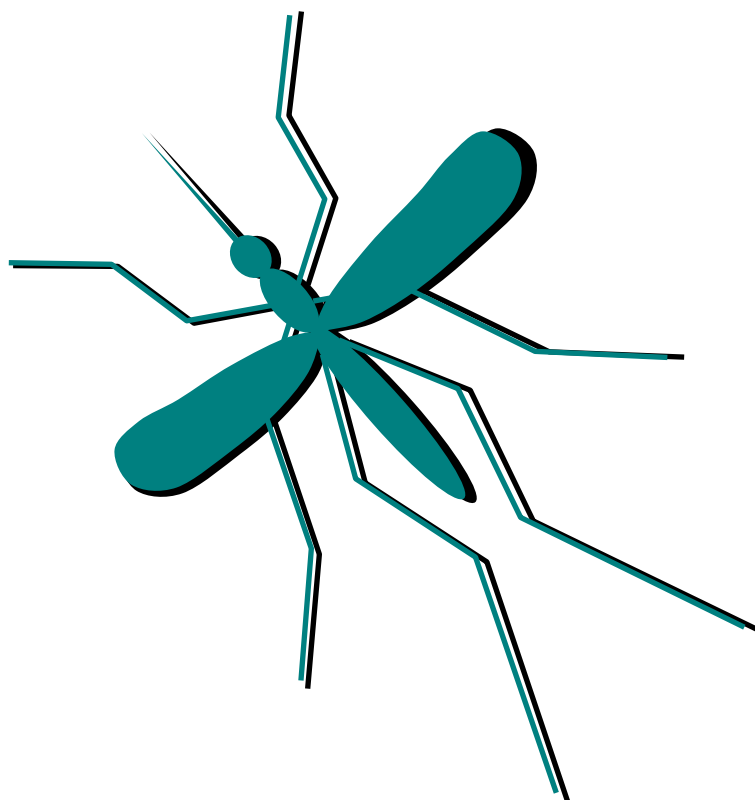




Consolidated Vector Control Program Standard Operating Procedures Columbus Public Health

This is a consolidation of the separate program SOPs into a single electronic document.



2008

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INTEGRATED PEST MANAGEMENT

A Comprehensive Mosquito Control Program must be based on the Integrated Pest Management (IPM) principle, be science based and include:

- 1. Source reduction through citizen education**
- 2. Mosquito avoidance through citizen education**
- 3. Source reduction through enforcement action**
- 4. Larval control by use of larvicides**
- 5. Surveillance of adult mosquitoes**
- 6. Adult control by contact sprays and fogging at or near breeding sites**
- 7. Adult control by residential fogging (Adulticiding/Fogging)**

Adulticiding:

Residential Fogging priority:

The decision of which residential areas to be fogged (adulticided/fogged) will be based upon recent and relevant information obtained through surveillance of adult mosquitoes and arbovirus identification. Columbus Public Health may fog (adulticide) locations where the vector population (*Culex sp.*) exceeds the threshold level of 200 mosquitoes per gravid trap. Other areas may demonstrate a higher priority. Additional areas will be prioritized for adulticiding based on direct observations by program staff and/or the recent identification of disease positive mosquitoes. The choice of adulticiding locations is not based on either the number of requests for fogging (mosquito complaints) or requests not to be fogged. Instead each complaint will be investigated and the decision will be made based upon the investigation. The investigation may include, but is not limited to:

1. Trapping at the complaint address
2. In the case of multiple complaints in close proximity to each other, trapping a representative location
3. Direct observation by field staff (mosquito landing counts) at the complaint address
4. In the case of multiple complaints in close proximity to each other, direct observation by field staff of one or more representative locations

Mosquito adulticiding priorities include:

A - Areas known through mosquito surveillance to have high numbers of potential vector mosquitoes (*Ochlerotatus triseriatus* – La Crosse Encephalitis or *Culex sp.* – West Nile Virus) and confirmation of infected mosquitoes (positive mosquito pools). Priority is to be given to areas with the highest relative infection ratio. The definition of a high number of *Culex sp.* mosquitoes is 200 or more caught in a single gravid trap within three weeks of the scheduled fogging. Mosquito count (number) data is not to be considered if it is over three weeks old. Priority is to be given to the most recent information.

B - Areas known through mosquito sampling to have high numbers of potential vector mosquitoes (*Ochlerotatus triseriatus* or *Culex pipiens*). The typical threshold value for “high” numbers is 200 or more *Culex sp.* mosquitoes caught in a single gravid trap.

C - Areas known through mosquito sampling, complaint investigation, and larviciding visits to have high numbers of biting mosquitoes. (This is the lowest threshold which would warrant fogging of a residential neighborhood).

D - Areas which due to their location, special nature, or because of special events will have people in an outdoor setting which will put those people at risk of being bitten by mosquitoes. (This priority is to be considered for parks and bikeways.)

Adulticiding will be conducted from 4:15 a.m. until shortly after sunrise. Typically adulticiding will conclude around 7:00 a.m. Pursuant with the label for Malathion, all fogging equipment nozzles are elevated at an upward angle of more than 45 degrees (typically 53 – 60 degrees).

Surveillance:**Trapping Procedure:**

One – Every district within Columbus and Worthington will be trapped with at least one trap pair (a gravid trap and a light trap) every two weeks.

Two – Trap locations which have been found to have repeated high numbers of mosquitoes will be re-trapped periodically to help assess control efforts.

Three – Complaint locations or in the case of multiple complaints in close proximity to each other a representative location will be trapped. Complaint location trapping can be used when appropriate to satisfy the requirement to trap every district.

Based on CDC and EPA guidelines.

Mosquito Control

The program objective is the prevention of vector borne disease transmission to humans and domestic animals. Appropriate and timely response to mosquito surveillance data is the key to preventing human and animal disease associated with WNV and other arboviruses. The mosquito surveillance program includes larval and adult sampling components, a mapping/record keeping component, a virus testing component, and a data analysis component. Mosquito-based surveillance remains a primary tool for quantifying the intensity of virus transmission in our area, and is a mainstay in our surveillance programs for WNV and other arboviruses. The goals of our mosquito-based surveillance are to:

- 1) Use data of mosquito populations and virus infection rates to assess the threat of human disease;
- 2) Identify geographic areas of high risk;
- 3) Assess the need for and timing of interventions;
- 4) Identify larval habitats for targeted control;
- 5) Monitor the effectiveness of this type of surveillance and improve prevention and control measures; and
- 6) Develop a better understanding of transmission cycles and potential vector species.

The program incorporates the following:

Staff will repeatedly test more than 1300 standing water sites for mosquito larva. If mosquito larvae are present in significant numbers, control agents may be applied.

Staff will trap mosquitoes at sites throughout the community, and test mosquito collections of sufficient size to detect low infection rates (IR) in the vector population. Minimally, adult mosquito density (number collected per trap night) and infection rate (number of individual mosquitoes estimated containing WNV per 1,000 specimens tested) are recorded for our community to provide a basis for tracking mosquito density and virus incidence at a defined location and time period. Although the number of positive pools provides valuable information, it does not provide an index of virus prevalence in the vector population. Therefore, the proportion of the mosquito population carrying the virus is monitored and expressed as the infection rate (IR), which is a more useful index of virus prevalence.

Staff will collect adult mosquitoes using gravid traps and light traps, providing representative geographic coverage and with sufficient trap sites and trapping frequency to obtain sample sizes required to detect WNV at relatively low infection rates. Some fixed positions allow us to compare population data to previous years and spatially map changes in mosquito abundance. Our trap distribution is influenced by the following species factors:

- (i) Habitat diversity, size, and abundance;
- (ii) Resource availability;
- (iii) Proximity to human population centers and/or recreational areas; and
- (iv) Flight range of vector species in the area.

If arbovirus activity is detected in our jurisdiction, a continuously updated (daily) decision making process is implemented in deciding whether to begin adulticiding and / or intensify mosquito control by using adulticides (fogging). Early-season detection of enzootic or epizootic WNV activity is correlated with increased risk of human cases later in the season. When focal early season enzootic WNV activity is detected, early season adulticiding is deemed useful in interrupting virus transmission. Our control activity is intensified in response to evidence of increasing virus transmission. However, there is no simple formula for determining how large an area to treat around a positive surveillance indicator or a

suspected or confirmed human case of WNV to reduce human disease risk. At a minimum, we consider the following factors when deciding the scope of the adulticiding effort:

1. The general ecology of the area, e.g., key habitat types and the presence of natural barriers such as rivers;
2. The population density, distribution, flight range, and age structure (proportion of parous females) of the target mosquito species;
3. The flight range of the avian amplifying host(s);
4. The length of time since birds started dying or became infected in the affected area or since virus-positive mosquito pools were collected;
5. The human population characteristics – spatial distribution and density relative to the positive locality, age demographics;
6. Evidence of persistent WNV activity detected by the surveillance program; and
7. Season of the year and how long WNV activity can be expected to persist.

Mosquito adulticiding is sometimes the only practical control technique available in situations where surveillance data indicate that it is necessary to reduce the density of adult mosquito populations quickly to lower the risk of WNV transmission to humans. The EPA has determined that the insecticides labeled nationally for this type of application do not pose unreasonable health risks to humans, wildlife, or the environment when used according to the label. When environmental factors indicate increasing disease distribution and spread, adulticide coverage may need to be expanded to cover large residential neighborhoods with dense human populations. Ground-based (truck-mounted ULV) application of adult mosquito control agents is used where road access is adequate, and where good coverage can be achieved. Insecticide selection and timing of application are important. Ground-based application is completed in the early morning hours between 4:15 am and dawn, when we can target activity periods of disease carrying mosquito species while simultaneously limiting direct exposure to humans and companion animals. If disease amplification is ongoing, multiple applications may be required to appreciably reduce the primary disease carrying mosquito populations and interrupt arbovirus transmission.

Trapping

- To make the attractant for gravid traps fill a 5-gallon bucket $\frac{1}{4}$ full with grass clippings then fill with water.
- The attractant that is used in the gravid traps should be replaced once it no longer emits a strong odor.
- The attractant is made from grass clippings and water that is allowed to ferment for about four days on the south side of carriage house; it ferments best in warm weather. Grass clippings are obtained from golf courses.
- What should be in the truck
 - The bed has three crates; two crates have jugs of bait for gravid traps and two jugs of water to clean up any spills. The third crate has eight light trap fans in it with one or two extra in case a problem should arise in the field. An army box will hold extra batteries for both gravid and light traps, insect repellent, and information that will be placed on the traps.
 - Daily Procedures
 - Coordinate the districts to be trapped with the carriage house sanitarian aide; the areas designed for trapping come from:
 - 1) Historical data of mosquito populations and virus infection rates.
 - 2) Geographic areas of high risk;
 - 3) Active complaints requiring the need for investigation;
 - 4) Larval habitats on record needing annual surveillance;
 - Morning/trap pick up
 - Before the traps can be picked up, dry ice for the large blue cooler must be picked up from dry ice supplier. The dry ice is not only used as an attractant in the light traps, but also used to kill the mosquitoes prior to identification. Put in 5 lbs. of dry ice; this can be a slab the supplier provides or pellets. A receipt for the dry ice is given to the Vector Specialist then the receipt is forwarded to the office manager.
 - The traps can be picked up in the same order that they were laid out because on both days the starting location is the dry ice supplier.
 - It may not be necessary to knock on the door of private homes when picking up traps, because the home-owners were spoken with the day before the traps were set.
 - At the trap location take an empty jug and the funnel from the truck. The numbers on the jug do not correlate to any particular trap; the numbers are just there to help make sure there are eight jugs.
 - When picking up the gravid trap it should first be checked to make sure that the fan is still operating. If it is continue with disassembling it, but if the fan no longer works make a note of which gravid trap it is. Lift up the net and loosely tie the bottom of it to prevent any mosquitoes from escaping. To disassemble the trap place one of the batteries at a diagonal in the clamps; this turns off the fan and helps to keep track of the battery. Pour the attractant into the empty jug using the funnel and the corner of the tub; it is not necessary to hold the funnel. After the tub is empty, knock it on the ground to help remove any excess attractant.
 - For the light traps remove the net and pull the string to close the opening. Be sure to make sure the fan and the light are still working. If not, it is possible that the sun caused the photocell to turn off the light, but it is also possible that the battery has

run out of power. To make sure the lack of function is not the battery, detach the clips from the battery and reconnect them. Cover the photocell with your finger. If the light and fan come back on, the battery is still operating. If the fan/light does not come on or is very weak, make a note of the battery number, and replace it with a recharged one after returning to the carriage house. When placing the lights into the crate use the clip found on the side of the fan to secure the wires. This will help prevent any tangling of the wires in the crate.

- All trapping materials can be returned to the truck by placing them in the black tub and carrying them back to the truck.
 - When loading the truck bed, remove all materials placing each in their proper location. Be sure to leave the gravid trap inside the tub. This will hold the tube in the truck bed while it dries out and you move to the next trap site. Once a tub is dry they can be stacked inside one another. If higher speeds will be reached while driving a bungee cord should be used to hold the tubs in place. Stacking will be needed to conserve space in the bed and it helps to keep the tubes from sliding around in the bed.
 - Place the nets on ice in the blue cooler; pellet ice can be put to the back of the cooler allowing more room the nets so they are not stacked causing the mosquitoes to be crushed. When stacking the other nets put the most recent pick up closest to the dry ice.
 - Excess dry ice from the light traps can be put in the larger cooler over top of the nets.
 - Any information pamphlets that were on the traps can be picked up and put in the truck cab.
 - After attractant jugs have been filled, time should be taken to add attractant to a point up to half way up the jug handle with the extra jug of bait in the truck. This is done to maintain the correct amount of attractant in the tub, allowing proper air current to be present in capturing mosquitoes.
- Afternoon/trap setting
- Traps are set Monday thru Thursday afternoons, because of this traps are picked up Tuesday thru Friday. Traps are still set in the rain if it is not a heavy rain.
 - A record of previous sites (by address) for the past few years can be found on a disk titled Trap; bold face addresses are where pools of mosquitoes have tested positive for West Nile Virus. Always use positive addresses in any sub district for trap sites. Other sites on record can be used, or new ones can be found. Pick a road in the district and find a suitable area that may be more likely to produce mosquito populations. Wooded or overgrown areas are good, or possibly locations where tires are found.
 - Once a suitable site is located, and it is a private home, the home owner's approval should be obtained. Some people are worried that the traps may harm animals, but there are no chemicals in the traps, just fermented grass clippings.
 - In preparing to set traps in any location, tubs should be assembled containing all materials needed. Each tub should contain a cooler, light apparatus, and net for the light trap. It should also contain a jug of attractant, a gravid trap tube/fan apparatus, and a gravid trap net. Make sure to check for the fourth gravid battery as well.

- To set the gravid trap pour the attractant into the tub, place the fan on top of the tub; secure the battery in the holder (check to see if the fan is spinning). Take the net and place it over top of the tube/fan, make sure the net covers the entire tube/fan apparatus.
- For light traps screw on the fan/light apparatus to the bottom of the cooler attaching the wires from the motor to the battery (black to black and red to red). When the battery is connected the fan and light may function. If it is not, use your finger to close off the light to the photocell causing the fan/light to begin working. If the fan/light apparatus does not function, check battery/wire connections or replace the entire apparatus and start over in your trouble shooting process. Once the apparatus is functioning properly, attach the net to the motor; there is a small indentation where the net will sit. Hang the trap by wrapping the cord around a tree branch and hooking it at the bottom of the rope.
- Traps set in public areas should have a pamphlet from Columbus Public Health placed on them to prevent people from tampering with them.
- Weekly Procedures done on Monday morning or Friday afternoon.
 - Fill jugs with gravid attractant. This may not have to be done every week if the attractant still smells.
 - To fill jugs use the blue chair, filter lid, tub, and funnel.
 - Take the 5 gallon buckets of attractant from the side of the carriage house by using the ladder (located in the north room of the carriage house) and lift the buckets of attractant over the fence. There are six buckets of bate fermenting at one time.
 - Take a bucket of attractant from the side of the building and screw on the filter lid, tilt to drain out the water into the tub. The chair may be used to hold bucket or you may pour each by hand.
 - Use a funnel to fill the jugs by pouring attractant from the tube in to the jug using the same procedure that is used for picking the trap up. The jugs have to be filled half way up the handle to meet the $\frac{3}{4}$ inch gap between the attractant and fan required in the gravid trap to work properly.
 - There are eight jugs for the eight traps and one extra jug. Due to evaporation some jugs may be below the required line; the extra jug is used to top off the loss in the jugs.
 - Battery maintenance.
 - Batteries should be checked for proper voltage if possible every day, but at least once a week.
 - The batteries in the light traps should be changed every Wednesday and Friday; they work for two consecutive nights before losing enough power to negatively affect their function. With this rotation there is always one set of batteries charging and one set in use.
 - The brown desk on the east wall of the carriage house holds the batteries for the light traps. The two bottom corners of the table are labeled for charged and non-charged batteries. Five battery chargers are in the top right corner of the table; non-useable D cell batteries for the gravid traps are also located here. A green light on the charger indicates that the battery is fully charged while a red light shows that it is still charging. The battery checker is also located on this table.

- Turn battery checker to the +DC (left knob), using the black wire to touch the black connection on the battery and the red wire to the red connection on the battery of the light traps. The dial should read six on the top black dial. This is repeated with the remaining seven light trap batteries.
- If the battery does not work use the wired brush from the military box kept in the truck to clean off any rust and retest the battery. If it still does not work exchange for a charged battery from the carriage house.
- For gravid traps clean off and residue from weathering on battery itself or on the holder attached to the tube. While doing this it is also good to check the wiring of the trap. Place the fourth battery in to the adapter to turn on the fan there by checking the unit. When storing the gravid traps keep one battery out and in the tubs to prevent the fan from turning on.
- Light traps maintenance
 - Check the bases of the coolers for cracks, if it is severely damaged new coolers can be found on the gray shelf in the northeast corner of the main room in the carriage house.
 - To check light traps connect the black and red clips to there respected spots on the battery and cover the sensor and the bottom of the trap. The sensor is the small black tube by the light. If the light and fan comes on the trap can be put back in the crate in the truck. If it does not work it could just be from rust use the wire brush on the clamps and try again.
 - If it still does not work bring in to carriage house to fix later; there are spare parts for light traps in the bottom left drawer of the desk on the east wall in the main room of the carriage house.
- Counting
 - The test tubs used to store mosquitoes are located in the top left drawer of the desk. Test Tubes should be labeled with CHD, the date, and the trap number on tape applied to the tube.
 - If the nets are wet from rain they have to be dried out. To do this take two bungee cords and attach each to the conduit on each side of the entry way to the carriage house and direct a floor fan to blow on the traps.
 - The longer the nets are in the coolers with the dry ice the better, if the mosquitoes are still moving, a longer freeze time is needed to kill the insects. If this is not done, mosquitoes may fly away during the counting process.
 - Empty one net onto the cardboard box lid (on the metal desk top) and spread them out, using the magnifying glass determine those insects that are indeed mosquitoes. Take out any insects that are not mosquitoes. If there are few mosquitoes a pair of tweezers can be used to count them as they are placed in the test tube. If there is a large amount of mosquitoes they can be counted as they are taken up in the aspirator.
 - Use a funnel to empty the aspirator into a test tube.
 - It is **VERY IMPORTANT** to make sure that all the mosquitoes are out of the aspirator and the nets. If any mosquitoes are left in the nets or aspirator this could cause a false positive for another net or trapping day.
 - After counting the number of mosquitoes, record the number on the trapping form making sure to keep numbers in proper locations.

- Tubes are placed in groups by date in the box that is placed in the freezer. This box is kept in the freezer of the specimen fridge in the garage of the carriage house.
- Type in the locations, net numbers, and mosquito counts on the spread sheet titled “trapping template” fill in the address, number that corresponds to the light and gravid trap that was used, the number under a particular species, and the total. On the spreadsheet bold numbers are estimates; greater than 100 are to the nearest 10.
- The file is then saved as “trapping MM.DD.YY” the date is the date when the traps where set. Three copies are made; one for the trapper’s records, one goes in the daily time sheets tray and the third is placed under the bulletin board.
- A green sticker is placed on the map next to the bulletin board at each location traps have been set. The stickers are numbered according to the number assigned to those particular traps at that site. If a mosquito comes back positive for West Nile the sticker will be changed to red.

Larviciding

- Testing
 - To test the water for larvae, scoop some water into the dipper. The white dipper is used so the larvae can be seen.
 - Scoop from the top not the bottom because the larvae must be at the top to breathe.
 - Larvae are small, slender and light brown. They do not have a forked tail or legs.
 - Tumblers (pupae) are dark brown and tumble around.
- Treatment
 - Chemicals should only be used if larvae or tumblers are found, and evaluation of certain wildlife has been considered. Moving water such as running creeks, ditches etc. are not treated because the larvae can not live in moving water.
 - Abate 2BG a granule chemical can be used to treat small areas
 - Abate 4E a liquid chemical in the sprayers can be used to treat ditches, tires and catch basins.
 - To start the sprayer flip the red on/off button on the engine to the on position, move the choke switch to choke, and pull the cord. Once the engine starts slide the choke switch to run. The switch above the on/off button needs to be on the rabbit.
 - If the engine starts then turns off this could be do to the gas valve; turn the valve to the open position. This is the red valve in the right corner of the engine.
 - To turn off the engine push the on/off button to off.
 - The sprayer cord is locked into place on the left side. To unlock it pull the bar out and rotate it so it can not go back in to the wheel.
 - Altosid 30 day and 150 day briquettes are used for larger areas and provide treatment for 30 or 150 days.
 - Protective eye wear and gloves are worn at all times when applying any of the pesticides.
 - If a ditch or larger area is found to have larvae and you do not have the sprayer or need a second person, make a note of it and come back later to treat the site.
 - Long ditches can be sprayed with someone spraying while in the passenger seat of the truck while someone else is driving.
 - The sprayer is started then the cord is brought over the chemical tank and to the passenger window.
 - The passenger holds the spray gun out side of the window to treat the ditches.
 - The driver can then drive slowly along the ditch; with the caution lights on.
 - After a site is checked a mosquito larviciding record form for that site needs to be filled out and turned in at the end of the day with a daily time sheet.
- In the Truck:
 - The truck should have hand sanitizer, insect repellent, a dipper, gloves, protective eye glasses and chemicals that may be used for the day. There should also be a first aid kit available and the MSDS sheets for the chemicals that may be used.
 - Dry chemicals are located in the southeast corner of the carriage house.

- Filling fogging trucks:
 - Sprayers are checked and/or filled prior to each use.
 - Butyl gloves and eye protection need to be used when filling the sprayer.
 - Use Abate 4E located in the carriage house.
 - To mix the chemical for the sprayer pour out 2 ounces of Abate4E (the black line) into the measuring cup; the measuring cup is located above the hose.
 - Pour the Abate 4E into the tank and triple rinse the measuring cup. It is best not to have the water flow from the hose on too fast, so chemical does not splash. Place the measuring cup upside down on the shelf.
 - Continue filling up the tank with water.
 - Filling works best with two people; one in back of the truck and another to run the hose.
 - The gas tank is also checked at this time. If it needs to be filled a gas container is in the garage of the carriage house.
 - Gas for the trucks:
 - Each truck has a blue gas card and each sanitarian aide has a yellow gas card; both are needed to fill the tank.
 - At the card reader swipe both cards in any order, type in the reading from the trucks odometer, and then select a pump number.
 - There are several city gas stations, for example there is one on Fairwood Ave.
 - The Fairwood station also has a power washer to clean the outside of the trucks if needed.
 - Return folders need to be checked everyday.
 - Lockers should have a change of clothes and a towel.
 - The trucks need to be cleaned everyday after use.
 - Paper work must be turned in daily in the Daily Time Sheet tray on the side of the filing cabinet in the middle room of the carriage house.
 - Hand sanitizer is a way to disinfect your hands if necessary.
 - Spray trucks are assigned daily; the paper is on the bulletin board on the east side wall in the middle room of the carriage house.
 - If it is raining paper work can be done in the truck while waiting for the rain to stop. If it is just a drizzle, sites can still be checked.
 - While driving from site to site keep an eye out for new sites.
 - New sites include low areas and ditches with standing water in them or tires.
 - If a new site is found fill out an orange Mosquito Larviciding Record form found in a tray on the filing cabinet in the main room of the carriage house.
- If any private pools are found with violations, their address should be written down and reported.

Scrap Tires

- Tires should only stay outside for 14 days.
- Businesses are responsible for having tires picked up for shredding.
- If tires are not picked up then they should be covered, so water cannot accumulate in them.
- New tire sites come from sanitarian aides and from driving to and from other sites.
- After visiting a site a mosquito larviciding form is filled out. Instead of writing “no cause for action” comments on the status of the tires is written down. For example “most tires gone”.
- On the first visit to a site a yellow Notice of Violation Improper Storage of Scrap Tires is filled out. The forms are located in the bottom rack of trays on the gray table in the main room on the west side of the carriage house. A copy is given to the business and another is saved for records. If the business is closed their copy should be posted. Extra notes can be written in the extra space of the form.
- If a site has been visited and has little or no change a Notice of Violation will be sent to the property owner from the Vector Specialist. After the Notice of Violation has been sent a follow-up visit is required to determine if legal action is still needed.
- Folders are made for each site with a mosquito larviciding form and the notice of violation form. A sticker on the folder has the name of the business and the address.
- For private homes a green Notice form is posted; located above the yellow forms.
 - If a site needs to be treated make arrangements to take a fogging truck.

311/Private Pools

- Bite line (311) located in right corner of room NL08 of the Public Health building. If there is a complaint on the line fill out a form that is located in the tray to the left on the desk; some of the information may not be given and therefore can not be recorded.
- Complaint folders
 - Complaint Investigation Form
 - Date of complaint
 - Priority low, medium, or high
 - Type of pool above ground, in ground, of kids pool
 - How the complaint came in (phone) and by who (anonymous)
 - Description complaint, whether it is dirty or not properly fenced for example.
 - Under the information tab type in the site location (address).
 - Generate complaint to get the I.D. number that appears in the top right corner of the window. This number is written down on a sticker that will be placed on the folder; the sticker also has the date, address, and P/E number. The P/E numbers are on a board to the left of the computer.
 - Property Information
 - On Franklin County Auditor web page go to auto search type in the street address; make sure the result is in Columbus. When searching it may be required to leave out road types like avenue or drive.
 - Once the location is found a map and picture sheet is printed by going to the left column and selecting map. A new window will open; in it select print map information and photo.
- What should be in the truck
 - Map, Notice of Violation form, chemicals, page protectors, pool safety and West Nile pamphlets, tap measure, camera, tape, final order form, and complaint folder.
- Once at a location knock at the door to see if any one is home
- Make sure that two “Notice of Violation” forms are filled out; one will be posted on the front door of the home in a page protector along with a pamphlet on West Nile and Pool Safety. The form is filled out with the date, type of pool, the address, the violations and the time limit till re-inspection. A more detailed description of the violation can be written next to the checked violations on the form. A picture should be taken of the posted notice on the door with the number of the house if possible. The other form is kept in the folder for the records. If the house is vacant a notice still has to be posted.
- Pictures should also be taken of the pools violations.
- Time periods for re-inspection
 - Three days for pools that are not properly fenced
 - Seven days for very dirty pools or moderate fence repairs.
 - Fifteen days for slightly dirty pools or simple gate repairs.
- Posted forms **MUST** have the Columbus Public Health logo on it
- A Complaint Investigation Form must also be filled out with a detailed description of the problem and any other findings i.e. tires or standing water. If any chemicals are used the name and amount are recorded here. The description should be signed at the end. The box next to the lined area should also be filled out with the date and time.

- When the problem is fixed there is no need to post a notice simply write on the Complaint Investigation Forms that the case is closed.
- A final order form is posted on the fourth visit to a location.
- If all complaints have been ran the rest of the day is spent looking for pools in different neighborhoods.
- If it is raining paper work can be done in the truck while waiting for it to stop. If it is just a drizzle sites can still be checked.
- Dead Birds
 - If a call comes in about a dead bird the bird is picked up and taken to Ohio Department of Agriculture 8995 Main Street. Go to the front at the building to tell them that a bird has to be dropped off. The freezers are in the back of the building where the bird is actually dropped off.
 - Only Blue Jays and Crows are picked up because they carry West Nile.
 - Birds can only be tested within 24 hours of their death.
 - If it is over 24 hours or the bird has maggots tell the citizen to double bag it and throw it away.

“No-Fog” Procedure Vector Control Program

The US EPA has estimated the exposure and risks to both adults and children posed by ULV ground applications of the mosquito control insecticides. For all the exposure scenarios considered, exposures were below an amount of pesticide that might pose a health concern. These estimates assumed several spraying events over a period of weeks, and also assumed that a toddler would ingest some soil and grass in addition to dermal exposure. However, adult mosquito control is the most controversial aspect of a mosquito control program. Columbus Public Health has maintained a list each season of those persons that do not wish to have their residences fogged to control mosquitoes. The revised procedure is:

1. In late May or early June, 3 to 4 weeks prior to any mosquito fogging, a notification letter is to be mailed to all individuals that were on the previous year’s no-fog list. The mailing is to be done by either the Vector Specialist or the program Supervisor. The notification letter shall provide information concerning the mosquito control program and may include flyers or other information concerning mosquito control, mosquito borne diseases, mosquitoes, and public health. The letter shall state the method by which a person can request no-fog status and shall include the address to submit the no-fog request to. Whether the recipient wishes to request to be on the no-fog list is their choice. Columbus Public Health should not provide any undue obstacle or incentive either way. Individuals shall not be required to provide any justification for their request. All information included in the notification letter must be strictly factual and a return envelope should not be included.

Sample text from the June 11, 2002 letter: “If you wish your residence to be exempted, please send me a signed card or letter with your name, address, and phone number.”

The rationale for requiring a signed card or letter is that it provides documentation that the request is legitimate.

2. Upon receipt of a written request to be placed on the no-fog list, the address and contact information is to be added to the list for that season. (The list is to be maintained in Microsoft Excel.) The original request is to be maintained in a file for a minimum of five years. The address is to be verified with the Franklin County Auditor’s website as to location. A response letter is to be sent to every person making a no-fog request. The response letter provides the person making the request verification as to their status and states the circumstances which might cause the cancellation of the request. The no-fog list is a public record. It (the Excel file) shall not contain any information which might be considered to be HIPAA protected.

Sample of text which has been used: “As a result of your recent request, the Columbus Public Health has designated your address as a "No-Fog" location. During normal mosquito fogging (adulticiding), I have instructed my staff to turn off the flow of insecticide about 200 feet from your location. Your request will be honored as long as there is no demonstrated disease risk to the public from the mosquitoes in your area. If that occurs, we will attempt to notify you.”

Rational for honoring all “no-fog” requests, unless there is a disease outbreak: Although the US EPA has concluded that the scientific evidence indicates that mosquito fogging is harmless to people, some individuals are very strongly opposed to the use of insecticides. As with all public health issues where mass prophylaxis is involved, individual property rights must be considered relative to the risk of a disease outbreak.

3. Upon strong indications of a disease outbreak, as determined by the Vector Specialist and the Supervisor of the Vector Control Program, the Section Chief and the Environmental Health Administrator will be notified. The Environmental Health Administrator after reviewing the available information will decide whether to recommend to the Health Commissioner that no-fog requests no longer be honored because of an unacceptably high risk of a disease outbreak. The decision whether to continue to honor no-fog requests and/or what exceptions and under what conditions will be made by the Health Commissioner. All persons affected by the Health Commissioner’s decision will be notified that their request can no longer be honored due to the risk of disease, and the web site will be updated to indicate the no fogs will not be honored.

Sample text to be used: “In the past the Columbus Public Health has attempted to respect requests by citizens to be exempted from mosquito fogging. Regrettably, circumstances are such that every effort must be taken to reduce the number of adult mosquitoes to an absolute minimum. As such for the duration of this summer, the Columbus Public Health will no longer honor "no fog" requests.

Rational for canceling “no-fog” status: The position of the CDC is that “...adulticiding based on surveillance data is an extremely important part of any integrated mosquito management program.” Further, field studies by the staff of the Columbus Public Health have demonstrated significant reductions in adult mosquitoes following adult control. Honoring “no-fog” requests reduces adulticiding efficiency. The position of the US EPA is that mosquito fogging is not a health concern. To honor “no-fog” requests during a disease outbreak would violate the stated goals of the Columbus Public Health and the Vector Control Program.

4. As soon as a mosquito related disease outbreak is under control, all “no-fog” requests will be honored. Written notification will be made to the Health Commissioner and to the affected individuals.

5. At the end of the mosquito control season, all persons on the no-fog list will be notified.

Adulticiding

- Data Analysis for Disease Carrying Vectors:

The program traps mosquitoes at sites throughout the community, and test mosquito collections of sufficient size to detect low infection rates (IR) in the vector population. Minimally, adult mosquito density (number collected per trap night) and infection rate (number of individual mosquitoes estimated containing WNV per 1,000 specimens tested) are recorded for our community to provide a basis for tracking mosquito density and virus incidence at a defined location and time period. Although the number of positive pools provides valuable information, it does not provide an index of virus prevalence in the vector population. Therefore, the proportion of the mosquito population carrying the virus is monitored and expressed as the infection rate (IR), which is a more useful index of virus prevalence.

The program collects adult mosquitoes using gravid traps and light traps, provides representative geographic coverage and with sufficient trap sites and trapping frequency to obtain sample sizes required to detect WNV at relatively low infection rates. Some fixed positions allow us to compare population data to previous years and spatially map changes in mosquito abundance. Our trap distribution is influenced by the following species factors:

- (i) Habitat diversity, size, and abundance;
- (ii) Resource availability;
- (iii) Proximity to human population centers and/or recreational areas; and
- (iv) Flight range of vector species in the area.

If arbovirus activity is detected in our jurisdiction, a continuously updated (daily) decision making process is implemented in deciding whether to begin adulticiding and / or intensify mosquito control by using adulticides (fogging). Early-season detection of enzootic or epizootic WNV activity is correlated with increased risk of human cases later in the season. When focal early season enzootic WNV activity is detected, early season adulticiding is deemed useful in interrupting virus transmission. Our control activity is intensified in response to evidence of increasing virus transmission. However, there is no simple formula for determining how large an area to treat around a positive surveillance indicator or a suspected or confirmed human case of WNV to reduce human disease risk. At a minimum, we consider the following factors when deciding the scope of our adulticiding effort:

- 1. The general ecology of the area, e.g., key habitat types and the presence of natural barriers such as rivers;
- 2. The population density, distribution, flight range, and age structure (proportion of parous females) of the target mosquito species;
- 3. The flight range of the avian amplifying host(s);
- 4. The length of time since birds started dying or became infected in the affected area or since virus-positive mosquito pools were collected;
- 5. The human population characteristics – spatial distribution and density relative to the positive locality, age demographics;
- 6. Evidence of persistent WNV activity detected by the surveillance program; and
- 7. Season of the year and how long WNV activity can be expected to persist.

Mosquito Adulticiding priority also includes the following:

A - Areas known through mosquito surveillance to have high numbers of potential vector mosquitoes (*Ochlerotatus triseriatus* – La Crosse Encephalitis or *Culex sp.* – West Nile Virus) and confirmation of

infected mosquitoes (positive mosquito pools). Priority is to be given to areas with the highest relative infection ratio. The definition of a high number of *Culex sp.* mosquitoes is 200 or more caught in a single gravid trap within three weeks of the scheduled fogging. Mosquito count (number) data is not to be considered if it is over three weeks old. Priority is to be given to the most recent information.

B - Areas known through mosquito sampling to have high numbers of potential vector mosquitoes (*Ochlerotatus triseriatus* or *Culex pipiens*). The typical threshold value for “high” numbers is 200 or more *Culex sp.* mosquitoes caught in a single gravid trap.

C- Areas known through mosquito sampling, complaint investigation, and larviciding visits to have high numbers of biting mosquitoes. (This is the lowest priority which would warrant fogging of a residential neighborhood).

D- Areas which due to their location, special nature, or because of special events will have people in an outdoor setting which will put those people at risk of being bitten by mosquitoes. (This priority is to be considered for parks and bikeways.)

Adulticiding will be conducted from 4:15 a.m. until shortly after sunrise. Typically adulticiding will conclude around 7:00 a.m. Pursuant with the label for Malathion, all fogging equipment nozzles are elevated at an upward angle of more than 45 degrees (typically 53 – 60 degrees).

- Starting the Foggers
 - Foggers are started before leaving the health department, so any mechanical problems can be resolved then.
 - The control box (in the cab of the truck) needs to be in the off position.
 - Pull out the choke ring on the upper left side of the engine.
 - Flip the switch on the bottom of the engine up to on.
 - Push the start button on the bottom center of the engine.
 - Once the fogger starts push the chock back in.
 - To turn the fogger off flip the switch down to the off position.
 - Fog will travel 150 feet on each side of the truck (this may vary depending on drift).
 - The driving route should be known before hand, so re-entry into a treated area will not occur.
 - To start fogging at the location use the control box to turn the fogger on; checking to see if the switch is on spray and NOT flush.
 - The truck caution light should be on when fogging.
 - After all the fogging has been completed for the day flush needs to be ran through the machine. To do this, flip the switch (in the truck) from spray to flush. Flushing needs to be done for thirty seconds in an area away from cars.
 - In some areas people have requested their house not to be fogged. For these locations turn the fogger off as directed.
 - A mosquito adulticiding record form is filled out after fogging and placed in the daily time sheet tray.
 - The amount used is calculated.
- Filling Foggers
 - The flush tank on the truck is the smaller one behind the large black tank that is used for the adulticides.

- The adulticides are located in the white shed south of the parking garage. The spray tank and the shed are locked.
- To fill the fogging tanks place the nozzle into the tank and crank the pump clock wise. Make sure the nozzle is secure and will not come out.
- After filling the tank lift the hose at the barrel and raise it so any excess chemical will go in to the tank.
- Flush is located in the left corner in the garage of the carriage house. It is a small gray barrel. Use a funnel to fill the flush tank.
- Gas tanks for the foggers are filled at the gas station following the same procedure as filling the trucks. The gas tank is next to the chemical tank and is not locked.
- Cleaning barrels
 - Once a barrel of adulticide is empty it must be triple rinsed with flush.
 - The rinsing process will require two people.
 - To triple rinse the barrels pour a small amount of flush into the barrel, replace the cap, and then roll the barrel back and forth between each other.
 - Dump the flush into the flush barrel using a funnel; this is put back into the tank on the trucks and fogged out.
 - Repeat this process two more times.
 - After the procedure of triple rinsing is completed, put the excess flush solution into the flush tanks on one of the trucks. The empty barrel is placed in the northeast corner of the parking garage.

COLUMBUS PUBLIC HEALTH
OCCUPATIONAL HEALTH AND SAFETY PROGRAM

COLUMBUS PUBLIC HEALTH
VECTOR CONTROL PROGRAM

POLICY AND PROTOCOL FOR
CHOLINESTERASE BLOOD LEVEL DETERMINATION

Policy:

The Occupational Health and Safety Program has recommended and will provide biological monitoring for persons in the Columbus Health Department Vector Control Program. These persons are those identified as likely to be continually or frequently exposed to insecticides during the course of their employment with the City.

The Biological Monitoring Program is designed to provide baseline blood level determinations of blood of employees and follow-up with additional determinations and treatment if an exposure occurs. Recommendations are also made for safety protective clothing and personal hygiene measures.

Protocol

Mandatory measures recommended include strict personal hygiene, thorough cleaning of contaminated clothes, wearing protective gloves and clothing and at all times limiting dermal contact.

A working baseline red blood cell and plasma cholinesterase determination may be established from one venous blood sample taken from the employee before exposure to cholinesterase inhibiting pesticides.

At any time during the handling or application of the chemical pesticides, and an employee has had an accidental exposure, the employee will:

Decontaminate his or her clothing with water as soon as possible.

Decontaminate skin with soap and water or water alone if nothing else is available, as soon as possible.

Report the exposure to supervision.

Supervision will copy the exposure report to the Occupational Health and Safety Program.

For other than trivial exposures, an employee:

a) Should have a plasma and red blood cell cholinesterase drawn as soon as possible after the exposure at the Occupational Health and Safety Program Clinic.

b) Will obtain treatment and medical surveillance recommended and provided by the Occupational Health and Safety Program.

Exposure/ Treatment Plan:

Symptoms	Treatment
Subclinical > 50% normal ChE	Decontaminate clothing with water/removal of contaminated clothing. Shower/decontaminate skin with soap and water
No symptoms or signs	
Mild = 20-50% normal ChE	Decontaminate clothing and skin with soap and water. Atropine 1 to 2 mg, IM If Atropine fails to produce signs of atropinization another dose may be administered in 10 minutes. Worker should be removed from further exposure should the RBC CHE fall to or below 40% of pre-exposure level.
Tiredness, dizziness, nausea, Vomiting, diarrhea, abdominal pain, salivation, wheezing	
Moderate = 10-20% normal ChE	Decontaminate clothing/skin with soap and water. Following to be done at Hospital ▪ Che blood level determination ▪ After cyanosis has been cleared, Atropine 2 to 4 mg may be given every 5 to 10 minutes until signs of atropinization appear. ▪ In moderate to severe cases, due to pulmonary involvement, there may be the need for intensive medical and nursing care requiring in hospital stay. ▪ Pralidoxime (2-PAM) 1 gram IV at the rate of 500 mg/minute may be administered and repeated in 1 hour if muscle weakness is still present. Remove from spraying duties until Che RBC returns to 80% of normal. Regeneration occurs at the rate of 1% per day.
Symptoms of mild poisoning plus weakness, inability to walk, muscle fasciculations, dysarthria, miosis	

Glossary of Terms

Acetylcholine – A chemical in the body. Excessive amounts stimulate the activities of secretory organs and the muscles of the gastrointestinal tract, eye and lungs.

Atropine – a medication used to treat excess exposure to organophosphates. Used only when symptoms occur from mild to moderate exposure and under the direction of a physician.

Atropinization – the expected effects of Atropine to block parasympathetic stimuli, thus producing reversal of twitching muscle groups and reducing salivary secretions, wheezing, vomiting and diarrhea.

Cholinesterase – an enzyme in the blood and nervous system that prevents the build-up of acetylcholine, a chemical responsible for transmitting nerve impulses to muscles and other organs.

Cyanosis – bluish discoloration of the skin and mucous membranes.

Dysarthria – difficult, poorly articulated speech, resulting from interference in the control of muscles of speech. Some medications and chemicals cause this problem.

IM – Intermuscular injection of a medication, frequently given in the deltoid muscle or gluteus maximus.

Miosis – Contraction of the sphincter muscle of the iris, causing the pupil to become smaller. This can be caused by certain drugs, chemicals and stimulation of the pupil with light.

Muscle fasciculations – a localized uncoordinated, uncontrollable twitching of a single muscle group innervated by a single motor nerve.

Trivial exposure – an exposure of very short duration, less than a couple of minutes, to a very limited area (less than one square inch) of exposed skin. [Exposures to the eyes are **never** to be considered trivial.]

The Policy and Protocol for Cholinesterase Blood Level Determination and Treatment for accidental exposures should be reviewed at least annually and appropriate changes made when necessary.

Emergency Situations

- **CALL SUPERVISOR**
 - The supervisor should always be called in any emergency.
- If saturated with chemical go to the nearest fire station or ask a home owner to use a garden hose; to wash the chemical off.
- After rinsing or if the spill is not too severe drive back to the carriage house to take a shower and change clothes. A change of clothes and a towel are kept in assigned lockers.
- If there is a leak earthen dam it up best as possible and return to the carriage house for repairs.
- Each truck has First Aid kits with emergency eye wash inside of them. The trucks also have Material Safety Data Sheets (MSDS) in them; for references on chemical safety.
- Spills on the ground are cleaned up with kitty litter; there are also emergency spill kits under the MSDS binders in the carriage house on the north wall of the main room.
- The carriage house has an emergency eye wash and shower located in the north east corner in the main room.
- The carriage house has a fire extinguisher locator in the garage.

Carriage House

- Get out computers and set them up with their respected printers. The computers are stored in the top drawer of the filing cabinet next to the restroom door. At the end of the day the computers need to be locked back into the cabinet.
 - The desktop computer is set up on the desk on the south wall in the middle room of the carriage house. The laptop is set up on the filing cabinet next to the desk.
 - The laptop is connected to the printer on the filing cabinet, the power cord, and USB hub.
 - The desk top is connected to the printer on the gray side table, as well as the power cord and key board.
 - The keyboard and all the cords are left out.
- Attendance
 - Attendance is taken daily and two reports are printed at the end of the week; one is given to the Public Health Veterinarian and the other is kept in the bottom right drawer of the desk.
 - An original for the attendance form is saved under “City YY” in My Documents on the desk top.
 - Once open change the date in the top row to the dates for the week.
 - The hours worked for the day is written in the row corresponding to that sanitarian aide. Hours for the week are totaled in the last column and over all hours are totaled next to the name.
 - Planned absences can be filled in with zero before the week starts; all absences are leave without pay.
 - Collect blue attendance sheets and record the hours on the attendance spread sheet.
- Maintenance on any equipment if necessary this includes computers, sprayers, and foggers.
- Paperwork
 - No fogs
 - There are two no fog documents saved on the desktop computer.
 - One is a Word document that has the names and addresses of the no fogs.
 - The other document is an Excel spread sheet that has the address as well as the district area, map coordinates, and the years that the no fog was requested (starting in 2003 to the present).
 - Update attendance
 - File larviciding forms into return folders; located in the bottom drawer of the filing cabinet under the laptop.
 - Find addresses and districts
 - Keep a visual running total of areas that have been fogged; located on a clipboard on the wall left of the desk.
- General cleaning of the carriage house
- Update maps
 - The no fog map is located on the bulletin board on the south wall in the middle room of the carriage house.
 - No fogged address are looked up to find there relative location and indicated with a blue thumbtack.
- Make sure MSDS (Material Safety Data Sheets) are up to date.

- Keep tools in the carriage house clean and in working order.
- Call sanitarian aides for special instructions or information that may come up after they leave for the day.
 - Dead birds or emergency requests for example.
- Keep trapping information up to date.
 - The trapper will give the carriage house sanitarian aide the disk for the day that has the daily trap spread sheet. The document is transferred from the disc to the flash drive to finally be stored on the desk top computer.
 - The spread sheets are saved under “City YY” in My Documents
 - Three daily trapping spread sheets are put in the daily time sheet tray.
 - Another daily trapping sheet put in a red binder labeled trap counts in the bottom right drawer of the desk.
 - A running total of the traps are placed on the east wall under the bulletin board.
 - If a positive mosquito comes back from the state then the address is changed to red on the spread sheet.
 - The sanitarian aide gives the total weeks trap results to the vector specialist who then forwards it to the health promotion department where it is posted on the Columbus Public Health Website.
- Assign fogging trucks weekly
 - Print out list (a form is saved in “City YY” on the desktop computer) and then posted on the bulletin board on the west wall in the main room of the carriage house.
 - Keep a record of what sanitarian aide is driving which truck. The forms are kept in the bottom right of the desk.
- Make sure empty containers of Malathion, BioMist and Evoluer (any adulticide) are triple rinsed and properly disposed of.
- Take pool pictures from camera
 - The memory card is put in the card reader for the desk top computer.
 - Once the card is read the computer will ask if the pictures want to be saved. They need to be saved in a new folder named for the roads that the pools are on (this folder is saved in the city folder in My Documents).
- Assign bite line calls to correct sanitarian aides.
- Talk with the vector specialist if any supplies are needed.
- Give daily updates to sanitarian aides and help with any questions from sanitarian aides.
- All documents are saved on both the flash drive and the desk top computer.
- Set areas for mosquito control
 - Talk to trapper and vector specialist (and sanitarian aides if needed) to help determine where control may be needed.
 - Areas where mosquitoes have been trapped and have met the locally established threshold may be adulticided.

A - Areas known through mosquito surveillance to have high numbers of potential vector mosquitoes (*Ochlerotatus triseriatus* – La Crosse Encephalitis or *Culex sp.* – West Nile Virus) and confirmation of infected mosquitoes (positive mosquito pools). Priority is to be given to areas with the highest relative infection ratio. The definition of a high number of

Culex sp. mosquitoes is 200 or more caught in a single gravid trap within three weeks of the scheduled fogging. Mosquito count (number) data is not to be considered if it is over three weeks old. Priority is to be given to the most recent information.

B - Areas known through mosquito sampling to have high numbers of potential vector mosquitoes (*Ochlerotatus triseriatus* or *Culex pipiens*). The typical threshold value for “high” numbers is 200 or more *Culex sp.* mosquitoes caught in a single gravid trap.

C - Areas known through mosquito sampling, complaint investigation, and larviciding visits to have high numbers of biting mosquitoes. (This is the lowest threshold which would warrant fogging of a residential neighborhood).

D - Areas which due to their location, special nature, or because of special events will have people in an outdoor setting which will put those people at risk of being bitten by mosquitoes. (This priority is to be considered for parks and bikeways.)

Areas that are determined to need control are discussed with the Section Chief for final approval. Once these are approved they are forwarded to the webmaster for the locations to be posted on Columbus Public Health Website.

Envision Complaint Creation Standard

At a minimum, the person creating a complaint in Envision shall fill in the following labeled fields:

1. Site Location (where is the location – street address, intersection, etc.)
2. Received By (who took the complaint and entered it into Envision)
3. Date (Received By) (when was the complaint taken)
4. Assigned To (who is the person that will receive the complaint)
5. Date (Assigned To) (when was/will the assigned person get the complaint)
6. Program Element (what program gets the complaint) (many programs have a specific complaint PE) (Pools = 7099, FSO Food = 2199, Sewage = 7299, Vector = 7899)
7. Complaint Mode (how was the complaint made)
8. Complaint Description (what is the complaint)
9. If the complaint mode is 3-1-1, the 3-1-1 number is to be placed first in the complaint description box (8).

The screenshot shows the 'Complaint' form in the Envision software. The form is divided into several sections:

- Owner Name and Address** and **Facility Name and Address** (top section).
- Facility ID** (dropdown menu), **Record ID** (text field), **Site Location** (text field, highlighted with a yellow background and labeled '1'), and **Account ID** (dropdown menu).
- Disposition** section with fields for **Emp #** (dropdown menu, labeled '2'), **Date** (dropdown menu, labeled '3'), **Time** (dropdown menu), **Status** (dropdown menu), **Received By** (dropdown menu, labeled '4'), **Assigned To** (dropdown menu, labeled '5'), **Program/Element** (dropdown menu, labeled '6'), and **Lien Disposition Code** (dropdown menu).
- Complaint** section with fields for **Complainant** (text field), **Address** (text field), **City, St, Zip** (text field), **Country** (text field), **Work Phone** (text field), **Home Phone** (text field), **Email Address** (text field), **Complaint Mode** (dropdown menu, labeled '7'), **Last Activity** (text field), and **Complaint Description** (text area, highlighted with a yellow background and labeled '8').
- Navigation** bar at the bottom with tabs: **Contact**, **Information**, **Location**, **Financial**, **Referral Dates/Agencies**, **GIS**, **Daily Activities**, **Violations**, and **Invoices**.

Supervisors will assess the status level of the complaint and change as appropriate from high to either medium or low priority. With few exceptions, all anonymous complaints will be low priority.

The supervisor will then assign the complaint to a sanitarian. The date assigned is the date that the sanitarian receives the complaint.

The sanitarian investigates/inspects, updates the complaint record, and when appropriate, closes the complaint. High priority complaints are to be inspected by the sanitarian within one business day, medium priority complaints are to be inspected within two business days, and low priority complaints are to be inspected within three business days.

Supervisors are responsible for regularly checking the status of all open complaints in their programs.

Sanitarians are to callback or otherwise notify the complainant as to the initial findings for all complaints where the complainant is known. The callback action or attempt is to be noted on the sanitarian's Envision daily activity record. Callbacks should be made within five business days or in accordance with the sanitarian's key job function timeline. A callback is considered complete when the sanitarian either speaks directly to the complainant or leaves a recorded message on the complainant's voicemail.

The following procedure is to be applied to *anonymous* complaints:

Anonymous complaints are to be entered into the Envision program and forwarded to the appropriate supervisor as with any other complaint. Supervisors will assign the complaint for investigation only when one or more of the following criteria are met:

- a. It appears to be a public health concern.
- b. It involves an establishment or facility for which we have regulatory responsibility.
- c. The complaint is referred to us from another government official.

If the complaint does not meet one or more of these criteria, the supervisor may close the complaint after so noting its failure to meet the above criteria in Envision. When anonymous complaints are received directly by field staff, they will use the above criteria to determine whether it will be investigated. If the criteria are not met, the person making the complaint should be told it will not be investigated. If the staff member is not sure, the information should be recorded in Envision and a decision will be made by the supervisor.

An anonymous complaint, just as any other complaint, must be related to one of our programs. If not, it should be referred to the appropriate agency. Investigations resulting from anonymous complaints should be made within three business days.

All anonymous complaint investigations should be made in a non-intrusive manner. The owner, occupant, or other person in charge of the building, premise, or property to be investigated should not be more than minimally inconvenienced or disturbed. Additional evidence from another source or by observation from off the property in question is required to constitute probable cause to enter onto the property in question or to obtain a search warrant to do so. (ORC §2933.22 (B) “A warrant of search to conduct an inspection of property shall issue only upon probable cause to believe that conditions exist upon such property which are or may become hazardous to the public health, safety, or welfare.”)

3-1-1 Service Requests, E-mail Complaints, Mailed Complaints

- 3-1-1 Service Requests
- E-mail Complaints
- Mailed Complaints
- Walk-in Complaints

These are to be handled in a manner similar to and consistent with telephone complaints. In the case of a complaint created in Envision because of a 3-1-1 service request, the 3-1-1 service request number is to be placed first in the “Complaint Description” field. Responses to a 3-1-1 service request should include the Envision complaint number.

3-1-1 Responses

311 Call Center
City Government at Your Fingertips

Home Log Out Print **Responses** Attachments SR List
Investigator User Guide
Service Request # 703275926

Date Open: 03/27/2007 08:06:29 AM Open By: LIDAUGHERTY
Status: Work Order In Progress Status Date: 04/09/2007
Incident Date: 3/27/2007 12:00:00 AM

311 Call Center
City Government at Your Fingertips

Home Log Out Service Request **Responses** Attachments Print SR List
Investigator User Guide
Responses for Service Request #703275926

Response Type	Date Added	Added By	Investigation Date	Investigator Name	Comments	Special Instructions
WORK ORDER CREATED - IN PROGRESS	04/09/2007	DHARMON	04/09/2007	HARMON, DALE	COLUMBUS PUBLIC HEALTH COMPLAINT (CO0015900) AND ASSIGNED TO PUBLIC HEALTH VETERINARIAN TO INVESTIGATE.	

Add New Response

Each supervisor or their designee is to check for new 3-1-1 service requests (Complaints) once each workday. If both the supervisor and their designee are away on leave, this task will be completed by the section chief. Upon opening a 3-1-1 service request, the supervisor should make a determination as to the proper response to the service request and is to enter a response to the 3-1-1 that same day. All 3-1-1 service requests, other than those in the “Open” category, should have at least one response. Each supervisor is to continue to update the 3-1-1 service request as to progress until the 3-1-1 service request is closed.

Closing an Envision Complaint

To fully close an Envision complaint, the fields marked in yellow must be changed and/or completed by the sanitarian:

The image shows two screenshots of the 'Complaint' form. The left screenshot shows the 'Disposition' section with 'Status' highlighted in yellow. The right screenshot shows the 'Inspected/Resolved' section with 'Requires Further Action' highlighted in yellow and a red arrow pointing to it with the text 'Must uncheck this box'.

Linking Daily Activity Records

The sanitarian’s daily activity records related to the complaint are to be linked to the complaint:

The image shows a screenshot of the 'Daily Express' form. It features a table with columns: Employee ID, Date, Record ID, P/E, Service, Result, Action, Type, Activity, Travel, District, Invoice No., Comment, Act. Tot, Tra. Tot. The 'Record ID' column is highlighted in yellow. Below the table are fields for Employee Name, Program/Element, Service, Result, Action, District, and a Score of 100.

Data Entry

- Data entry is done in room NL08 of the Health Department building; it is the second computer on the south wall.
- Data entry is done everyday.
- First separate daily time sheets from, mosquito larviciding record form, and any other information for the vector specialist.
- Separate the mosquito larviciding record forms by date putting the oldest date first.
- If a sanitarian aide has two daily time sheets make sure their name and the date are on both.
- Complaint folders and daily time sheets are separated by date and placed on the chair of the vector specialist.
- If a location is no longer a site they are not recorded, but placed on top of the filing cabinet in the vector specialist office.
- New sites (orange forms) are not entered till the end of the season because they need a record ID number.
- On the computer
 - Log on to the computer with a user name and password.
 - Double click on Envision; log on with the user name vseason and the password vector1
 - To open the data window go to:
 - Applications
 - Core
 - Daily time and activity
 - Daily express
 - Type “85” for the employer ID; press enter
 - Type the date the site was treated; press enter.
 - In the Record ID column type in “SR000” and then the record site number located in the box on the top left corner of the mosquito larviciding record form; press enter.
 - The address of the site will appear above the form; check to make sure it is the same one that is on the form.
 - In the Program/Element (P/E) column type in “7820” or “7812”
 - 7820 for mosquito chemical larva control
 - 7812 for habitat investigation
 - In the service column write “703”
 - Under the result column type “06” (incompliance)
 - In the action column “12” is written (schedule follow up)
 - Type in the time spent at the site in the activity column.
 - If any pesticide is used the name is written, then two dashes (--), and then the amount is written in the comments column; this is done in all capital letters. If nothing is done at the site type in “NCFA” (no cause for action).
 - After the comments are written use the down arrow to move to the next row; if this is not done typing will continue to move over to the right.

PROGRAM ELEMENT CODES (PEs)

MOSQUITO	DEAD BIRD	7813
MOSQUITO	CHEMICAL ADULT CONTROL	7822
MOSQUITO	LARVAL CONTROL	7820
MOSQUITO	GRAVID TRAPPING	7811
MOSQUITO	HABITAT INVESTIGATION	7812
MOSQUITO	HABITAT LARVAL CONTROL	7821
MOSQUITO	LIGHT TRAPPING	7810

PRIVATE	IN GROUNG POOL	7012
PRIVATE	ABOVE GROUND POOL	7011
PRIVATE	POOLS GENERAL	7010

RODENT	GENERAL	7600
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TICK	CHEMICAL CONTROL	7860
TICK	ENVIRONMENTAL CONTROL	7861
TICK	CONTROL SURVEILLANCE	7850

VECTOR CONTROL GENERAL		7800
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Procedure for Oil Changes/Repairs on Vector Control Vehicles

Staff members do not need to call ahead for appointment - just drop off at Fleet Management.

If an oil change is required properly fill out **BLUE** form at the window of the check-in-desk

Brass Tag #

License #

Odometer

Lay in Date

Lay in Time

Customer Name

Phone

Division

If repairs are needed on the vehicle, properly fill out the **WHITE** form at the window of the check-in-desk

Fleet Management will not call you when the vehicle is ready. You can either wait on the vehicle or pick it up later. (Fleet Management will give you an estimated time of completion)

Fleet Management is open for second shift so you can use the city vehicle for the day if needed then drop it off at the end of the day and it will likely be ready for pick up the next morning

***Fleet Managements estimated move to the East side is January 2008**

***Copies of Blue and White sheets are located on book shelf outside of Dan Smith's Office.**

Week of:

January 1st	Cost history on trucks Complete, review, and submit 2005 inventory of chemicals & supplies to justify purchase requests for 2006 season. (Should have been completed in October 2005.) Complete Internal Requisition Forms (Samples avail in 3 ring binder labeled "Purchase Request").
January 1st	Start larvicide site verification
February 6th	Call last year's seasonal employees (Need to determine which Vector Program seasonal employees will be returning. This allows us to determine the number of open positions to interview for.)
February 21 st	Begin hiring process by submitting a Personnel Status Form to HR. The Status Form specifies the job title, number of seasonal positions to be filled, number of expected returnees, the index code (501 353), the number of weeks for the posting, and the date to begin the posting.
March 1st	Call Human Resources about job posting
March 13 th	Seasonal posting begins for the requested number of weeks.
April	Review applicant response forms; mail letters to applicants requesting they call to arrange interview; finalize interview tool (questions); have HR review and approve the interview tool.
Early in May	Interview all applicants, mail Vector Program information/notification letter to citizens that in 2005 requested their property not be adulticided (no-fogs).
Mid-May	Make hiring decisions and submit Personnel Status Forms to HR (Make sure that proper notification and drug testing protocol is followed.)
June 12th	Start 1 or 2 seasonal employees, begin taking and responding to complaints.
Week of June 19th	Have all ULV-fog equipment calibrated, begin mosquito trapping, begin larviciding, have all staff hired, and train new staff.
June 22 and every week thereafter:	Provide to the department webmaster a map in electronic form showing next week's expected adulticiding locations. The locations are to be determined in strict accordance with the Columbus Public Health adulticiding priorities.

June 28 th or so	Start adulticiding (fogging) with City of Columbus parks; have no-fog locations/lists in all vehicles used for adulticiding.
Week of July 10 th	All larviciding sites inspected by this date
August	Evaluate effectiveness of adulticiding; consider doing efficacy study (trap – adulticide – trap with control trap – no adulticide – trap locations). Monitor adulticiding staff as needed to insure adulticiding is being conducted as assigned.
First week of September	Determine the last day for adulticiding. Begin consolidating insecticide into active vehicles. Begin cleaning equipment. Use staff to organize and clean trucks, carriage house, & chemical building.
Mid September	Insure that no staff work more than 480 hours or 14 weeks. Use remaining staff to finish up season.
October	Inventory all chemicals and equipment. Make a determination as to equipment and chemicals needed for the next year. Store any ramps or outside equipment before there is a chance of snow.
November	P.H. Sanitarian II performs equipment repairs as needed. However, the main function until next season is inspection & enforcement actions aimed at nuisance backyard pools and improper tire storage/disposal.