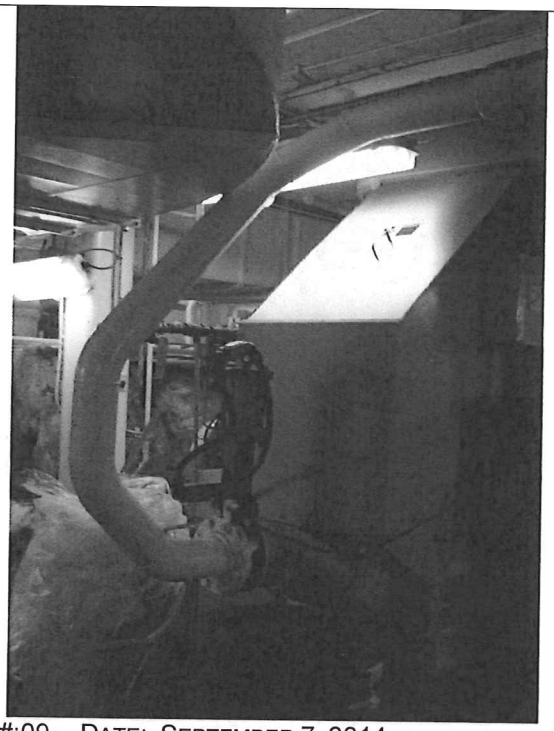

PHOTO #:09 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010010
DESCRIPTION: GARBAGE/RECYCLING: INCINERATOR

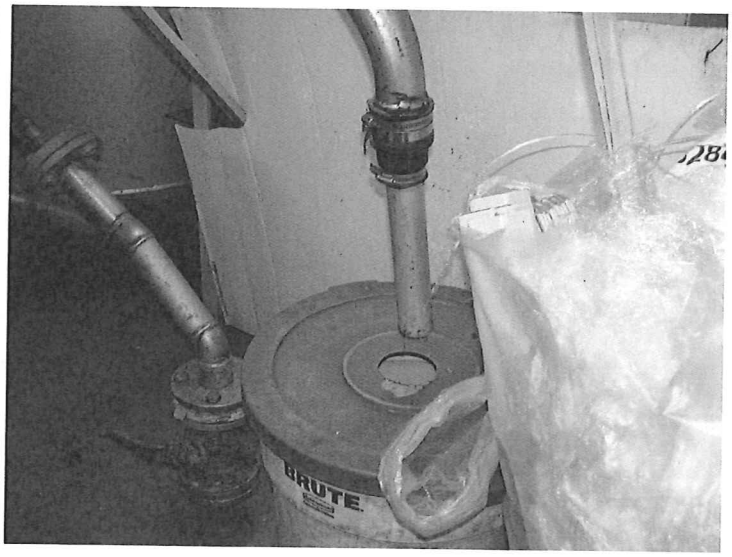

PHOTO #:10 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010012
DESCRIPTION: GARBAGE/RECYCLING: FOOD WASTE VIA PULPER

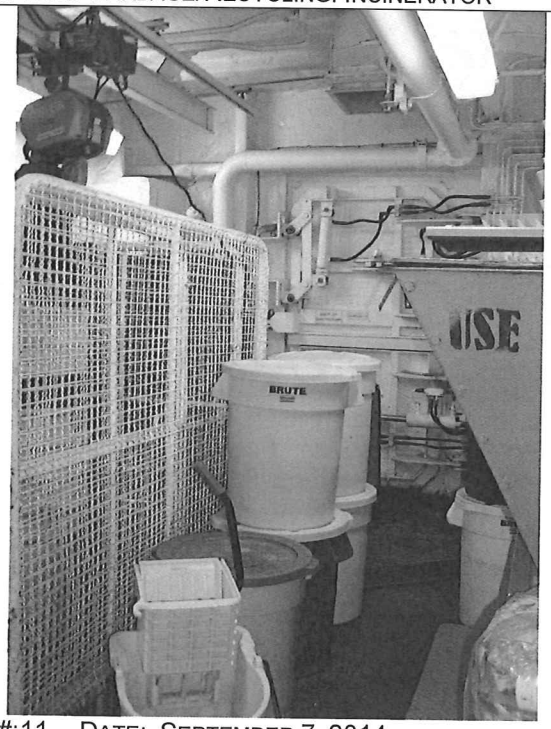

PHOTO #:11 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010013
DESCRIPTION: GARBAGE/RECYCLING: FOOD WASTE BINS/CHUTE BEHIND

PHOTO #:12 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010014
DESCRIPTION: GARBAGE/RECYCLING: GARBAGE FOR INCINERATION

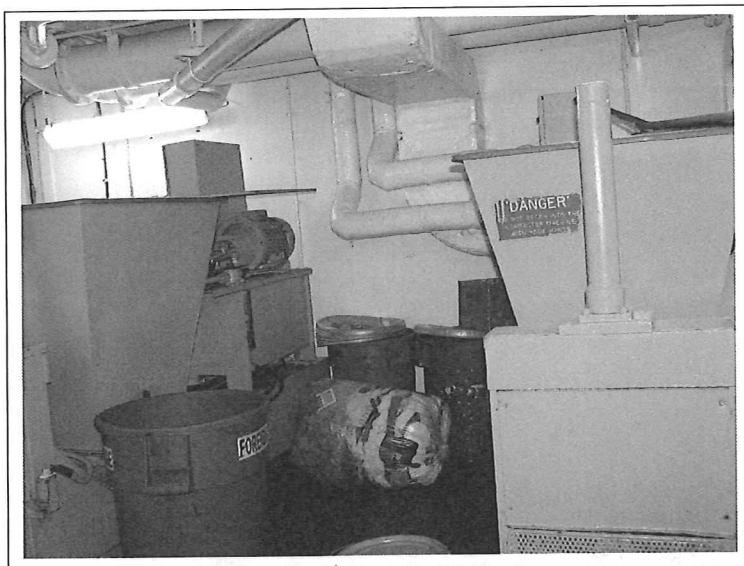

PHOTO #:13 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010015
DESCRIPTION: GARBAGE/RECYCLING: COMPACTORS

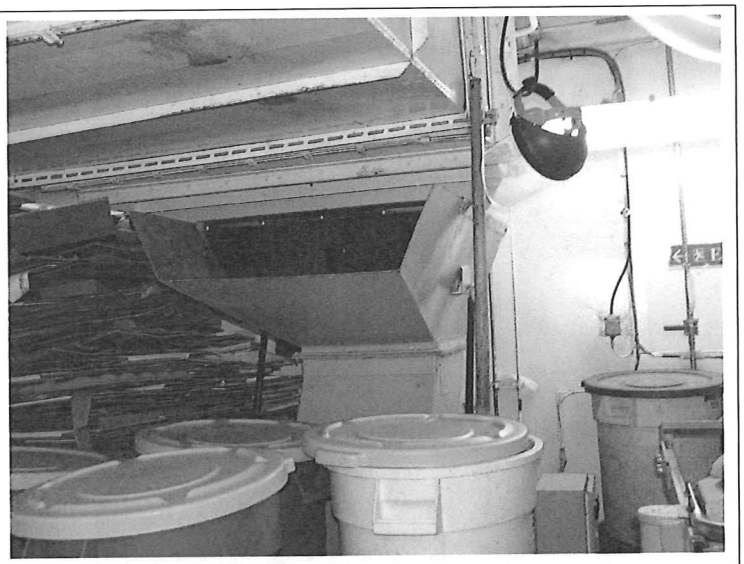

PHOTO #:14 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010016
DESCRIPTION: GARBAGE/RECYCLING: GLASS CRUSHER

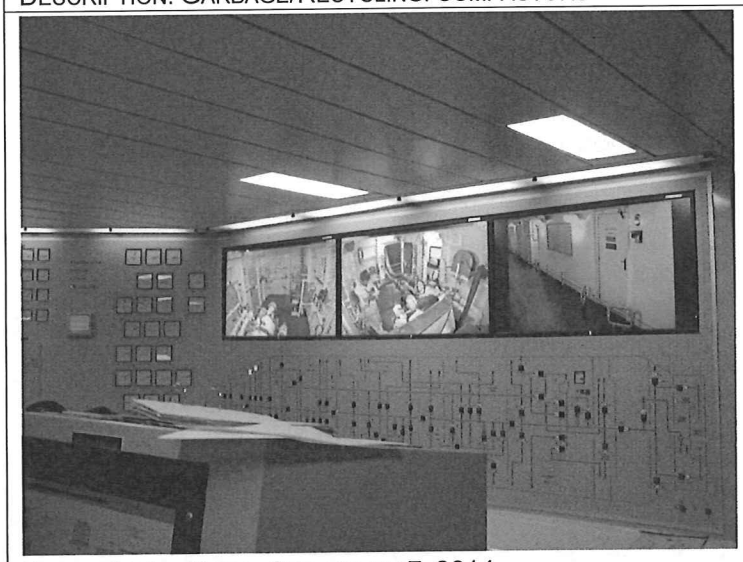

PHOTO #:15 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010017
DESCRIPTION: ENGINE CONTROL ROOM – MONITORS (BUNKERING)

PHOTO #:16 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010018
DESCRIPTION: ENGINE CONTROL ROOM – MONITORS (STACKS)

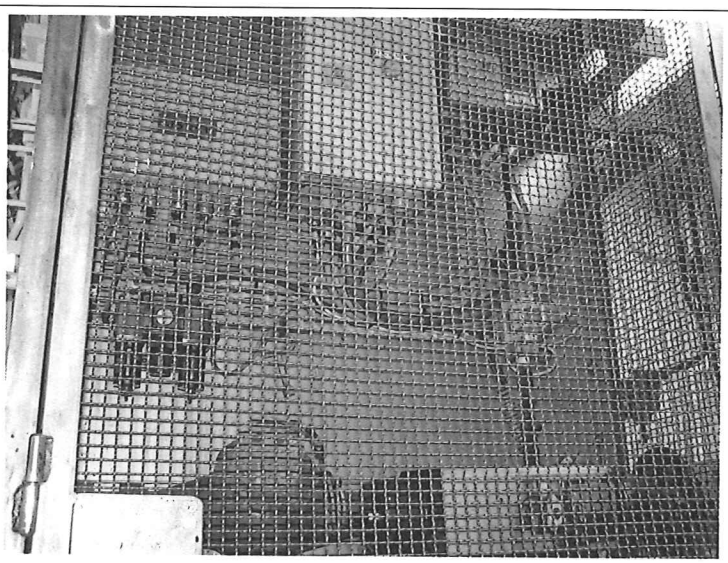

PHOTO #:17 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010019
DESCRIPTION: OILY WATER SEPARATOR (OWS) WHITE BOX

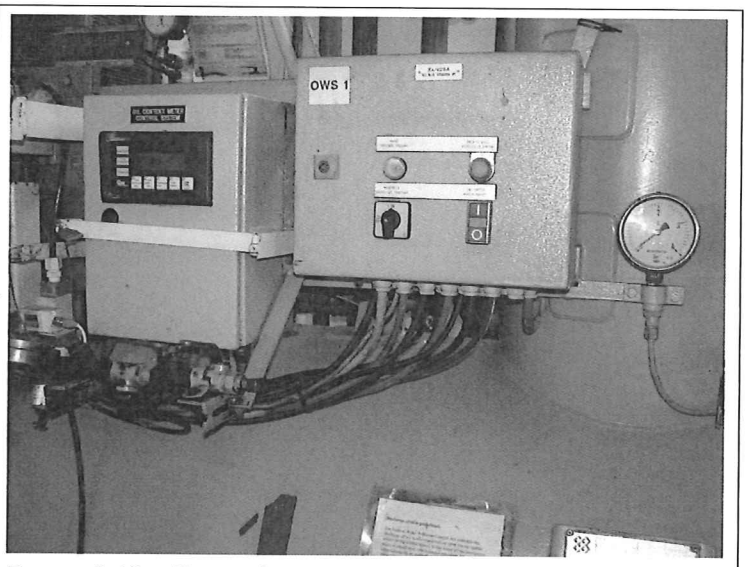

PHOTO #:18 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010020
DESCRIPTION: OWS FACET (1 OF 2)

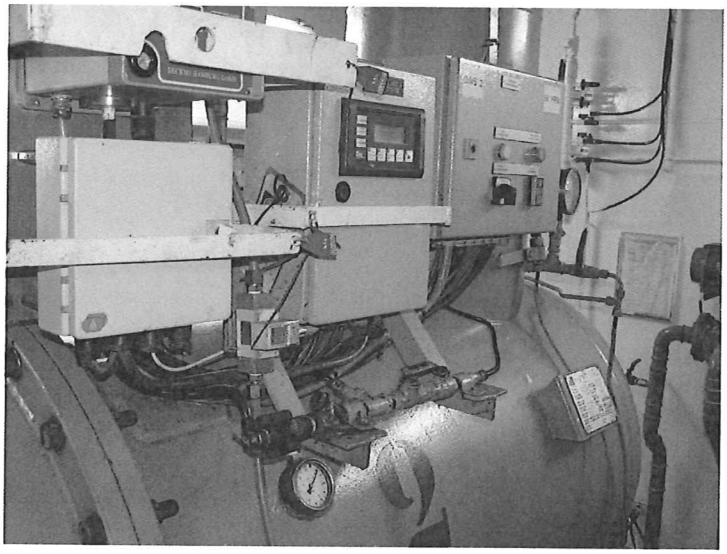

PHOTO #:19 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010021
DESCRIPTION: OWS FACET (2 OF 2)

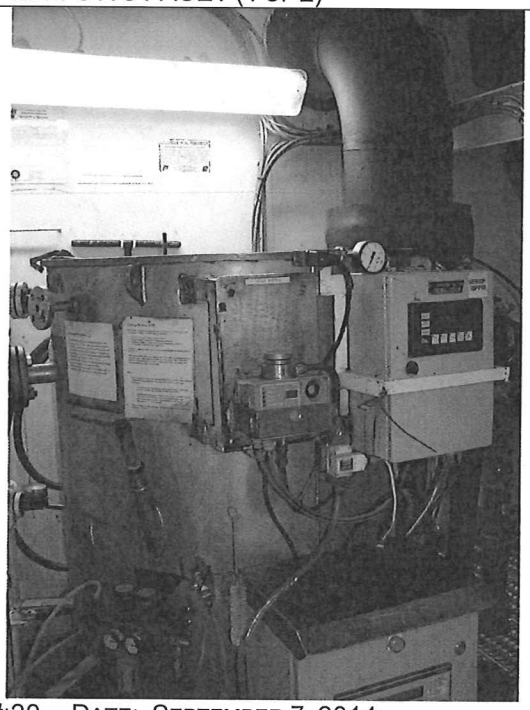

PHOTO #:20 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010022
DESCRIPTION: OWS SEREP

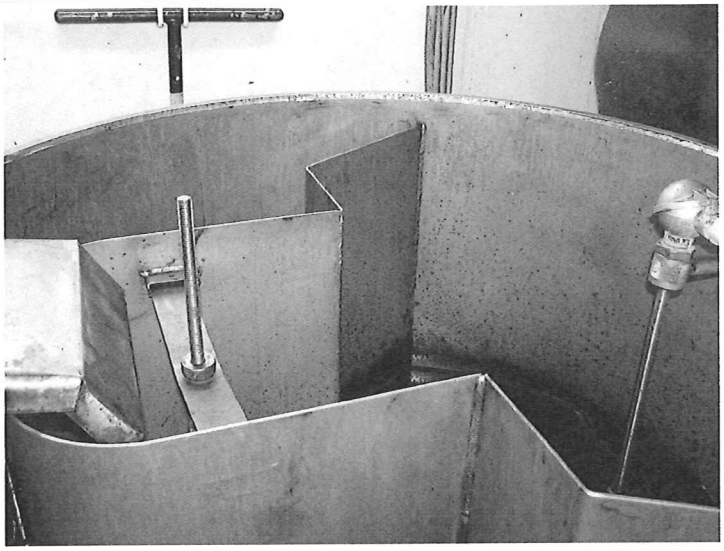

PHOTO #:21 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010023
DESCRIPTION: OWS SEREP INSIDE VIEW

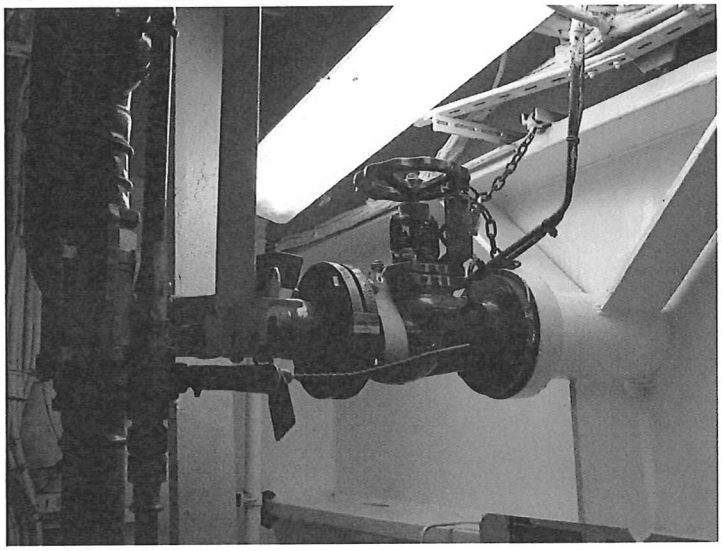

PHOTO #:22 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010024
DESCRIPTION: OWS OVERBOARD (GREEN TAGGED AND PADLOCKED)

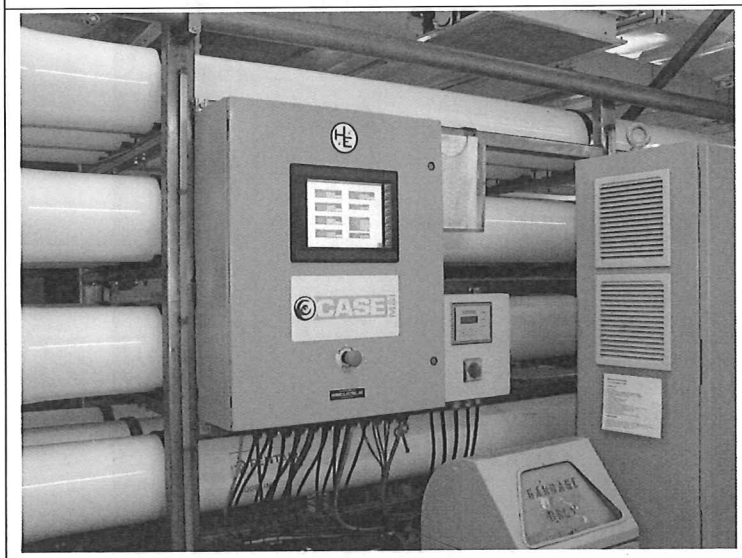

PHOTO #:23 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010025
DESCRIPTION: WATER PRODUCTION REVERSE OSMOSIS SYSTEM

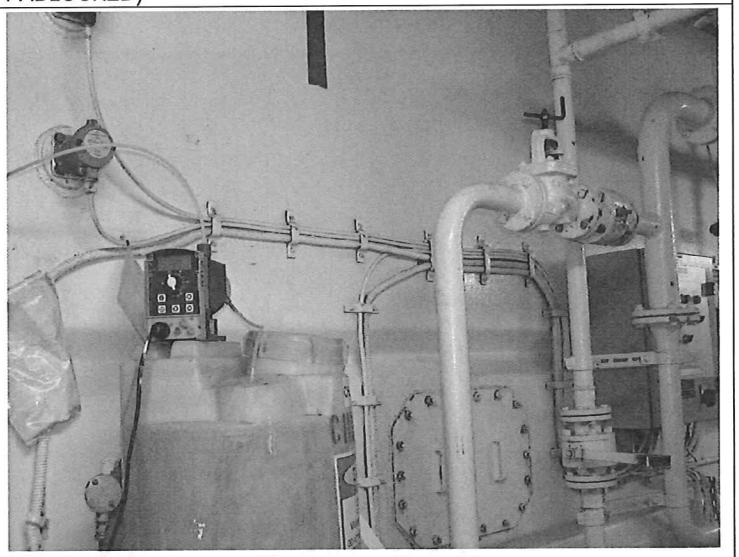

PHOTO #:24 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010026
DESCRIPTION: MSD (1 OF 3) WITH CHLORINE DOSING IN FRONT

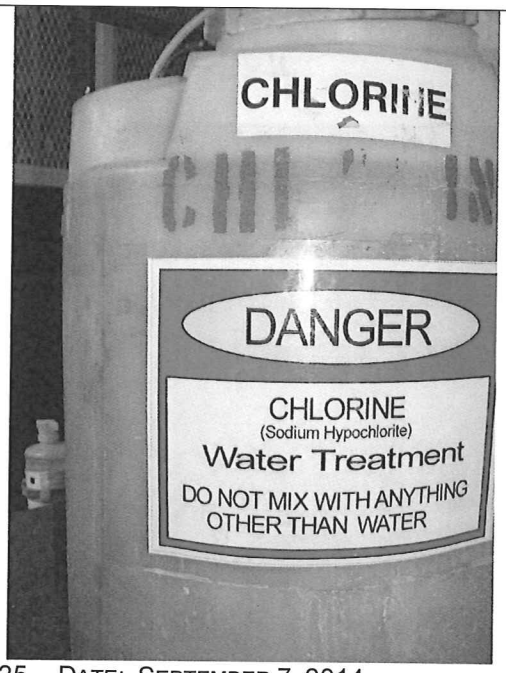

PHOTO #:25 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010027
DESCRIPTION: CHLORINE FOR MSD

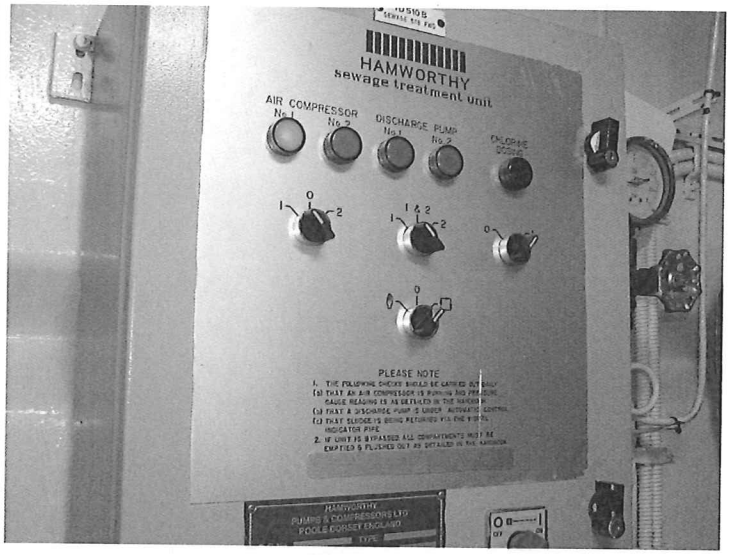

PHOTO #:26 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010028
DESCRIPTION: MSD (2 OF 3) CONTROLS

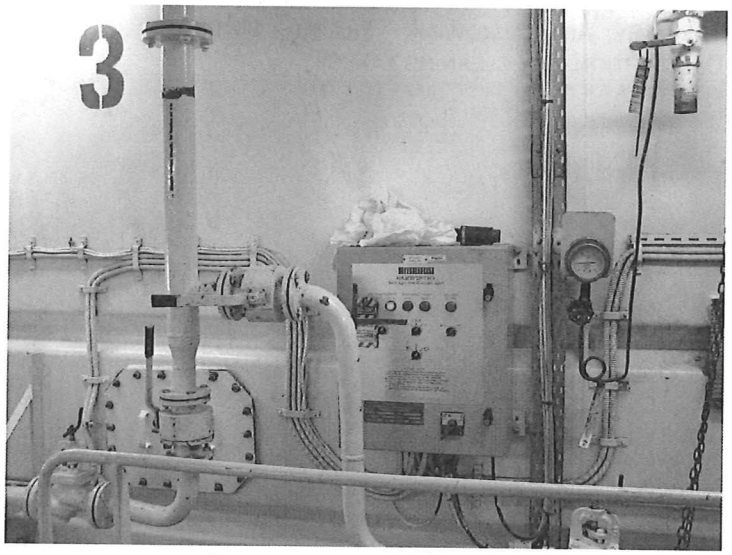

PHOTO #:27 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010029
DESCRIPTION: MSD (3 OF 3)

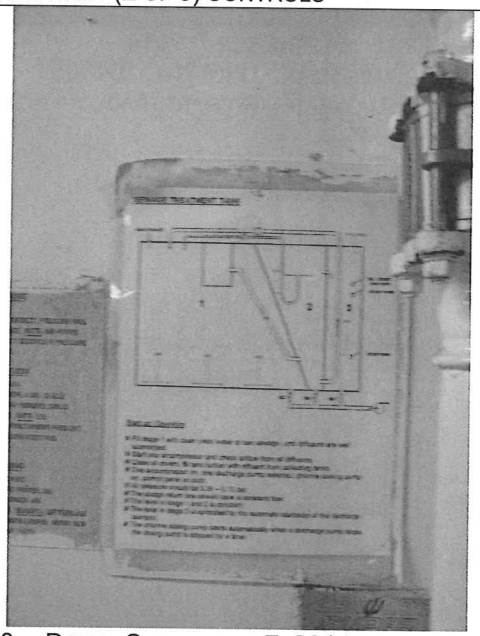

PHOTO #:28 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010030
DESCRIPTION: MSD DIAGRAM

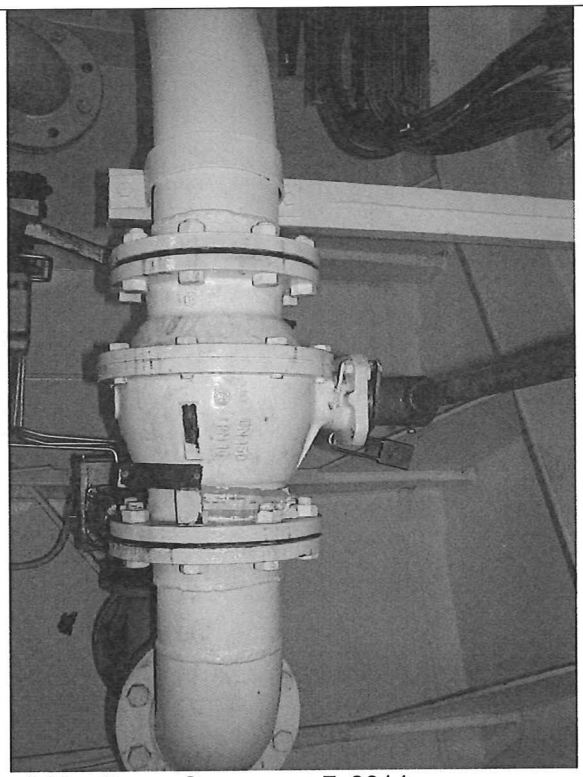

PHOTO #:29 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010031
DESCRIPTION: MSD OVERBOARD PORT (PADLOCKED)

PHOTO #:30 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010034
DESCRIPTION: DRY CLEANING TANKS

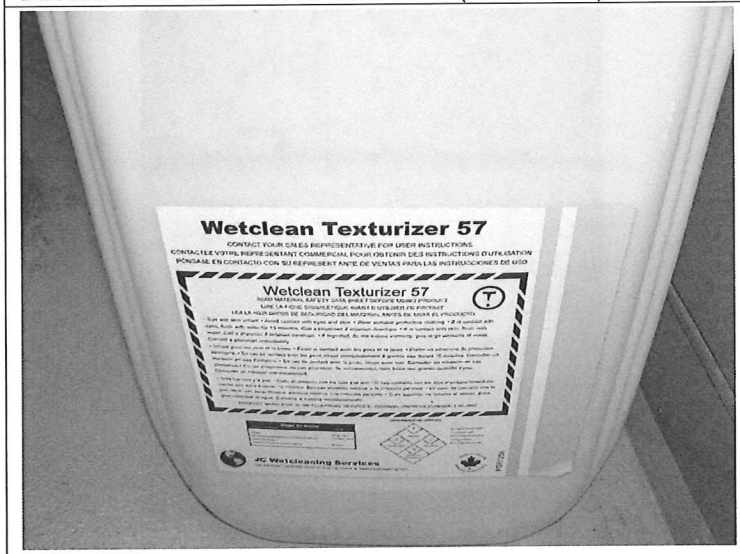

PHOTO #:31 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010035
DESCRIPTION: DRY CLEANING WETCLEAN TEXTURIZER 57

PHOTO #:32 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010036
DESCRIPTION: DRY CLEANING CHEMICALS (WETCLEAN DETERGENT 34)

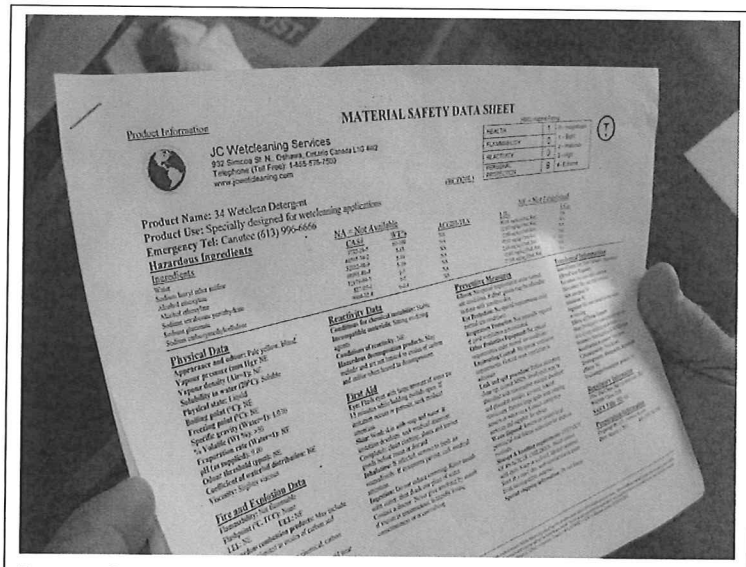

PHOTO #:33 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010037
DESCRIPTION: MSDS FOR DRY CLEANING DETERGENT

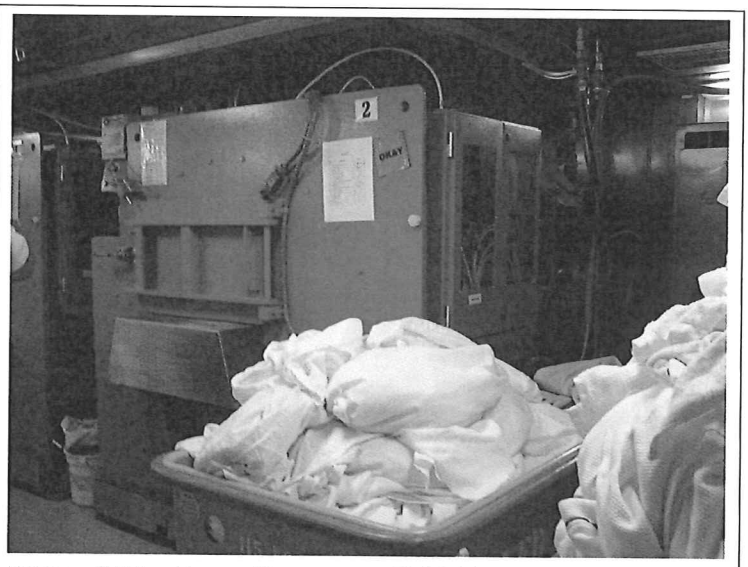

PHOTO #:34 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010038
DESCRIPTION: LAUNDRY

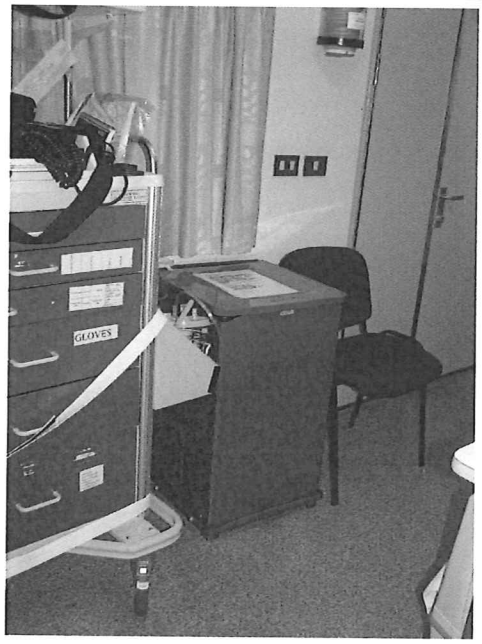

PHOTO #:35 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010039
DESCRIPTION: MEDICAL FACILITY – RED BAGGED WASTE

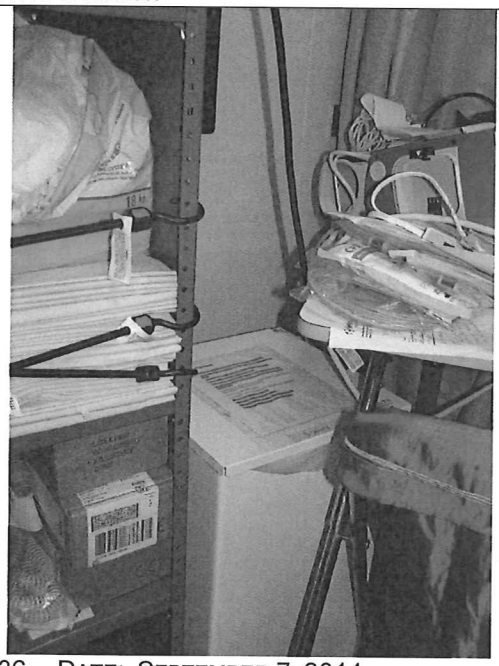

PHOTO #:36 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010040
DESCRIPTION: MEDICAL FACILITY – WHITE BAGGED WASTE

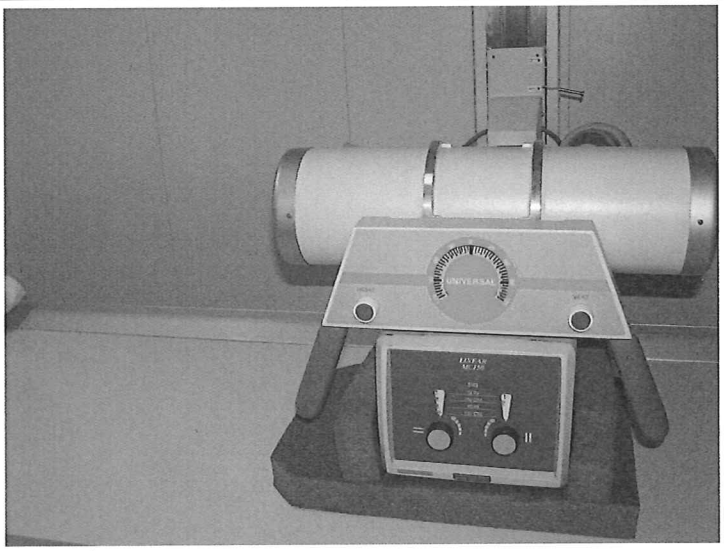

PHOTO #:37 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010041
DESCRIPTION: MEDICAL FACILITY – DIGITAL X-RAY

PHOTO #:38 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010042
DESCRIPTION: MEDICAL FACILITY – BIOHAZARDOUS SHARPS COLLECTION

PHOTO #:39 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010043
DESCRIPTION: HAZARDOUS WASTE STORAGE (PHOTO WASTE)

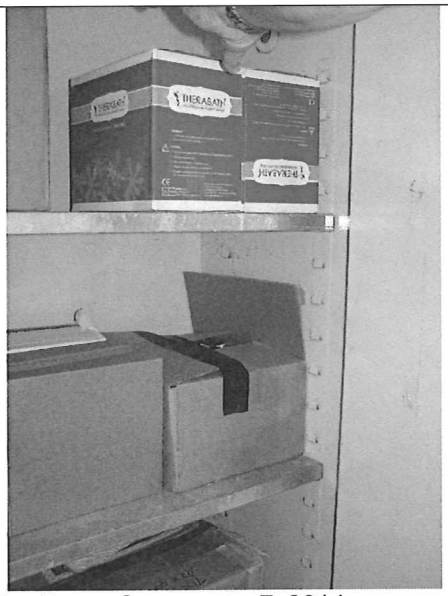

PHOTO #: 40 DATE: SEPTEMBER 7, 2014
TAKEN BY: AMY JANKOWIAK FILE NO.: 1010044
DESCRIPTION: HAZARDOUS WASTE STORAGE