



LAGRANGE COUNTY HEALTH DEPARTMENT



ANNUAL REPORT 2015

LAGRANGE COUNTY

HEALTH DEPARTMENT

304 N TOWNLINE RD., SUITE 1
LAGRANGE, IN. 46761
260-499-4182

WEBSITE: lagrangecountyhealth.com

HEALTH OFFICER AND BOARD MEMBERS

DR. T. ANTHONY PECHIN, M.D., HEALTH OFFICER
REGINA LINN, R. N., PRESIDENT
JAMES P KELLY, FACHE, HFA; VICE PRESIDENT
DR. JEFFREY BASSETT, D.D.S.
TRUDY MANDERFELD
TAMMY WELDON

HEALTH DEPARTMENT STAFF

DR. ALFREDO GARCIA, ADMINISTRATOR/ENVIRONMENTAL HEALTH SPECIALIST
JAROD NISLEY, ENVIRONMENTAL HEALTH SPECIALIST
KELLY BILLS, VITAL RECORDS REGISTRAR, OFFICE MANAGER
DEBRA GROSSMAN, R.N.; PUBLIC HEALTH NURSE I
LINDA STONEBURNER, L.P.N.; PUBLIC HEALTH NURSE II; RESIGNED NOVEMBER 2015
LOUANN SHERCK, NURSING - DATA ENTRY AND CLERICAL
MICHELLE TENNANT, R.N.; PUBLIC HEALTH NURSE II, WIC COORDINATOR
RENEE ROSENDAUL, WIC CLINIC ASSISTANT, BREAST FEEDING COORDINATOR
TAWANDA MILLER, R.N.; PUBLIC HEALTH NURSE II, WIC NUTRITIONIST RESIGNED MAY 2015
ERIN NORTON, R.N.; PUBLIC HEALTH NURSE II, WIC NUTRITIONIST RESIGNED DECEMBER 2015

LAGRANGE COUNTY HEALTH DEPARTMENT

ANNUAL REPORT 2015

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LaGrange County Health Department
304 N. Townline Road, Suite #1
LaGrange, IN 46761
Communicable Diseases 2015

Disease	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Total
Animal Bite	2	3	2	3	6	2	3	1	1	2	1	3	29
Campylobacter	0	2	1	3	0	0	1	3	0	2	0	1	13
Chicken Pox	0	1	0	0	0	0	0	0	0	0	0	0	1
Chlamydia Trachomatis	1	0	0	0	0	3	0	3	1	0	2	0	10
Cryptosporidium	0	0	0	0	0	1	0	0	0	0	1	0	2
E.Coli, 0157(+other)	0	0	0	0	0	0	0	0	0	0	0	0	0
Exposure (Bloodborne)	0	0	0	0	0	0	0	0	0	0	0	0	0
Giardiasis	0	0	0	0	0	0	0	0	0	0	0	0	0
Haemophilus B	0	1	0	0	0	0	0	0	0	0	0	0	1
Hepatitis A	0	1	0	0	0	0	0	0	0	0	0	0	1
Hepatitis B	2	2	0	1	0	0	0	1	0	0	0	0	6
Hepatitis C	3	4	2	2	0	1	0	2	0	1	1	0	16
Histoplasmosis	0	1	1	0	0	0	0	0	0	0	0	1	3
Influenza (death)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lead, elevated	0	1	0	0	1	0	0	1	0	1	0	0	4
Legionellosis	0	0	0	0	0	0	0	0	0	0	0	0	0
Meningitis, Viral	0	0	0	0	0	0	0	0	0	0	0	0	0
Meningitis, Bacterial	0	0	0	0	0	0	0	0	0	0	0	0	0
Mumps	0	0	0	0	0	0	0	0	0	0	0	0	0
N. Gonorrhoeae	0	0	0	0	0	0	0	0	0	1	0	0	1
Newborn Screen	0	0	0	0	0	0	0	0	0	0	0	0	0
Pertussis	0	0	0	0	0	0	0	0	1	0	1	2	4
Rabies, potential	0	0	0	0	0	0	0	0	0	0	0	0	0
Rocky Mtn. Sp. Fever	0	0	0	0	0	0	0	0	0	0	0	0	0
Salmonella	0	0	0	2	0	0	0	1	0	1	0	0	4
Shigella	0	0	0	0	0	0	0	0	0	0	0	0	0
Strep Inv A	0	0	0	0	0	0	0	0	0	0	0	0	0
Strep GrpB	0	0	0	0	0	0	0	0	0	0	0	0	0
Strep Pneumococcal	4	0	4	0	1	1	0	0	0	0	0	0	10
TB Class II (LTBI)	0	0	0	0	0	0	1	0	0	0	0	0	1
West Nile Virus	0	0	0	0	0	0	0	0	0	0	0	0	0
Other: (See below)								1	2				3
Lyme Disease	0	1	0	0	0	0	0	0	0	0	1	0	2
Syphilis	0	0	0	0	0	0	0	0	0	0	0	0	0
Invasive Strep B	0	0	0	0	0	0	0	0	0	1	0	0	1
Listeriosis	0	0	0	0	0	0	0	0	0	0	0	0	0
Severe MRSA/MSSA	0	0	0	0	0	0	0	0	0	0	0	0	0
TB (Active)	0	0	0	0	0	0	0	0	0	0	0	0	0
TB (Contact)	0	0	0	0	0	0	0	0	0	0	0	0	0
TB (Suspect)	0	0	0	0	0	0	0	0	0	0	0	0	0
TB (Clinical)	0	0	0	0	0	0	0	0	0	1	1	0	2
TB (Window Propy)	0	0	0	0	0	0	0	0	0	0	0	0	0
Tetanus Death	0	0	0	0	0	0	0	0	0	0	0	0	0
Measles	0	0	0	0	0	0	0	0	0	0	0	0	0
Varicella	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	12	18	10	11	8	8	5	13	5	10	8	7	115

July LTBI pt expired before could start treatment from other medical problems.

OTHER (from August above):

Chikungunya in a pt who traveled to Nicaragua.

Other (from Sept above)

Chikungunya in a pt who traveled to Nicaragua.

Brucellosis

Number of Visits to the LCHD for ISDH Vaccine For Children Program:

	January	February	March	April	May	June	July	August	Sept.	October	Nov	Dec	Year Total
2009	233	255	342	331	308	368	421	548	351	350	180	221	3,904
2010	193	776	242	887	463	374	394	896	506	396	465	345	5,937
2011	313	227	319	332	367	386	439	723	371	375	422	588	4,862
2012	193	198	222	304	293	358	405	469	355	400	227	196	3,620
2013	200	199	193	277	221	649	322	411	335	344	250	172	3,573
2014	127	138	180	210	236	331	408	375	364	284	245	205	3,103
2015	61	174	201	200	215	322	339	367	273	294	210	187	2,843

aGrange Clinics:

Total visits split by location:

2009	112	105	189	188	136	126	198	253	167	160	135	138	1,902
2010	99	692	136	772	335	159	160	616	278	168	354	173	3,942
2011	188	132	140	136	159	203	160	329	139	151	245	386	2,368
2012	69	93	42	95	94	85	115	203	128	159	66	62	1,211
2013	41	67	48	94	64	204	126	165	84	119	104	59	1,175
2014	47	58	37	60	73	92	126	135	147	77	95	99	1,046
2015	36	48	55	53	77	109	118	151	96	98	96	96	1,033

Shipshewana Clinics:

2009	47	76	78	73	72	132	91	141	74	100	148	47	1,079
2010	39	32	46	49	65	91	113	138	109	101	111	75	969
2011	44	52	80	99	108	61	131	187	121	101	113	81	1,178
2012	57	67	68	116	56	122	142	159	121	108	102	84	1,202
2013	73	63	81	66	91	246	62	127	126	103	92	44	1,174
2014	32	22	63	71	69	127	113	134	101	96	89	54	971
2015	25	48	58	58	81	110	94	121	107	86	65	57	910

Opoka Clinics:

2009	74	74	75	70	103	110	132	154	110	90	70	22	1,084
2010	55	52	60	66	63	124	121	142	119	127	0	97	1,026
2011	81	43	99	97	100	122	148	207	111	123	64	121	1,316
2012	67	38	98	93	143	151	148	107	106	133	59	50	1,193
2013	86	69	64	117	66	244	134	119	125	122	54	69	1,269
2014	48	58	80	79	94	112	169	106	116	111	61	52	1,086
2015	0	78	88	89	57	103	127	95	70	110	49	34	866

Total Number of Vaccines Administered:

2009	545	593	793	755	746	843	924	1,237	816	683	353	353	8,641
2010	414	1,494	538	1,921	1,103	759	851	2,082	1,197	786	810	706	12,661
2011	592	482	686	717	803	856	936	1,649	844	752	773	995	10,085
2012	404	423	473	618	640	734	845	1,045	783	846	446	391	7,648
2013	422	422	401	603	469	694	701	953	715	727	484	367	6,958
2014	282	296	384	445	468	685	883	788	765	557	439	404	6,396
2015	127	375	425	416	435	699	709	778	591	566	422	385	5,928

Immunizations *from A to Z*

May 22, 2015 at 10:00a - 2:00p

Hosted by **LAGRANGE COUNTY HEALTH DEPARTMENT**

Location: County Office Building (no time limit parking around building)
114 W Michigan St (Commissioner/Council Room)
Lagrange, IN 46761

Lunch provided by Sanofi

For location information, contact Deb Grossman at (260)499-4182 ext 2.

Email: dgrossman@lagrangecounty.org

For registration or training information, contact Debra Doctor ISDH Educator at (260)210-2932

Email: ddoctor@isdh.in.gov



Who Should Attend?

This training is for anyone who provides immunizations, or is interested in learning more about vaccine preventable diseases. This includes medical staff & management.

Participants include NPs, RNs, LPNs, CNAs, MDs, MAs, PAs, & faculty/students in the medical field.

Topics Included

Principles of Vaccination	Adult recommendations
Vaccine Preventable Diseases	Immunization Schedules
Child/Adolescent Immunizations	School Requirements
General Recommendations	Vaccine Misconceptions
Vaccine Storage & Handling	Reliable resources
Safe & Effective Vaccine Admin	Resources Booklet provided

Registration Deadline Monday May 18, 2015, 4:30 pm eastern time

To register: Email or fax this form to ddoctor@isdh.in.gov or fax# 317-974-2003

A separate form must be used for each person. Confirmations will be sent by email or by phone.

Name _____ Credentials (RN, LPN, MD, etc.) _____

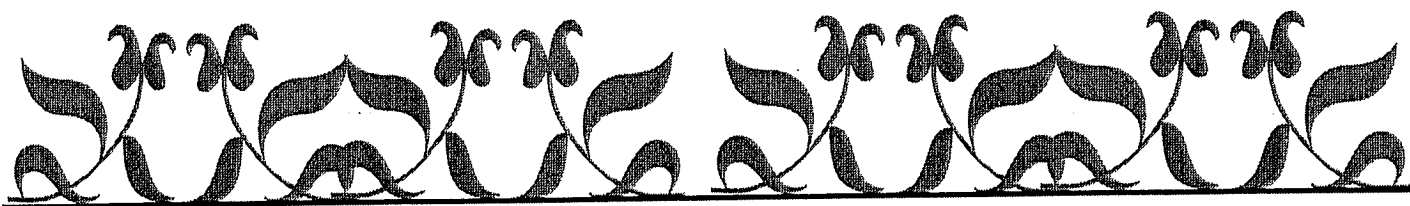
Practice/Clinic _____ Job Title _____

Mailing Address _____

City _____ State _____ ZIP _____ County _____

PHONE _____ FAX _____ EMAIL: _____

Have you attended the Immunizations from A to Z training before?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Would you like to receive our Immunization E-Newsletter by Email?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are you currently a CHIRP user?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If no, would you like more information on CHIRP?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are you currently a VFC Provider?	<input type="checkbox"/> Yes	<input type="checkbox"/> No



WHAT: Back to School Immunization Clinic

WHERE: LaGrange County Health Dept
304 N. Townline Rd.
LaGrange, IN

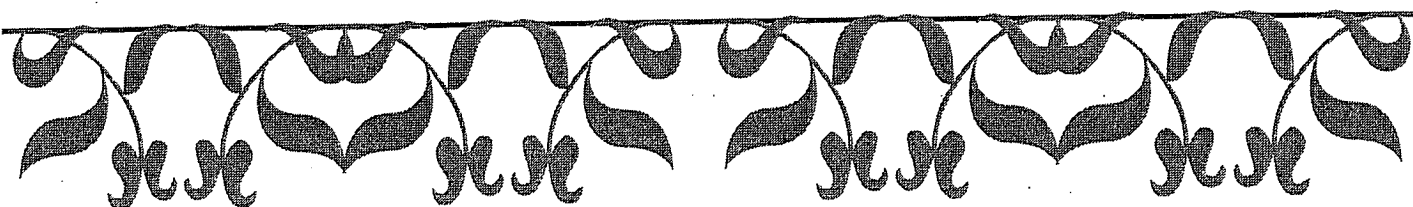
WHEN: Tuesday August 4th, 2015
From 330p to 7p

BY APPOINTMENT ONLY

WHO: All Eligible LaGrange County Children

Eligibility rules are: No insurance, valid Medicaid, or insurance does not pay for any vaccine; or be Alaskan Native/American Indian.

Please call the LCHD at 260-499-4182 ext 1 to make an appointment or with any questions.



FREE FLU SHOTS

**(For children with no insurance, Medicaid
or Insurance doesn't cover vaccines.)**

LaGrange Co. Health Dept.

will be at the

Shipshewana Wolfe Building

giving Flu Shots on:

December 17 3:30-5:30

Adults Flu Vaccine \$25.00

**For more information contact the
LaGrange County Health Department 260-499-4182 ext 1**



LaGrange County Health Department

www.lagrangecountyhealth.com

Protecting the place
where we live!!!...


304 N. Townline Rd. Suite 1. LaGrange, IN 46761-1319*Phone (260) 499-4182 extension 7*Fax (260) 499-4189

ENVIRONMENTAL HEALTH OFFICE

SANITARIANS ACTIVITIES REPORT (JANUARY-DECEMBER)

	2011	2012	2013	2014	2015	15-Y AVERAGE
1. SOILS EVALUATIONS	176	155	182	160	230	250
2. SEPTIC PERMIT INTERVIEWS	169	151	164	162	192	195
3. SEPTICS FINAL INSPECTIONS	150	163	136	143	163	192
4. TECHNICAL ASSISTANCE	743	585	614	503	479	446
5. COMPLAINTS:						
5a. VISITS	6	7	6	5	7	30
5b. LETTERS	2	2	1	4	8	7
6. MEETINGS:						
PLAT COMMITTEE	24	21	13	20	23	21
STATE HEALTH DPT.	4	4	2	2	4	7
OTHER (IEHA, ETC.)	16	20	23	30	51	32
TOTAL	44	45	38	52	78	59
7. MILES	10987	11144	11512	12234	11993	10395
8. BUILDING APPLICATION REVIEW	43	42	42	32	51	395
9. PLAT/ZONING FILES	74	105	104	129	151	137

SUBMITTED BY:

 **Dr. Alfredo García, PhD.**
 Administrator/Environmentalist
 LaGrange County Health Department
www.lagrangecountyhealth.com

Office (260) 499-4182 Ext 7
 Fax (260) 499-4189
agarcia@lagrangecounty.org



11-Jan-2016



BREAST CANCER: BEST PROTECTION IS EARLY DETECTION!!!!...

Breast cancer will affect an average of one in seven women during their lifetime and is the second most common cause of cancer-related deaths in women.

Regular screenings is good way to keep your health in check. Cancer screenings help to save lives as mammograms can find cancer before symptoms are present. Diagnostic mammography is used when an abnormality is found during screening or in women who have breast complaints, such as a breast mass, nipple discharge, breast pain or skin irritation.

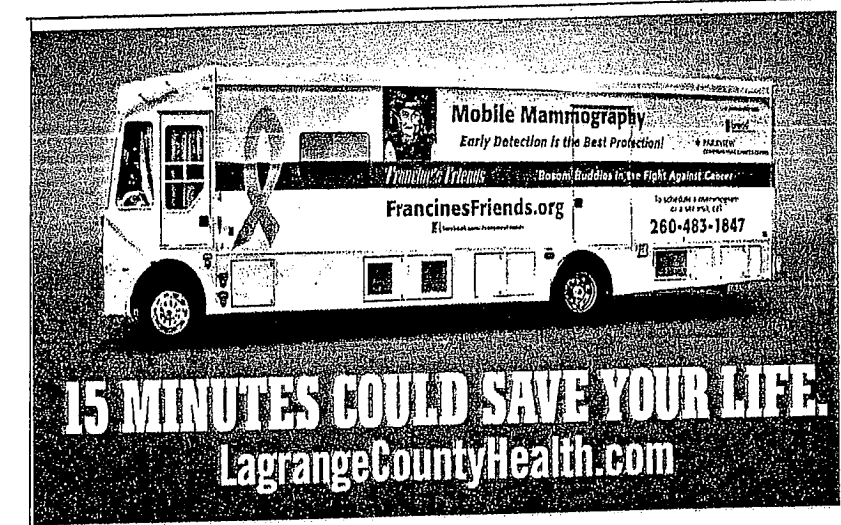
CALL US TO SCHEDULE YOUR APPOINTMENT.
 (260) 483-1847 & (800) 727-8439 ext. 26540

12/08/2015 Parkview Physicians Group Family Practice
 (8175 W US 20, Shipshewana)

Please note: For women without insurance, a high deductible or resources to pay, funding (SSS) is available

IMMUNIZATIONS: LAGRANGE COUNTY HEALTH DEPARTMENT (260) 499-4182 Extension 1

<p>LaGrange Clinic LaGrange County Health Department <u>Monday & Wednesday Walk-in Clinics</u> <u>Tuesday Appointments</u> 8:30 a.m. – 11:00 a.m. & 1:00 p.m. – 3:00 p.m.</p>	<p>Shipshewana Clinic Wolfe Building Community Room <u>Only 1st & 3rd Thursday</u> 9:00 a.m. – 11:30 a.m. 1:00 p.m. – 3:00 p.m.</p>	<p>Topeka Clinic Topeka Fire Station Building <u>Only 2nd & 4th Thursday</u> 9:00 a.m. – 11:30 a.m. 1:00 p.m. – 3:00 p.m.</p>
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BREAST CANCER: BEST PROTECTION IS EARLY DETECTION!!!!...

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CALL US TO SCHEDULE YOUR APPOINTMENT.
 (260) 483-1847 & (800) 727-8439 ext. 26540

10/13/2015 LaGrange County Council on Aging Howe,
 7605 N SR 9, Howe.

Please note: For women without insurance, a high deductible or resources to pay, funding (SSS) is available

IMMUNIZATIONS: LAGRANGE COUNTY HEALTH DEPARTMENT (260) 499-4182 Extension 1

<p>LaGrange Clinic LaGrange County Health Department <u>Monday & Wednesday Walk-in Clinics</u> <u>Tuesday Appointments</u> 8:30 a.m. – 11:00 a.m. & 1:00 p.m. – 3:00 p.m.</p>	<p>Shipshewana Clinic Wolfe Building Community Room <u>Only 1st & 3rd Thursday</u> 9:00 a.m. – 11:30 a.m. 1:00 p.m. – 3:00 p.m.</p>	<p>Topeka Clinic Topeka Fire Station Building <u>Only 2nd & 4th Thursday</u> 9:00 a.m. – 11:30 a.m. 1:00 p.m. – 3:00 p.m.</p>
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Indiana Onsite Wastewater Professionals Association, Inc.

I.O.W.P.A.

Has Presented This of Member In Good Standing To:

LAGRANGE COUNTY HEALTH DEPT.

*For subscribing to the IOWPA Code of Professional Conduct
and is entitled to All benefits and privileges of membership.*

**COUNTY HEALTH DEPARTMENT
MEMBERSHIP**

INCLUDES UP TO 3 STAFF MEMBERS

In the event that you need to reach me, my cell phone is 317-370-8757. Please don't hesitate to contact me.

On behalf of Dean ^{Paul} Halverson, thank you for your time. We look forward to meeting with you.

All the best,

JoBeth

JoBeth McCarthy, MPH

Director, Center for Public Health Practice and Indiana Public Health Training Center

Indiana University

Richard M. Fairbanks School of Public Health

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EF 200

Indianapolis, IN 46202

Direct: 317-274-3178

Cell: 317-370-8757

Fax: 317-274-3443

jomccart@iupui.edu

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<image005.png>

JoBeth McCarthy-Jean

Director, Public Health Training Center



**RICHARD M. FAIRBANKS
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www.pbhealth.iupui.edu

317-274-3178 phone
317-274-3443 fax
jomccart@iu.edu

October 15, 2015

Itinerary

6:45 - 9:30 Travel

9:30 – 10:30 Memorial Hospital of South Bend (Beacon Hospital)

11:00 – 12:00 Michiana Health Information Network

12:30 – 1:30 Eck Institute for Global Health

2:30 – 3:00 LaGrange County Health Department

4:00 – 5:00 IU Health Goshen

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**RICHARD M. FAIRBANKS
SCHOOL OF PUBLIC HEALTH**

INDIANA UNIVERSITY

Office of the Dean
IUPUI

November 10, 2015

Dear Dr. Garcia and Dr. Pechin,

Thank you for taking the time to meet last week. I can't begin to tell you how valuable I found your insights on current health department practices and issues.

I appreciate your time, and the opportunity to hear your thoughts on this important facet of public health.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul K. Halverson".

Paul K. Halverson, DrPH FACHE
Founding Dean and Professor

Activity Progress

OIG Ethics Training

Alfredo Garcia, SJRBC, Department of Natural Resources-NONEE "

Activity Name: OIG Ethics Training Type: Computer-Based Training
Activity Code: OIG_ET2015 Contact: Jeanelle Winders
Price Per Seat: -- Drop Charge: --
Enrollment Status: Completed Confirmation Number: 1773772
Start Date: 08/06/2015 End Date: --
Last Enrollment Date: -- Last Drop Date: --

[Progress](#) [Schedule](#) [Grades and Attendance](#) [Notes and Attachments](#) [Payment Details](#) [Approvals](#)

Activity Syllabus — Grades and Attendance

Syllabus Component	Progress	Passing Status	Grade	Attendance
Ethics Course 2015	Completed	Pass	Not Graded	Attended

Objectives Met

There are no Objectives associated with this activity.

[Drop](#)

[Return to Previous Page](#)

Alfredo Garcia

From: Nancy Pascoe <nancykwp@gmail.com>
Sent: Wednesday, September 02, 2015 10:00 AM
To: Alfredo Garcia
Subject: constructed wetlands for Animal Shelter use

Dear Dr. Garcia

I came across your presentation on the internet: <http://www.lagrangecountyhealth.com/Documents/RVFCWISDHHMarch2010.pdf>

I work for the National Parks Trust of the British Virgin Islands in the Caribbean and am also on the Board of the local Humane Society. The Society is designing a new animal shelter and as the site is near to a salt pond/wetland area we are considering using a constructed wetland for waste treatment.

Your web report was very informative but I was wondering how long these systems last? The local Town and Country Planning Department here have never heard of this treatment method and are requesting this information.

I am happy to provide more detail if you have the time to assist with our questions?

thank you and best wishes

Nancy Pascoe

Planning Coordinator
National Parks Trust of the Virgin Islands (UK)
British Virgin Islands
<http://www.bvinternationalparkstrust.org/>

Board Director
Humane Society of the BVI
www.bvihumanesociety.org



Title / Keyword Journal Volume
 Author Section Issue Clear
 Article Type Special Issue Page Search

[Recycling](#)

[Volume 1, Issue 1](#)

Recycling 2015, 1(1), 3-13; doi:10.3390/recycling1010003

[Open Access](#)

Case Report

Recycled Shredded-Tire Chips Used As Support Material in a Constructed Wetland Treating High-Strength Wastewater from a Bakery: Case Study

Alfredo García-Pérez ^{1,*}, Mark Harrison ², Craig Chivers ¹ and Bill Grant ¹

¹ Lagrange County Health Department, Environmental Health Office, 304 North Townline Road, Suite 1, LaGrange, IN 46761-1319, USA

² Water Resources-Senior Associate, Lochmueller Group, 3502 Woodview Trace, Suite 150, Indianapolis, IN 46268, USA

* Author to whom correspondence should be addressed.

Received: 4 August 2015 / Revised: 10 September 2015 / Accepted: 11 September 2015 / Published: 18 September 2015

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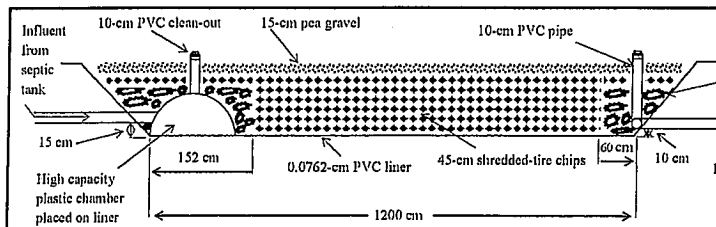
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Abstract

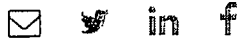
Support material used in constructed wetlands has been shown to be a key element and significant mechanism in the process of contaminants removal from sewage including phosphorus compounds. Recycled waste tires processed into small chips that are similar to conventional stone aggregate are currently used in the construction of septic system leach fields and could be a green alternative as support material in constructed wetlands. During three years, the performance of a gravity subsurface horizontal flow constructed wetland using recycled shredded-tire chips as support material to treat on-site the high strength wastewater from a bakery was monitored. Grab samples of the effluent from the septic tank and the constructed wetland were collected quarterly and submitted to a certified laboratory. Final treatment efficiency (percentage removal) was low for potassium (36%), intermediate for total nitrogen (56%), and total Kjeldahl nitrogen (57%), and relatively high for total phosphorus (65%), total suspended solids (69%), ammonia-nitrogen (87%), five-day biochemical oxygen demand (92%), *Escherichia coli* (97%), and fat-oil and grease total (99%). Nitrate-nitrogen final mean value was consistently below 1 mg/L, and iron concentration increased from less of 2 mg/L in the sewage to 55 mg/L in the constructed wetland effluent. These results show that recycled shredded-tire chips could be an environmental alternative support material in constructed wetlands as efficient removal of typical wastewater contaminants is not compromised.

Keywords: constructed wetland; high-strength sewage; recycled tires; shredded-tire chips



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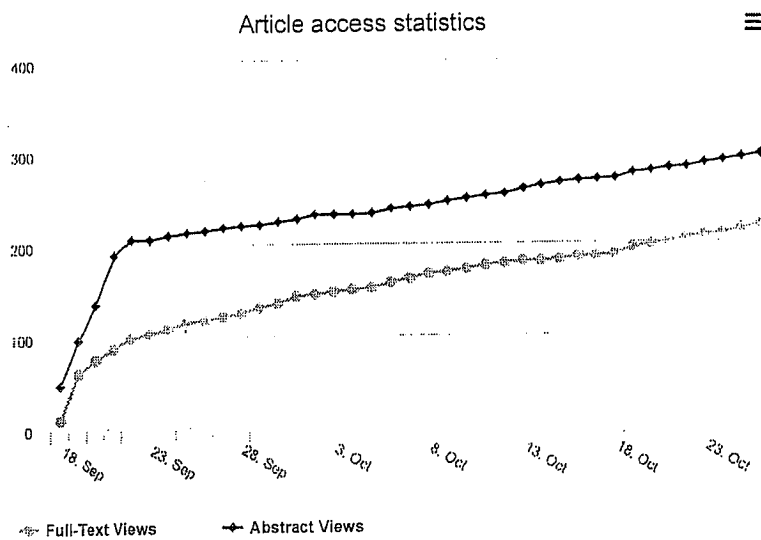
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Case Report

Recycled Shredded-Tire Chips Used As Support Material in a Constructed Wetland Treating High-Strength Wastewater from a Bakery: Case Study

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Abstract: Support material used in constructed wetlands has been shown to be a key element and significant mechanism in the process of contaminants removal from sewage including phosphorus compounds. Recycled waste tires processed into small chips that are similar to conventional stone aggregate are currently used in the construction of septic system leach fields and could be a green alternative as support material in constructed wetlands. During three years, the performance of a gravity subsurface horizontal flow constructed wetland using recycled shredded-tire chips as support material to treat on-site the high strength wastewater from a bakery was monitored. Grab samples of the effluent from the septic tank and the constructed wetland were collected quarterly and submitted to a certified laboratory. Final treatment efficiency (percentage removal) was low for potassium (36%), intermediate for total nitrogen (56%), and total Kjeldahl nitrogen (57%), and relatively high for total phosphorus (65%), total suspended solids (69%), ammonia-nitrogen (87%), five-day biochemical oxygen demand (92%), *Escherichia coli* (97%), and fat-oil and grease total (99%). Nitrate-nitrogen final mean value was consistently below 1 mg/L, and iron concentration increased from less of 2 mg/L in the sewage to 55 mg/L in the constructed wetland effluent. These results show that recycled shredded-tire chips could be an

environmental alternative support material in constructed wetlands as efficient removal of typical wastewater contaminants is not compromised.

Keywords: constructed wetland; high-strength sewage; recycled tires; shredded-tire chips

1. Introduction

The support material used in constructed wetlands (CWs) has been shown to be a key element and significant mechanism in the process of pollutants removal from wastewater. Research has been done testing sewage treatment efficiency of CWs using different support materials, such as gravel [1,2], shale, ironstone and hornblende [3] combination of sand and dolomite [4], and volcanic gravel rock [5].

Recycled waste tires processed into small chips are used as a filter media in the construction of septic systems absorption or leach fields [6]. The recycled shredded-tire chips material is coarse aggregate, lightweight material with long term stability and maximum storage capacity: tire chips have a porosity of 0.6, and the gravel has a porosity of 0.4 [7]. The bulky characteristic of tire chips saves in the support material as less material is required to cover same space [8]. Additionally, tire chips have good ion-exchange capacity, which allows them to work as buffer material adsorbing and releasing NO_3^- -N [9]. Those properties can be useful for wastewater treatment as tire rubber can retain not only NO_3^- -N but phosphorus compounds reducing their leachate to the soil and eventually to the ground or surface waters, however; the mechanism of how the mitigation works remains unclear [10]. Recycled shredded-tire chips could be an environmental alternative to river stone or other local media as support material in constructed wetlands. This three-year case study reports the performance of a subsurface gravity horizontal flow constructed wetland (GHFCW) using recycled shredded-tire chips as support material to treat on-site high-strength wastewater from a bakery.

2. Materials and Methods

A GHFCW cell (12 m × 6 m; 0.6 m deep) to treat on-site high-strength sewage from a bakery was built in LaGrange County, Northeast Indiana. Volume of sewage to be treated was assumed as approximately 2124 L per day according to the current commercial regulations from the Indiana State Department of Health for the proposed type of business. The 6-day per week, and 16-h bakery operation also included a public cafeteria serving coffee and ready to eat food dishes.

The wastewater from the kitchen and the bakery operation was collected in a 4732-liter septic tank working as a grease trap. Effluent leaving the grease trap runs by gravity to the front end section of a second 4732-liter septic tank, which it was also receiving sewage generated from the public and employees restrooms (Figure 1). The high strength effluent passed through a plastic filter located at the outlet of the second septic tank, and gradually released by gravity to the feeding inlet bottom of the wetland cell, which used plastic chambers to spread the incoming sewage at the front end. The GHFCW cell was built with a 0.0762 cm PVC liner and filled with a bottom layer of 45 cm depth of 40–80 mm diameter recycled shredded-tire chips, and a top layer of 15 cm depth of 4 mm diameter gravel (pea gravel) (Figures 2 and 3). The top of the wetland cell was planted with four transplanted wildlife cattails on the

corners and a dozen of water irises planted on the center of the wetland cell to enhance the system landscaping (Figure 4).

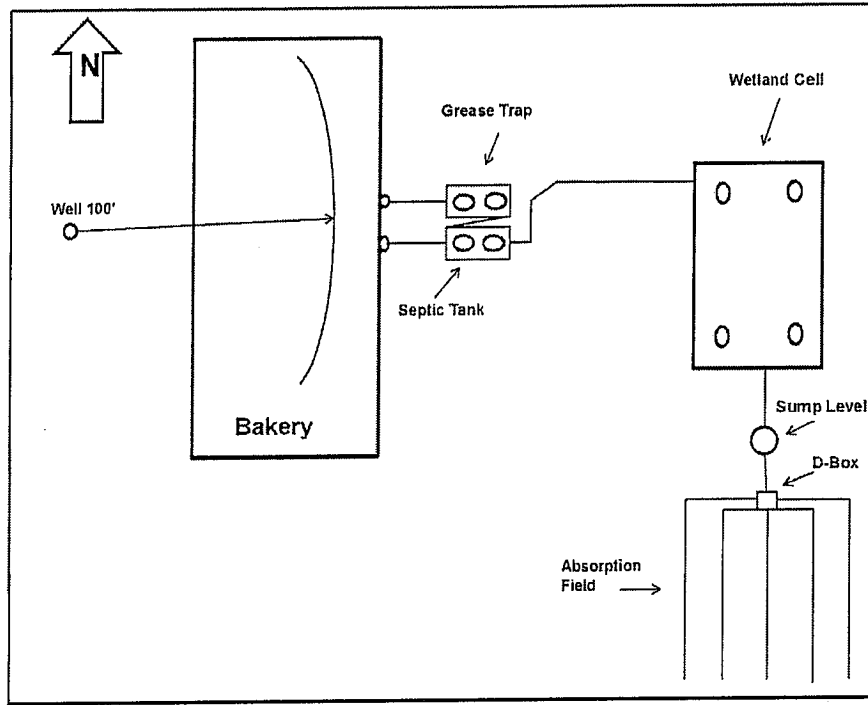


Figure 1. Site plan with components of the on-site wastewater system.

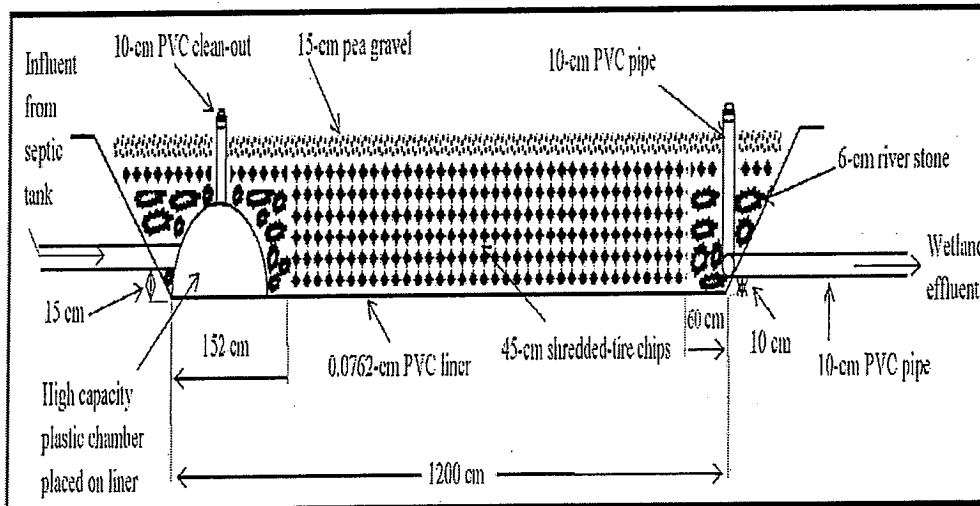


Figure 2. Longitudinal view of the horizontal flow constructed wetland.

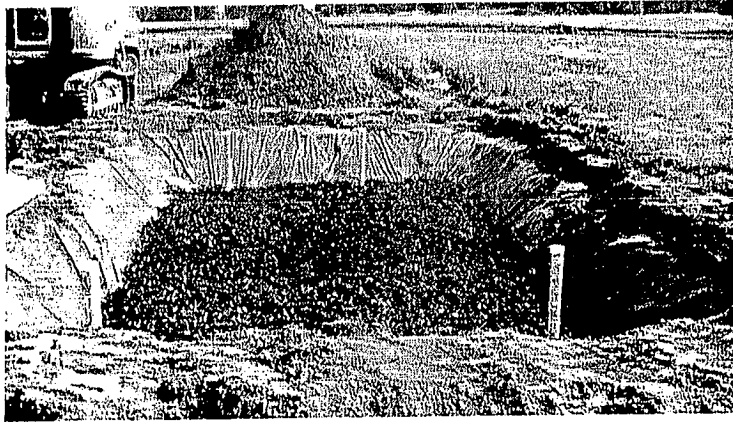


Figure 3. Front view of the constructed wetland cell showing the shredded-tire chips.

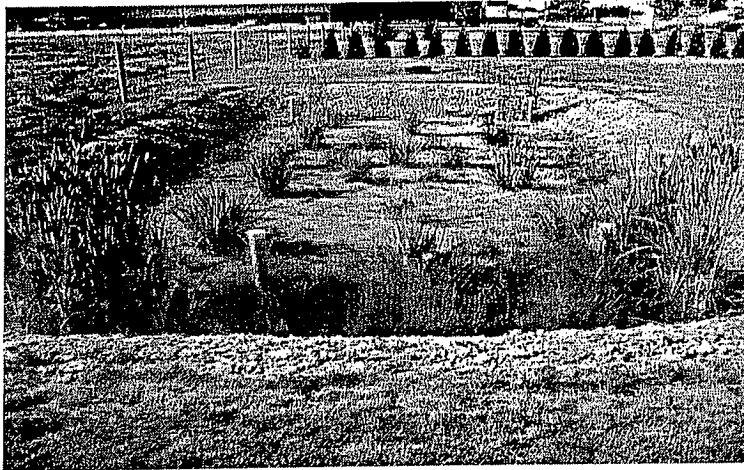


Figure 4. Aspect of the constructed wetland after the first year of installed.

During three years; grab samples of the effluent from the septic tank and the constructed wetland were collected quarterly, and transported in refrigerated coolers (4 °C) to a certified Environmental Protection Agency (EPA) testing laboratory. The samples were analyzed immediately after arriving to the laboratory using the methodology described in Standard Methods (SM) for the Examination of Water and Wastewater [11], and in the EPA Manual of Methods for Chemical Analysis of Water and Wastes [12] for the following parameters including the analytical reporting detection limit for each test: 5-day biochemical oxygen demand (BOD₅, SM-5210-B, 2 mg/L), nitrate-nitrogen (NN) (NO₃⁻-N, EPA-353.2, 0.1 mg/L), ammonia-nitrogen (AN) (NH₄⁺-N, SM-4500-NH₃-D, 0.1 mg/L), total suspended solids (TSS, SM-2540-D, 3 mg/L), fecal coliforms bacteria (EC) (*Escherichia coli*, SM-Quanti-Tray/2000, 1 MPN/100 mL), total phosphorus (TP, SM-4500-P, 0.1 mg/L), potassium (K, EPA-200.7, 2 mg/L), iron (Fe, EPA-200.7, 0.2 mg/L), fats, oil and grease, total (FOG, HEM-EPA-1664, 5 mg/L), and total Kjeldahl nitrogen (TKN, EPA-351.2, 2 mg/L). Parameters collected on-site at the constructed wetland outlet sump pit, and the septic tank included temperature (air and water), dissolved oxygen, oxygen reduction potential, and pH. The removal efficiency was calculated according to the equation used by Ebeling *et al.* [13].

3. Results and Discussion

The wastewater treatment system was designed to treat a daily sewage flow of 2124 L; however, a water well meter to check water consumption did show a daily real flow (mean \pm standard deviation) of 4191 ± 1120 L considering only six days per week for scheduled business operations. There is a percentage of the water added to prepare the dough that is evaporated during the baking process and it is not ending as wastewater. The bakery's owners indicated that 25% of the daily water flow should be ending as final baked products. Under this consideration the amount of daily sewage (3143 liters) generated by the bakery was one and half times the daily flow capacity of the CWs wastewater treatment system. The theoretical hydraulic retention time (HRT) of the sewage inside the septic tanks (9464 L) divided by the influent flowrate (3143 L/day) was ± 72 h. Assuming the same flowrate passed directly to the GHFCW, the HRT of the septic tank effluent inside the wetland cell was ± 4 days. A field test to determine a more accurate HRT was not performed. Over time, plants and accumulated sludge can negatively change the HRT. As a technical note, the support material was not changed during the testing period. The wastewater treatment system was always operational as required and clogging issues were not visible during the three-year testing period. Additionally, decaying death material was not allowed to accumulate on top of the pea gravel. Every spring a complete cleanup of the dead material was performed to allowing the new vegetative material to grow.

Results of influent (septic tank sewage) vs. effluent from the CWs, and treatment efficiency for DO, ORP, pH, air and water temperature, BOD₅, TSS, TP, K, coliform bacteria (Table 1), and nitrogenous compounds (Table 2) fluctuated during the three-year testing period. The capacity of the GHFCW to remove contaminants fluctuated from a low 36% (K) to high up to 99% for FOG (Table 3).

According to Benefield [14] the following range values could be used to define sewage as high-strength: BOD₅ (100–3685 mg/L), TSS (142–4375 mg/L), and FOG (25–14958 mg/L). Per data from Table 1 and Table 3, the constructed wetland septic system serving the bakery received wastewater that can be classified as high-strength sewage using Benefield [14] definition. Bakeries are a type of business that usually generates larger amounts of wastewater containing high amounts of FOG. High values for FOG also increases the concentration of BOD₅.

The constructed wetland used in this case study was able to reduce the inlet concentration of FOG from 1102 to 5 mg/L in the outlet showing removal efficiency over 99%. Additionally, there was a high removal efficiency for BOD₅ (92%) dropping from 2373 mg/L in the influent to 197 mg/L as effluent treated. For BOD₅, the removal efficiency of the constructed wetland system used in this case study showed better or similar performance than values reported by other researches using support material different than shredded-tire chips. Zurita, F. *et al.* [15] using local gravel rich in iron oxide (volcanic rock) as support material reported BOD₅ removal efficiency fluctuating between 74% and 78% for a horizontal flow constructed wetland treating domestic wastewater in lab-scale and pilot-scale studies. The study by [16] reported high BOD₅ removal efficiencies (96%) using stone as substrate in a subsurface constructed wetland; however, the constructed wetland was fed with pretreated raw wastewater passed first through an upflow anaerobic sludge blanket.

Table 1. Mean concentration and standard deviation (SD) for dissolved oxygen (DO), temperature (°C), 5-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), total phosphorus (TP), and fecal coliforms bacteria (*E. coli*). MPN: most probably number.

Age (Days)	DO (mg/L)		T (°C)		BOD ₅ (mg/L)		TSS (mg/L)		TP (mg/L)		<i>E. coli</i> (MPN)	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
30	1.2	1.5	23.5	17.7	850	20	170	10	4.92	0.85	9 × 10 ⁴	3 × 10 ⁴
83	1.94	1.6	22.9	21.5	830	150	330	85	8.22	0.55	17 × 10 ⁴	12 × 10 ⁴
101	0.02	0.04	26.6	22.9	710	510	240	220	7.24	1.3	98 × 10 ³	12 × 10 ³
148	0.22	0.26	25.1	16.3	2200	96	351	90	4.89	2	33 × 10 ⁵	25 × 10 ³
188	0.07	0.25	24.5	15.3	1400	120	160	130	1.7	0.41	39 × 10 ⁵	3 × 10 ³
318	0.33	0.21	22.6	11.1	2000	560	240	140	2.33	0.76	9 × 10 ³	7 × 10 ³
370	1.5	1.3	19.1	5.3	3100	160	360	150	6.54	0.363	9 × 10 ²	5 × 10 ²
436	2.2	4.6	20.9	17.3	1800	610	210	270	6.6	2.12	1 × 10 ⁵	4 × 10 ⁴
510	3.2	3.5	28.0	25.7	4200	99	1100	140	4.48	1.72	9 × 10 ³	5 × 10 ³
655	1.4	1.3	23.2	19.8	1900	110	310	150	7.28	4.53	9 × 10 ⁴	4 × 10 ⁴
775	1.3	1.4	24.5	21.6	1600	18	276	74	6.76	5.47	9 × 10 ³	2 × 10 ³
895	1.51	2.1	17.8	5.6	5680	186	464	80	3.76	1.95	2 × 10 ⁴	2 × 10 ⁴
1015	2.2	1.3	25.9	23.2	3790	31	592	62	4.5	1.6	1 × 10 ⁶	2 × 10 ³
1115	1.9	1.1	26.3	20.5	3160	87	552	38	3.6	2.2	2 × 10 ⁵	1 × 10 ⁴
Mean	1.4	1.5	23.6	17.4	2373	197	383	117	5.2	1.8	8 × 10 ⁵	2 × 10 ⁴
SD	0.9	1.3	2.9	6.3	1445	610	245	69	1.9	1.5	13 × 10 ⁵	3 × 10 ⁴

Table 2. Mean concentration, and standard deviation (SD) for ammonia-nitrogen (NH₄⁺-N), nitrate-nitrogen (NN = NO₃⁻-N), total-Kjeldahl-nitrogen (TKN), and total-nitrogen (TN = TKN + NN).

Age (Days)	NH ₄ ⁺ -N (mg/L)		NO ₃ ⁻ -N (mg/L)		TKN (mg/L)		TN (mg/L)	
	In	Out	In	Out	In	Out	In	Out
30	14.8	3.62	0	0	33.5	14.1	33.5	14.1
83	25.1	13.3	0	0	119	56.6	119	56.6
101	31.6	0.19	0	0	63.4	23.4	63.4	23.4
148	39.3	4.42	0	0	127	20	127	20
188	35.2	0.2	0	0	40.2	14.7	40.2	14.7
318	38.8	0.16	0	0	33.7	25.8	33.7	25.8
370	23.4	0.126	0	0	53.2	27.7	53.2	27.7
436	41.4	2.12	0	0	39.3	21.6	39.3	21.6
510	47.6	4.01	0.5	0.5	47	4.1	47.5	4.6
655	36.7	11.4	0.5	0.5	57.3	37.2	57.8	37.7
775	14	7.7	0.5	0.7	60.2	39.3	60.7	40
895	12.8	0.05	0.5	0.5	54	31.3	54.5	31.8
1015	24.5	0.35	0.5	0	44.8	20.5	45.3	21
1115	16.9	3.4	0.8	0.5	30	12.9	30.8	13.4
Mean	28.7	3.6	0.24	0.19	57.3	24.9	57.5	25.09
SD	11.8	4.4	0.29	0.27	29.7	13.2	29.6	10.9

Table 3. Treatment efficiency of the horizontal flow constructed wetland. MPN: Most Probably Number, NA: not applicable. Mean concentration (standard deviation = SD).

Water Quality Parameters	Subsurface Horizontal Flow Constructed Wetland		
	{Mean (SD)}		Efficiency (%)
	Influent	Effluent	
Fat, Oil and Grease {FOG (mg/L)}	1101 (150)	5.3 (0.5)	99
Fecal Coliforms { <i>E. coli</i> (MPN/100 mL)}	8×10^5 (13×10^5)	2×10^4 (3×10^4)	97
Biochemical Oxygen Demand {BOD ₅ (mg/L)}	2373 (1445)	197 (610)	92
Ammonia-N {NH ₄ ⁺ -N (mg/L)}	28.7 (11.8)	3.6 (4.4)	87
Total Suspended Solids {TSS (mg/L)}	383 (245)	117 (69)	69
Total Phosphorus {TP (mg/L)}	5.2 (1.9)	1.8 (1.5)	65
Total Kjeldahl Nitrogen {TKN (mg/L)}	57.3 (29.7)	24.9 (13.2)	57
Total-Nitrogen {(TN = TKN + NN) (mg/L)}	57.5 (29.6)	25.09 (10.9)	56
Potassium {K (mg/L)}	31.9 (8.9)	20.5 (9)	36
Nitrate-Nitrogen {NN = NO ₃ ⁻ -N (mg/L)}	0.24 (0.29)	0.19 (0.27)	NA
Dissolved Oxygen {DO (mg/L)}	1.4 (0.9)	1.5 (1.3)	NA
pH (standard units)	3.9–6.2	6.3–7.6	NA
Water Temperature (°C)	23.6 (2.9)	17.4 (6.3)	NA

The average removal for TSS during the experimental period was reduced from 383 mg/L in the inlet to 117 mg/L at the outlet showing an efficiency removal of 69%. Zurita, F. *et al.* [5] reported TSS removal up to 82% by a horizontal flow constructed wetland (HFCW) treating influent similar to typical sewage from household. A HFCW treating fermented fish production wastewater reached 88% removal of solids [16]. The lower value of solids removal by the constructed wetland used in this case study in comparison with other reports could be related to the higher daily water uses, which was over one and half times the treatment capacity for which the system was designed. This situation could have increased the velocity of the sewage passing through the wetland cell, reducing the time for sedimentation and filtration; the two main processes responsible for solid removal in constructed wetlands.

Nitrification process was efficient dropping AN from 29 to 4 mg/L (87%), TKN from 57 to 25 mg/L (57%), and TN was reduced from 58 to 25 mg/L (56%). The final NN was consistently below 1 mg/L. Values in this study were better than to those by [16]. They reported a reduction of 53% and 70%, for TKN and AN, respectively; and NN fluctuated from 0.17 to 3.4 mg/L. Their system treated wastewater from a fermented fish production; however the wastewater passed first through an upflow anaerobic sludge blanket. The constructed wetland system used in this case study shows low efficiency removal for TN (59%) in comparison with the research done by [17] using a laboratory-scale constructed wetland treating residential sewage. They reported TN removal up to 87% as a result of effective high oxygenation of the system as dissolved oxygen concentration ranged from 5.2 to 7.4 mg/L. The constructed wetland system in this case study had a final oxygen concentration of 1.5 mg/L; with a range from 0.2 to 4.6 mg/L. Additionally, another factor to be considered affecting low TN removal could be the pH concentration of the sewage entering the constructed wetland. Ammonification to convert organic-N back into ammonium is pH dependent with an optimum range from 6.5 to 8.5 standard units (SU). The final average value for the septic tank effluents (GHFCW influent) was 5.1 SU (lowest

value was 3.9 and the higher value was 6.2); which is a value located more toward the acid side of the pH scale.

Phosphorus is considered a nuisance and its presence on surface water can allow an excessive growth of algae that consume the oxygen, forming eutrophic ecosystems. The GHFCW used in this case study reached 65% removal efficiency reducing TP concentration from 5.2 mg/L in the inlet to 1.8 mg/L at the outlet. According to [18], constructed wetlands do not remove significant quantities of phosphorus, except if special media with high phosphorus adsorption capacity is used but this could generate an additional cost if it is not locally available. Typically, horizontal flow constructed wetlands remove 40% to 60% of phosphorus [19]. In addition, the support material used in CWs has been shown as a key element to phosphorus removal, and it has been compared in different studies. Gravel did show the lowest phosphorus removal efficiency (21%) followed by ironstone and hornblende both with a 33% efficiency [3]. A mixture of sand and dolomite reached a removal efficiency of 45% for phosphates [4]. A constructed wetland equipped with a calcite filter showed 62% phosphorus removal efficiency. The removal in the calcite filter was initially good, but after three months all P-filters were saturated [20]. Garcia-Perez, A. *et al.* [21] reported 76% for phosphorus removal using gravel as substrate, however they used a recirculating vertical flow constructed wetland growing and harvesting corn, a crop commodity that specifically uses large amount of phosphorus during the growing season. Iron-rich volcanic rock used as support material reached 81% phosphorus removal [17]. The high efficiency to removing phosphorus (65%) reached by the GHFCW used in this case study can be explained by the presence of metals, specifically the iron from the exposed wires of the tire chips. Any phosphorus present in the sewage could have reacted with the iron creating insoluble phosphorus compounds. The precipitation and sequestration of those phosphorus compounds within CWs using support media rich in iron has also been reported by other researchers [22–24].

During this study, the iron concentration increased from the normal 2 mg/L in the septic tank to 55 mg/L at the GHFCW effluent. Concentration of iron up to 22.6 mg/L from water collected within monitoring wells installed around septic leach fields using tire chips as media has been reported [6]. Wires of the recycled shredded-tire chips can be considered a good source for iron as a typical passenger tire is composed approximately of 10 to 15 percent of ferric material [24]. Potassium was measured considering the potential negative effect of high salt concentration on soil. Studies showing the efficiency of constructed wetlands to remove potassium from wastewater are limited. Thus, this datum (36% removal efficiency) is significant to show that constructed wetlands can also remove potassium. The concentration of potassium in effluents from domestic wastewater sources ranges from 18 to 57 mg/L [25].

4. Conclusions

The three-year case study monitoring the discharged effluent from the constructed wetland suggests that using recycled shredded-tire chips as support material performed well. The efficiency removal after three-year operation was high for TOG (99%), EC (97%), BOD₅ (92%), AN (87%), and TSS (69%). Nitrate-N final mean value was consistently below 1 mg/L. Iron concentration increased, and removal efficiency for phosphorus reached 65%. For this specific case study, a continue good performing and life expectancy of the CWs as a functional sewage treatment system is unknown

considering the daily volume (>2124 LPD) of high-strength wastewater passing through the wetland cell. Also, this GHFCW was not designed to treat this type of sewage. It was only used to test the performance of recycled shredded-tire chips as support material to treat sewage. These results indicated that recycled shredded-tire chips could be an environmental local alternative to river stone or other local material as support material in constructed wetlands. The efficiency to removing typical wastewater contaminants is not compromised. Similar to any new testing technology, early applications of recycled shredded-tire chips in constructed wetlands will serve as the initial baseline point for improvement, refining and developing better future generations of the proposed system to treat sewage onsite.

Acknowledgments

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Author Contributions

Alfredo García-Pérez, Mark Harrison, Craig Chivers and Bill Grant contributed to the design of the case study, analysis, interpretation of the results, and/or preparation of the manuscript. Additional contributions included the water sampling and data collection from the field, which they were performed by Alfredo García-Pérez, and Craig Chivers. Mark Harrison, Craig Chivers and Bill Grant provided additional reviews and proof reading for any changes regarding comments and/or reviews. Alfredo García-Pérez was the corresponding author keeping co-authors informed about the reviews and comments from the referees and the editorial office, plus updating the manuscript as required.

Conflicts of Interest

The authors declare no conflict of interest.

References

1. García-Pérez, A.; Grant, B.; Harrison, M. Water quality effluent from a recirculating vertical flow constructed wetland. *Small Flow Q.* **2006**, *7*, 34–38.
2. Korkusuz, E.; Beklioglu, M.; Demirer, G. Treatment efficiencies of the vertical flow pilot-scale constructed wetlands for domestic wastewater treatment. *Turk. J. Eng. Env. Sci.* **2004**, *28*, 333–344.
3. Tang, X.Q.; Huang, S.L.; Scholz, M. Comparison of phosphorus removal between vertical subsurface flows constructed wetlands with different substrates. *Water Environ. J.* **2009**, *23*, 180–188.
4. Prochaska, C.A.; Zouboulis, A.I. Removal of phosphates by pilot vertical-flow constructed wetlands using a mixture of sand and dolomite as substrate. *Ecol. Eng.* **2006**, *26*, 293–303.
5. Zurita, F.; de Anda, J.; Belmont, M.A. Treatment of domestic wastewater and production of commercial flowers in vertical and horizontal subsurface-flow constructed wetlands. *Ecol. Eng.* **2009**, *35*, 861–869.

6. Olyphant, G.A.; Letsinger, S.L. Environmental feasibility of using recycled tire pieces as media in septic system absorption fields. *Indiana Geol. Surv.* **2011**, *6*, 1–47.
7. Lin, W.; Holmes, G.A. A new life for old tires: Constructed wetland with shredded-tire chips produces consistently high quality lagoon effluent. *J. Water Environ. Technol.* **2010**, *22*, 48–53.
8. McKenzie, C. Tire chips-A growing trend as aggregate in soil absorption systems. *Small Flows Q.* **2003**, *4*, 14–17.
9. Krayzelova, L.; Lynn, T.J.; Banihani, Q.; Bartacek, J.; Jenicek, P.; Ergas, S.J. A tire-sulfur hybrid adsorption denitrification (T-SHAD) process for decentralized wastewater treatment. *Water Res.* **2014**, *61*, 191–199.
10. Lisi, R.D.; Park, J.K.; Stier, J.C. Mitigating nutrient leaching with a sub-surface drainage layer of granulated tires. *Waste Manag.* **2004**, *24*, 831–839.
11. APHA; AWWA; WEF. *Standard Methods for the Examination of Water and Wastewater*, 20th ed.; American Public Health Association: Washington, DC, USA, 1998.
12. United States Environmental Protection Agency. *Manual: Methods for Chemical Analysis of Water and Wastes*; EPA/600/4-79/020; Office of Research and Development, United States Environmental Protection Agency: Washington, DC, USA, 1983.
13. Ebeling, J.; Tsukuda, S.; Hankins, J.; Solomon, C. Performance evaluation of a recirculating sand filter and peat filter in West Virginia. *Small Flows Q.* **2003**, *4*, 27–37.
14. Benefield, A.L. *Wastewater Quality/Strength/Content—Washington State Department of Health*; Waste Management Report WAC 246-272-11501; Washington State Department of Health: Washington, DC, USA, 2002; Volume 4, pp. 1–18.
15. Zurita, F.; Belmont, M.A.; de Anda, J.; White, J.R. Seeking a way to promote the use of constructed wetlands for domestic wastewater treatment in developing countries. *Water Sci. Technol.* **2011**, *63*, 654–659.
16. Kantawanichkul, S.; Karnchanawong, S.; Jing, S.R. Treatment of fermented fish production wastewater by constructed wetland system in Thailand. *Chiang Mai J. Sci.* **2009**, *36*, 149–157.
17. Zurita, F.; de Anda, J.; Belmont, M.A. Performance of laboratory-scale wetland planted with tropical ornamental plants to treatment domestic wastewater. *Water Qual. Res. J. Can.* **2006**, *41*, 410–417.
18. Wallace, S.D.; Knight, R.L. Small-scale constructed wetland treatment systems. In *Feasibility, Design Criteria, and O&M Requirements*; Water Environmental Research Foundation Document 01-CTS-5; IWA Publishing: Washington, DC, USA, 2006.
19. Wymazal, J. Removal of phosphorus in constructed wetlands with horizontal sub-surface flow in the Czech Republic. *Water Air Soil Pollut. Focus* **2004**, *4*, 657–670.
20. Arias, C.A.; Brix, H.; Johansen, N.H. Phosphorus removal from municipal wastewater in an experimental two-stage vertical flow constructed wetland system equipped with a calcite filter. *Water Sci. Technol.* **2003**, *48*, 51–58.
21. García-Pérez, A.; Harrison, M.; Grant, B. Recirculating vertical flow constructed wetland for on-site sewage treatment: An approach for a sustainable ecosystem. *J. Water Environ. Technol.* **2011**, *9*, 39–46.

22. Lesikar, B.; Weaver, R.; Ritcher, A.; O'Neill, C. Constructed Wetland Media. Available online: <http://www.agrilifebookstore.org/OWTS-Constructed-Wetland-Media-p/el-5459.htm> (accessed on 4 August 2015).
23. Richter, A.Y.; Weaver, R.W. Treatment of domestic wastewater by subsurface flow constructed wetlands filled with gravel and tire chip media. *Environ. Technol.* **2003**, *24*, 1561–1567.
24. Grimes, B.H.; Steinbeck, S.; Amoozegar, A. Analysis of tire chips as a substitute for stone aggregate in nitrification trenches of onsite septic systems: Status and notes on the comparative macro biology of tire chip vs. stone aggregate trenches. *Small Flows Q.* **2003**, *4*, 18–21.
25. García-Pérez, A.; Harrison, M.; Grant, B.; Chivers, C. Microbial analysis and chemical composition of maize (*Zea mays*, L.) growing on a recirculating vertical flow constructed wetland treating sewage on-site. *Biosyst. Eng.* **2013**, *114*, 351–356.

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ANNUAL FOOD ACTIVITIES REPORT 2015

ACTIVITIES	January	February	March	April	May	June	July	August	September	October	November	December	Total
Restaurant Inspections	13	18	20	15	17	20	33	26	19	24	21	14	240
Bed & Breakfast Inspections	0	0	0	0	1	1	1	1	1	1	0	0	6
Locker Plant Inspections	0	0	0	0	1	0	0	0	0	0	0	0	1
Courtesy Inspections	5	3	1	7	8	3	4	12	14	3	5	1	66
Water Sampling	1	2	3	4	1	5	0	3	6	3	2	3	33
Complaints	1	3	2	6	5	1	3	1	2	8	3	2	37
Consultations	17	20	11	22	26	23	14	25	31	27	21	12	249
Reinspections	0	0	0	0	2	1	4	2	2	1	1	0	13
Emergency Situations	1	0	0	0	0	0	0	0	0	1	0	0	2
Plan Submission Review	0	0	0	0	0	1	0	0	0	1	1	0	3
Letters	1	0	0	1	0	2	0	0	0	0	0	0	4
Meetings	2	1	4	8	6	3	1	0	1	1	2	1	30
Total Miles Driven	986	857	1112	1251	1486	1441	1241	1334	1312	1072	1134	1164	14390
Food Safety Classes	0	0	0	1	0	0	0	0	0	1	0	0	2
Class Size	0	0	0	37	0	0	0	0	0	12	0	0	49
Meth Lab's	1	2	2	3	2	0	0	0	0	1	1	2	14
Pool Inspections	0	0	0	0	0	0	0	0	2	3	2	0	7




Submitted by:

Jarod Nisley



Environmental Health Specialist

PROPOSED NE CHAPTER IEHA PROGRAM 2014-2015

September 18 2014	Blackford County	1. Blue/Green Algae Bloom Shawna Feinman 2. Norovirus-Erica Pitcher	1 Rob 2 Rich
October 20 2014	Elkhart County	1. Rocket Science Ice Dream-TBD 2. MS4-IDEM	1 Rob 2 Craig
November 20 2014	Grant County	1. Rabies Lab/Info-ISDH 2. Weaver Popcorn	1 Judy 2 Linda
December 18 2014	Huntington County	1. Env Remediation Serv-Mercury 2. Food Truck Assoc-Jim Goodwin	1 Judy 2 Rob
January 15 2015	Jay County	1. "Roof Solutions Co"-interior Wall/ceiling const. materials 2. Methane-a families experience	1 Linda 2 Rob
February 19 2015	Kosciusko County	1. Meth Lab Updates 2. Food Updates-ISDH	1 Linda 2 Judy
March 19 2015 	LaGrange County 	1. Perkin Elmer Lab-new testing Instrument for food,water,etc 2. Honey Producer	1 Craig  2 Craig
April 16 2015	Whitley County River Cleanup	1. Steel Dynamics-environmental 2. BOAH-food topic TBD	1 Rob 2 Linda
May 21 2105	Miami County	1. Aquaponics-Food 2. Chikungunya Virus	1 Rich 2 Rich
June 18 2014	Noble County	1. Personal Safety-defusing Confrontational people 2. Farmer's Market 3. Produce Update	1 Judy 2 Judy

Topic

person responsible

I.E.H.A. NORTHEAST CHAPTER
MEETING

Thursday March 19, 2015

Fireside Café
300 S. Van Buren St. (S.R. 5)
Shipshewana, IN LaGrange County

9:00 – 10:00 Coffee, Donuts, & Healthy Alternative

10:00 – 11:00 Craig Chivers – Environmental Health Specialist LaGrange
County Health Department, Retired “Raw
Milk Cheese”

11:00 – 11:15 Break

11:15 – 12:00 Jeremy Snowden – Director of Information Technology Vigo
County “Indiana’s First iPad/Cloud
Environmental Health Software-iToss
and CodePal”

12:00 – 1:00 Lunch

1:00 - ? Business Meeting

PLEASE MAKE SURE THAT ALL IEHA MEMBERS IN YOUR OFFICE
RECEIVE A COPY OF THIS NOTICE.

*Members are requested to stay at the meeting site for lunch so that the
Room is not charged to the chapter.*

****** Contact Craig Chivers cell: 260-239-8220 if you need directions ******

Immunization Project Improvement Plan

Update – December 2015

The goal of the Immunization Project Improvement Plan is to increase the immunization rate of residents of LaGrange County with a focus on infants during the first six months of life. “Branding” the health department as a safe, friendly, and trusted entity is of high importance. The Beautiful Child marketing campaign will exemplify how communities work together to nurture our county’s children.

- Immunization data will continue to be collected on all infants both born and residing in LaGrange County. Michelle Tennant completed the 2013 statistics. Immunization data entry for infants born in 2014 is in process. Data entry of 2015 births has been updated weekly.
- The Excel spreadsheet containing the 2014 and 2015 data can be found by first accessing the county’s shared files. Next, choose the Immunization Improvement Project folder. Finally, click on Immunization Records 2014-2015. This is the most up-to-date file.
- The child’s demographic information is documented from the certificate of live births, which is then filed and stored in the cabinet. Immunization information is access via CHIRP. Immunizations for this project’s purposes are only entered if they were given before the child was 8 months old. Any immunization received on or after the date the infant turns 8 months old is considered “late” and not entered.
- The immunization data is color-coded. Immunizations that the child has not received are highlighted RED. If a child is not in the CHIRP system, the immunizations are highlighted YELLOW. PURPLE highlighted areas indicate that further investigation is required, such as suspected data entry error in the CHIRP system or an unneeded immunization given.
- Infants will be grouped into 4 categories: 1.) Fully immunized, 2.) Incomplete immunizations, 3.) No immunizations, and 4.) Not in CHIRP.
- A survey was sent out to parents of babies born in 2013. Data from these surveys was difficult to work into statistics because two different versions of the survey were mailed. Dr. Pechin clarified that he was not particularly interested in the survey results; they primarily served as a reminder for parents and a marketing tool for the health department. A summary of the comments derived from these surveys are located in the Immunization Project packet.
- A survey for babies born in 2014 was drafted and sent to Dr. Pechin for review on October 23, 2015. Revisions were made and it was sent back to him for approval on November 12, 2015. This file is called “LCHD Immunization Survey 2014 births” and is located in the shared files.
- It was decided at the October 2015 team meeting to create and order greeting cards as part of the Beautiful Child marketing campaign. Cards would contain the photo/logo on the front and a brief message about the “beautiful child” on the inside. Health department nurses could sign and send the cards to families as a thank you note or other greeting. A quote from LaGwana Printing Inc. was obtained on 10/23/15. The quote was forwarded to Dr. Pechin on 10/23/15. The budget for this project was not determined.

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	OCT14	NOV14	DEC14	JAN15	FEB15	MAR15	APR15	MAY15	JUN15	JUL15	AUG15	SEP15	C/O
	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	30DY	ISSD	AVG
TOTAL RPTD PARTIC.	412	391	417	406	357	365	368	356	353	369	362	350	379
WOMEN TOTAL	90	84	87	87	76	78	75	75	72	80	87	81	80
	21.8	21.5	20.9	21.4	21.3	21.4	20.4	21.1	20.4	21.7	24.0	23.1	
PRIORITY 1	56	55	55	52	50	47	41	44	41	52	61	54	49
	13.6	14.1	13.2	12.8	14.0	12.9	11.1	12.4	11.6	14.1	16.9	15.4	
PRIORITY 4	3	3	2	3	2	2	2	3	4	4	1	2	3
	.7	.8	.5	.7	.6	.5	.5	.8	1.1	1.1	.3	.6	
PRIORITY 3	10	9	10	12	9	9	8	7	7	6	8	7	9
	2.4	2.3	2.4	3.0	2.5	2.5	2.2	2.0	2.0	1.6	2.2	2.0	
UNKNOWN	0	0	0	0	0	0	0	0	0	0	0	1	0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	
PRIORITY 6	14	10	13	13	12	19	22	20	19	15	14	14	16
	3.4	2.6	3.1	3.2	3.4	5.2	6.0	5.6	5.4	4.1	3.9	4.0	
PRIORITY 5	7	7	7	7	3	1	2	1	1	3	3	3	4
	1.7	1.8	1.7	1.7	.8	.3	.5	.3	.3	.8	.8	.9	
WOMEN - P - TOTAL	35	36	31	32	32	31	29	33	27	40	40	37	33
	8.5	9.2	7.4	7.9	9.0	8.5	7.9	9.3	7.6	10.8	11.0	10.6	
PRIORITY 1	32	33	30	30	31	30	28	31	24	37	39	35	31
	7.8	8.4	7.2	7.4	8.7	8.2	7.6	8.7	6.8	10.0	10.8	10.0	
PRIORITY 4	3	3	1	2	1	1	1	2	3	3	1	2	2
	.7	.8	.2	.5	.3	.3	.3	.6	.8	.8	.3	.6	

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Local Agency Service Site	49 01	LaGrange County WIC Program LaGrange County WIC Program	OCT14 C/O	NOV14 C/O	DEC14 C/O	JAN15 C/O	FEB15 C/O	MAR15 C/O	APR15 C/O	MAY15 C/O	JUN15 C/O	JUL15 C/O	AUG15 30DY	SEP15 ISSD	C/O AVG
WOMEN - B - TOTAL	24	22	26	23	20	18	14	14	14	18	16	16	22	20	20
	5.8	5.6	6.2	5.7	5.6	4.9	3.8	3.9	3.9	5.1	4.3	4.3	6.1	5.7	5.7
PRIORITY 1	24	22	25	22	19	17	13	13	13	17	15	15	22	19	19
	5.8	5.6	6.0	5.4	5.3	4.7	3.5	3.7	3.7	4.8	4.1	4.1	6.1	5.4	5.4
UNKNOWN	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.3
PRIORITY 4	0	0	1	1	1	1	1	1	1	1	1	1	0	0	1
	.0	.0	.2	.2	.3	.3	.3	.3	.3	.3	.3	.3	.0	.0	.0
WOMEN - N - TOTAL	31	26	30	32	24	29	32	28	28	27	24	24	25	24	28
	7.5	6.6	7.2	7.9	6.7	7.9	8.7	7.9	7.9	7.6	6.5	6.5	6.9	6.9	6.9
PRIORITY 6	14	10	13	13	12	19	22	20	22	19	15	15	14	14	16
	3.4	2.6	3.1	3.2	3.4	5.2	6.0	5.6	5.4	5.4	4.1	4.1	3.9	4.0	4.0
PRIORITY 5	7	7	7	7	3	1	2	1	2	1	3	3	3	3	4
	1.7	1.8	1.7	1.7	.8	.3	.5	.3	.3	.3	.8	.8	.8	.9	.9
PRIORITY 3	10	9	10	12	9	9	8	7	8	7	6	6	8	7	9
	2.4	2.3	2.4	3.0	2.5	2.5	2.2	2.0	2.2	2.0	1.6	1.6	2.2	2.0	2.0

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Local Agency 49 LaGrange County WIC Program
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	OCT14	NOV14	DEC14	JAN15	FEB15	MAR15	APR15	MAY15	JUN15	JUL15	AUG15	SEP15	CIC
	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	30DY	ISSD	AVC
INFANT TOTAL	97 23.5	93 23.8	96 23.0	96 23.6	81 22.7	93 25.5	93 25.3	89 25.0	91 25.8	90 24.4	84 23.2	80 22.9	92
PRIORITY 4	1 .2	1 .3	1 .2	1 .2	1 .3	2 .5	1 .3	2 .6	3 .8	3 .8	3 .8	2 .6	2
PRIORITY 1	79 19.2	73 18.7	75 18.0	75 18.5	61 17.1	65 17.8	62 16.8	58 16.3	57 16.1	57 15.4	52 14.4	51 14.6	66
PRIORITY 2	17 4.1	19 4.9	20 4.8	20 4.9	19 5.3	26 7.1	30 8.2	29 8.1	31 8.8	30 8.1	29 8.0	27 7.7	24
CHILD TOTAL	225 54.6	214 54.7	234 56.1	223 54.9	200 56.0	194 53.2	200 54.3	192 53.9	190 53.8	199 53.9	191 52.8	189 54.0	207
PRIORITY 3	126 30.6	123 31.5	140 33.6	139 34.2	127 35.6	116 31.8	109 29.6	97 27.2	95 26.9	102 27.6	98 27.1	95 27.1	117
PRIORITY 5	97 23.5	89 22.8	91 21.8	83 20.4	72 20.2	78 21.4	91 24.7	94 26.4	95 26.9	97 26.3	93 25.7	93 26.6	89
UNKNOWN	2 .5	2 .5	3 .7	1 .2	1 .3	0 .0	0 .0	1 .3	0 .0	0 .0	0 .0	1 .3	1

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Local Agency 49 LaGrange County WIC Program

	OCT14	NOV14	DEC14	JAN15	FEB15	MAR15	APR15	MAY15	JUN15	JUL15	AUG15	SEP15	C/O
	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	30DY	ISSD	AVC
TOTAL RPTD PARTIC.	412	391	417	406	357	365	368	356	353	369	362	350	371
WOMEN TOTAL	90	84	87	87	76	78	75	75	72	80	87	81	80
	21.8	21.5	20.9	21.4	21.3	21.4	20.4	21.1	20.4	21.7	24.0	23.1	
UNKNOWN	0	0	0	0	0	0	0	0	0	0	0	0	0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0
PRIORITY 5	7	7	7	7	3	1	2	1	1	3	3	3	4
	1.7	1.8	1.7	1.7	.8	.3	.5	.3	.3	.8	.8	.9	.4
PRIORITY 3	10	9	10	12	9	9	8	7	7	6	8	7	9
	2.4	2.3	2.4	3.0	2.5	2.5	2.2	2.0	2.0	1.6	2.2	2.0	.9
PRIORITY 1	56	55	55	52	50	47	41	44	41	52	61	54	49
	13.6	14.1	13.2	12.8	14.0	12.9	11.1	12.4	11.6	14.1	16.9	15.4	16
PRIORITY 4	3	3	2	3	2	2	2	3	4	4	1	2	3
	.7	.8	.5	.7	.6	.5	.5	.8	1.1	1.1	.3	.6	3
PRIORITY 6	14	10	13	13	12	19	22	20	19	15	14	14	16
	3.4	2.6	3.1	3.2	3.4	5.2	6.0	5.6	5.4	4.1	3.9	4.0	16
WOMEN - P - TOTAL	35	36	31	32	32	31	29	33	27	40	40	37	33
	8.5	9.2	7.4	7.9	9.0	8.5	7.9	9.3	7.6	10.8	11.0	10.6	33
PRIORITY 4	3	3	1	2	1	1	1	2	3	3	1	2	2
	.7	.8	.2	.5	.3	.3	.3	.6	.8	.8	.3	.6	2
PRIORITY 1	32	33	30	30	31	30	28	31	24	37	39	35	31
	7.8	8.4	7.2	7.4	8.7	8.2	7.6	8.7	6.8	10.0	10.8	10.0	31

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	OCT14	NOV14	DEC14	JAN15	FEB15	MAR15	APR15	MAY15	JUN15	JUL15	AUG15	SEP15	C/O
	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	30DY	ISSD	AVG
WOMEN - B - TOTAL	24	22	26	23	20	18	14	14	18	16	22	20	20
	5.8	5.6	6.2	5.7	5.6	4.9	3.8	3.9	5.1	4.3	6.1	5.7	5.7
PRIORITY 1	24	22	25	22	19	17	13	13	17	15	22	19	19
	5.8	5.6	6.0	5.4	5.3	4.7	3.5	3.7	4.8	4.1	6.1	5.4	5.4
UNKNOWN	0	0	0	0	0	0	0	0	0	0	0	1	0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.3
PRIORITY 4	0	0	1	1	1	1	1	1	1	1	0	0	1
	.0	.0	.2	.2	.3	.3	.3	.3	.3	.3	.0	.0	.0
WOMEN - N - TOTAL	31	26	30	32	24	29	32	28	27	24	25	24	28
	7.5	6.6	7.2	7.9	6.7	7.9	8.7	7.9	7.6	6.5	6.9	6.9	6.9
PRIORITY 6	14	10	13	13	12	19	22	20	19	15	14	14	16
	3.4	2.6	3.1	3.2	3.4	5.2	6.0	5.6	5.4	4.1	3.9	4.0	4.0
PRIORITY 5	7	7	7	7	3	1	2	1	1	3	3	3	4
	1.7	1.8	1.7	1.7	.8	.3	.5	.3	.3	.8	.8	.9	.9
PRIORITY 3	10	9	10	12	9	9	8	7	7	6	8	7	9
	2.4	2.3	2.4	3.0	2.5	2.5	2.2	2.0	2.0	1.6	2.2	2.0	2.0

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Local Agency 49 LaGrange County WIC Program

	OCT14	NOV14	DEC14	JAN15	FEB15	MAR15	APR15	MAY15	JUN15	JUL15	AUG15	SEP15	C/O
	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	C/O	30DY	ISSD	AVG
INFANT TOTAL	97	93	96	96	81	93	93	89	91	90	84	80	92
	23.5	23.8	23.0	23.6	22.7	25.5	25.3	25.0	25.8	24.4	23.2	22.9	
PRIORITY 4	1	1	1	1	1	2	1	2	3	3	3	2	2
	.2	.3	.2	.2	.3	.5	.3	.6	.8	.8	.8	.6	
PRIORITY 2	17	19	20	20	19	26	30	29	31	30	29	27	24
	4.1	4.9	4.8	4.9	5.3	7.1	8.2	8.1	8.8	8.1	8.0	7.7	
PRIORITY 1	79	73	75	75	61	65	62	58	57	57	52	51	66
	19.2	18.7	18.0	18.5	17.1	17.8	16.8	16.3	16.1	15.4	14.4	14.6	
CHILD TOTAL	225	214	234	223	200	194	200	192	190	199	191	189	207
	54.6	54.7	56.1	54.9	56.0	53.2	54.3	53.9	53.8	53.9	52.8	54.0	
UNKNOWN	2	2	3	1	1	0	0	1	0	0	0	1	1
	.5	.5	.7	.2	.3	.0	.0	.3	.0	.0	.0	.3	
PRIORITY 5	97	89	91	83	72	78	91	94	95	97	93	93	89
	23.5	22.8	21.8	20.4	20.2	21.4	24.7	26.4	26.9	26.3	25.7	26.6	
PRIORITY 3	126	123	140	139	127	116	109	97	95	102	98	95	117
	30.6	31.5	33.6	34.2	35.6	31.8	29.6	27.2	26.9	27.6	27.1	27.1	

Vital Statistics Report

Births 2013, 2014, 2015

2013

BIRTHS	MALE	FEMALE
J	26	34
F	33	29
M	41	35
A	34	68
M	46	73
J	48	80
JUL	40	75
A	45	89
S	33	74
O	35	56
N	32	79
D	27	61
TOTAL	440	413

2014

BIRTHS	MALE	FEMALE
J	42	30
F	51	30
M	24	28
A	39	34
M	32	29
J	34	26
JUL	34	25
A	45	41
S	37	36
O	36	21
N	46	26
D	27	41
TOTAL	447	367

2015

BIRTHS	MALE	FEMALE
J	33	25
F	37	38
M	44	38
A	40	42
M	38	34
J	22	31
JUL	45	40
A	38	27
S	28	36
O	29	26
N	25	37
D	34	29
TOTAL	413	403

2013

	J	F	M	A	M	J	JUL	A	S	O	N	D
NEW EDEN CARE	38	35	39	42	39	35	40	51	30	32	44	27
PARKVIEW LAGRANGE HOME	19	21	31	22	27	40	25	34	38	18	28	29
TOTAL	3	6	6	4	7	5	10	4	6	6	7	5
	60	62	76	68	73	80	75	89	74	56	79	61
	0	0	0	0	0	0	0	0	0	0	0	0
	853	814	814	814	814	814	814	814	814	814	814	814

2014

	J	F	M	A	M	J	JUL	A	S	O	N	D
NEW EDEN CARE	50	41	32	40	32	29	30	44	43	30	34	40
PARKVIEW LAGRANGE HOME	20	36	17	30	21	28	27	34	24	21	33	21
TOTAL	2	4	3	3	8	4	1	9	5	5	6	7
	72	81	52	73	61	61	58	87	72	56	73	68
	Count Off	4	4	4	4	4	4	4	4	4	4	4
	818	818	818	818	818	818	818	818	818	818	818	818

2015

	J	F	M	A	M	J	JUL	A	S	O	N	D
NEW EDEN CARE	40	44	44	48	42	39	56	42	42	33	41	41
PARKVIEW LAGRANGE HOME	14	25	28	25	24	8	24	19	17	15	17	19
TOTAL	4	6	10	9	6	6	5	4	5	7	3	4
	58	75	82	82	72	53	85	65	64	55	61	64
	0	0	0	0	0	0	0	0	0	0	0	0
	816	816	816	816	816	816	816	816	816	816	816	816

Respectfully Submitted: Kelly Bills

Vital Statistics Report
Deaths 2013, 2014, 2015
2013

DEATHS	MALE	FEMALE	FETAL		
J	9	15			
F	4	12			
M	12	4			
A	6	8			
M	8	9	2		
J	7	10			
JUL	10	7			
A	7	7			
S	8	5	1		
O	11	6	1		
N	3	15			
D	14	13	1		
TOTAL	99	111	5	215	

2014

DEATHS	MALE	FEMALE	FETAL DEATHS	
J	16	7	1	
F	13	12	1	
M	9	6	1	
A	6	3	1	
M	16	8	0	
J	11	8	0	
JUL	6	4	0	
A	8	5	1	
S	8	2	0	
O	14	9	0	
N	8	7	1	
D	8	5	0	
TOTAL	123	76	199	6

2015

DEATHS	MALE	FEMALE	TOTAL	FETAL	
J	10	14		0	
F	8	12		0	
M	8	12		1	
A	8	4		2	1 from 2014
M	13	13		1	1 from 2014
J	8	8		1	
JUL	7	14		1	
A	8	10		1	
S	11	7		0	
O	10	10		1	
N	10	10		0	
D	8	7		1	
TOTAL	109	121	230	9	
			1		Wrong County put in LaGrange C
			231		Total Death Certificate Count

Respectfully Submitted: Kelly Bills

nd 1159 HEALTH department LAGRANGE CO GOVT
 Period Ending Date: December 31, 2015

Account Number	Account Name	Current Year Appropriated Budget	Net Budget Amendments	Current Year Total Amended Budget	Month-to-date Actual	Current Year-to-date Actual	Current Budget Balance
0-01-1001	ADMINISTRATOR	46,233.54	0.00	46,233.54	3,562.28	46,233.54	0.00
0-01-1005	REGISTRAR	28,082.60	0.00	28,082.60	2,160.20	27,861.51	221.09
0-01-1010	FOOD SANITARIAN	37,655.80	0.00	37,655.80	2,896.60	37,229.01	426.79
0-01-1020	HEALTH NURSE/DG	47,163.61	-2,322.11	44,841.50	3,633.20	44,506.70	334.80
0-01-1021	ASSISTANT NURSE/LINDA	34,106.80	170.00	34,276.80	2,843.23	34,276.38	0.42
0-01-1022	ASSISTANT NURSE/MT	13,642.72	0.00	13,642.72	1,049.44	12,766.12	876.60
0-01-1025	IMMUNIZATION COORDINATOR	26,426.40	0.00	26,426.40	2,032.80	26,264.76	161.64
0-01-1301	HEALTH OFFICER	7,894.48	0.00	7,894.48	1,973.62	7,894.48	0.00
0-01-1310	HEALTH BOARD	1,575.00	-170.00	1,405.00	290.00	1,145.00	260.00
0-01-1315	HEALTH BOARD SECRETARY	228.00	0.00	228.00	0.00	114.00	114.00
0-01-1512	LONGEVITY	5,000.00	0.00	5,000.00	3,862.68	3,862.68	1,137.32
0-01-1520	FICA	15,500.00	0.00	15,500.00	1,401.63	13,986.14	1,513.86
0-01-1521	PERF	27,774.00	2,322.11	30,096.11	2,794.18	30,096.11	0.00
0-01-1522	HEALTH INSURANCE	42,000.00	0.00	42,000.00	3,500.00	42,000.00	0.00
0-01-1523	UNEMPLOYMENT	1,470.00	0.00	1,470.00	0.00	703.95	766.05
0-01-1525	MEDICARE	3,600.00	0.00	3,600.00	327.80	3,270.93	329.07
	Expenses Total	338,352.95	0.00	338,352.95	32,327.66	332,211.31	6,141.64
	Personal Services Acct Cat Total	338,352.95	0.00	338,352.95	32,327.66	332,211.31	6,141.64
	Category 3 Other Services and Charges Expenses						

DEPARTMENT HEAD BUDGETARY STATUS

LAGRANGE CO GOVT

Period Ending Date: December 31, 2015

Account Number Account Name	Current Year Appropriated Budget	Net Budget Amendments	Current Year Total Amended Budget	Month-to-date Actual	Current Year-to-date Actual	Current Budget Balance
03-3001 LEGAL SERVICES						
Expenses Total	7,500.00	0.00	7,500.00	0.00	0.00	7,500.00
Revenue Services and Charges Acct Cat	7,500.00	0.00	7,500.00	0.00	0.00	7,500.00
Net Total	345,852.95	0.00	345,852.95	32,327.66	332,211.31	13,641.64
Expenses Fund Total	345,852.95	0.00	345,852.95	32,327.66	332,211.31	13,641.64
Net (Rev/Exp)	345,852.95	0.00	345,852.95	32,327.66	332,211.31	13,641.64
Beginning/Adjusted Balance						
	29,944.10					
	+		YTD Revenues	YTD Expenses		
			341,508.46	332,211.31	=	
					39,241.25	
and Total for Expenses	345,852.95	0.00	345,852.95	32,327.66	332,211.31	13,641.64
and Total Net Rev/Exp	345,852.95	0.00	345,852.95	32,327.66	332,211.31	13,641.64

DEPARTMENT HEAD BUDGETARY STATUS

nd 1168 LOCAL HEALTH MAINTENANCE LAGRANGE CO GOVT
 Period Ending Date: December 31, 2015

Account Number	Account Name	Current Year Appropriated Budget	Net Budget Amendments	Current Year Total Amended Budget	Month-to-date Actual	Current Year-to-date Actual	Current Budget Balance
nd 1168 LOCAL HEALTH MAINTENANCE							
iscal Year 2015							
partment 000							
ategory 1 Personal Services							
spenses							
0-01-1522	HEALTH INSURANCE	16,800.00	0.00	16,800.00	1,400.00	15,400.00	1,400.00
spenses Total		16,800.00	0.00	16,800.00	1,400.00	15,400.00	1,400.00
ersonal Services Acct Cat Total		16,800.00	0.00	16,800.00	1,400.00	15,400.00	1,400.00
ategory 2 Supplies							
spenses							
00-02-2010	OFFICE SUPPLIES	1,000.00	200.00	1,200.00	124.29	991.35	208.65
00-02-2020	GAS, OIL, LUBRICANTS	4,000.00	-800.00	3,200.00	179.45	2,536.98	663.02
00-02-2021	TIRES & TUBES	500.00	0.00	500.00	0.00	19.95	480.05
00-02-2022	REPAIR & MAINTENANCE SUPPLIES	500.00	0.00	500.00	0.00	132.67	367.33
00-02-2030	COMPUTER SUPPLIES	500.00	300.00	800.00	0.00	500.58	299.42
00-02-2034	BACTERIA LABORATORY	200.00	0.00	200.00	0.00	65.99	134.01
00-02-2040	REFERENCE BOOKS	200.00	-200.00	0.00	0.00	0.00	0.00
spenses Total		6,900.00	-500.00	6,400.00	303.74	4,247.52	2,152.48
ppplies Acct Cat Total		6,900.00	-500.00	6,400.00	303.74	4,247.52	2,152.48
ategory 3 Other Services and Charges							
spenses							
00-03-3001	LEGAL SERVICES	900.00	195.00	1,095.00	75.00	1,020.00	75.00
00-03-3010	TELEPHONE	6,000.00	-425.00	5,575.00	513.88	4,264.59	1,310.41
00-03-3013	POSTAGE	1,500.00	225.00	1,725.00	0.00	1,710.35	14.65
00-03-3014	MEDICAL WASTE DISPOSAL	500.00	-500.00	0.00	0.00	0.00	0.00
00-03-3020	PRINTING	3,000.00	0.00	3,000.00	575.70	2,856.97	143.03
00-03-3021	WETLAND TESTING	5,000.00	0.00	5,000.00	1,280.00	4,385.00	615.00

DEPARTMENT HEAD BUDGETARY STATUS

Department: 1168 LOCAL HEALTH MAINTENANCE LAGRANGE CO GOVT
 Period Ending Date: December 31, 2015

Account Number	Account Name	Current Year Appropriated Budget	Net Budget Amendments	Current Year Total Amended Budget	Month-to-date Actual	Current Year-to-date Actual	Current Budget Balance
0-03-3022	BOOK RE-BINDING	1,500.00	1,357.68	2,857.68	0.00	2,857.68	0.00
0-03-3045	BUILDING MAINTENANCE	1,000.00	0.00	1,000.00	0.00	467.12	532.88
0-03-3050	EQUIPMENT REPAIR / MAINTENANCE	500.00	-50.00	450.00	0.00	0.00	450.00
0-03-3051	SOFTWARE SUPPORT	800.00	0.00	800.00	19.97	494.96	305.04
0-03-3054	VEHICLE MAINTENANCE	1,000.00	164.00	1,164.00	148.76	333.75	830.25
0-03-3081	SEMINARS & TRAINING	500.00	0.00	500.00	0.00	406.37	93.63
	Expenses Total	22,200.00	966.68	23,166.68	2,613.31	18,796.79	4,369.89
	Other Services and Charges Acct Cat	22,200.00	966.68	23,166.68	2,613.31	18,796.79	4,369.89
	Capital Outlays						
	Expenses						
00-04-4010	EQUIPMENT, FURNITURE, FILES	500.00	-271.68	228.32	0.00	34.85	193.47
	Expenses Total	500.00	-271.68	228.32	0.00	34.85	193.47
	Capital Outlays Acct Cat Total	500.00	-271.68	228.32	0.00	34.85	193.47
	Dept Total	46,400.00	195.00	46,595.00	4,317.05	38,479.16	8,115.84
	Expenses Fund Total	46,400.00	195.00	46,595.00	4,317.05	38,479.16	8,115.84
	Net (Rev/Exp)	46,400.00	195.00	46,595.00	4,317.05	38,479.16	8,115.84
	Beginning/Adjusted Balance	117,424.68					
	YTD Revenues	33,139.00					
	YTD Expenses		38,479.16				
	Current Fund Balance				111,784.52		
	Grand Total for Expenses	46,400.00	195.00	46,595.00	4,317.05	38,479.16	8,115.84
	Grand Total Net Rev/Exp	46,400.00	195.00	46,595.00	4,317.05	38,479.16	8,115.84

Unit: 4105 IMMUNIZATION DONATION LAGRANGE CO GOVT Period Ending Date: December 31, 2015

Account Name	Current Year Appropriated Budget	Net Budget Amendments	Current Year Total Amended Budget	Month-to-date Actual	Current Year-to-date Actual	Current Budget Balance
nd 4105 IMMUNIZATION DONATION						
cal Year 2015						
partment 000						
ategory 2 Supplies						
penses						
0-02-2010 IMMUNIZATION SUPPLIES	9,000.00	-4,200.00	4,800.00	279.57	2,069.13	2,730.87
0-02-2011 PROMOTIONAL SUPPLIES	3,000.00	-437.00	2,563.00	0.00	995.20	1,567.80
0-02-2012 OFFICE SUPPLIES	1,000.00	700.00	1,700.00	276.40	1,437.17	262.83
0-02-2014 DIGITIZATION SOFTWARE	0.00	2,000.00	2,000.00	0.00	1,898.00	102.00
10-02-2017 NURSE'S SUPPLIES	2,000.00	0.00	2,000.00	0.00	1,779.13	220.87
10-02-2030 VACCINES	6,500.00	0.00	6,500.00	0.00	3,909.02	2,590.98
10-02-2040 UNIFORMS	500.00	0.00	500.00	0.00	0.00	500.00
xpenses Total	22,000.00	-1,937.00	20,063.00	555.97	12,087.65	7,975.35
pplies Acct Cat Total	22,000.00	-1,937.00	20,063.00	555.97	12,087.65	7,975.35
ategory 3 Other Services and Charges						
xpenses						
00-03-3010 TELEPHONE	0.00	120.00	120.00	120.00	120.00	0.00
00-03-3012 TRAVEL / MILEAGE	1,500.00	0.00	1,500.00	0.00	1,232.96	267.04
00-03-3013 POSTAGE	1,300.00	0.00	1,300.00	0.00	1,289.28	10.72
00-03-3014 MEDICAL WASTE	500.00	17.00	517.00	39.75	516.75	0.25
00-03-3020 PRINTING	1,500.00	0.00	1,500.00	272.00	1,451.12	48.88
00-03-3081 SEMINARS & TRAINING	500.00	300.00	800.00	0.00	691.65	108.35
xpenses Total	5,300.00	437.00	5,737.00	431.75	5,301.76	435.24
Other Services and Charges Acct Cat Total	5,300.00	437.00	5,737.00	431.75	5,301.76	435.24
ategory 5 Capital Outlays						
xpenses						
00-04-4010 EQUIPMENT	1,500.00	1,500.00	3,000.00	0.00	2,597.69	402.31

LAGRANGE CO GOVT

Fund 4105 IMMUNIZATION DONATION
Department
Period Ending Date: December 31, 2015

Account Number	Account Name	Current Year Appropriated Budget	Net Budget Amendments	Current Year Total Amended Budget	Month-to-date Actual	Current Year-to-date Actual	Current Budget Balance
HEALTH DEPARTMENT REMODEL							
	Expenses Total	0.00	20,000.00	20,000.00	0.00	0.00	20,000.00
	Capital Outlays Acct Cat Total	1,500.00	21,500.00	23,000.00	0.00	2,597.69	20,402.31
	Dept Total	1,500.00	21,500.00	23,000.00	0.00	2,597.69	20,402.31
	Expenses Fund Total	28,800.00	20,000.00	48,800.00	987.72	19,987.10	28,812.90
	Net (Rev/Exp)	28,800.00	20,000.00	48,800.00	987.72	19,987.10	28,812.90
	Beginning/Adjusted Balance	51,718.89		48,800.00	987.72	19,987.10	28,812.90
			YTD Revenues	YTD Expenses			
		19,400.18	19,987.10	19,987.10	51,131.97		
	Grand Total for Expenses	28,800.00	20,000.00	48,800.00	987.72	19,987.10	28,812.90
	Grand Total Net Rev/Exp	28,800.00	20,000.00	48,800.00	987.72	19,987.10	28,812.90

DEPARTMENT HEAD BUDGETARY STATUS

LAGRANGE CO GOVT
Period Ending Date: December 31, 2015

Account Number Account Name	Current Year Appropriated Budget	Net Budget Amendments	Current Year Total Amended Budget	Month-to-date Actual	Current Year-to-date Actual	Current Budget Balance
Ind 9110 TOBACCO SETTLEMENT						
iscal Year 2015						
Department 000						
Category 1 Personal Services						
Expenses						
30-01-1001 ADMINISTRATOR	6,500.00	0.00	6,500.00	500.00	6,500.00	0.00
30-01-1002 ASSISTANT NURSE	16,529.76	0.00	16,529.76	218.28	4,146.28	12,383.48
30-01-1520 FICA	1,428.00	0.00	1,428.00	44.59	661.20	766.80
00-01-1523 UNEMPLOYMENT	355.00	0.00	355.00	14.25	154.13	200.87
00-01-1525 MEDICARE	334.00	0.00	334.00	10.44	154.67	179.33
Expenses Total	25,146.76	0.00	25,146.76	787.56	11,616.28	13,530.48
Personal Services Acct Cat Total	25,146.76	0.00	25,146.76	787.56	11,616.28	13,530.48
Category 2 Supplies						
Expenses						
100-02-2011 GENERAL SUPPLIES	3,000.00	-2,800.00	200.00	0.00	0.00	200.00
Expenses Total	3,000.00	-2,800.00	200.00	0.00	0.00	200.00
Supplies Acct Cat Total	3,000.00	-2,800.00	200.00	0.00	0.00	200.00
Category 3 Other Services and Charges						
Expenses						
300-03-3001 CONTRACT FOR SERVICES	0.00	626.02	626.02	0.00	193.86	432.16
300-03-3002 MOBILE MAMMOGRAPHY	2,000.00	0.00	2,000.00	0.00	2,000.00	0.00
300-03-3021 ADVERTISING	4,000.00	2,800.00	6,800.00	520.00	6,798.40	1.60
Expenses Total	6,000.00	3,426.02	9,426.02	520.00	8,992.26	433.76
Other Services and Charges Acct Cat Total	6,000.00	3,426.02	9,426.02	520.00	8,992.26	433.76
Dept Total	34,146.76	626.02	34,772.78	1,307.56	20,608.54	14,164.24
Expenses Fund Total	34,146.76	626.02	34,772.78	1,307.56	20,608.54	14,164.24
Net (Rev/Exp)	34,146.76	626.02	34,772.78	1,307.56	20,608.54	14,164.24
Beginning/Adjusted Balance	193,304.45					
	+	YTD Revenues	21,910.64			
		YTD Expenses	20,608.54			
		Current Fund Balance	=		194,606.55	