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Interim Report, Missile Community Cancer Study, Malmstrom Air Force Base, Round 2 Results

Lt Col Scott M. Boyd
Occupational & Environmental Health Department

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29 February 2024

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Air Force Research Laboratory 711th Human Performance Wing
U.S. Air Force School of Aerospace Medicine
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14. ABSTRACT
At the request of the Air Force Global Strike Commander (AFGSC/CC), the United States Air Force School of Aerospace Medicine (USAFSAM) Defense Centers for Public Health-Dayton (DCPH-D) Occupational and Environmental Health Department Consultative Services Division (OEC) performed an environmental health survey for all fifteen Missile Alert Facilities (MAFs) at Malmstrom AFB, Montana. The purpose of this environmental health survey was to assess elevated cancer concerns within the Air Force missile community by characterizing and documenting potential exposures to environmental hazards in the MAFs. Round 2 occurred from 29 October to 9 November 2023 and built upon the Round 1 environmental health survey which occurred from 20 to 30 June 2023. Round 2 was executed as part of a three-round surveillance effort to determine seasonal variations associated with potential environmental hazards at MAF locations. Round 2 repeated area air sampling, direct reading instrument (DRI) air monitoring, swipe sampling of surfaces, drinking water sampling, and soil sampling which were conducted in Round 1.

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29 February 2024

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FROM: DCPH-D/OE
2510 Fifth Street, Building 840
WPAFB OH 45433-7913

SUBJECT: Consultative Letter, AFRL-SA-WP-TR-2024-0003, Missileer Cancer Study, Malmstrom Air Force Base (AFB) Round 2 Results

References: (a) Emily C. Arceo, *Technical Guide for Indoor Air Quality Surveys* (OH: Air Force Research Laboratory, 2014), pp 4, 6 & 9.

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1. INTRODUCTION

At the request of the Air Force Global Strike Commander (AFGSC/CC), the United States Air Force School of Aerospace Medicine (USAFSAM) Defense Centers for Public Health-Dayton (DCPH-D) Occupational and Environmental Health Department Consultative Services Division (OEC) performed an environmental health survey for all fifteen Missile Alert Facilities (MAFs) at Malmstrom AFB, Montana. The purpose of this environmental health survey was to assess elevated cancer concerns within the Air Force missile community by characterizing and documenting potential exposures to environmental hazards in the MAFs. Round 2 occurred from 29 October to 9 November 2023 and built upon the Round 1 environmental health survey which occurred from 20 to 30 June 2023. Round 2 was executed as part of a three-round surveillance effort to determine seasonal variations associated with potential environmental hazards at MAF locations. Round 2 repeated area air sampling, direct reading instrument (DRI) air monitoring, swipe sampling of surfaces, drinking water sampling, and soil sampling which were conducted in Round 1.

Environmental sampling conducted in Round 2 replicated Round 1 sampling with the following intended exceptions:

A. DCPH-D/OE did not collect Polychlorinated Biphenyl (PCB) swipe and air samples in any of the fifteen MAFs since the persistent nature of PCBs makes them unaffected by seasonal changes.

B. DCPH-D/OE collected PCB swipe and air samples in the two Missile Procedures Trainers (MPTs) to assess the presence/absence of PCBs during 13N-Nuclear and Missile Operations Officers routine training.

The purpose of this memo is to convey Round 2 sample results received from three civilian laboratories.

A. Survey Personnel:

(1) Capt Leigh Durden, Environmental Health Consultant, DCPH-D/OEC

(2) TSgt Willie McElroy, Occupational & Environmental Health (OEH) Technician, DCPH-D/OEC

(3) SSgt Jesse Reed, OEH Technician, DCPH-D/OEC

B. Malmstrom AFB Personnel: Maj Brian Schuler, 341st Operational Medical Readiness Squadron (OMRS) Bioenvironmental Engineering Flight Commander

C. Equipment Used:

(1) Thermo-System Engineering Incorporated (TSI) VelociCalc Meter: Ventilation air velocity and pressure differential

(2) TSI Indoor Air Quality (IAQ) Meter: Temperature, humidity, carbon monoxide, carbon dioxide

(3) Forensics Detectors Ozone Meter

(4) HACH DR900 Colorimeter: pH, Total Chlorine, Free Available Chlorine in water

(5) Scientific Kit Corporation (SKC) Air Sampling Pumps

(6) MESA LABS Air Sampling Pump Calibrator

(7) Ancillary equipment including sterile containers, cassettes, tubes, swipes, and other items to facilitate sample collection and analysis

2. BACKGROUND

Following a March 2023 site visit to address cancer concerns in the missileer community, DCPH-D performed the first and second rounds of environmental sampling at all MAFs at Malmstrom AFB, Montana. The sampling plan targeted carcinogens which could potentially affect MAF personnel through dermal, ingestion, and inhalation exposure pathways. The survey also included other parameters such as air temperature, relative humidity, and carbon dioxide (CO_2); water potential of hydrogen (pH); and percent moisture in soil. The potential health hazards/concerns associated with each carcinogen and the other parameters sampled will be discussed in Section 3: Health Hazard Summary.

The missile squadrons included in this survey at Malmstrom AFB are the 10th, 12th, and 490th each comprised of five MAFs. The 10th Missile Squadron is responsible for MAFs Alpha through Echo, the 12th Missile Squadron is responsible for Foxtrot through Juliet and the 490th Missile Squadron is responsible for Kilo through Oscar. MAFs are of similar construction where the Topside Support Building consists of bedrooms, common areas, offices and a kitchen whereas the Launch Control Center (LCC) is completely underground with access by an elevator. The Launch Control Equipment Building (LCEB) which stores ancillary equipment and generators is also underground and connected to the LCC by a hallway.

When activated, Malmstrom AFB mans the MAFs for twenty-four hours per day, seven days per week, three hundred sixty-five days a year with rotating crews. Each crew works in the MAF seven straight days at the MAF followed by two weeks in non-MAF locations. The LCCs are periodically deactivated for maintenance.

Except for some unique differences to include operational equipment and equipment/power redundancies, MPTs are of identical configuration to an LCC and located on the main operating base. MPTs are LCC simulators used to periodically train and enhance the readiness of 13N Nuclear and Missile Operations Officers.

3. HEALTH HAZARD SUMMARY

This section details the potential health hazards and other parameters measured in the MAFs and LCCs. In addition to carcinogens that can be present in the air, soil and water, the survey also included indoor air quality (IAQ) parameters such as temperature, relative humidity and carbon dioxide that can indicate comfort levels in a workplace, as well as pH and chlorine in water. All samples were used to characterize and identify potential hazards in the work centers. Organophosphates and Diquat/Paraquat were sampled due to location/proximity of MAFs on/to agricultural land and historical use.

3.1 INDOOR AIR QUALITY

3.1.1 CARBON MONOXIDE

Carbon monoxide (CO) is an odorless gas and can cause fatigue and drowsiness at low concentrations and nausea, headache, and difficulty breathing at higher concentrations. Carbon monoxide poisoning prevents the body from absorbing enough oxygen and has the potential to lead to unconsciousness, coma and death. The major source of carbon monoxide is the combustion of fuels from equipment inside a building or vehicles running outside nearby the air intake vent of the building (Arceo, 2014). Carbon monoxide is also naturally produced in the human body. People who smoke are vulnerable to increased levels of carbon monoxide within their body. The American Conference of Governmental Industrial Hygienists (ACGIH) established a Threshold Limit Value (TLV) as an 8-hour time-weighted average (TWA) of twenty-five parts-per-million (25 ppm, or 29 milligrams per cubic meter [29 mg/m^3]) for carbon monoxide (ACGIH, 2023). TLVs are ACGIH health-based recommendations which establish levels of exposures that workers can be exposed to without adverse health effects. The TLV-TWA is the airborne chemical concentration for a conventional eight-hour workday and forty-hour workweek (Ibid, 2023). The TLV-TWA for carbon monoxide is intended to maintain blood carboxyhemoglobin (COHb) levels below 3.5%, to minimize the potential for adverse neurobehavioral changes, and to maintain cardiovascular work and exercise capacities (ACGIH, 2001). Furthermore, this TLV provides a margin of safety for workers particularly susceptible to the adverse effects of carbon monoxide exposure, including pregnant workers (i.e., the fetus) and those with chronic heart and respiratory diseases (Ibid, 2001).

Although not linked to cancer, sampling for carbon monoxide serves two purposes: (1) assess direct exposure to MAF occupants; and (2) assess the effectiveness of MAF ventilation systems.

3.1.2 CARBON DIOXIDE

Carbon dioxide is a gas released by human exhalation. If inadequate fresh air or “make-up” air is available in a building, carbon dioxide can accumulate indoors. Carbon dioxide is not considered a health risk unless at very high levels (5,000 parts-per-million and above), but

symptoms of concentrations exceeding 600 parts-per-million (600 ppm [1,080 mg/m^3]) can include headache, drowsiness, difficulty concentrating, and dizziness (Arceo, 2014). The Bioenvironmental Engineering Technical Guide for IAQ Surveys further reflects maximum levels to carbon dioxide should not exceed one-thousand parts-per-million (Ibid, 2014). Although not linked to cancer, sampling for carbon dioxide serves three purposes: (1) assess direct exposure to MAF occupants; (2) assess the effectiveness of MAF ventilation systems; and (3) assess MAF structural integrity.

3.1.3 OZONE

Ozone is a colorless gas that can be emitted directly by urban and industrial processes, but also forms in the atmosphere by chemical reactions between nitrogen oxides and volatile organic compounds (VOCs). Ozone is also used as a bleaching agent for pulp and paper. Ozone affects the lower respiratory system and exposure limits are based on work activity levels (light, moderate, and heavy work activity). As respiratory rates increase, the potential for ozone reaching the deep lung also increases (Luttrell et al., 2019). The ACGIH established a TLV-TWA for light work recommending airborne ozone exposures are limited to 0.1 parts-per-million (0.1 ppm [0.2 mg/m3]). Symptoms of excessive exposure to ozone include fatigue, dizziness, headache, and decreased concentration, motor activity, and cognitive response (Ibid, 2019). Although inconclusive, increased ozone levels have been linked to an increase in cancer risk (Kim, et al., 2019); however, ACGIH indicates ozone is Not Classifiable as a Human Carcinogen (A4) (ACGIH, 2023).

3.1.4 TEMPERATURE AND RELATIVE HUMIDITY

Temperature and humidity recommendations are set by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and are based on comfort of the occupants as opposed to health risk. ASHRAE recommends indoor temperatures of 68°F – 74°F in cold seasons and 72°F – 80°F during warm seasons. Relative humidity indoors below 40% is commonly associated with building occupant discomfort and dissatisfaction. Symptoms due to relative humidity less than 40% can include dry nose and throat, nose bleeds, sinus and throat irritation, and dry eyes. Long term exposure to low relative humidity can also contribute to respiratory illness via weakening pulmonary mucous membrane defense (Arceo, 2014). High relative humidity indoors promotes conditions suitable for fungi and mold growth. Although not linked to cancer, analyzing temperature and relative humidity assesses MAF ventilation systems which can be used to evaluate changes to DCPH-D/OE's current environmental sampling strategy are needed.

3.2 VOLATILE ORGANIC COMPOUNDS

VOCs are a group of chemicals which include 1,2,3-trichloropropane, Benzene, Carbon Tetrachloride, Dibromochloropropane (DBCP), Ethylene dibromide, Bromodichloromethane, Methylene chloride, and Trichloroethylene (TCE). VOCs are substances that have a high vapor pressure and low water solubility. This makes them easily capable to change from a liquid or solid to a gaseous state which increases the potential for human exposure via inhalation. Exposure limits for VOCs are unique to each chemical. They are commonly found in both

industrial environments and household products such as cleaning supplies, varnishes, plug-in air fresheners, essential oils, and pesticides (United States Environmental Protection Agency, 2023). Some VOCs (acetone, for example) can be present in the outdoor environment. Fifty-one (51) VOCs were sampled for at each MAF. Health effects from VOC exposure vary from eye, nose, and throat irritation to headaches and damage to the liver, kidney, and central nervous system (Ibid, 2023). VOCs can accumulate in an indoor setting if there is insufficient ventilation and thereby affect the quality of indoor air. The most up-to-date and comprehensive method to sample and analyze for VOCs was used to test for VOCs within the MAFs.

3.3 ORGANOPHOSPHATES

Organophosphates are a type of insecticide or pesticide commonly used in agriculture, homes, and gardens. Several organophosphates are highly toxic and can potentially cause acute (sudden) or subacute (rapid) toxicity (United States Environmental Protection Agency, 2013). Various organophosphates were sampled in the air, soil, and water. These compounds have varying exposure limits or maximum contaminant levels (MCLs) although their human health effects are similar. Acute symptoms from organophosphate exposure include diarrhea, excessive salivation, and constriction of pupils. Acute and subacute symptoms include fluid accumulation in the respiratory tract as well as central nervous system effects such as tremors, delirium, loss of coordination, and convulsions (Luttrell et al., 2019). Organophosphates (specifically Malathion, Diazinon, Dichlorvos, Parathion, and Tetrachlorvinphos) have been deemed possible carcinogens or probable carcinogens by The International Agency for Research on Cancer (IARC) and/or the United States Environmental Protection Agency (USEPA) (National Institute of Health, 2015). Air, water, and soil samples were collected to test for organophosphate compounds due to MAF locations adjacent to agricultural land.

3.4 POLY CHLORINATED BIPHENYLS (PCBs)

PCBs are synthetic organic chemicals used for a variety of industrial and commercial purposes. They were commonly used synthetic dielectric and coolant fluids in electrical components, capacitors, and transformers. PCBs were developed in the 1940's and used through the late 1970's. In the late 1970's, they were banned because of evidence that determined PCBs accumulate in the environment and may be toxic to humans and wildlife. PCBs remain present in electrical components of equipment in the LCCs because of their capability to insulate and regulate equipment temperatures (Agency for Toxic Substances and Disease Registry, 2014). Forty (40) Code of Federal Regulations (CFR) 761.61 establishes a standard for PCB spills to be cleaned to ten micrograms per one hundred square centimeters (10 µg/100 cm^2) (National Archives, 2023). The USEPA classifies PCBs as a probable human carcinogen based on studies in animals which provided conclusive evidence of carcinogenicity and in studies with capacitor manufacturing workers which raise further concern of potential carcinogenicity (USEPA, 2023). Although the USEPA determined PCB carcinogenicity from ingestion studies only, the USEPA deems there is a reasonable basis to expect similar effects from dermal or inhalation exposures (USEPA, 1996). Many of the cancer concerns from MAF occupants originated with concerns about PCB exposures.

3.5 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs)

SVOCs are persistent pollutants in soils and aquatic environments which can be transported over long distances and accumulate in organisms (Liu et al., 2019). SVOCs can be found in many pesticides, oil-based products, and flame retardants. SVOCs have unique exposure limits yet have similar adverse health effects on the human body. Forty-one (41) SVOCs were analyzed for in the water samples and their respective MCLs can be found in the results tables in the Appendices. Some SVOCs could cause cancer (e.g., polycyclic aromatic hydrocarbons), reproductive disorders (e.g., phthalates), nervous system damage (e.g., pesticides, insecticides, and herbicides), and immune system disruption (Ibid, 2019). Considering concerns with carcinogenic effects, SVOC water samples were collected within the MAFs. The most comprehensive, up-to-date method was used to sample and analyze for SVOCs.

3.6 DIQUAT/PARAQUAT

Diquat and paraquat compounds are herbicides used in agriculture and homes, although diquat is utilized less in agriculture than paraquat (Jones and Vale, 2000). Paraquat was first produced for commercial purposes in 1961 and is one of the most used herbicides worldwide (Centers for Disease Control and Prevention, 2018). The USEPA set a MCL for diquat at 0.02 milligrams per liter. While no paraquat MCL exists, the USEPA requires mitigation measures to reduce risks to human health and the environment (USEPA, 2023). Health effects from diquat and paraquat exposure include gastrointestinal symptoms and heart, liver, and kidney failure (Centers for Disease Control and Prevention, 2018). Herbicides have the potential to be present in environments surrounding MAFs due to MAF proximity to agricultural land. Considering the National Institute of Health reports of potential links between diquat/paraquat and elevated rates of non-Hodgkin's lymphoma (National Institute of Health, 2016), water samples were collected to test for diquat/paraquat.

3.7 DIOXINS

Dioxins are persistent organic pollutants found throughout the world that can take a long time to break down once in the environment. They can bioaccumulate resulting in greater than 90% of typical human exposure to be via dietary intake of animal, dairy, and fish products (USEPA, 2023). Dioxins can be found in the water from air emissions due from burning of waste or other combustion sources (Ibid, 2023). The dioxin 2,3,7,8-Tetrachlorodibenzodioxin is deemed a human carcinogen by the World Health Organization (IARC, 2004). The USEPA established a MCL of thirty picograms per liter (30 pg/L) for 2,3,7,8-Tetrachlorodibenzodioxin. Exposure to 2,3,7,8-Tetrachlorodibenzodioxin results in severe skin disease and acne-like skin lesions (Agency for Toxic Substances and Disease Registry, 1999). Variations of dioxins have been banned for use inside the United States. In the 1980s, 2,3,7,8-Tetrachlorodibenzodioxin was banned from use within the United States. Due to MAFs using wells for drinking water and dioxin ability to remain present in environments and settle in sediment, drinking water samples were collected to test for dioxins in drinking water.

3.8 NITRATE/NITRITE

Fertilizers and animal waste can contain nitrogen increasing the concentration of nitrate (NO_3) and nitrite (NO_2) in water sources. Per the Agency for Toxic Substances and Disease Registry (ATSDR), nitrate and nitrite-containing compounds in the soil can easily dissolve in water making them easy to migrate into groundwater (ATSDR, 2017). Nitrite is more easily oxidized than nitrate, therefore nitrate is more commonly found in groundwater and surface waters. The USEPA established a MCL of ten milligrams per liter (10 mg/L) for total nitrates and nitrites as nitrogen and a MCL of one milligram per liter (1 mg/L) for nitrites as nitrogen. Due to hold times required by the lab, DCPH-D/OE could not sample for nitrites. Excessive nitrate or nitrite exposure can cause blood disorders. The IARC classified nitrates and nitrites as "probably carcinogenic to humans" (ATSDR, 2023). Due to the location of most MAFs near agricultural land, water samples were collected to test for nitrite and nitrate.

3.9 CHLORINE & POTENTIAL OF HYDROGEN (pH)

Chlorine is a commonly used microbe disinfectant for drinking water (USEPA, 2000). Personnel may be exposed to chlorine through the ingestion of drinking water which has been disinfected with an excess amount of chlorine (Ibid, 2000). The USEPA has established a chlorine MCL of four milligrams per liter (4 mg/L) (USEPA, 2023). Stomach discomfort has been the primary reported health effect resulting from long-term exposures to chlorine above the MCL (Ibid, 2023).

pH measures acidity and alkalinity of a substance (USEPA, 2023). pH ranges from zero to fourteen where substances equal to seven are "neutral", substances less than seven are "acidic", and substances greater than seven are "basic" (Ibid, 2023). In its purest form, the pH of water is neutral, however, the existence of other chemicals has the potential to increase or decrease pH (Ibid, 2023). Recommended pH levels are defined by the USEPA's National Secondary Drinking Water Regulations (NSDWR) which are established guidelines to manage aesthetical characteristics of drinking water such as taste, color, and odor (USEPA, 2023). NSDWRs that exceed their applicable secondary maximum contaminant levels (SMCLs) affect the palatability of drinking water but are not known to pose a health risk for consumers (Ibid, 2023). However, the USEPA establishes SMCLs to encourage the consumption of drinking water that is aesthetically and/or aromatically appealing and/or palatable (Ibid, 2023). The SMCL for pH is 6.5 to 8.5; drinking water below 6.5 have been reported to may have a bitter, metallic taste while pH greater than 8.5 have been reported to have a slippery texture and soda-like taste (Ibid, 2023).

4. METHODOLOGY & ANALYSIS

This section summarizes sampling plans utilized to ensure proper collection, analysis, and validity of results. Detailed sampling plans for each potential health hazard sampled will be included in the final report. National Institute for Occupational Safety and Health (NIOSH) and USEPA-approved methods were used to develop sampling plans and execute sample analysis. The individual methods for sampling can test for multiple analytes or chemical compounds. Laboratory analysis included five methods for water sampling, three methods for air sampling, one method for PCB swipe sampling, and one method for soil sampling. The tables in the appendices of this report contain sample type, location, analyte, result, and applicable detection

limit. Except for soil, which was collected outside of the MAFs, all samples were collected in the LCC, Topside Support Building, and MPT. A summary of analytical methods and number of samples taken for each method can be found in Chart 1 and Chart 2. Samples were shipped from Malmstrom AFB to three civilian analytical laboratories to conduct the analysis. DCPH-D/OE validated results as they were received from the laboratories.

4.1 WATER

Sample locations at each MAF were the kitchen sink in the Topside Support Building and the bathroom sink in the LCC. In accordance with USEPA sampling methods, screen aerators were removed, and the water was flushed for five minutes prior to sample collection. After sample collection, samples were immediately stored to meet required temperature parameters defined in the analytical method. Three samples for each method were taken at the two specified locations: (1) the sample, (2) matrix spike, and (3) matrix spike duplicate. Matrix spike and matrix spike duplicates are quality-control samples used to evaluate the performance of the analytical method by measuring the effect on interferences caused by the sample matrix – water in this case. Matrix spike and matrix spike duplicates were spiked with a required, known amount of the analyte and run through the analytical method by the labs. The lab calculates the percent recovery of the spike which must fall within parameters to ensure sample results are not affected by interferents.

4.2 AIR

Air sampling quantifies the concentration of analytes within the volume of air sampled. Area air samples were collected to characterize the indoor air environment in the MAFs. DCPH-D/OE used three different methods to analyze for sixty-one (61) analytes consisting of organophosphates and VOCs in each of the fifteen MAFs and PCB sampling for seven (7) analytes within the MPT. Considering its location on the main operating base isolated from agricultural operations, VOC and organophosphate sampling did not occur in the MPTs. The following area air samples were collected for each method:

A. Organophosphate: eight- and two-hour samples in the LCC and eight- and two-hour samples in the Topside Support Building. Two-hour sampling was conducted because one of the chemicals (Malathion) analyzed in the method had a lower maximum collection volume that could be exceeded if sampled for eight hours.

B. PCB: eight-hour sample in the MPT.

C. VOCs: eight-hour sample in the LCC and eight-hour sample in the Topside Support Building.

In addition to the area air samples collected at each MAF, field and media blanks were also analyzed. Media blanks are never exposed to the environment and are used to ensure there is no contamination of media during the equipment/media manufacturing and handling processes. Field blanks are opened to the environment to assess any initial contamination that may be associated with the handling of the samples and then are capped, meaning no tested air would have flowed through the sample media.

Eight-hour area air samples were collected to minimize missile crew rest interruption. The two-man crew is in the LCC for twenty-four hours where each crew member will have crew rest

for about eight hours. The remaining time is spent in the crew members' seat in front of their visual display console. Considering missileers are not performing any processes that would change LCC conditions, an eight-hour area sample appropriately characterizes a twenty-four-hour alert shift.

4.3 SOIL

To determine the presence of organophosphates, six grab samples were collected eight to twelve inches below the soil surface at each MAF. Samples were collected at each corner, outside of the MAF restricted area fence line to establish background concentrations. Additionally, a sample was collected near the air intake vent where dirt can potentially enter the MAF ventilation system. The sixth soil sample location was selected at random within the MAF fence line.

4.4 PCB SWIPES

Swipe sampling was conducted to determine the presence/absence of PCBs. No more than twenty (20) swipes were collected in each MPT at locations historically known to contain PCBs (e.g., panels, transformers, & batteries) as well as commonly touched areas and equipment (e.g., display screens, & keyboards). Surfaces of a ten-centimeter by ten-centimeter (100 cm^2) area were swiped horizontally and vertically within the same location, side to side, up and down. The media used to swipe the surfaces was a cotton gauze pad saturated with ten milliliters of hexane. Once the surface was swiped, the cotton gauze pad was placed into a glass vial, labelled, stored and shipped in accordance with laboratory specifications. When possible, for equipment being swiped, both a surface swipe and ground level or underside of the piece of equipment was swiped to capture any potential PCB equipment leaks.

Chart 1: Summary of Analytical Methods and Sample Quantity for each Potential Health Hazard

Potential Health Hazard	Lab (Location)	Analytical Method	Matrix	No. of Samples (per MAF)	No. of Samples (per base)
PCBs	Australian Laboratory Services (Houston, TX)	EPA 505	Water	6	90
Total Nitrate/Nitrite as N	Australian Laboratory Services	EPA 353.2	Water	6	90
Pesticides/SVOCs	Australian Laboratory Services	EPA 525.2	Water	6	90
Diquat/Paraquat	Australian Laboratory Services	EPA 549.2	Water	6	90
Dioxin	Australian Laboratory Services	EPA 1613B	Water	6	90
VOCs	Bureau Veritas North America (Fort Lauderdale, FL)	EPA TO 17	Air	4	60
Organophosphates	Bureau Veritas North America	NIOSH 5600	Air	6	90
Organophosphates	Summit (Cuyahoga Falls, OH)	EPA 1699	Soil	6	90

Chart 2: Summary of Analytical Methods and Sample Quantity for each Potential Health Hazard

Potential Health Hazard	Lab (Location)	Analytical Method	Matrix	No. of Samples (per MPT)	No. of Samples (per base)
PCBs	Bureau Veritas North America	NIOSH 5503	Air	1	2
PCB Swipe Sampling	Summit	EPA 8082A	Surface	16	36*
* Four (4) PCB swipe samples were collected in the observation room adjacent to MPT Trainer 1 and MPT Trainer 2.					

5. RESULTS & DISCUSSION

This section summarizes the findings of all samples collected at Malmstrom AFB. Sample results were received from the laboratories and checked for quality assurance and control. All results for each MAF and MPT received from the laboratories are documented in the appendices of this report. Each MAF and MPT result can be found as its own appendix, Appendix Alpha through Appendix Oscar. Non-Detects (ND) mean the sample result was below the laboratory limit of detection (LOD) for that specific method. The appendices may document occurrences when the laboratory's reported LOD exceeded the associated health limit for a given analyte. If/when this occurs, DCPH-D/OE will characterize the analyte health risk by considering revisions to the Round 3 sampling strategy.

5.1 PCB SWIPE SAMPLING

Swipe sampling for PCBs were compared to the 40 CFR 761 clean-up standard of ten micrograms per one hundred square centimeters (10 µg/100 cm^2). All swipes were non-detect for both MPTs. A full list of all swipe locations at each MPT and results can be found in Tables T1 and T2 in Appendices 16 and 17.

5.2 AIR SAMPLING

All PCB area air sampling in the MPTs and organophosphate area air sampling in the LCC and Topside Support Building were non-detect. As reflected in Table 3 of the Appendices, the two-hour area air sampling using method NIOSH 5600 for organophosphates only analyzed for malathion to ensure the desired air volumes were achieved. Malathion was also analyzed with nine other organophosphates within all the eight-hour samples using method NIOSH 5600. As with the other organophosphates, the concentration of malathion was less than the reporting limit in all two-hour and eight-hour samples. Given the concentrations for both the two-hour and eight-hour samples were low and paralleled with organophosphate concentrations sampled in Round 1, eliminating the two-hour NIOSH 5600 air sampling from Round 3 should be considered.

VOC air sampling detected trace amounts of Methylene Chloride (less than 1% of the TWA-TLV) in November Topside. Despite the trace amounts of detected Methylene Chloride, concentrations were below the eight-hour health-based exposure limit. No media blank or field blank samples showed trace amounts of any VOC above the reporting limit. DCPH-D/OE will resample for VOCs and organophosphates in Round 3. A full list of results can be found in Tables 1 and 2 in the appendices.

5.3 WATER SAMPLING

In the Round 1 report, the concentration for Aldrin was reported to be below the lab LOD, yet above the USEPA-established MCL. Upon further research, DCPH-D/OE discovered Aldrin has no associated MCL and the USEPA determined:

A. "While there is evidence that aldrin and dieldrin have adverse health effects in humans, their occurrence in drinking water at frequencies or concentrations significant for public health concern is low" (USEPA, 2003)

B. "Furthermore, occurrence of aldrin and dieldrin in drinking water supplies in the coming years is likely to decrease since the substances are no longer commercially produced or used. Therefore, regulation of aldrin and dieldrin may be unlikely to represent a meaningful opportunity for health risk reduction" (USEPA, 2003)

All analytes with an USEPA-established MCL had results less than its corresponding MCL except:

A. Benzo[a]anthracene which were non-detect in MAFs Alpha (Topside and LCC), Bravo (LCC), Foxtrot (Topside), Golf (Topside), Hotel (LCC), Kilo (LCC), Mike (Topside and LCC), and Oscar (Topside and LCC)

B. PCBs which were non-detect in MAFs Bravo (LCC), Mike (Topside), and Oscar (LCC)

Therefore, there are currently no identified analytes within the drinking water presenting a current risk to human health. Some analytes evaluated do not have an MCL, noted not applicable (N/A) in the tables located in the Appendix. The USEPA has not determined these analytes to be a risk considering public health protection, technical and financial barriers. The water results for each method can be found in Tables 3-7 of the Appendices.

Due to a sample collection error, the lab was unable to analyze the 2,3,7,8-Tetrachlorodibenzodioxin at Charlie Topside. Table 4 in Appendix 3 annotates "Sample Compromised" for 2,3,7,8-Tetrachlorodibenzodioxin. A chemical formed during paper bleaching, 2,3,7,8-Tetrachlordibenzodioxin concentrations in water are unlikely to be impacted by season variations. Round 1 sampling for 2,3,7,8-Tetrachlorodibenzodioxin at Charlie Topside revealed concentrations below the MCL. Additionally, drinking water samples for Charlie LCC were not analyzed. Appendix 3, Tables 3C through 7C annotate "Not Analyzed" for the LCC.

A different laboratory for drinking water analysis was used in Round 2, therefore, some analytes in method 525.2 that were analyzed in Round 1 were not evaluated for Round 2. Nineteen analytes in Round 2 that were not included in the laboratory analysis are: 1-Methylnapthalene, Dichlorodiphenyldichloroethane, alpha-Chlordane, Bromacil, Chlorothalonil, Cyanazine, Deisopropylatrazine, Desethyl Atrazine, Di(2-ethylhexyl)phthalate, Diazinon, Dibenz[a-h]anthracene, Dimethoate, Di-n-octylphthalate, gamma-Chlordane, Malathion, Metolachlor, Parathion, Prometryn, and Thiobencarb. During Round 1, these nineteen chemicals were either below the laboratory LOD, below the EPA-established MCL, and/or corresponds to chemicals which do not have an EPA-established MCL. The IARC classifies:

A. Diazinon, Dibenz[a-h]anthracene, and Malathion as Probably Carcinogenic to Humans (IARC, 2023)

B. Chlorothalonil, Di(2-ethylhexyl)phthalate, and Parathion as Possibly Carcinogenic to Humans (IARC, 2023)

1-Methylnapthalene, Alpha-Chlordane, Bromacil, Cyanazine, Desethyl Atrazine, Deisopropylatrazine, Dichlorodiphenyldichloroethane, Dimethoate, Di-n-octylphthalate, Gamma-Chlordane, Metolachlor, Prometryn, and Thiobencarb have not been classified by the IARC. Water sampling will occur in Round 3 of the study.

5.4 SOIL SAMPLING

Soil sampling was performed to determine presence or absence of organophosphate compounds on and around MAF property. The results were non-detect for all ten analytes screened at all fifteen MAFs. Soil sampling will occur in Round 3 of the study. The full list of results can be found as Tables 8 in the Appendices.

5.5 IAQ

Direct reading measurements for carbon monoxide, carbon dioxide, ozone, relative humidity, and temperature were taken in each MAF. Readings were compared to comfort levels provided by the ASHRAE Standard 62.1-2010 and exposure limits dictated by ACGIH. A full list of IAQ results can be found in Tables 9 in the appendices.

A. Carbon monoxide: Levels ranged from 0.1 to 4.5 parts-per-million; all below ACGIH TLV of twenty-five parts-per-million.

B. Carbon dioxide: MAF levels ranged from 444 to 1603 parts-per-million, with an average concentration in the LCC of 614 parts-per-million and Topside Support Building of 799 parts-per-million. Except for Bravo Topside (1603 ppm), India Topside (1011 ppm), and Mike LCC (1003 ppm), all remaining carbon dioxide levels were below the recommended worker comfort maximum exposure limit of 1,000 parts-per-million (Arceo, 2014).

C. Ozone: All levels were at below the ACGIH TLV of 0.1 parts-per-million for light work.

D. Relative humidity: Average relative humidity levels ranged from 18.2% to 44.4%, compared to ASHRAE's comfort criteria for relative humidity of 30% to 60%.

E. Temperature: MAF temperature ranged from 60.9°F to 72.6°F, with an average MAF temperature in the LCC of 67.8°F and Topside Support Building of 69.3°F. ASHRAE temperature recommendation range for winter is 68°F to 74°F. Although many locations had temperatures slightly below ASHRAE recommendations, DCPH-D/OE does not foresee any comfort risks associated with these temperature variances.

5.6 RADON

Due to the length of time required to collect the radon samples and complete analysis, results from Round 2 radon sampling were captured in a separate report.

6. CONCLUSIONS

The results presented in this report are a part of a multi-faceted study to characterize the environment in which the missileer community works. Three sampling events will occur over a year to determine if seasonal variations in the analytes analyzed exist. Round 3 of this assessment is planned to occur in Spring 2024. If you have any questions, comments, or concerns, please contact Capt Leigh Durden at 937-938-3297 or by e-mail at leigh.durden@us.af.mil.

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SCOTT M. BOYD, Lt Col, USAF, BSC
Chief Consulting Executive

Appendix 1: MAF ALPHA (A-01) Results, Sampled on 6 November 2023

Table 1A: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2A: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2A: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3A: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	1.03	0.10	10

Table 4A: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<0.29	<0.33	30

Table 5A: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6A: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.00049	<0.00049	0.0005
PCB-1221	<0.00049	<0.00049	0.0005
PCB-1232	<0.00049	<0.00049	0.0005
PCB-1242	<0.00049	<0.00049	0.0005
PCB-1248	<0.00049	<0.00049	0.0005
PCB-1254	<0.00049	<0.00049	0.0005
PCB-1260	<0.00049	<0.00049	0.0005
Total PCBs	<0.00049	<0.00049	0.0005

Table 7A: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.00019	<0.00022	N/A
4,4'-DDE	<0.00019	<0.00022	N/A
Acenaphthene	<0.000097	<0.00011	N/A
Acenaphthylene	<0.000097	<0.00011	N/A
Alachlor	<0.00019	<0.00022	0.002
Aldrin	<0.00019	<0.00022	N/A
Anthracene	<0.00019	<0.00022	N/A
Atrazine	<0.00019	<0.00022	0.003
Benzo[a]anthracene	<0.000097	<0.00011	0.0001
Benzo[a]pyrene	<0.000097	<0.00011	0.0002
Benzo[b]fluoranthene	<0.000097	<0.00011	0.0002
Benzo[g,h,i]perylene	<0.000097	<0.00011	N/A
Benzo[k]fluoranthene	<0.000097	<0.00011	0.0002
Bis(2-Ethylhexyl)phthalate	<0.00097	<0.0011	0.006
Butachlor	<0.00019	<0.00022	N/A
Butylbenzylphthalate	<0.00097	<0.0011	N/A
Chrysene	<0.000097	<0.00011	0.0002
Di(2-ethylhexyl)adipate	<0.00097	<0.0011	0.40
Dieldrin	<0.00019	<0.00022	N/A
Diethylphthalate	<0.00097	<0.0011	N/A
Dimethylphthalate	<0.00097	<0.0011	N/A
Di-n-butylphthalate	<0.00097	<0.0011	N/A
Endrin	<0.00048	<0.00054	0.002
EPTC	<0.00019	<0.00022	N/A
Fluoranthene	<0.000097	<0.00011	N/A
Fluorene	<0.000097	<0.00011	N/A
gamma-BHC (Lindane)	<0.000097	<0.00011	0.0002
Heptachlor	<0.000097	<0.00011	0.0004
Heptachlor Epoxide	<0.000097	<0.00011	0.0002
Hexachlorobenzene	<0.000097	<0.00011	0.001
Hexachlorocyclopentadiene	<0.00019	<0.00022	0.05
Indeno[1,2,3-cd]pyrene	<0.000097	<0.00011	0.0004
Methoxychlor	<0.00019	<0.00022	0.04
Metribuzin	<0.00019	<0.00022	N/A
Molinate	<0.00019	<0.00022	N/A
Naphthalene	<0.00019	<0.00022	N/A
Phenanthrene	<0.000097	<0.00011	N/A

Table 7A: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.00019	<0.00022	N/A
Pyrene	<0.000097	<0.00011	0.0002
Simazine	<0.00019	<0.00022	0.004
Terbacil	<0.00048	<0.00054	N/A
Trifluralin	<0.00019	<0.00022	N/A

Table 8A: Soil Sampling Results

Analyte	SW Corner Near Fenceline (mg/kg-dry)	NW Corner Near Fenceline (mg/kg-dry)	NE Corner Near Fenceline (mg/kg-dry)
Methyl Parathion	<0.0248	<0.0247	<0.0247
Phorate	<0.0248	<0.0247	<0.0247
Parathion	<0.0248	<0.0247	<0.0247
Methamidophos	<0.0248	<0.0247	<0.0247
Malathion	<0.0248	<0.0247	<0.0247
Ethoprop	<0.0248	<0.0247	<0.0247
Dicrotophos	<0.0248	<0.0247	<0.0247
Diazinon	<0.0248	<0.0247	<0.0247
Chlorpyrifos	<0.0248	<0.0247	<0.0247
Terbufos	<0.0248	<0.0247	<0.0247

Table 8A: Soil Sampling Results Cont.

Analyte	SE Corner Near Fenceline (mg/kg-dry)	Behind MAF Near Air Intake Vent Next to MAF (mg/kg-dry)	Inside Fenceline (mg/kg-dry)
Methyl Parathion	<0.0248	<0.0247	<0.0249
Phorate	<0.0248	<0.0247	<0.0249
Parathion	<0.0248	<0.0247	<0.0249
Methamidophos	<0.0248	<0.0247	<0.0249
Malathion	<0.0248	<0.0247	<0.0249
Ethoprop	<0.0248	<0.0247	<0.0249
Dicrotophos	<0.0248	<0.0247	<0.0249
Diazinon	<0.0248	<0.0247	<0.0249
Chlorpyrifos	<0.0248	<0.0247	<0.0249
Terbufos	<0.0248	<0.0247	<0.0249

Table 9A: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	679 ppm	651 ppm	<1000 ppm
Relative Humidity	36.2%	28.4%	30% - 60%
Temperature	67.7°F	71.2°F	68°F - 74°F
Carbon Monoxide	0.3 ppm	0.6 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10A: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	>8.5	>8.5	6.5 - 8.5
Free Available Chlorine	0.12	0.14	> 0 mg/L; < 4 mg/L

Appendix 2: MAF BRAVO (B-01) Results, Sampled on 1 November 2023

Table 1B: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2B: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2B: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3B: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	<0.10	<0.10	10

Table 4B: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<0.78	<0.83	30

Table 5B: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6B: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.00049	<0.00051	0.0005
PCB-1221	<0.00049	<0.00051	0.0005
PCB-1232	<0.00049	<0.00051	0.0005
PCB-1242	<0.00049	<0.00051	0.0005
PCB-1248	<0.00049	<0.00051	0.0005
PCB-1254	<0.00049	<0.00051	0.0005
PCB-1260	<0.00049	<0.00051	0.0005
Total PCBs	<0.00049	<0.00051	0.0005

Table 7B: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.00020	<0.00022	N/A
4,4'-DDE	<0.00020	<0.00022	N/A
Acenaphthene	<0.00010	<0.00011	N/A
Acenaphthylene	<0.00010	<0.00011	N/A
Alachlor	<0.00020	<0.00022	0.002
Aldrin	<0.00020	<0.00022	N/A
Anthracene	<0.00020	<0.00022	N/A
Atrazine	<0.00020	<0.00022	0.003
Benzo[a]anthracene	<0.00010	<0.00011	0.0001
Benzo[a]pyrene	<0.00010	<0.00011	0.0002
Benzo[b]fluoranthene	<0.00010	<0.00011	0.0002
Benzo[g,h,i]perylene	<0.00010	<0.00011	N/A
Benzo[k]fluoranthene	<0.00010	<0.00011	0.0002
Bis(2-Ethylhexyl)phthalate	<0.0010	<0.0011	0.006
Butachlor	<0.00020	<0.00022	N/A
Butylbenzylphthalate	<0.0010	<0.0011	N/A
Chrysene	<0.00010	<0.00011	0.0002
Di(2-ethylhexyl)adipate	<0.0010	<0.0011	0.40
Dieldrin	<0.00020	<0.00022	N/A
Diethylphthalate	<0.0010	<0.0011	N/A
Dimethylphthalate	<0.0010	<0.0011	N/A
Di-n-butylphthalate	<0.0010	<0.0011	N/A
Endrin	<0.00020	<0.00022	0.002
EPTC	<0.00020	<0.00022	N/A
Fluoranthene	<0.00010	<0.00011	N/A
Fluorene	<0.00010	<0.00011	N/A
gamma-BHC (Lindane)	<0.00010	<0.00011	0.0002
Heptachlor	<0.00010	<0.00011	0.0004
Heptachlor Epoxide	<0.00010	<0.00011	0.0002
Hexachlorobenzene	<0.00010	<0.00011	0.001
Hexachlorocyclopentadiene	<0.00020	<0.00022	0.05
Indeno[1,2,3-cd]pyrene	<0.00010	<0.00011	0.0004
Methoxychlor	<0.00020	<0.00022	0.04
Metribuzin	<0.00020	<0.00022	N/A
Molinate	<0.00020	<0.00022	N/A
Naphthalene	<0.00020	<0.00022	N/A
Phenanthrene	<0.00010	<0.00011	N/A

Table 7B: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.00020	<0.00022	N/A
Pyrene	<0.00010	<0.00011	0.0002
Simazine	<0.00020	<0.00022	0.004
Terbacil	<0.00050	<0.00055	N/A
Trifluralin	<0.00020	<0.00022	N/A

Table 8B: Soil Sampling Results

Analyte	SW Corner (mg/kg-dry)	SE Corner (mg/kg-dry)	NE Corner (mg/kg-dry)
Methyl Parathion	<0.0248	<0.0245	<0.0248
Phorate	<0.0248	<0.0245	<0.0248
Parathion	<0.0248	<0.0245	<0.0248
Methamidophos	<0.0248	<0.0245	<0.0248
Malathion	<0.0248	<0.0245	<0.0248
Ethoprop	<0.0248	<0.0245	<0.0248
Dicrotophos	<0.0248	<0.0245	<0.0248
Diazinon	<0.0248	<0.0245	<0.0248
Chlorpyrifos	<0.0248	<0.0245	<0.0248
Terbufos	<0.0248	<0.0245	<0.0248

Table 8B: Soil Sampling Results Cont.

Analyte	NW Corner (mg/kg-dry)	SW Inside Corner Near Air Intake Vent (mg/kg-dry)	SW Inside Corner (mg/kg-dry)
Methyl Parathion	<0.0249	<0.0247	<0.0247
Phorate	<0.0249	<0.0247	<0.0247
Parathion	<0.0249	<0.0247	<0.0247
Methamidophos	<0.0249	<0.0247	<0.0247
Malathion	<0.0249	<0.0247	<0.0247
Ethoprop	<0.0249	<0.0247	<0.0247
Dicrotophos	<0.0249	<0.0247	<0.0247
Diazinon	<0.0249	<0.0247	<0.0247
Chlorpyrifos	<0.0249	<0.0247	<0.0247
Terbufos	<0.0249	<0.0247	<0.0247

Table 9B: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	1603 ppm	527 ppm	<1000 ppm
Relative Humidity	27.9%	23.2%	30% - 60%
Temperature	67.7°F	67.2°F	68°F - 74°F
Carbon Monoxide	0.7 ppm	1.6 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10B: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	7.2	7.3	6.5 - 8.5
Free Available Chlorine	0.03	0.13	> 0 mg/L; < 4 mg/L

Appendix 3: MAF CHARLIE (C-01) Results, Sampled on 3 November 2023

Table 1C: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2C: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2C: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3C: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	0.11	Not Analyzed	10

Table 4C: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	Sample Compromised	Not Analyzed	30

Table 5C: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	Not Analyzed	0.02
Paraquat	<0.002	Not Analyzed	N/A

Table 6C: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.00048	Not Analyzed	0.0005
PCB-1221	<0.00048	Not Analyzed	0.0005
PCB-1232	<0.00048	Not Analyzed	0.0005
PCB-1242	<0.00048	Not Analyzed	0.0005
PCB-1248	<0.00048	Not Analyzed	0.0005
PCB-1254	<0.00048	Not Analyzed	0.0005
PCB-1260	<0.00048	Not Analyzed	0.0005
Total PCBs	<0.00048	Not Analyzed	0.0005

Table 7C: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.00022	Not Analyzed	N/A
4,4'-DDE	<0.00022	Not Analyzed	N/A
Acenaphthene	<0.00011	Not Analyzed	N/A
Acenaphthylene	<0.00011	Not Analyzed	N/A
Alachlor	<0.00022	Not Analyzed	0.002
Aldrin	<0.00022	Not Analyzed	N/A
Anthracene	<0.00022	Not Analyzed	N/A
Atrazine	<0.00022	Not Analyzed	0.003
Benzo[a]anthracene	<0.00011	Not Analyzed	0.0001
Benzo[a]pyrene	<0.00011	Not Analyzed	0.0002
Benzo[b]fluoranthene	<0.00011	Not Analyzed	0.0002
Benzo[g,h,i]perylene	<0.00011	Not Analyzed	N/A
Benzo[k]fluoranthene	<0.00011	Not Analyzed	0.0002
Bis(2-Ethylhexyl)phthalate	<0.0011	Not Analyzed	0.006
Butachlor	<0.00022	Not Analyzed	N/A
Butylbenzylphthalate	<0.0011	Not Analyzed	N/A
Chrysene	<0.00011	Not Analyzed	0.0002
Di(2-ethylhexyl)adipate	<0.0011	Not Analyzed	0.40
Dieldrin	<0.00022	Not Analyzed	N/A
Diethylphthalate	<0.0011	Not Analyzed	N/A
Dimethylphthalate	<0.0011	Not Analyzed	N/A
Di-n-butylphthalate	<0.0011	Not Analyzed	N/A
Endrin	<0.00022	Not Analyzed	0.002
EPTC	<0.00022	Not Analyzed	N/A
Fluoranthene	<0.00011	Not Analyzed	N/A
Fluorene	<0.00011	Not Analyzed	N/A
gamma-BHC (Lindane)	<0.00011	Not Analyzed	0.0002
Heptachlor	<0.00011	Not Analyzed	0.0004
Heptachlor Epoxide	<0.00011	Not Analyzed	0.0002
Hexachlorobenzene	<0.00011	Not Analyzed	0.001
Hexachlorocyclopentadiene	<0.00022	Not Analyzed	0.05
Indeno[1,2,3-cd]pyrene	<0.00011	Not Analyzed	0.0004
Methoxychlor	<0.00022	Not Analyzed	0.04
Metribuzin	<0.00022	Not Analyzed	N/A
Molinate	<0.00022	Not Analyzed	N/A
Naphthalene	<0.00022	Not Analyzed	N/A
Phenanthrene	<0.00022	Not Analyzed	N/A

Table 7C: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.00022	Not Analyzed	N/A
Pyrene	<0.00011	Not Analyzed	0.0002
Simazine	<0.00022	Not Analyzed	0.004
Terbacil	<0.00055	Not Analyzed	N/A
Trifluralin	<0.00022	Not Analyzed	N/A

Table 8C: Soil Sampling Results

Analyte	NE Perimeter Outside Fenceline (mg/kg-dry)	Outside Air Intake of North Wall (mg/kg-dry)	NW Perimeter Outside Fenceline (mg/kg-dry)
Methyl Parathion	<0.0249	<0.0246	<0.0243
Phorate	<0.0249	<0.0246	<0.0243
Parathion	<0.0249	<0.0246	<0.0243
Methamidophos	<0.0249	<0.0246	<0.0243
Malathion	<0.0249	<0.0246	<0.0243
Ethoprop	<0.0249	<0.0246	<0.0243
Dicrotophos	<0.0249	<0.0246	<0.0243
Diazinon	<0.0249	<0.0246	<0.0243
Chlorpyrifos	<0.0249	<0.0246	<0.0243
Terbufos	<0.0249	<0.0246	<0.0243

Table 8C: Soil Sampling Results Cont.

Analyte	SW Perimeter Outisde Fenceline (mg/kg-dry)	Above Capsule (mg/kg-dry)	SE Perimeter Outside Fenceline (mg/kg-dry)
Methyl Parathion	<0.0246	<0.0248	<0.0247
Phorate	<0.0246	<0.0248	<0.0247
Parathion	<0.0246	<0.0248	<0.0247
Methamidophos	<0.0246	<0.0248	<0.0247
Malathion	<0.0246	<0.0248	<0.0247
Ethoprop	<0.0246	<0.0248	<0.0247
Dicrotophos	<0.0246	<0.0248	<0.0247
Diazinon	<0.0246	<0.0248	<0.0247
Chlorpyrifos	<0.0246	<0.0248	<0.0247
Terbufos	<0.0246	<0.0248	<0.0247

Table 9C: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	485 ppm	505 ppm	<1000 ppm
Relative Humidity	34.4%	37.0%	30% - 60%
Temperature	70.5°F	67.4°F	68°F - 74°F
Carbon Monoxide	0 ppm	1.3 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10C: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	>8.5	>8.5	6.5 - 8.5
Free Available Chlorine	0.02	0.04	> 0 mg/L; < 4 mg/L

Appendix 4: MAF DELTA (D-01) Results, Sampled on 2 November 2023

Table 1D: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2D: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2D: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3D: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	<0.10	<0.10	10

Table 4D: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<0.61	<0.60	30

Table 5D: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6D: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.00048	<0.00050	0.005
PCB-1221	<0.00048	<0.00050	0.005
PCB-1232	<0.00048	<0.00050	0.005
PCB-1242	<0.00048	<0.00050	0.005
PCB-1248	<0.00048	<0.00050	0.005
PCB-1254	<0.00048	<0.00050	0.005
PCB-1260	<0.00048	<0.00050	0.005
Total PCBs	<0.00048	<0.00050	0.005

Table 7D: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.0002	<0.0002	N/A
4,4'-DDE	<0.0002	<0.0002	N/A
Acenaphthene	<0.0001	<0.0001	N/A
Acenaphthylene	<0.0001	<0.0001	N/A
Alachlor	<0.0002	<0.0002	0.002
Aldrin	<0.0002	<0.0002	N/A
Anthracene	<0.0002	<0.0002	N/A
Atrazine	<0.0002	<0.0002	0.003
Benzo[a]anthracene	<0.0001	<0.0001	0.0001
Benzo[a]pyrene	<0.0001	<0.0001	0.0002
Benzo[b]fluoranthene	<0.0001	<0.0001	0.0002
Benzo[g,h,i]perylene	<0.0001	<0.0001	N/A
Benzo[k]fluoranthene	<0.0001	<0.0001	0.0002
Bis(2-Ethylhexyl)phthalate	<0.001	<0.001	0.006
Butachlor	<0.0002	<0.0002	N/A
Butylbenzylphthalate	<0.001	<0.001	N/A
Chrysene	<0.0001	<0.0001	0.0002
Di(2-ethylhexyl)adipate	<0.001	<0.001	0.40
Dieldrin	<0.0002	<0.0002	N/A
Diethylphthalate	<0.001	<0.001	N/A
Dimethylphthalate	<0.001	<0.001	N/A
Di-n-butylphthalate	<0.001	<0.001	N/A
Endrin	<0.0002	<0.0002	0.002
EPTC	<0.0002	<0.0002	N/A
Fluoranthene	<0.0001	<0.0001	N/A
Fluorene	<0.0001	<0.0001	N/A
gamma-BHC (Lindane)	<0.0001	<0.0001	0.0002
Heptachlor	<0.0001	<0.0001	0.0004
Heptachlor Epoxide	<0.0001	<0.0001	0.0002
Hexachlorobenzene	<0.0001	<0.0001	0.001
Hexachlorocyclopentadiene	<0.0002	<0.0002	0.05
Indeno[1,2,3-cd]pyrene	<0.000098	<0.0001	0.0004
Methoxychlor	<0.0002	<0.0002	0.04
Metribuzin	<0.0002	<0.0002	N/A
Molinate	<0.0002	<0.0002	N/A
Naphthalene	<0.0002	<0.0002	N/A
Phenanthrene	<0.0001	<0.0001	N/A

Table 7D: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.0002	<0.0002	N/A
Pyrene	<0.0001	<0.0001	0.0002
Simazine	<0.0002	<0.0002	0.004
Terbacil	<0.0005	<0.00051	N/A
Trifluralin	<0.0002	<0.0002	N/A

Table 8D: Soil Sampling Results

Analyte	NW of MAF, 20 Feet from Corner of Building (mg/kg-dry)	3 Feet from Outside Air Intake Vent (mg/kg-dry)	SE Corner of MAF (mg/kg-dry)
Methyl Parathion	<0.0250	<0.0250	<0.0249
Phorate	<0.0250	<0.0250	<0.0249
Parathion	<0.0250	<0.0250	<0.0249
Methamidophos	<0.0250	<0.0250	<0.0249
Malathion	<0.0250	<0.0250	<0.0249
Ethoprop	<0.0250	<0.0250	<0.0249
Dicrotophos	<0.0250	<0.0250	<0.0249
Diazinon	<0.0250	<0.0250	<0.0249
Chlorpyrifos	<0.0250	<0.0250	<0.0249
Terbufos	<0.0250	<0.0250	<0.0249

Table 8D: Soil Sampling Results Cont.

Analyte	SW Corner of MAF, 5 Feet From Corner of Fence (mg/kg-dry)	NW Corner of MAF, 5 Feet From Corner of Fence (mg/kg-dry)	NE Corner of MAF (mg/kg-dry)
Methyl Parathion	<0.0250	<0.0246	<0.0248
Phorate	<0.0250	<0.0246	<0.0248
Parathion	<0.0250	<0.0246	<0.0248
Methamidophos	<0.0250	<0.0246	<0.0248
Malathion	<0.0250	<0.0246	<0.0248
Ethoprop	<0.0250	<0.0246	<0.0248
Dicrotophos	<0.0250	<0.0246	<0.0248
Diazinon	<0.0250	<0.0246	<0.0248
Chlorpyrifos	<0.0250	<0.0246	<0.0248
Terbufos	<0.0250	<0.0246	<0.0248

Table 9D: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	799 ppm	610 ppm	<1000 ppm
Relative Humidity	30.0%	30.6%	30% - 60%
Temperature	67.2°F	60.9°F	68°F - 74°F
Carbon Monoxide	0.6 ppm	2.0 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10D: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	>8.5	>8.5	6.5 - 8.5
Free Available Chlorine	0.18	1.08	> 0 mg/L; < 4 mg/L

Appendix 5: MAF ECHO (E-01) Results, Sampled on 31 October 2023

Table 1E: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2E: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2E: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3E: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	<0.10	<0.10	10

Table 4E: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<0.69	<0.71	30

Table 5E: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6E: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.0005	<0.0005	0.0005
PCB-1221	<0.0005	<0.0005	0.0005
PCB-1232	<0.0005	<0.0005	0.0005
PCB-1242	<0.0005	<0.0005	0.0005
PCB-1248	<0.0005	<0.0005	0.0005
PCB-1254	<0.0005	<0.0005	0.0005
PCB-1260	<0.0005	<0.0005	0.0005
Total PCBs	<0.0005	<0.0005	0.0005

Table 7E: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.00019	<0.0002	N/A
4,4'-DDE	<0.00019	<0.0002	N/A
Acenaphthene	<0.000095	<0.0001	N/A
Acenaphthylene	<0.000095	<0.0001	N/A
Alachlor	<0.00019	<0.0002	0.002
Aldrin	<0.00019	<0.0002	N/A
Anthracene	<0.00019	<0.0002	N/A
Atrazine	<0.00019	<0.0002	0.003
Benzo[a]anthracene	<0.000095	<0.0001	0.0001
Benzo[a]pyrene	<0.000095	<0.0001	0.0002
Benzo[b]fluoranthene	<0.000095	<0.0001	0.0002
Benzo[g,h,i]perylene	<0.000095	<0.0001	N/A
Benzo[k]fluoranthene	<0.000095	<0.0001	0.0002
Bis(2-Ethylhexyl)phthalate	<0.00095	<0.001	0.006
Butachlor	<0.00019	<0.0002	N/A
Butylbenzylphthalate	<0.00095	<0.0001	N/A
Chrysene	<0.000095	<0.0001	0.0002
Di(2-ethylhexyl)adipate	<0.000095	<0.0001	0.40
Dieldrin	<0.0019	<0.0002	N/A
Diethylphthalate	<0.000095	<0.001	N/A
Dimethylphthalate	<0.000095	<0.001	N/A
Di-n-butylphthalate	<0.000095	<0.001	N/A
Endrin	<0.00019	<0.0002	0.002
EPTC	<0.00019	<0.0002	N/A
Fluoranthene	<0.000095	<0.0001	N/A
Fluorene	<0.000095	<0.0001	N/A
gamma-BHC (Lindane)	<0.000095	<0.0001	0.0002
Heptachlor	<0.000095	<0.0001	0.0004
Heptachlor Epoxide	<0.000095	<0.0001	0.0002
Hexachlorobenzene	<0.000095	<0.0001	0.001
Hexachlorocyclopentadiene	<0.00019	<0.0002	0.05
Indeno[1,2,3-cd]pyrene	<0.000095	<0.0001	0.0004
Methoxychlor	<0.00019	<0.0002	0.04
Metribuzin	<0.00019	<0.0002	N/A
Molinate	<0.00019	<0.0002	N/A
Naphthalene	<0.00019	<0.0002	N/A
Phenanthrene	<0.000095	<0.0001	N/A

Table 7E: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.00019	<0.0002	N/A
Pyrene	<0.000095	<0.0001	0.0002
Simazine	<0.00019	<0.0002	0.004
Terbacil	<0.00047	<0.0005	N/A
Trifluralin	<0.00019	<0.0002	N/A

Table 8E: Soil Sampling Results

Analyte	SE Corner Outside Fenceline (mg/kg-dry)	NE Corner Outside Fenceline (mg/kg-dry)	NW Corner Outside Fenceline (mg/kg-dry)
Methyl Parathion	<0.0249	<0.0250	<0.0250
Phorate	<0.0249	<0.0250	<0.0250
Parathion	<0.0249	<0.0250	<0.0250
Methamidophos	<0.0249	<0.0250	<0.0250
Malathion	<0.0249	<0.0250	<0.0250
Ethoprop	<0.0249	<0.0250	<0.0250
Dicrotophos	<0.0249	<0.0250	<0.0250
Diazinon	<0.0249	<0.0250	<0.0250
Chlorpyrifos	<0.0249	<0.0250	<0.0250
Terbufos	<0.0249	<0.0250	<0.0250

Table 8E: Soil Sampling Results Cont.

Analyte	SW Corner Outside Fenceline (mg/kg-dry)	Behind MAF Next to Air Intake Vent (mg/kg-dry)	Middle of MAF Area Backside (mg/kg-dry)
Methyl Parathion	<0.0249	<0.0248	<0.0243
Phorate	<0.0249	<0.0248	<0.0243
Parathion	<0.0249	<0.0248	<0.0243
Methamidophos	<0.0249	<0.0248	<0.0243
Malathion	<0.0249	<0.0248	<0.0243
Ethoprop	<0.0249	<0.0248	<0.0243
Dicrotophos	<0.0249	<0.0248	<0.0243
Diazinon	<0.0249	<0.0248	<0.0243
Chlorpyrifos	<0.0249	<0.0248	<0.0243
Terbufos	<0.0249	<0.0248	<0.0243

Table 9E: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	931 ppm	655 ppm	<1000 ppm
Relative Humidity	25.1%	26.3%	30% - 60%
Temperature	67.9°F	67.0°F	68°F - 74°F
Carbon Monoxide	0.6 ppm	2.0 ppm	<25 ppm (8-hr TWA)
Ozone	0.02 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10E: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	>8.5	>8.5	6.5 - 8.5
Free Available Chlorine	0.05	0.07	> 0 mg/L; < 4 mg/L

Appendix 6: MAF FOXTROT (F-01) Results, Sampled on 3 November 2023

Table 1F: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2F: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2F: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3F: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	<0.10	<0.10	10

Table 4F: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<0.62	<0.63	30

Table 5F: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6F: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.00049	<0.00049	0.0005
PCB-1221	<0.00049	<0.00049	0.0005
PCB-1232	<0.00049	<0.00049	0.0005
PCB-1242	<0.00049	<0.00049	0.0005
PCB-1248	<0.00049	<0.00049	0.0005
PCB-1254	<0.00049	<0.00049	0.0005
PCB-1260	<0.00049	<0.00049	0.0005
Total PCBs	<0.00049	<0.00049	0.0005

Table 7F: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.00021	<0.00021	N/A
4,4'-DDE	<0.00021	<0.00021	N/A
Acenaphthene	<0.00011	<0.00010	N/A
Acenaphthylene	<0.00011	<0.00010	N/A
Alachlor	<0.00021	<0.00021	0.002
Aldrin	<0.00021	<0.00021	N/A
Anthracene	<0.00021	<0.00021	N/A
Atrazine	<0.00021	<0.00021	0.003
Benzo[a]anthracene	<0.00011	<0.00010	0.0001
Benzo[a]pyrene	<0.00011	<0.00010	0.0002
Benzo[b]fluoranthene	<0.00011	<0.00010	0.0002
Benzo[g,h,i]perylene	<0.00011	<0.00010	N/A
Benzo[k]fluoranthene	<0.00011	<0.00010	0.0002
Bis(2-Ethylhexyl)phthalate	<0.0011	<0.0010	0.006
Butachlor	<0.00021	<0.00021	N/A
Butylbenzylphthalate	<0.0011	<0.0010	N/A
Chrysene	<0.00011	<0.00010	0.0002
Di(2-ethylhexyl)adipate	<0.0011	<0.0010	0.40
Dieldrin	<0.00021	<0.00021	N/A
Diethylphthalate	<0.0011	<0.0010	N/A
Dimethylphthalate	<0.0011	<0.0010	N/A
Di-n-butylphthalate	<0.0011	<0.0010	N/A
Endrin	<0.00021	<0.00021	0.002
EPTC	<0.00021	<0.00021	N/A
Fluoranthene	<0.00011	<0.00010	N/A
Fluorene	<0.00011	<0.00010	N/A
gamma-BHC (Lindane)	<0.00011	<0.00010	0.0002
Heptachlor	<0.00011	<0.00010	0.0004
Heptachlor Epoxide	<0.00011	<0.00010	0.0002
Hexachlorobenzene	<0.00011	<0.00010	0.001
Hexachlorocyclopentadiene	<0.00021	<0.00021	0.05
Indeno[1,2,3-cd]pyrene	<0.00011	<0.00010	0.0004
Methoxychlor	<0.00021	<0.00021	0.04
Metribuzin	<0.00021	<0.00021	N/A
Molinate	<0.00021	<0.00021	N/A
Naphthalene	<0.00021	<0.00021	N/A
Phenanthrene	<0.00011	<0.00010	N/A

Table 7F: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.00021	<0.00021	N/A
Pyrene	<0.00011	<0.00010	0.0002
Simazine	<0.00021	<0.00021	0.004
Terbacil	<0.0005	<0.00052	N/A
Trifluralin	<0.00021	<0.00021	N/A

Table 8F: Soil Sampling Results

Analyte	SE Corner Outside Fenceline (mg/kg-dry)	NE Corner Outside Fenceline (mg/kg-dry)	NW Corner Outside Fenceline (mg/kg-dry)
Methyl Parathion	<0.0248	<0.0243	<0.0249
Phorate	<0.0248	<0.0243	<0.0249
Parathion	<0.0248	<0.0243	<0.0249
Methamidophos	<0.0248	<0.0243	<0.0249
Malathion	<0.0248	<0.0243	<0.0249
Ethoprop	<0.0248	<0.0243	<0.0249
Dicrotophos	<0.0248	<0.0243	<0.0249
Diazinon	<0.0248	<0.0243	<0.0249
Chlorpyrifos	<0.0248	<0.0243	<0.0249
Terbufos	<0.0248	<0.0243	<0.0249

Table 8F: Soil Sampling Results Cont.

Analyte	SW Corner Outside Fenceline (mg/kg-dry)	Behind MAF Outside Air Intake Vent (mg/kg-dry)	Behind MAF (mg/kg-dry)
Methyl Parathion	<0.0244	<0.0250	<0.0249
Phorate	<0.0244	<0.0250	<0.0249
Parathion	<0.0244	<0.0250	<0.0249
Methamidophos	<0.0244	<0.0250	<0.0249
Malathion	<0.0244	<0.0250	<0.0249
Ethoprop	<0.0244	<0.0250	<0.0249
Dicrotophos	<0.0244	<0.0250	<0.0249
Diazinon	<0.0244	<0.0250	<0.0249
Chlorpyrifos	<0.0244	<0.0250	<0.0249
Terbufos	<0.0244	<0.0250	<0.0249

Table 9F: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	595 ppm	580 ppm	<1000 ppm
Relative Humidity	31.1%	32.9%	30% - 60%
Temperature	69.3°F	67.8°F	68°F - 74°F
Carbon Monoxide	0.1 ppm	2.1 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10F: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	>8.5	>8.5	6.5 - 8.5
Free Available Chlorine	0.44	0.42	> 0 mg/L; < 4 mg/L

Appendix 7: MAF GOLF (G-01) Results, Sampled on 5 November 2023

Table 1G: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2G: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2G: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3G: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	<0.10	<0.10	10

Table 4G: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<0.58	<0.56	30

Table 5G: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6G: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.00049	<0.00049	0.0005
PCB-1221	<0.00049	<0.00049	0.0005
PCB-1232	<0.00049	<0.00049	0.0005
PCB-1242	<0.00049	<0.00049	0.0005
PCB-1248	<0.00049	<0.00049	0.0005
PCB-1254	<0.00049	<0.00049	0.0005
PCB-1260	<0.00049	<0.00049	0.0005
Total PCBs	<0.00049	<0.00049	0.0005

Table 7G: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.00021	<0.00021	N/A
4,4'-DDE	<0.00021	<0.00021	N/A
Acenaphthene	<0.00011	<0.0001	N/A
Acenaphthylene	<0.00011	<0.0001	N/A
Alachlor	<0.00021	<0.00021	0.002
Aldrin	<0.00021	<0.00021	N/A
Anthracene	<0.00021	<0.00021	N/A
Atrazine	<0.00021	<0.00021	0.003
Benzo[a]anthracene	<0.00011	<0.0001	0.0001
Benzo[a]pyrene	<0.00011	<0.0001	0.0002
Benzo[b]fluoranthene	<0.00011	<0.0001	0.0002
Benzo[g,h,i]perylene	<0.00011	<0.0001	N/A
Benzo[k]fluoranthene	<0.00011	<0.0001	0.0002
Bis(2-Ethylhexyl)phthalate	0.007	<0.001	0.006
Butachlor	<0.00021	<0.00021	N/A
Butylbenzylphthalate	<0.0011	<0.001	N/A
Chrysene	<0.00011	<0.0001	0.0002
Di(2-ethylhexyl)adipate	<0.0011	<0.001	0.40
Dieldrin	<0.00021	<0.00021	N/A
Diethylphthalate	<0.0011	<0.001	N/A
Dimethylphthalate	<0.0011	<0.001	N/A
Di-n-butylphthalate	<0.0011	<0.001	N/A
Endrin	<0.00021	<0.00021	0.002
EPTC	<0.00021	<0.00021	N/A
Fluoranthene	<0.00011	<0.0001	N/A
Fluorene	<0.00011	<0.0001	N/A
gamma-BHC (Lindane)	<0.00011	<0.0001	0.0002
Heptachlor	<0.00011	<0.0001	0.0004
Heptachlor Epoxide	<0.00011	<0.0001	0.0002
Hexachlorobenzene	<0.00011	<0.0001	0.001
Hexachlorocyclopentadiene	<0.00021	<0.00021	0.05
Indeno[1,2,3-cd]pyrene	<0.00011	<0.0001	0.0004
Methoxychlor	<0.00021	<0.00021	0.04
Metribuzin	<0.00021	<0.00021	N/A
Molinate	<0.00021	<0.00021	N/A
Naphthalene	<0.00021	<0.00021	N/A
Phenanthrene	<0.00011	<0.0001	N/A

Table 7G: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.00021	<0.00021	N/A
Pyrene	<0.00011	<0.0001	0.0002
Simazine	<0.00021	<0.00021	0.004
Terbacil	<0.00053	<0.00051	N/A
Trifluralin	<0.00021	<0.00021	N/A

Table 8G: Soil Sampling Results

Analyte	NE Corner Outside Fenceline (mg/kg-dry)	NW Corner Outside Fenceline (mg/kg-dry)	SW Corner Outside Fenceline (mg/kg-dry)
Methyl Parathion	<0.0248	<0.0247	<0.0247
Phorate	<0.0248	<0.0247	<0.0247
Parathion	<0.0248	<0.0247	<0.0247
Methamidophos	<0.0248	<0.0247	<0.0247
Malathion	<0.0248	<0.0247	<0.0247
Ethoprop	<0.0248	<0.0247	<0.0247
Dicrotophos	<0.0248	<0.0247	<0.0247
Diazinon	<0.0248	<0.0247	<0.0247
Chlorpyrifos	<0.0248	<0.0247	<0.0247
Terbufos	<0.0248	<0.0247	<0.0247

Table 8G: Soil Sampling Results Cont.

Analyte	SE Corner Outside Fenceline (mg/kg-dry)	NE Corner Inside Fence Over Capsule (mg/kg-dry)	NE Corner Inside Fence Near Air Intake Vent (mg/kg-dry)
Methyl Parathion	<0.0248	<0.0247	<0.0249
Phorate	<0.0248	<0.0247	<0.0249
Parathion	<0.0248	<0.0247	<0.0249
Methamidophos	<0.0248	<0.0247	<0.0249
Malathion	<0.0248	<0.0247	<0.0249
Ethoprop	<0.0248	<0.0247	<0.0249
Dicrotophos	<0.0248	<0.0247	<0.0249
Diazinon	<0.0248	<0.0247	<0.0249
Chlorpyrifos	<0.0248	<0.0247	<0.0249
Terbufos	<0.0248	<0.0247	<0.0249

Table 9G: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	923 ppm	590 ppm	<1000 ppm
Relative Humidity	36.9%	44.4%	30% - 60%
Temperature	62.9°F	63.1°F	68°F - 74°F
Carbon Monoxide	0.1 ppm	0.1 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10G: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	8.1	8.3	6.5 - 8.5
Free Available Chlorine	0.25	0.15	> 0 mg/L; < 4 mg/L

Appendix 8: MAF HOTEL (H-01) Results, Sampled on 2 November 2023

Table 1H: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2H: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2H: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3H: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	3.66	3.76	10

Table 4H: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<0.69	<0.56	30

Table 5H: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6H: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.00049	<0.0005	0.0005
PCB-1221	<0.00049	<0.0005	0.0005
PCB-1232	<0.00049	<0.0005	0.0005
PCB-1242	<0.00049	<0.0005	0.0005
PCB-1248	<0.00049	<0.0005	0.0005
PCB-1254	<0.00049	<0.0005	0.0005
PCB-1260	<0.00049	<0.0005	0.0005
Total PCBs	<0.00049	<0.0005	0.0005

Table 7H: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.00019	<0.00021	N/A
4,4'-DDE	<0.00019	<0.00021	N/A
Acenaphthene	<0.000096	<0.00011	N/A
Acenaphthylene	<0.000096	<0.00011	N/A
Alachlor	<0.00019	<0.00021	0.002
Aldrin	<0.00019	<0.00021	N/A
Anthracene	<0.00019	<0.00021	N/A
Atrazine	<0.00019	<0.00021	0.003
Benzo[a]anthracene	<0.000096	<0.00011	0.0001
Benzo[a]pyrene	<0.000096	<0.00011	0.0002
Benzo[b]fluoranthene	<0.000096	<0.00011	0.0002
Benzo[g,h,i]perylene	<0.000096	<0.00011	N/A
Benzo[k]fluoranthene	<0.000096	<0.00011	0.0002
Bis(2-Ethylhexyl)phthalate	<0.00096	<0.0011	0.006
Butachlor	<0.00019	<0.00021	N/A
Butylbenzylphthalate	<0.00096	<0.0011	N/A
Chrysene	<0.000096	<0.00011	0.0002
Di(2-ethylhexyl)adipate	<0.00096	<0.0011	0.40
Dieldrin	<0.00019	<0.00021	N/A
Diethylphthalate	<0.00096	<0.0011	N/A
Dimethylphthalate	<0.00096	<0.0011	N/A
Di-n-butylphthalate	<0.00096	<0.0011	N/A
Endrin	<0.00019	<0.00021	0.002
EPTC	<0.00019	<0.00021	N/A
Fluoranthene	<0.000096	<0.00011	N/A
Fluorene	<0.000096	<0.00011	N/A
gamma-BHC (Lindane)	<0.000096	<0.00011	0.0002
Heptachlor	<0.000096	<0.00011	0.0004
Heptachlor Epoxide	<0.000096	<0.00011	0.0002
Hexachlorobenzene	<0.000096	<0.00011	0.001
Hexachlorocyclopentadiene	<0.00019	<0.00021	0.05
Indeno[1,2,3-cd]pyrene	<0.000096	<0.00011	0.0004
Methoxychlor	<0.00019	<0.00021	0.04
Metribuzin	<0.00019	<0.00021	N/A
Molinate	<0.00019	<0.00021	N/A
Naphthalene	<0.00019	<0.00021	N/A
Phenanthrene	<0.000096	<0.00011	N/A

Table 7H: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.00019	<0.00021	N/A
Pyrene	<0.000096	<0.00011	0.0002
Simazine	<0.00019	<0.00021	0.004
Terbacil	<0.00048	<0.00053	N/A
Trifluralin	<0.00019	<0.00021	N/A

Table 8H: Soil Sampling Results

Analyte	Above Capsule (mg/kg-dry)	Above HVAC (mg/kg-dry)	SW Corner (mg/kg-dry)
Methyl Parathion	<0.0249	<0.0243	<0.0247
Phorate	<0.0249	<0.0243	<0.0247
Parathion	<0.0249	<0.0243	<0.0247
Methamidophos	<0.0249	<0.0243	<0.0247
Malathion	<0.0249	<0.0243	<0.0247
Ethoprop	<0.0249	<0.0243	<0.0247
Dicrotophos	<0.0249	<0.0243	<0.0247
Diazinon	<0.0249	<0.0243	<0.0247
Chlorpyrifos	<0.0249	<0.0243	<0.0247
Terbufos	<0.0249	<0.0243	<0.0247

Table 8H: Soil Sampling Results Cont.

Analyte	NW Corner (mg/kg-dry)	NE Corner (mg/kg-dry)	SE Corner (mg/kg-dry)
Methyl Parathion	<0.0250	<0.249	<0.249
Phorate	<0.0250	<0.249	<0.249
Parathion	<0.0250	<0.249	<0.249
Methamidophos	<0.0250	<0.249	<0.249
Malathion	<0.0250	<0.249	<0.249
Ethoprop	<0.0250	<0.249	<0.249
Dicrotophos	<0.0250	<0.249	<0.249
Diazinon	<0.0250	<0.249	<0.249
Chlorpyrifos	<0.0250	<0.249	<0.249
Terbufos	<0.0250	<0.249	<0.249

Table 9H: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	727 ppm	545 ppm	<1000 ppm
Relative Humidity	24.3°F	27.5°F	30% - 60%
Temperature	70.9°F	71.6°F	68°F - 74°F
Carbon Monoxide	0.5 ppm	4.5 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10H: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	>8.5	>8.5	6.5 - 8.5
Free Available Chlorine	0.05	0.14	> 0 mg/L; < 4 mg/L

Appendix 9: MAF INDIA (I-01) Results, Sampled on 7 November 2023

Table 1I: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2I: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2I: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3I: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	0.11	0.10	10

Table 4I: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<0.38	<0.32	30

Table 5I: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6I: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.00048	<0.00049	0.0005
PCB-1221	<0.00048	<0.00049	0.0005
PCB-1232	<0.00048	<0.00049	0.0005
PCB-1242	<0.00048	<0.00049	0.0005
PCB-1248	<0.00048	<0.00049	0.0005
PCB-1254	<0.00048	<0.00049	0.0005
PCB-1260	<0.00048	<0.00049	0.0005
Total PCBs	<0.00048	<0.00049	0.0005

Table 7I: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.00019	<0.0002	N/A
4,4'-DDE	<0.00019	<0.0002	N/A
Acenaphthene	<0.000097	<0.0001	N/A
Acenaphthylene	<0.000097	<0.0001	N/A
Alachlor	<0.00019	<0.0002	0.002
Aldrin	<0.00019	<0.0002	N/A
Anthracene	<0.00019	<0.0002	N/A
Atrazine	<0.00019	<0.0002	0.003
Benzo[a]anthracene	<0.000097	<0.0001	0.0001
Benzo[a]pyrene	<0.000097	<0.0001	0.0002
Benzo[b]fluoranthene	<0.000097	<0.0001	0.0002
Benzo[g,h,i]perylene	<0.000097	<0.0001	N/A
Benzo[k]fluoranthene	<0.000097	<0.0001	0.0002
Bis(2-Ethylhexyl)phthalate	<0.00\097	<0.001	0.006
Butachlor	<0.00019	<0.0002	N/A
Butylbenzylphthalate	<0.00097	<0.001	N/A
Chrysene	<0.000097	<0.0001	0.0002
Di(2-ethylhexyl)adipate	<0.00097	<0.001	0.40
Dieldrin	<0.00019	<0.0002	N/A
Diethylphthalate	<0.00097	<0.001	N/A
Dimethylphthalate	<0.00097	<0.001	N/A
Di-n-butylphthalate	<0.00097	<0.001	N/A
Endrin	<0.00019	<0.0002	0.002
EPTC	<0.00019	<0.0002	N/A
Fluoranthene	<0.000097	<0.0001	N/A
Fluorene	<0.000097	<0.0001	N/A
gamma-BHC (Lindane)	<0.000097	<0.0001	0.0002
Heptachlor	<0.000097	<0.0001	0.0004
Heptachlor Epoxide	<0.000097	<0.0001	0.0002
Hexachlorobenzene	<0.000097	<0.0001	0.001
Hexachlorocyclopentadiene	<0.00019	<0.0002	0.05
Indeno[1,2,3-cd]pyrene	<0.000097	<0.0001	0.0004
Methoxychlor	<0.00019	<0.0002	0.04
Metribuzin	<0.00019	<0.0002	N/A
Molinate	<0.00019	<0.0002	N/A
Naphthalene	<0.00019	<0.0002	N/A
Phenanthrene	<0.000097	<0.0001	N/A

Table 7I: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.00019	<0.0002	N/A
Pyrene	<0.000097	<0.0001	0.0002
Simazine	<0.00019	<0.0002	0.004
Terbacil	<0.00049	<0.0005	N/A
Trifluralin	<0.00019	<0.0002	N/A

Table 8I: Soil Sampling Results

Analyte	5 Feet From MAF Intake Vent (mg/kg-dry)	17 Feet From UHF Radio Antenna (mg/kg-dry)	SW of MAF, 17 Feet From Fence Post Corner (mg/kg-dry)
Methyl Parathion	<0.0249	<0.0247	<0.0248
Phorate	<0.0249	<0.0247	<0.0248
Parathion	<0.0249	<0.0247	<0.0248
Methamidophos	<0.0249	<0.0247	<0.0248
Malathion	<0.0249	<0.0247	<0.0248
Ethoprop	<0.0249	<0.0247	<0.0248
Dicrotophos	<0.0249	<0.0247	<0.0248
Diazinon	<0.0249	<0.0247	<0.0248
Chlorpyrifos	<0.0249	<0.0247	<0.0248
Terbufos	<0.0249	<0.0247	<0.0248

Table 8I: Soil Sampling Results Cont.

Analyte	NW of MAF, 14 Feet from Fence Post Corner (mg/kg-dry)	NW of MAF, 6 Feet from Fence Post Corner (mg/kg-dry)	NW of MAF, 20 Feet from Fence Post Corner (mg/kg-dry)
Methyl Parathion	<0.0249	<0.0248	<0.0244
Phorate	<0.0249	<0.0248	<0.0244
Parathion	<0.0249	<0.0248	<0.0244
Methamidophos	<0.0249	<0.0248	<0.0244
Malathion	<0.0249	<0.0248	<0.0244
Ethoprop	<0.0249	<0.0248	<0.0244
Dicrotophos	<0.0249	<0.0248	<0.0244
Diazinon	<0.0249	<0.0248	<0.0244
Chlorpyrifos	<0.0249	<0.0248	<0.0244
Terbufos	<0.0249	<0.0248	<0.0244

Table 9I: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	1011 ppm	444 ppm	<1000 ppm
Relative Humidity	30.2 %	24.2%	30% - 60%
Temperature	72.6°F	72.5°F	68°F - 74°F
Carbon Monoxide	0.7 ppm	0.1 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10I: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	7.5	7.4	6.5 - 8.5
Free Available Chlorine	0.05	0.31	> 0 mg/L; < 4 mg/L

Appendix 10: MAF JULIET (J-01) Results, Sampled on 4 November 2023

Table 1J: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2J: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2J: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3J: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	3.72	3.81	10

Table 4J: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<0.57	<0.61	30

Table 5J: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6J: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.0005	<0.0005	0.0005
PCB-1221	<0.0005	<0.0005	0.0005
PCB-1232	<0.0005	<0.0005	0.0005
PCB-1242	<0.0005	<0.0005	0.0005
PCB-1248	<0.0005	<0.0005	0.0005
PCB-1254	<0.0005	<0.0005	0.0005
PCB-1260	<0.0005	<0.0005	0.0005
Total PCBs	<0.0005	<0.0005	0.0005

Table 7J: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.00019	<0.0002	N/A
4,4'-DDE	<0.00019	<0.0002	N/A
Acenaphthene	<0.000095	<0.000098	N/A
Acenaphthylene	<0.000095	<0.000098	N/A
Alachlor	<0.00019	<0.0002	0.002
Aldrin	<0.00019	<0.0002	N/A
Anthracene	<0.00019	<0.0002	N/A
Atrazine	<0.00019	<0.0002	0.003
Benzo[a]anthracene	<0.000095	<0.000098	0.0001
Benzo[a]pyrene	<0.000095	<0.000098	0.0002
Benzo[b]fluoranthene	<0.000095	<0.000098	0.0002
Benzo[g,h,i]perylene	<0.000095	<0.000098	N/A
Benzo[k]fluoranthene	<0.000095	<0.000098	0.0002
Bis(2-Ethylhexyl)phthalate	<0.00095	<0.00098	0.006
Butachlor	<0.00019	<0.0002	N/A
Butylbenzylphthalate	<0.00095	<0.00098	N/A
Chrysene	<0.00095	<0.000098	0.0002
Di(2-ethylhexyl)adipate	<0.00095	<0.00098	0.40
Dieldrin	<0.00019	<0.0002	N/A
Diethylphthalate	<0.00095	<0.00098	N/A
Dimethylphthalate	<0.00095	<0.00098	N/A
Di-n-butylphthalate	<0.00095	<0.00098	N/A
Endrin	<0.00019	<0.0002	0.002
EPTC	<0.00019	<0.0002	N/A
Fluoranthene	<0.000095	<0.000098	N/A
Fluorene	<0.000095	<0.000098	N/A
gamma-BHC (Lindane)	<0.000095	<0.000098	0.0002
Heptachlor	<0.000095	<0.000098	0.0004
Heptachlor Epoxide	<0.000095	<0.000098	0.0002
Hexachlorobenzene	<0.000095	<0.000098	0.001
Hexachlorocyclopentadiene	<0.00019	<0.0002	0.05
Indeno[1,2,3-cd]pyrene	<0.000095	<0.000098	0.0004
Methoxychlor	<0.00019	<0.0002	0.04
Metribuzin	<0.00019	<0.0002	N/A
Molinate	<0.00019	<0.0002	N/A
Naphthalene	<0.00019	<0.0002	N/A
Phenanthrene	<0.000095	<0.000098	N/A

Table 7J: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.00019	<0.0002	N/A
Pyrene	<0.000095	<0.000098	0.0002
Simazine	<0.00019	<0.0002	0.004
Terbacil	<0.00047	<0.00049	N/A
Trifluralin	<0.00019	<0.0002	N/A

Table 8J: Soil Sampling Results

Analyte	NW of MAF Outside Fenceline (mg/kg-dry)	SW of MAF Outside Fenceline (mg/kg-dry)	SE of MAF Outside Fenceline (mg/kg-dry)
Methyl Parathion	<0.0250	<0.0246	<0.0249
Phorate	<0.0250	<0.0246	<0.0249
Parathion	<0.0250	<0.0246	<0.0249
Methamidophos	<0.0250	<0.0246	<0.0249
Malathion	<0.0250	<0.0246	<0.0249
Ethoprop	<0.0250	<0.0246	<0.0249
Dicrotophos	<0.0250	<0.0246	<0.0249
Diazinon	<0.0250	<0.0246	<0.0249
Chlorpyrifos	<0.0250	<0.0246	<0.0249
Terbufos	<0.0250	<0.0246	<0.0249

Table 8J: Soil Sampling Results Cont.

Analyte	SW of MAF Outside Fenceline (mg/kg-dry)	Behind MAF Outside Air Intake Vent (mg/kg-dry)	Above Capsule (mg/kg-dry)
Methyl Parathion	<0.0249	<0.0250	<0.0249
Phorate	<0.0249	<0.0250	<0.0249
Parathion	<0.0249	<0.0250	<0.0249
Methamidophos	<0.0249	<0.0250	<0.0249
Malathion	<0.0249	<0.0250	<0.0249
Ethoprop	<0.0249	<0.0250	<0.0249
Dicrotophos	<0.0249	<0.0250	<0.0249
Diazinon	<0.0249	<0.0250	<0.0249
Chlorpyrifos	<0.0249	<0.0250	<0.0249
Terbufos	<0.0249	<0.0250	<0.0249

Table 9J: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	630 ppm	689 ppm	<1000 ppm
Relative Humidity	27.2%	37.6%	30% - 60%
Temperature	71.0°F	68.3°F	68°F - 74°F
Carbon Monoxide	0.0 ppm	2.5 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10J: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	>8.5	>8.5	6.5 - 8.5
Free Available Chlorine	0.68	0.00	> 0 mg/L; < 4 mg/L

Appendix 11: MAF KILO (K-01) Results, Sampled on 4 November 2023

Table 1K: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2K: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2K: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3K: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	<0.10	<0.10	10

Table 4K: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<0.87	<0.64	30

Table 5K: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6K: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.00049	<0.0005	0.0005
PCB-1221	<0.00049	<0.0005	0.0005
PCB-1232	<0.00049	<0.0005	0.0005
PCB-1242	<0.00049	<0.0005	0.0005
PCB-1248	<0.00049	<0.0005	0.0005
PCB-1254	<0.00049	<0.0005	0.0005
PCB-1260	<0.00049	<0.0005	0.0005
Total PCBs	<0.00049	<0.0005	0.0005

Table 7K: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.0002	<0.00022	N/A
4,4'-DDE	<0.0002	<0.00022	N/A
Acenaphthene	<0.0001	<0.00011	N/A
Acenaphthylene	<0.0001	<0.00011	N/A
Alachlor	<0.0002	<0.00022	0.002
Aldrin	<0.0002	<0.00022	N/A
Anthracene	<0.0002	<0.00022	N/A
Atrazine	<0.0002	<0.00022	0.003
Benzo[a]anthracene	<0.0001	<0.00011	0.0001
Benzo[a]pyrene	<0.0001	<0.00011	0.0002
Benzo[b]fluoranthene	<0.0001	<0.00011	0.0002
Benzo[g,h,i]perylene	<0.0001	<0.00011	N/A
Benzo[k]fluoranthene	<0.0001	<0.00011	0.0002
Bis(2-Ethylhexyl)phthalate	<0.001	<0.0011	0.006
Butachlor	<0.0002	<0.00022	N/A
Butylbenzylphthalate	<0.001	<0.0011	N/A
Chrysene	<0.0001	<0.00011	0.0002
Di(2-ethylhexyl)adipate	<0.001	<0.0011	0.40
Dieldrin	<0.0002	<0.00022	N/A
Diethylphthalate	<0.001	<0.0011	N/A
Dimethylphthalate	<0.001	<0.0011	N/A
Di-n-butylphthalate	<0.001	<0.0011	N/A
Endrin	<0.0002	<0.00022	0.002
EPTC	<0.0002	<0.00022	N/A
Fluoranthene	<0.0001	<0.00011	N/A
Fluorene	<0.0001	<0.00011	N/A
gamma-BHC (Lindane)	<0.0001	<0.00011	0.0002
Heptachlor	<0.0001	<0.00011	0.0004
Heptachlor Epoxide	<0.0001	<0.00011	0.0002
Hexachlorobenzene	<0.0001	<0.00011	0.001
Hexachlorocyclopentadiene	<0.0002	<0.00022	0.05
Indeno[1,2,3-cd]pyrene	<0.0001	<0.00011	0.0004
Methoxychlor	<0.0002	<0.00022	0.04
Metribuzin	<0.0002	<0.00022	N/A
Molinate	<0.0002	<0.00022	N/A
Naphthalene	<0.0002	<0.00022	N/A
Phenanthrene	<0.0001	<0.00011	N/A

Table 7K: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.0002	<0.00022	N/A
Pyrene	<0.0001	<0.00011	0.0002
Simazine	<0.0002	<0.00022	0.004
Terbacil	<0.00051	<0.00054	N/A
Trifluralin	<0.0002	<0.00022	N/A

Table 8K: Soil Sampling Results

Analyte	SW Corner Near Fenceline (mg/kg-dry)	NW Corner Near Fenceline (mg/kg-dry)	NE Corner Near Fenceline (mg/kg-dry)
Methyl Parathion	<0.0247	<0.0249	<0.0244
Phorate	<0.0247	<0.0249	<0.0244
Parathion	<0.0247	<0.0249	<0.0244
Methamidophos	<0.0247	<0.0249	<0.0244
Malathion	<0.0247	<0.0249	<0.0244
Ethoprop	<0.0247	<0.0249	<0.0244
Dicrotophos	<0.0247	<0.0249	<0.0244
Diazinon	<0.0247	<0.0249	<0.0244
Chlorpyrifos	<0.0247	<0.0249	<0.0244
Terbufos	<0.0247	<0.0249	<0.0244

Table 8K: Soil Sampling Results Cont.

Analyte	SE Corner Near Fenceline (mg/kg-dry)	Outside MAF Above Air Intake Vent (mg/kg-dry)	Inside MAF Fence (mg/kg-dry)
Methyl Parathion	<0.0249	<0.0249	<0.0247
Phorate	<0.0249	<0.0249	<0.0247
Parathion	<0.0249	<0.0249	<0.0247
Methamidophos	<0.0249	<0.0249	<0.0247
Malathion	<0.0249	<0.0249	<0.0247
Ethoprop	<0.0249	<0.0249	<0.0247
Dicrotophos	<0.0249	<0.0249	<0.0247
Diazinon	<0.0249	<0.0249	<0.0247
Chlorpyrifos	<0.0249	<0.0249	<0.0247
Terbufos	<0.0249	<0.0249	<0.0247

Table 9K: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	640 ppm	730 ppm	<1000 ppm
Relative Humidity	27.1%	30.3%	30% - 60%
Temperature	67.0°F	67.0°F	68°F - 74°F
Carbon Monoxide	0.7 ppm	0.8 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10K: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	>8.5	>8.5	6.5 - 8.5
Free Available Chlorine	0.11	0.10	> 0 mg/L; < 4 mg/L

Appendix 12: MAF LIMA (L-01) Results, Sampled on 5 November 2023

Table 1L: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2L: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2L: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3L: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	<0.10	<0.10	10

Table 4L: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<0.58	<0.97	30

Table 5L: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6L: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.00049	<0.00048	0.0005
PCB-1221	<0.00049	<0.00048	0.0005
PCB-1232	<0.00049	<0.00048	0.0005
PCB-1242	<0.00049	<0.00048	0.0005
PCB-1248	<0.00049	<0.00048	0.0005
PCB-1254	<0.00049	<0.00048	0.0005
PCB-1260	<0.00049	<0.00048	0.0005
Total PCBs	<0.00049	<0.00048	0.0005

Table 7L: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.00021	<0.00021	N/A
4,4'-DDE	<0.00021	<0.00021	N/A
Acenaphthene	<0.0001	<0.0001	N/A
Acenaphthylene	<0.0001	<0.0001	N/A
Alachlor	<0.00021	<0.00021	0.002
Aldrin	<0.00021	<0.00021	N/A
Anthracene	<0.00021	<0.00021	N/A
Atrazine	<0.00021	<0.00021	0.003
Benzo[a]anthracene	<0.0001	<0.0001	0.0001
Benzo[a]pyrene	<0.0001	<0.0001	0.0002
Benzo[b]fluoranthene	<0.0001	<0.0001	0.0002
Benzo[g,h,i]perylene	<0.0001	<0.0001	N/A
Benzo[k]fluoranthene	<0.0001	<0.0001	0.0002
Bis(2-Ethylhexyl)phthalate	<0.001	<0.001	0.006
Butachlor	<0.00021	<0.00021	N/A
Butylbenzylphthalate	<0.001	<0.001	N/A
Chrysene	<0.0001	<0.0001	0.0002
Di(2-ethylhexyl)adipate	<0.001	<0.001	0.40
Dieldrin	<0.00021	<0.00021	N/A
Diethylphthalate	<0.001	<0.001	N/A
Dimethylphthalate	<0.001	<0.001	N/A
Di-n-butylphthalate	<0.001	<0.001	N/A
Endrin	<0.00021	<0.00021	0.002
EPTC	<0.00021	<0.00021	N/A
Fluoranthene	<0.0001	<0.0001	N/A
Fluorene	<0.0001	<0.0001	N/A
gamma-BHC (Lindane)	<0.0001	<0.0001	0.0002
Heptachlor	<0.0001	<0.0001	0.0004
Heptachlor Epoxide	<0.0001	<0.0001	0.0002
Hexachlorobenzene	<0.0001	<0.0001	0.001
Hexachlorocyclopentadiene	<0.00021	<0.00021	0.05
Indeno[1,2,3-cd]pyrene	<0.0001	<0.0001	0.0004
Methoxychlor	<0.00021	<0.00021	0.04
Metribuzin	<0.00021	<0.00021	N/A
Molinate	<0.00021	<0.00021	N/A
Naphthalene	<0.00021	<0.00021	N/A
Phenanthrene	<0.0001	<0.0001	N/A

Table 7L: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.00021	<0.00021	N/A
Pyrene	<0.0001	<0.0001	0.0002
Simazine	<0.00021	<0.00021	0.004
Terbacil	<0.00052	<0.00052	N/A
Trifluralin	<0.00021	<0.00021	N/A

Table 8L: Soil Sampling Results

Analyte	NE Corner of MAF Outside Fenceline (mg/kg-dry)	SE Corner of MAF Outside Fenceline (mg/kg-dry)	SW Corner Outside Fenceline (mg/kg-dry)
Methyl Parathion	<0.0247	<0.0249	<0.0249
Phorate	<0.0247	<0.0249	<0.0249
Parathion	<0.0247	<0.0249	<0.0249
Methamidophos	<0.0247	<0.0249	<0.0249
Malathion	<0.0247	<0.0249	<0.0249
Ethoprop	<0.0247	<0.0249	<0.0249
Dicrotophos	<0.0247	<0.0249	<0.0249
Diazinon	<0.0247	<0.0249	<0.0249
Chlorpyrifos	<0.0247	<0.0249	<0.0249
Terbufos	<0.0247	<0.0249	<0.0249

Table 8L: Soil Sampling Results Cont.

Analyte	NW Corner Outside Fenceline (mg/kg-dry)	Behind MAF Outside Air Intake Vent (mg/kg-dry)	Above Capsule Behind MAF (mg/kg-dry)
Methyl Parathion	<0.0250	<0.0245	<0.0243
Phorate	<0.0250	<0.0245	<0.0243
Parathion	<0.0250	<0.0245	<0.0243
Methamidophos	<0.0250	<0.0245	<0.0243
Malathion	<0.0250	<0.0245	<0.0243
Ethoprop	<0.0250	<0.0245	<0.0243
Dicrotophos	<0.0250	<0.0245	<0.0243
Diazinon	<0.0250	<0.0245	<0.0243
Chlorpyrifos	<0.0250	<0.0245	<0.0243
Terbufos	<0.0250	<0.0245	<0.0243

Table 9L: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	770 ppm	580 ppm	<1000 ppm
Relative Humidity	36.4%	31.3%	30% - 60%
Temperature	71.9°F	70.5°F	68°F - 74°F
Carbon Monoxide	0.7 ppm	1.9 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10L: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	>8.5	7.4	6.5 - 8.5
Free Available Chlorine	0.19	0.08	> 0 mg/L; < 4 mg/L

Appendix 13: MAF MIKE (M-01) Results, Sampled on 31 October 2023

Table 1M: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2M: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2M: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3M: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	<0.10	<0.10	10

Table 4M: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<1.00	<0.83	30

Table 5M: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6M: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.00051	<0.0005	0.0005
PCB-1221	<0.00051	<0.0005	0.0005
PCB-1232	<0.00051	<0.0005	0.0005
PCB-1242	<0.00051	<0.0005	0.0005
PCB-1248	<0.00051	<0.0005	0.0005
PCB-1254	<0.00051	<0.0005	0.0005
PCB-1260	<0.00051	<0.0005	0.0005
Total PCBs	<0.00051	<0.0005	0.0005

Table 7M: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.00022	<0.00022	N/A
4,4'-DDE	<0.00022	<0.00022	N/A
Acenaphthene	<0.00011	<0.00011	N/A
Acenaphthylene	<0.00011	<0.00011	N/A
Alachlor	<0.00022	<0.00022	0.002
Aldrin	<0.00022	<0.00022	N/A
Anthracene	<0.00022	<0.00022	N/A
Atrazine	<0.00022	<0.00022	0.003
Benzo[a]anthracene	<0.00011	<0.00011	0.0001
Benzo[a]pyrene	<0.00011	<0.00011	0.0002
Benzo[b]fluoranthene	<0.00011	<0.00011	0.0002
Benzo[g,h,i]perylene	<0.00011	<0.00011	N/A
Benzo[k]fluoranthene	<0.00011	<0.00011	0.0002
Bis(2-Ethylhexyl)phthalate	<0.0011	<0.0011	0.006
Butachlor	<0.00022	<0.00022	N/A
Butylbenzylphthalate	<0.0011	<0.0011	N/A
Chrysene	<0.00011	<0.00011	0.0002
Di(2-ethylhexyl)adipate	<0.0011	<0.0011	0.40
Dieldrin	<0.00022	<0.00022	N/A
Diethylphthalate	<0.0011	<0.0011	N/A
Dimethylphthalate	<0.0011	<0.0011	N/A
Di-n-butylphthalate	<0.0011	<0.0011	N/A
Endrin	<0.00022	<0.00022	0.002
EPTC	<0.00022	<0.00022	N/A
Fluoranthene	<0.00011	<0.00011	N/A
Fluorene	<0.00011	<0.00011	N/A
gamma-BHC (Lindane)	<0.00011	<0.00011	0.0002
Heptachlor	<0.00011	<0.00011	0.0004
Heptachlor Epoxide	<0.00011	<0.00011	0.0002
Hexachlorobenzene	<0.00011	<0.00011	0.001
Hexachlorocyclopentadiene	<0.00022	<0.00022	0.05
Indeno[1,2,3-cd]pyrene	<0.00011	<0.00011	0.0004
Methoxychlor	<0.00022	<0.00022	0.04
Metribuzin	<0.00022	<0.00022	N/A
Molinate	<0.00022	<0.00022	N/A
Naphthalene	<0.00022	<0.00022	N/A
Phenanthrene	<0.00011	<0.00011	N/A

Table 7M: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.00022	<0.00022	N/A
Pyrene	<0.00011	<0.00011	0.0002
Simazine	<0.00022	<0.00022	0.004
Terbacil	<0.00054	<0.00055	N/A
Trifluralin	<0.00022	<0.00022	N/A

Table 8M: Soil Sampling Results

Analyte	Inside MAF Fenceline (mg/kg-dry)	NE Corner Near Fenceline (mg/kg-dry)	Behind MAF Near Air Intake Vent Next to MAF (mg/kg-dry)
Methyl Parathion	<0.0347	<0.0250	<0.0250
Phorate	<0.0347	<0.0250	<0.0250
Parathion	<0.0347	<0.0250	<0.0250
Methamidophos	<0.0347	<0.0250	<0.0250
Malathion	<0.0347	<0.0250	<0.0250
Ethoprop	<0.0347	<0.0250	<0.0250
Dicrotophos	<0.0347	<0.0250	<0.0250
Diazinon	<0.0347	<0.0250	<0.0250
Chlorpyrifos	<0.0347	<0.0250	<0.0250
Terbufos	<0.0347	<0.0250	<0.0250

Table 8M: Soil Sampling Results Cont.

Analyte	NW Corner Near Fenceline (mg/kg-dry)	SW Corner Near Fenceline (mg/kg-dry)	SE Corner Near Fenceline (mg/kg-dry)
Methyl Parathion	<0.0245	<0.0247	<0.0243
Phorate	<0.0245	<0.0247	<0.0243
Parathion	<0.0245	<0.0247	<0.0243
Methamidophos	<0.0245	<0.0247	<0.0243
Malathion	<0.0245	<0.0247	<0.0243
Ethoprop	<0.0245	<0.0247	<0.0243
Dicrotophos	<0.0245	<0.0247	<0.0243
Diazinon	<0.0245	<0.0247	<0.0243
Chlorpyrifos	<0.0245	<0.0247	<0.0243
Terbufos	<0.0245	<0.0247	<0.0243

Table 9M: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	541ppm	1003 ppm	<1000 ppm
Relative Humidity	18.2%	23.7%	30% - 60%
Temperature	72.2°F	68.4°F	68°F - 74°F
Carbon Monoxide	0.1 ppm	2.1 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10M: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	>8.5	>8.5	6.5 - 8.5
Free Available Chlorine	0.28	0.31	> 0 mg/L; < 4 mg/L

Appendix 14: MAF NOVEMBER (N-01) Results, Sampled on 6 November 2023

Table 1N: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2N: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2N: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	11
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3N: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	<0.10	<0.10	10

Table 4N: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<0.29	<0.56	30

Table 5N: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6N: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.00049	<0.00049	0.0005
PCB-1221	<0.00049	<0.00049	0.0005
PCB-1232	<0.00049	<0.00049	0.0005
PCB-1242	<0.00049	<0.00049	0.0005
PCB-1248	<0.00049	<0.00049	0.0005
PCB-1254	<0.00049	<0.00049	0.0005
PCB-1260	<0.00049	<0.00049	0.0005
Total PCBs	<0.00049	<0.00049	0.0005

Table 7N: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.0002	<0.00021	N/A
4,4'-DDE	<0.0002	<0.00021	N/A
Acenaphthene	<0.0001	<0.00011	N/A
Acenaphthylene	<0.0001	<0.00011	N/A
Alachlor	<0.0002	<0.00021	0.002
Aldrin	<0.0002	<0.00021	N/A
Anthracene	<0.0002	<0.00021	N/A
Atrazine	<0.0002	<0.00021	0.003
Benzo[a]anthracene	<0.0001	<0.00011	0.0001
Benzo[a]pyrene	<0.0001	<0.00011	0.0002
Benzo[b]fluoranthene	<0.0001	<0.00011	0.0002
Benzo[g,h,i]perylene	<0.0001	<0.00011	N/A
Benzo[k]fluoranthene	<0.0001	<0.00011	0.0002
Bis(2-Ethylhexyl)phthalate	<0.001	<0.0011	0.006
Butachlor	<0.0002	<0.00021	N/A
Butylbenzylphthalate	<0.001	<0.0011	N/A
Chrysene	<0.0001	<0.00011	0.0002
Di(2-ethylhexyl)adipate	<0.001	<0.0011	0.40
Dieldrin	<0.0002	<0.00021	N/A
Diethylphthalate	<0.001	<0.0011	N/A
Dimethylphthalate	<0.001	<0.0011	N/A
Di-n-butylphthalate	<0.001	<0.0011	N/A
Endrin	<0.0002	<0.00021	0.002
EPTC	<0.0002	<0.00021	N/A
Fluoranthene	<0.0001	<0.00011	N/A
Fluorene	<0.0001	<0.00011	N/A
gamma-BHC (Lindane)	<0.0001	<0.00011	0.0002
Heptachlor	<0.0001	<0.00011	0.0004
Heptachlor Epoxide	<0.0001	<0.00011	0.0002
Hexachlorobenzene	<0.0001	<0.00011	0.001
Hexachlorocyclopentadiene	<0.0002	<0.00021	0.05
Indeno[1,2,3-cd]pyrene	<0.0001	<0.00011	0.0004
Methoxychlor	<0.0002	<0.00021	0.04
Metribuzin	<0.0002	<0.00021	N/A
Molinate	<0.0002	<0.00021	N/A
Naphthalene	<0.0002	<0.00021	N/A
Phenanthrene	<0.0001	<0.00011	N/A

Table 7N: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.0002	<0.00021	N/A
Pyrene	<0.0001	<0.00011	0.0002
Simazine	<0.0002	<0.00021	0.004
Terbacil	<0.00051	<0.00053	N/A
Trifluralin	<0.0002	<0.00021	N/A

Table 8N: Soil Sampling Results

Analyte	4 Feet from Air Intake Vent (mg/kg-dry)	Center of MAF (mg/kg-dry)	SW of MAF Outside of Fenceline (mg/kg-dry)
Methyl Parathion	<0.0245	<0.0249	<0.0249
Phorate	<0.0245	<0.0249	<0.0249
Parathion	<0.0245	<0.0249	<0.0249
Methamidophos	<0.0245	<0.0249	<0.0249
Malathion	<0.0245	<0.0249	<0.0249
Ethoprop	<0.0245	<0.0249	<0.0249
Dicrotophos	<0.0245	<0.0249	<0.0249
Diazinon	<0.0245	<0.0249	<0.0249
Chlorpyrifos	<0.0245	<0.0249	<0.0249
Terbufos	<0.0245	<0.0249	<0.0249

Table 8N: Soil Sampling Results Cont.

Analyte	Air Handler Corner 4 Feet from Fence (mg/kg-dry)	SE Corner Outside Fenceline By Antenna & Windmill (mg/kg-dry)	NE Corner Outside Fenceline (mg/kg-dry)
Methyl Parathion	<0.0248	<0.0249	<0.0247
Phorate	<0.0248	<0.0249	<0.0247
Parathion	<0.0248	<0.0249	<0.0247
Methamidophos	<0.0248	<0.0249	<0.0247
Malathion	<0.0248	<0.0249	<0.0247
Ethoprop	<0.0248	<0.0249	<0.0247
Dicrotophos	<0.0248	<0.0249	<0.0247
Diazinon	<0.0248	<0.0249	<0.0247
Chlorpyrifos	<0.0248	<0.0249	<0.0247
Terbufos	<0.0248	<0.0249	<0.0247

Table 9N: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	770 ppm	580 ppm	<1000 ppm
Relative Humidity	36.4%	31.3%	30% - 60%
Temperature	71.9°F	70.5°F	68°F - 74°F
Carbon Monoxide	0.6 ppm	1.9 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10N: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	7.3	7.3	6.5 - 8.5
Free Available Chlorine	0.19	0.08	> 0 mg/L; < 4 mg/L

Appendix 15: MAF OSCAR (O-01) Results, Sampled on 1 November 2023

Table 1O: Air Sampling Results – Organophosphates

Analyte	LCC (8hr) Result (mg/m^3)	Topside (8hr) Result (mg/m^3)	LCC (2hr) Result (mg/m^3)	Topside (2hr) Result (mg/m^3)
Chloropyrifos (Dursban)	<0.0026	<0.0026	<0.010	<0.010
Diazinon	<0.0026	<0.0026	<0.010	<0.010
Dicrotophos	<0.0026	<0.0026	<0.010	<0.010
Ethoprophos (Mocap)	<0.0026	<0.0026	<0.010	<0.010
Malathion	<0.0026	<0.0026	<0.010	<0.010
Methamidophos	<0.0026	<0.0026	<0.010	<0.010
Methyl Parathion	<0.0026	<0.0026	<0.010	<0.010
Parathion (Parathion Ethyl)	<0.0026	<0.0026	<0.010	<0.010
Phorate	<0.0026	<0.0026	<0.010	<0.010
Terbufos	<0.0026	<0.0026	<0.010	<0.010

Table 2O: Air Sampling Results – VOCs

Analyte	LCC Result ($\mu g/m^3$)	Topside Result ($\mu g/m^3$)
1,1,1,2-Tetrachloroethane	<10	<10
1,1,1-Trichloroethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10
1,1,2-Trichloroethane	<10	<10
1,1-Dichloroethane	<10	<10
1,1-Dichloroethylene	<10	<10
1,1-Dichloropropylene	<10	<10
1,2,3-Trichlorobenzene	<10	<10
1,2,3-Trichloropropane	<10	<10
1,2,4-Trichlorobenzene	<10	<10
1,2,4-Trimethylbenzene	<10	<10
1,2-Dibromo-3-chloropropane (DBCP)	<10	<10
Ethylene Dibromide	<10	<10
1,2-Dichlorobenzene	<10	<10

Table 2O: Air Sampling Results – VOCs Cont.

Analyte	LCC Result (µg/m^3)	Topside Result (µg/m^3)
1,2-Dichloroethane	<10	<10
1,2-Dichloropropane	<10	<10
1,3,5-Trimethylbenzene	<10	<10
1,3-Dichlorobenzene	<10	<10
1,3-Dichloropropane	<10	<10
1,4-Dichlorobenzene	<10	<10
2-Chlorotoluene	<10	<10
4-chlorotoluene	<10	<10
Benzene	<10	<10
Bromobenzene	<10	<10
Bromochloromethane	<10	<10
Bromodichloromethane	<10	<10
Bromoform	<10	<10
Carbon Tetrachloride	<10	<10
Chlorobenzene	<10	<10
Chloroform	<10	<10
cis-1,2-Dichloroethylene	<10	<10
cis-1,3-Dichloropropene	<10	<10
Dibromochloromethane	<10	<10
Ethylbenzene	<10	<10
Hexachlorobutadiene	<10	<10
Isopropylbenzene	<10	<10
Methylene Chloride(Dichloromethane)	<10	<10
p+m-Xylene	<10	<10
Naphthalene	<10	<10
n-Butylbenzene	<10	<10
n-Propylbenzene	<10	<10
o-Xylene	<10	<10
p-isopropyltoluene	<10	<10
sec-butylbenzene	<10	<10
Styrene	<10	<10
tert-butylbenzene	<10	<10
Tetrachloroethylene	<10	<10
Toluene	<10	<10
trans-1,2-Dichloroethylene	<10	<10
trans-1,3-Dichloropropene	<10	<10
Trichloroethylene	<10	<10

Table 3O: Water Sampling Results – Nitrate/Nitrite

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Nitrate/Nitrite (Total)	<0.10	<0.10	10

Table 4O: Water Sampling Results – Dioxins

Analyte	Topside Result (pg/L)	LCC Result (pg/L)	Maximum Containment Level (pg/L)
2-3-7-8-Tetrachlorodibenzo-p-dioxin	<0.41	<0.75	30

Table 5O: Water Sampling Results – Diquat/Paraquat

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Diquat	<0.002	<0.002	0.02
Paraquat	<0.002	<0.002	N/A

Table 6O: Water Sampling Results – PCBs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
PCB-1016	<0.0005	<0.00051	0.0005
PCB-1221	<0.0005	<0.00051	0.0005
PCB-1232	<0.0005	<0.00051	0.0005
PCB-1242	<0.0005	<0.00051	0.0005
PCB-1248	<0.0005	<0.00051	0.0005
PCB-1254	<0.0005	<0.00051	0.0005
PCB-1260	<0.0005	<0.00051	0.0005
Total PCBs	<0.0005	<0.00051	0.0005

Table 7O: Water Sampling Results – Pesticides/SVOCs

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
2-Methylnapthalene	<0.00021	<0.00022	N/A
4,4'-DDE	<0.00021	<0.00022	N/A
Acenaphthene	<0.00011	<0.00011	N/A
Acenaphthylene	<0.00011	<0.00011	N/A
Alachlor	<0.00021	<0.00022	0.002
Aldrin	<0.00021	<0.00022	N/A
Anthracene	<0.00021	<0.00022	N/A
Atrazine	<0.00021	<0.00022	0.003
Benzo[a]anthracene	<0.00011	<0.00011	0.0001
Benzo[a]pyrene	<0.00011	<0.00011	0.0002
Benzo[b]fluoranthene	<0.00011	<0.00011	0.0002
Benzo[g,h,i]perylene	<0.00011	<0.00011	N/A
Benzo[k]fluoranthene	<0.00011	<0.00011	0.0002
Bis(2-Ethylhexyl)phthalate	<0.0011	<0.0011	0.006
Butachlor	<0.00021	<0.00022	N/A
Butylbenzylphthalate	<0.0011	<0.0011	N/A
Chrysene	<0.00011	<0.00011	0.0002
Di(2-ethylhexyl)adipate	<0.0011	<0.0011	0.40
Dieldrin	<0.00021	<0.00022	N/A
Diethylphthalate	<0.00011	<0.0011	N/A
Dimethylphthalate	<0.00011	<0.0011	N/A
Di-n-butylphthalate	<0.00011	<0.0011	N/A
Endrin	<0.00021	<0.00022	0.002
EPTC	<0.00021	<0.00022	N/A
Fluoranthene	<0.00011	<0.00011	N/A
Fluorene	<0.00011	<0.00011	N/A
gamma-BHC (Lindane)	<0.00011	<0.00011	0.0002
Heptachlor	<0.00011	<0.00011	0.0004
Heptachlor Epoxide	<0.00011	<0.00011	0.0002
Hexachlorobenzene	<0.00011	<0.00011	0.001
Hexachlorocyclopentadiene	<0.00021	<0.00022	0.05
Indeno[1,2,3-cd]pyrene	<0.00011	<0.00011	0.0004
Methoxychlor	<0.00021	<0.00022	0.04
Metribuzin	<0.00021	<0.00022	N/A
Molinate	<0.00021	<0.00022	N/A
Naphthalene	<0.00021	<0.00022	N/A
Phenanthrene	<0.00011	<0.00011	N/A

Table 7O: Water Sampling Results – Pesticides/SVOCs Cont.

Analyte	Topside Result (mg/L)	LCC Result (mg/L)	Maximum Containment Level (mg/L)
Propachlor	<0.00021	<0.00022	N/A
Pyrene	<0.00011	<0.00011	0.0002
Simazine	<0.00021	<0.00022	0.004
Terbacil	<0.00053	<0.00056	N/A
Trifluralin	<0.00021	<0.00022	N/A

Table 8O: Soil Sampling Results

Analyte	NW Corner Outside Fenceline (mg/kg-dry)	SW Corner Outside Fenceline (mg/kg-dry)	SE Corner Outside Fenceline (mg/kg-dry)
Methyl Parathion	<0.0244	<0.0248	<0.0249
Phorate	<0.0244	<0.0248	<0.0249
Parathion	<0.0244	<0.0248	<0.0249
Methamidophos	<0.0244	<0.0248	<0.0249
Malathion	<0.0244	<0.0248	<0.0249
Ethoprop	<0.0244	<0.0248	<0.0249
Dicrotophos	<0.0244	<0.0248	<0.0249
Diazinon	<0.0244	<0.0248	<0.0249
Chlorpyrifos	<0.0244	<0.0248	<0.0249
Terbufos	<0.0244	<0.0248	<0.0249

Table 8O: Soil Sampling Results Cont.

Analyte	NE Corner Outside Fenceline (mg/kg-dry)	Behind MAF Outside Air Intake Vent (mg/kg-dry)	South of MAF Outside Bedroom Doors (mg/kg-dry)
Methyl Parathion	<0.0246	<0.0250	<0.0247
Phorate	<0.0246	<0.0250	<0.0247
Parathion	<0.0246	<0.0250	<0.0247
Methamidophos	<0.0246	<0.0250	<0.0247
Malathion	<0.0246	<0.0250	<0.0247
Ethoprop	<0.0246	<0.0250	<0.0247
Dicrotophos	<0.0246	<0.0250	<0.0247
Diazinon	<0.0246	<0.0250	<0.0247
Chlorpyrifos	<0.0246	<0.0250	<0.0247
Terbufos	<0.0246	<0.0250	<0.0247

Table 9O: Air Direct Reading Values

Analyte	Topside Measured Value	LCC Measure Value	Recommended Range
Carbon Dioxide	875 ppm	531 ppm	<1000 ppm
Relative Humidity	28.5%	21.5%	30% - 60%
Temperature	69.5°F	64.7°F	68°F - 74°F
Carbon Monoxide	1.3 ppm	0.2 ppm	<25 ppm (8-hr TWA)
Ozone	0 ppm	0 ppm	<0.1 ppm (8-hr TWA)

Table 10O: Water Direct Reading Values

Analyte	Topside Measured Value	LCC Measured Value	Recommended Range
pH	7.9	>8.5	6.5 - 8.5
Free Available Chlorine	3.1	0.06	> 0 mg/L; < 4 mg/L

Appendix 16: Trainer 1 Results, Sampled on 20 October 2023

Table T1: PCB Swipe Sampling

Location	Analyte	Result (µg/100 cm^2)	Standard (40 CFR Part 761) (µg/100 cm^2)
Battery Charger Access – Surface	Total PCBs	Not Detected	<10
Battery Charger Access – Underside	Total PCBs	Not Detected	<10
Right Console Keyboard Above T1/T2/T3	Total PCBs	Not Detected	<10
Right Console Display Screen	Total PCBs	Not Detected	<10
Left Console Keyboard Above T1/T2/T3	Total PCBs	Not Detected	<10
Left Console Display Screen	Total PCBs	Not Detected	<10
Wing 3 LCPA Panel - Surface	Total PCBs	Not Detected	<10
Wing 3 LCPA Panel - Underside	Total PCBs	Not Detected	<10
Electrical Equipment Cabinet	Total PCBs	Not Detected	<10
Circuit Breaker Unit Ref 364	Total PCBs	Not Detected	<10
MPT Exit Door Inside	Total PCBs	Not Detected	<10
MPT Exit Door Blast Door Pump	Total PCBs	Not Detected	<10
MPT Exit Door Outside Handle	Total PCBs	Not Detected	<10
NPT CAB Power Distribution Box	Total PCBs	Not Detected	<10
NPT CAB Instructor Power Distribution	Total PCBs	Not Detected	<10
NPT CAB Instructor Audio Controls	Total PCBs	Not Detected	<10

Table T1: Air Sampling Results – PCBs

Analyte	Result (mg/m^3)
Aroclor 1016	<0.0021
Aroclor 1221	<0.0021
Aroclor 1232	<0.0021
Aroclor 1242	<0.0021
Aroclor 1248	<0.0021
Aroclor 1254	<0.0021
Aroclor 1260	<0.0021

Appendix 17: Trainer 2 Results, Sampled on 20 October 2023

Table T2: PCB Swipe Sampling

Location	Analyte	Result (µg/100 cm^2)	Standard (40 CFR Part 761) (µg/100 cm^2)
Battery Charger Access – Surface	Total PCBs	Not Detected	<10
Battery Charger Access – Underside	Total PCBs	Not Detected	<10
Right Console Keyboard Above T1/T2/T3	Total PCBs	Not Detected	<10
Right Console Display Screen	Total PCBs	Not Detected	<10
Left Console Keyboard Above T1/T2/T3	Total PCBs	Not Detected	<10
Left Console Display Screen	Total PCBs	Not Detected	<10
Wing 3 LCPA Panel - Surface	Total PCBs	Not Detected	<10
Wing 3 LCPA Panel - Underside	Total PCBs	Not Detected	<10
Electrical Equipment Cabinet	Total PCBs	Not Detected	<10
Circuit Breaker Unit Ref 364	Total PCBs	Not Detected	<10
MPT Exit Door Inside	Total PCBs	Not Detected	<10
MPT Exit Door Blast Door Pump	Total PCBs	Not Detected	<10
MPT Exit Door Outside Handle	Total PCBs	Not Detected	<10
NPT CAB Power Distribution Box	Total PCBs	Not Detected	<10
NPT CAB Instructor Power Distribution	Total PCBs	Not Detected	<10
NPT CAB Instructor Audio Controls	Total PCBs	Not Detected	<10

Table T2: Air Sampling Results – PCBs

Analyte	Result (mg/m^3)
Aroclor 1016	<0.0021
Aroclor 1221	<0.0021
Aroclor 1232	<0.0021
Aroclor 1242	<0.0021
Aroclor 1248	<0.0021
Aroclor 1254	<0.0021
Aroclor 1260	<0.0021