REPORT TO

ENVIRONMENTAL QUALITY COUNCIL ON PESTICIDE AND GROUNDWATER ENFORCEMENT PROGRAMS PURSUANT TO TITLE 75, CHAPTER 1, PART 3, SECTION 314

MONTANA DEPARTMENT OF AGRICULTURE
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December 2013

Montana Department of Agriculture

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PESTICIDE PROGRAM

The Montana Department of Agriculture (MDA) enforces the Montana Pesticide Act (MPA), Title 80, Chapter 8, Montana Code Annotated (MCA), and portions of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). Enforcement of the federal law is accomplished through a cooperative agreement with the U.S. Environmental Protection Agency (EPA). This agreement provides primacy to Montana acting through the MDA to enforce pesticide use regulations.

Since FY 2000, the MDA has entered into an annual cooperative agreement with the United States Department of Agriculture (USDA) to inspect application records involving the use of restricted-use pesticides by private farm applicators. Up until FY 2012, the MDA was contracted to conduct 65 initial (new) inspections and up to 5 follow-up inspections that were held over from the previous year. Follow-up inspections are those inspections where the applicator was found to be in non-compliance the previous year. Due to federal budget cuts, the program was suspended and the number of inspections was reduced to approximately 35. The MDA renewed a short-term contract in 2013 and conducted 50 initial inspections and 2 follow up inspections.

1a. Activities and Efforts Taking Place to Promote Compliance Assistance and Education:

Pesticide program staff has undertaken many activities to promote compliance within the pesticide use community. These activities include providing information and education, technical assistance, conducting sampling and inspections, investigating complaints and issuing enforcement actions consistent with statute.

Information/Education:

The pesticide program promotes the use of education to ensure that dealers and applicators are properly qualified. As required under 80-8-109, MCA, the MDA develops and conducts appropriate educational programs for pesticide use/sales categories. The educational program informs individuals working with pesticides about correct methods for formulating, applying, storing, disposing, handling and transporting pesticides. These trainings also include information on proper sale/application record keeping.

Along with MSU Extension Service, the MDA conducts these educational programs for pesticide dealers, commercial/governmental applicators and private applicators. The MDA provides “initial” training and testing for both commercial applicators and private farm applicators. Subject to available funds, the MDA and MSU Extension Service establish educational training programs for the general public and retailers on pest management, pesticide use safety and alternative pest control methods. Training manuals are available to provide education on pesticide sales, handling, use, application, and disposal. Passing a qualification exam of 80 percent or higher is required for the licensing of commercial and governmental applicators to become a certified applicator. This qualifies the licensed individual to use general-use and restricted-use pesticides. Once certified, all license holders must obtain 12 re-certification training credits over a 4 year period to remain licensed, or retest.

The education component gives the MDA an opportunity to encourage participants to comply with pesticide laws by helping them understand each specific element of pesticide laws.

Topics that are discussed range from farm worker safety to properly maintaining equipment. The information provided also informs participants of the environmental effects from illegally used, stored or sold pesticides and the potential consequences of noncompliance (misuse).

In FY2012 and FY2013 special training sessions were conducted by registrants on the use of prairie dog baits for commercial and private pesticide applicators.

Technical Assistance:
In FY2011 the department initiated a Stewardship Program with Dow AgroSciences to address concern regarding the presence of aminopyralid in groundwater and compost that had been found by our groundwater monitoring program and pesticide enforcement program, respectively. The Stewardship Program continues to provide education to unlicensed applicators, commercial and government applicators, commercial composters, hobby livestock owners, organic growers and others. The program is also providing analytical support through the MDA Analytical Laboratory for MSU Extension Agents who encounter possible aminopyralid-related issues. Although success of the Stewardship Program is hard to measure, we have seen a reduction in the number of complaints and concerns involving compost and gardens that have been contaminated with aminopyralid. The occurrence of aminopyralid in water has also decreased.

During this reporting period, the MDA continued to support the Pesticide Intern program. In FY 2012, one intern focused on educating childcare providers on implementation of integrated pest management (IPM) for their facilities. The goal of the program was to assess current pest control practices in the childcare facilities, safe storage and to encourage adoption of IPM. A second intern focused on educating pesticide retail sales facilities on best practices for displaying products, how to read the label, and what products are classified as registered pesticides.

1b. **Size and Description of the Regulated Community:**
Pesticide manufacturers and formulators are businesses that repackage or actually produce pesticides. They can be identified because they are required to register as a Producer Establishment with the EPA. Approximately 119 Producing Establishments (PE) are currently registered with EPA and doing business in Montana. The MDA conducts between 10 and 20 inspections per year that specifically target these facilities.

Pesticide dealers are required to become licensed in order to sell Ag-Use pesticides. The number of licensed pesticide dealers has remained stable during 2012 and 2013 ranging from 447 to 493, respectively. Dealers who sell pesticides for home, lawn and garden use only are referred to as “retailer” by definition and are not required to be licensed; however, they remain part of the regulated community. On average, staff conducted approximately 80-100 routine dealer/marketplace and retail establishment inspections each year.

Commercial and governmental pesticide applicators are also required to obtain a Montana license. Commercial applicators are persons who apply pesticides for hire, and governmental applicators are persons who apply pesticides for a public entity (city, state or federal). Operators are persons who apply pesticides under the supervision of a certified applicator. The supervising applicator is required by law to train and have oversight of their operators’ activities.

Non-commercial applicators are individuals who choose to use restricted use pesticides and cannot be classified as a commercial, public utility, government applicator or private applicator.

A certified non-commercial applicator may use restricted and general use pesticides on lands owned, rented, or leased by his employer or himself/herself. The total number of people licensed as non-commercial applicators in 2012 and 2013 basically remained the same when reviewed in a longer timeframe.

Table 4

Licenses					
Year					
	Non-commercial, Public Utility	**Dealer**	**Government**	**Commercial**	**Private**
2012	123	447	731	932	5500
2013	150	493	854	1139	6543

Private farm applicators are required to obtain a special permit if they wish to use and apply "restricted- use" pesticides. The license is good for 5 years and requires 6 credit hours of recertification training over the 5 year period to remain qualified. Montana maintains a yearly average of approximately 6,000 permitted farm (private) applicators. There are a number of people who apply general use pesticides such as home, lawn and garden products to their own property and are not required to become licensed.

On average, the total number of individual Montana license holders, including dealers, commercial/government applicators and farm applicators, is approximately 9,200.

1c. Non- Compliance and Method of Discovery
Routine Commercial, Governmental and Marketplace/Dealer Inspections:
Table 3 represents the number of routine inspections conducted in fiscal years 2012 and 2013. The inspections are classified according to the licensee type (marketplace, agricultural applicator, non-agricultural applicator, etc.) or by purpose of the inspection. For example, follow-up inspections are "for-cause" inspections, usually a citizen tip or complaint. Generally, the number of inspections is the result of an effort to meet department goals and generate a uniform enforcement presence in the regulated community. For the two years demonstrated below, the distribution of inspections among various parts of the regulated community has remained relatively constant.

Table 3

2012-2013 Routine Inspections		
Inspection type	**2012**	**2013**
Ag-Use	104	96
Ag Follow Up (for cause)	16	7
Non Ag-Use	106	157
Non Ag Follow Up (for cause)	26	12
Experimental Use	0	0
PE	13	17
Marketplace	86	87
Imports	0	0
Exports	1	1
Cert. App. Records	197	217
RUP Dealer Records	60	41
Total	**606**	**636**

Sampling and Inspections:

The Legislature established authority to sample (Section 80-8-302, MCA), inspect (Section 80-8-304, MCA) and analyze pesticides or devices distributed within the State of Montana to determine whether such pesticides or devices meet the minimum standards listed on the label. The Analytical Laboratory Bureau, located on the Montana State University campus, performs pesticide chemical analyses for the MDA, Extension Service and the general public.

The inspection and investigation authority granted under Section 80-8-304, MCA, allows department staff or an authorized agent, upon reasonable cause, with a warrant or consent of the inhabitant or owner, to inspect or investigate pesticide use. Compliance assistance (CA) inspections of licensed dealers and applicators are routinely conducted. Although discretionary, a licensee is eligible for CA through their first inspection. Routine inspections are conducted on a 4-5 year rotation after the initial inspection. Program inspection goals are determined prior to the beginning of the inspection year and average between 600-700 inspection events per year. Routine inspections are conducted with commercial applicators, government applicators, dealers and permitted farm applicators. In addition to the routine inspection program, inspections are conducted with individuals upon the receipt of a complaint (follow up) or if there is reason to believe that someone is in noncompliance with the pesticide laws.

The number of complaint investigations varies from year to year because pesticide use varies greatly with weather conditions, pest outbreaks, rainfall, crop types and commodity prices. The number of complaints, reports of damage and referrals from other agencies also vary from year to year for the same reason. Routine marketplace inspections are conducted at retailers to verify that products offered for sale meet state and federal pesticide law registration requirements.

The Legislature also established the authority under Section 80-8-304, MCA, to take residue samples related to either routine inspections or complaint investigations. The number of residue samples per year varies according to the number of inspections/investigations conducted during the use season. The number of samples collected per investigation depends on the number of pesticides involved in the investigation and the scope of the investigation. Analytical results become part of the evidence for enforcement related issues.

Table 1 shows the total number of enforcement samples collected and the number of analysis conducted during 2012-2013:

Table 1

Samples Collected & Analyzed per Year		
Year	**Samples Collected**	**Analysis Conducted**
2012	103	331
2013	61	251

Private Applicator Records Inspection:

In FY 2012, inspections were conducted to check records of restricted-use pesticide applications that were made by private farm applicators. This program is unique in that it allows for compliance assistance during an inspection to help applicators reach the record

keeping goals of USDA. Approximately half of those inspected for the first time needed some type of compliance assistance during the inspections to meet law record requirements.

As mentioned on page 1, in mid- FY 2012 the program was suspended because of federal funding cuts. Because the program was suspended, a reduced number of inspections were conducted. In late FY 2013, the MDA was asked by USDA to conduct 50 new inspections to use up the last remaining funds in the USDA program budget. The program has since ended and MDA has been given notice by USDA that federal funds will not be available to continue the inspection program in FY 2014 and beyond.

Historically, the overall compliance, including those reaching compliance with assistance, averages above 95 percent.

Compliance Inspections – Non compliance

The MDA conducts comprehensive inspections and investigations. Inspections and investigations cover such topics as use, selling, labeling, registration, storage, records and licensure compliance. Therefore, one inspection can result in multiple category violations.

Table 2 illustrates the number of inspections conducted yearly and shows the percent of non-compliance.

Table 2

History of Compliance		
Year	**Total Number of Inspections**	**Percent Non-Compliance**
2012	606	<5%
2013	636	<5%

Major Violations:

During FY 2012 and 2013, the number of follow-up (for cause) investigations has maintained an average of 20-30 per year. Most pesticide use violations are discovered through complaint investigations resulting from tips and complaints from the public. Case significance or severity depends on a number of factors including the type of violation and potential or actual occurrence of harm from pesticides. Each case has its own unique set of circumstances and is investigated according to department Standard Operating Procedures.

The table below combines all major violations as well as other enforcement actions taken by the department for FY2012 and FY 2013.

Table 5

Major Enforcement Actions	
Year	**Number of Actions**
2012	22
2013	21

Very few cases go unresolved past the fiscal year end. On an average, only a few cases are in what would be called “unresolved” status only because these are cases or complaints that were received by the department late in the spring use season and final resolution crosses over into a new fiscal year.

Significance of Noncompliance and Enforcement Options:

Section 80-8-211, MCA, establishes violations that are cause for revoking or modifying a license. Section 80-8-303, MCA, authorizes the MDA to embargo pesticides that are adulterated, misbranded, or unregistered. Section 80-8-304, MCA, authorizes compliance orders requiring a person to correct violations and clean up pesticide spills. Upon completion of each investigation, a review process determines if there is sufficient evidence to support enforcement action. Section 80-8-306, MCA, authorizes the department to issue written warnings or propose administrative civil penalties to settle a case. The department may also seek judicial civil penalties or criminal penalties under that same section. Minor violations that involve record keeping, storage or equipment maintenance are handled through the compliance assistance process or by the issuance of a Notice of Non Compliance (NONC). Violations handled under these processes have not resulted in harm to humans or the environment.

The Montana Pesticide Act defines a major violation as one that is subject to civil penalties in Section 80-8-306 (5) (e), MCA. The Act specifically states that the department, in determining an appropriate amount of civil penalty, shall consider the effect on the person's ability to continue to stay in business, the degree of harm, gravity factors associated with the violation, and the degree of care taken by the offender. The MDA considers all of these factors when determining the amount of the civil penalty for a violation. All enforcement actions are subject to appeal (or can be contested) according to provisions of the Montana Administrative Procedure Act.

1d. Compliance and Enforcement History - Trends:

Over the past several years, the number of major violation requiring MDA enforcement action has decreased. There are several factors that explain the decrease. One significant factor that helped reduce the number of misuse violations is the quality and quantity of MDA training efforts. Another factor is the evolution of new and improved application equipment products and additives to help control pesticide drift. Montana applicators have also taken a more proactive approach to pesticide use education and that effort has help reduce the number of cases the MDA is asked to address. Unique weather, pest infestation and agriculture economy also drive pesticide use and therefore, can affect the number of cases each year.

GROUNDWATER PROTECTION PROGRAM:

The Montana Agricultural Chemical Groundwater Protection Act (MACGWPA) was enacted in 1989. Program accomplishments include:

- Adoption of rules.
- Increased capacity of statewide groundwater monitoring system.
- Promotion of research of Montana's aquifers.
- Building cooperative working relationships with private and government groups.
- Completion of a General Management Plan for state driven pesticide-groundwater issues and a Generic Management Plan for federally mandated pesticide-groundwater management plans. Both of these documents are meant to serve as the foundation for Specific Agricultural Chemical Management Plan (SMP) and Pesticide Management Plans (PMP's).
- Major river system-associated groundwater monitoring projects.
- Relational database of monitoring results.

1a. The Activities and Efforts Taking Place to Promote Compliance Assistance and Education

The Groundwater Protection program has undertaken the following to promote compliance with the statutory goals of the program:

Information/Education

The groundwater program promotes research and technical assistance. The department is dedicated to providing information and assistance to prevent groundwater contamination by agricultural chemicals. Through education and outreach, the department provides information on groundwater and agricultural chemical characterization, Best Management Practices (BMP) and Specific Management Plans (SMP). These plans provide for the management of agricultural chemicals to prevent, minimize and mitigate their presence in groundwater. The department is involved in an ongoing process of identifying environmentally sensitive areas, soils, and aquifers. Information about agricultural chemicals in Montana groundwater is provided through analytical results from the MDA's statewide monitoring program. Public meetings and pesticide certification training are used as a venue to inform the public about the locations of vulnerable areas in Montana. Special project reports, detailing our monitoring of major river systems for pesticides and nitrate are available on our web site.

It is the public policy of the state, Section 80-15-103, MCA, to protect groundwater from impairment, allow for the proper use of pesticides and to provide education and training to pesticide applicators and the general public. As required under Section 80-15-106, MCA, the department is required to develop and conduct appropriate educational programs. Groundwater protection is a component of all pesticide applicator training, which assures that dealers and applicators have the necessary knowledge and safety tools to sell and use pesticides in accordance with label directions. The MDA provides education and training for commercial, non-commercial and governmental applicators and the general public on groundwater protection, agricultural chemical use, and the use of alternative crop protection methods.

The MDA, in cooperation with MSU Extension Service, provides initial and recertification training and testing of farm applicators. One of the major topics covered during the pesticide recertification training courses is how to protect Montana's water resources from agriculture chemical contamination. A variety of training manuals are available to provide education on agricultural chemical handling, use, application, and disposal. The Montana General Agricultural Chemical Ground Water Management Plan is a comprehensive strategy for Montana to protect groundwater from agricultural chemicals. The Generic Management Plan discusses the philosophy; requirements, development and implementation of federally mandated management plans and outlines the process to be used in their development.

The "*Pesticide and Fertilizer Use Around the Home, Effects on Water Resources and Alternatives to Chemical Controls*" as well as many other pamphlets, have been developed in cooperation with MSU Extension Water Quality Program, to provide information to homeowners on good stewardship practices and to protect water resources from the impacts of chemical use.

Technical Assistance

The position of the MDA, as guided by the Montana constitution and statute, is that agriculture and groundwater in the state can be protected. The department dedicates most of its assistance efforts to prevention of groundwater contamination by agricultural chemicals through the use of MDA, EPA, and MSU Extension Service bulletins, brochures, reports, other

training aids. Protection efforts also involve participating in educational programs, direct contact with the regulated community, and sharing of analytical data with other agencies working to protect Montana's water quality.

The Montana Agricultural Chemical Ground Water Protection Act (MACGWPA) provides for the Groundwater Protection Program, which is presently a research and technical assistance program. General statewide ambient groundwater monitoring for contamination by agricultural chemicals has been ongoing since 1984, before the law was passed. The MACGWPA required the development of the General Management Plan principally as a tool to identify environmentally sensitive areas, soils, and aquifers and to develop Best Management Practices for the use of agricultural chemicals in Montana.

Section 80-15-202, MCA, directs the MDA to conduct monitoring to determine if agricultural chemical residues are present in groundwater resources and to determine the likelihood of agricultural chemicals to enter groundwater. The department initiated a groundwater monitoring program in 1984. The department established a permanent monitoring well network in 1991. The network of permanent monitoring wells that is available for testing has grown from the eight wells in 1984, to its present size of 44. Currently, MDA collects samples for chemical analysis from 41 wells. The monitoring wells are located in areas that are representative of Montana agricultural production, as well as areas with extensive noxious weed management. The department also conducts project specific monitoring to augment permanent well monitoring efforts, generally as a response to new scientific research or to meet a state identified need.

Monitoring results indicating the presence of an agricultural chemical are evaluated to determine if a response is necessary or appropriate. An appropriate response may include well owner notification, use recommendations, mandatory spill clean-up, additional monitoring, or referral to the Department of Environmental Quality for remediation. The development of a Specific Management Plan (SMP) pursuant to Section 80-15-212, MCA may also be an appropriate response. Continued monitoring, data sharing and education are also incorporated in a response, which will promote awareness and resource protection.

Specific Management Plans (SMP)

Section 80-15-212, MCA, requires the MDA to adopt "Specific Agricultural Chemical Groundwater Management Plans" when necessary to protect groundwater. The 2005 Legislature passed HB 107, which clarified conditions requiring a Specific Management Plan (SMP). This gave the department more flexibility in addressing the presence of low level agriculture chemicals in groundwater through educational measures to prevent, minimize and mitigate pesticide presence in groundwater that would be more appropriate and cost effective than development of a Specific Management Plan under administrative rule. Under provisions of HB 107, a SMP is required when an agricultural chemical is found at or above 50 percent of the concentration level believed to cause a human health risk.

To date, the department has adopted one SMP, which was developed under provisions prior to passage of HB 107. That SMP was for the wild oat herbicide Assert, which contains the active ingredient, imazamethabenz-methyl. The plan covered all persons in the Fairfield Bench area who use this product. The SMP used a voluntary approach because of the low levels of chemical that were present in groundwater under the bench. The plan outlined voluntary requirements for irrigation management, chemical rotation, calibration, integrated pest management and record keeping. An evaluation of the plan's success in 2005, including a statistical analysis of four years of monitoring data, showed the plan was working and that

levels of imazamethabenz-methyl did not increase over that time. A survey of users showed that Best Management Practices (BMP) had been implemented by a majority of producers. The Voluntary Advisory Committee for the Fairfield Bench SMP found that the voluntary approach was successful and in August 2006, based on the committee's recommendation, Section 4.11.1201 through 4.11.1209, ARM, (which included the details of the SMP) was repealed.

1b. Size and Description of the Regulated Community

In general, the regulated community includes all persons who apply pesticides to control weed, insect, animal and microorganism pests. Anyone who applies pesticides must read and follow the container label directions for use, including the label directions to protect both ground and surface water.

There are parts of the regulated community that are easily identifiable through the licensing process; however, there are parts of the regulated community that do not require licensing and are not easily identified or necessarily trained. That part of the community includes landowners, including homeowners, who use pesticides. Pesticide dealers, fertilizer dealers, and some pesticide applicators are required to be licensed by the MDA and would be identifiable for training and possible regulation. The same is true for landowners who desire training on groundwater pollution prevention techniques or Best Management Practices (BMPs) and Best Available Technology (BATs).

1c. Non Compliance and Method of Discovery:

The MDA has issued administrative orders requiring cleanup of pesticide spills, sampling soils and groundwater, and some soil removals. Orders are issued using authority of the Montana Pesticide Act, Title 80. The department has issued informative letters to fertilizer facilities where soils may be contaminated with high levels of nitrate that have the potential of impacting groundwater. The letters provided information to improve operational activities to minimize further contamination. The information contained Best Management Practices for handling and storage containment of fertilizers.

Monitoring results are used to determine if a pesticide is present in groundwater resources. Additional sampling is conducted to verify all initial detections. Verified detections are further evaluated to determine the relative health and environmental risk that an agricultural chemical presence represents. The Department of Environmental Quality is responsible for development of interim numerical human health standards in the absence of federal standards. Surface water detections are measured against aquatic life benchmarks developed by EPA. The relative significance of an agricultural chemical residue in groundwater is related to the percentage of the Montana Water Quality Standard met. The MDA puts forth effort in locating contaminated groundwater bodies, possible source(s) for the contamination, and to what extent the body of water is impaired. Dependent upon the contamination level and source, (i.e., point or non-point source) the Department discusses and implements an appropriate enforcement and/or mitigation response.

Table 1 shows the total number of monitoring samples collected and the number of analysis conducted during 2012-2013:

Table 1

Samples Collected & Analyzed per Year		
Year	**Samples Collected**	**Analysis Conducted**
2012	159	384
2013	219	477

Inspections
The Act allows routine inspection of persons subject to the Specific Management Plans. The MDA has authority (Section 80-15-401, MCA) to sample, conduct inspections, collect samples for analysis, inspect monitoring equipment, and inspect and copy records required by the MACGWPA. The MDA can investigate conditions relating to compliance with agricultural chemical labels, management plans, monitoring requirements, groundwater protection requirements and management plan violations or compliance orders. Because there are no current SMP's in place, no inspections have been conducted under this authority. The MDA Laboratory Bureau, located on the Montana State University campus, conducts laboratory analysis for the MDA, MSU Extension Service and the general public.

1d. Compliance and Enforcement History - Trends:
Compliance and Enforcement History - Trends:
At the time of this report, there are no significant non-compliance issues related to non-point source groundwater contamination from agricultural chemicals. The Groundwater Protection Program maintains a permanent monitoring well network distributed across the state to capture various land use and geographical conditions and has increased monitoring samples collected. Analysis of additional water resources, such as stormwater runoff, stream sediments, and wetlands, are also conducted.

Where detected, pesticide concentrations are very low and do not exceed or approach human health drinking water standards. Between 2008 and 2012 there was not a pesticide concentration from the permanent monitoring well network that exceeded one percent of the human health drinking water standard.

Nitrate data from the permanent monitoring wells, which are single use and not used for drinking or stock water, show that in most cases nitrate concentrations are below 50 percent of the drinking water standard. Several wells have elevated nitrate concentrations but the source of the nitrate has been shown to be sources other than fertilizer application, such as cropping practices, septic or livestock. The department coordinates nitrate results and follow-up activities with the DEQ.