

Twin Falls County Regional Project Pesticide Detections and Idaho's Pesticide Management Plan

This fact sheet summarizes pesticide detections in ground water found by the Idaho State Department of Agriculture (ISDA) in the Twin Falls County regional project, which covers the northern portion of Twin Falls County in south central Idaho (Figure 1). The Twin Falls County regional project began in 1998 as a result of previous monitoring by the Idaho Department of Water Resources (IDWR).

The Twin Falls County regional project encompasses an area of irrigated agricultural land in northwest and north central Twin Falls County, approximately 25 miles by 40 miles in size. The northern boundary of the project area is the Snake River. The project area is bound to the east by the county line and to the west by Salmon Falls Creek. The project area is bound to the south by the South Hills, the town of Hollister and Salmon Falls Creek. Local irrigation practices include both flood and sprinkler irrigation. Major crops in the area include alfalfa hay, barley, oats, wheat, beans, potatoes, sugar beets, and corn (USDA National Agricultural Statistics Service, 2009).

There are four primary ground water-bearing zones in Twin Falls County and they include: Idavada Volcanics Formation, Banbury Basalt Formation, Glens Ferry Formation, and the Snake River Group (Neely, 2001). The depth to ground water varies within the project area. Static water levels are deeper in the central portion of the project area compared to the rest of the project area (Neely, 2001). According to well logs from wells sampled as part of this project, the depth to first encountered ground water is between 10 and 300 feet below land surface. Ground water flow direction in the project area is from the south to the north and northwest (Neely, 2001).

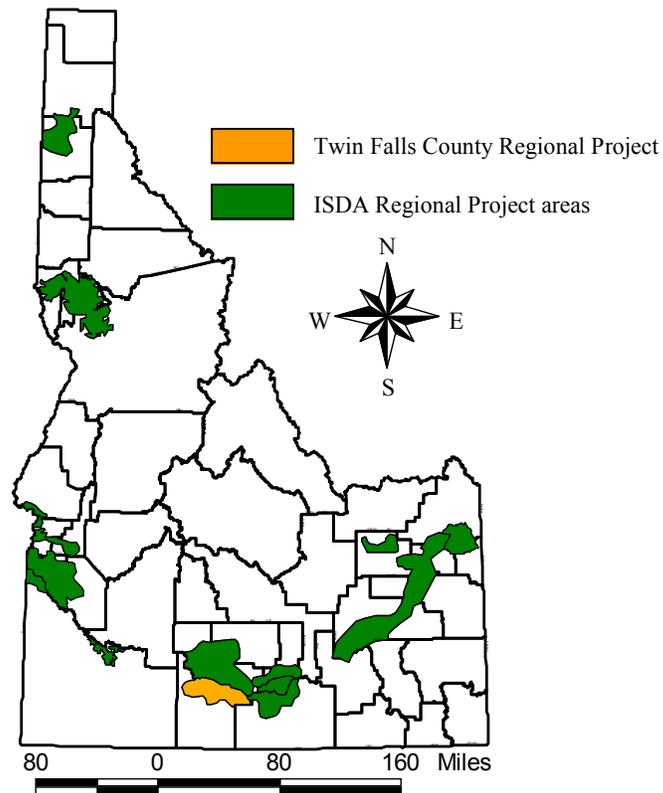


Figure 1. Location of Twin Falls County regional project and other ISDA regional project areas.

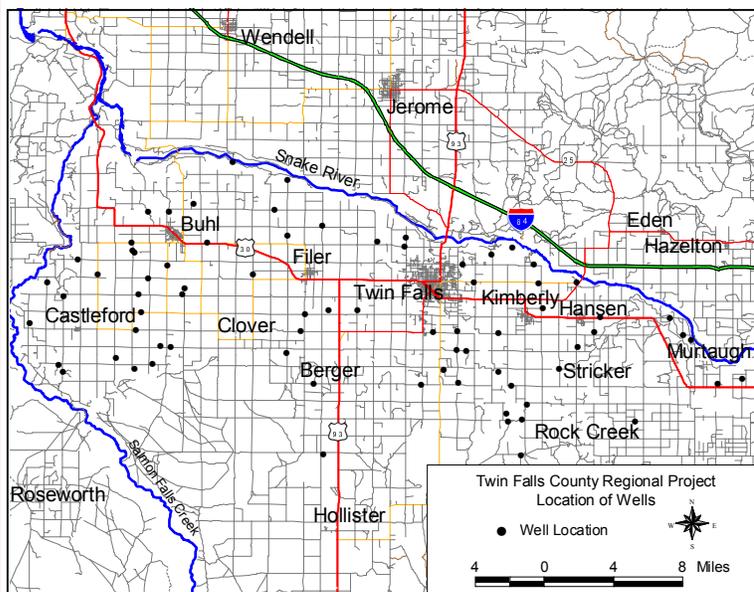


Figure 2. Location of project wells.

To establish this regional monitoring project, the ISDA randomly selected domestic wells in the area. ISDA statistically determined that sampling 75 randomly selected domestic wells would provide adequate data to evaluate overall ground water quality in the area (Figure 2). All sampling was conducted after a quality assurance project plan (QAPP) was established and followed established ISDA protocols for handling, storage and shipping. Permission was gained from the land owners prior to sampling.

Nutrients, and common ions were evaluated 11 out of the 12 years (1998 through 2009) of ISDA's testing of the Twin Falls County regional project. Pesticides testing was conducted every three to four years. Pesticides analysis was conducted by the University of Idaho Analytical Sciences Laboratory (UIASL), in Moscow, Idaho.



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2006 ISDA Pesticide Detections

In 2006, a total of 73 wells were sampled for pesticides as part of the Twin Falls County regional project (Figure 3). A total of 35 wells had one or more positive pesticide detections. Desethyl atrazine (DEA), a breakdown product of atrazine, was the most commonly detected pesticide with detections in 29 wells. Atrazine was the next most commonly detected pesticide with detections in nine wells, followed by 2,4-D and DCPA (dacthal) with two detections each. The following pesticides were detected in one well each: bentazon, bromacil, diazinon, hexazinone, and MCP. All detections were below any health standards set by EPA or the State of Idaho and were defined as Level 1 detections based on the Idaho Pesticide Management Plan (PMP).

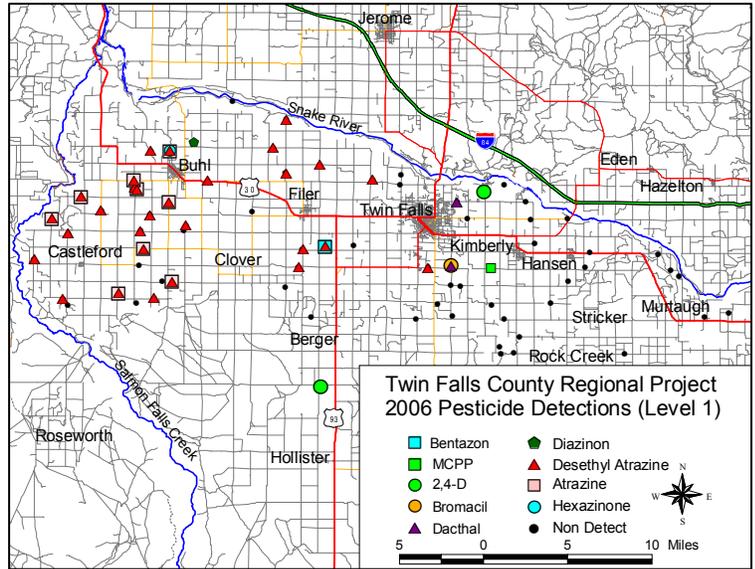


Figure 3. Pesticide detections from 2006 sampling.

2009 ISDA Pesticide Detections

In 2009, 14 wells in the regional project were tested for pesticides as a partial sampling of the project area and follow-up to detections from the monitoring conducted in 2006. The pesticides detected were atrazine, DEA, and bromacil (Figure 4). All detections were below any health-based standards set by the EPA or the State of Idaho and are defined as Level 1 detections based on the Idaho PMP.

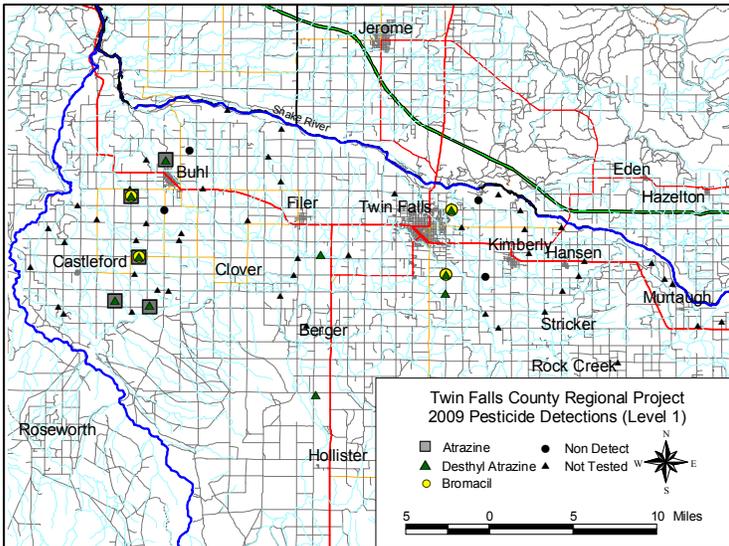


Figure 4. Pesticide detections from 2009 sampling.

Before using any pesticide,



READ, AND FOLLOW THE LABEL!

Idaho Pesticide Management Plan (PMP)

The Idaho State Department of Agriculture (ISDA) is the lead agency in developing the *Idaho Pesticide Management Plan (PMP) for Ground Water Protection*. ISDA has the authority to implement pesticide programs through a cooperative working agreement with the Environmental Protection Agency (EPA), Idaho state laws, and department rules. The Idaho PMP outlines processes to protect ground water from pesticides and defines pesticide detections based on the concentration of the detection compared to a reference point. The reference point refers to health based concentrations. Idaho has adopted the EPA's Maximum Contaminant Levels (MCLs) in the Idaho Ground Water Quality Rule (1997). Where no MCL exists, ISDA will use EPA Lifetime Health Advisories (HAL) first if they exist, and then an EPA Reference Dose (RfD) number.

The PMP categorizes detection levels into the following levels:

- Level 1:** Detection above the detection limit to less than 20% of Reference Point.
- Level 2:** Detection at 20% to less than 50% of Reference Point.
- Level 3:** Detection at 50% to less than 100% of Reference Point
- Level 4:** Detection equal to or greater than 100% of Reference Point.

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REFERENCES:

Neely, K.W. and Crockett, J. K., 1999. Nitrate in Idaho's Ground Water: Idaho Department of Water Resources Technical Results Summary No. 1.
Neely, Kenneth W., 2001. Ground Water Quality in the Twin Falls Hydrogeologic Subarea, 1991-2000. Idaho Department of Water Resources, Water Information Bulletin No. 50, Part 4.

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United States Department of Agriculture (USDA), National Agricultural Statistics Service, Idaho Field Office, 2009. 2009 Idaho Agricultural Statistics...including Idaho State Department of Agriculture's Annual Report, pp. 36-59.