



INSTRUCTION SHEET
2013 FARM AND RANCH IRRIGATION SURVEY (FRIS)
Your report is due February 10, 2014



Completing the 2013 FRIS Questionnaire

Make all entries clear and easy to read. Use a **blue** or **black** ball point pen.

General

Refer to the instructions below for completing your questionnaire. The enclosed census follow-on questionnaire was mailed to producers and growers throughout the United States. Because it is meant for use in all parts of the country, it may contain items and inquiries which do not apply to your operation. In this case, mark the "No" or "None" box and go on to the next item or section.

Partial Year Operation

If you stopped farming during 2013, complete the questionnaire for the portion of 2013 that you did farm. Write "Stopped farming in 2013" and the date you stopped farming below the address area. Mail the completed questionnaire in the return envelope.

If You Receive More Than One Questionnaire for the Same Operation

Return any duplicate questionnaire(s) in the same envelope with the completed questionnaire. In the address area of the questionnaire you complete, write the 11-digit ID number from the label of the extra questionnaire(s).

Partnership Operations

Complete only ONE questionnaire for a partnership operation and include all partners' shares on the same questionnaire. If two or more questionnaires were received for the partnership, see instruction on "If You Receive More Than One Questionnaire for the Same Operation" above.

How to Enter Your Responses on the Questionnaire

Please enter your answers in the spaces provided and in the units requested, i.e., number of acres, dollars, percent, etc. Mark all applicable Yes/No boxes with an "X".

Instructions by Section

Complete Sections 1 and 2 of the questionnaire. If you did not irrigate or water any cropland (including nursery and greenhouse acreage in the open and under protection), pastureland, or rangeland in 2013, go to Section 22 on the back page and complete the remainder of the questionnaire.

Section 1 – Acreage in 2013

Report land owned, rented, or used by the respondent, spouse, partnership, corporation, or organization identified on the questionnaire. If you did not operate any land in 2013, go to Section 24 on the back page and complete the remainder of the questionnaire.

Include all land, regardless of location or use; cropland, pastureland, rangeland, woodland, idle land, **greenhouses or other area under protection**, Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP), Farmable Wetlands Program (FWP), Conservation Reserve Enhancement Program (CREP), and house lots. All responses in this section should be rounded to whole acres. Area under protection less than one acre should be reported as one acre. **Exclude** land used under a grazing permit.

Item 1 - Report all land owned in 2013 by you and/or your spouse, or by the partnership, corporation, or organization named on the questionnaire. Include all fields and tracts of cropland, pastureland, woodland, wasteland, idle land, and farmsteads.

Item 2 - Report all land rented or leased from others on shares, cash rent, used rent-free, in exchange for services, for taxes, etc., regardless of location, even if used for part of the year. **Exclude** land used on a per head basis under a grazing permit or animal unit (AUM) basis.

Item 3 - Report all land rented or leased to others regardless of the purpose. Include land that was rented and subleased to others.

Item 4 - The acres in item 4, **Box A**, should equal item 1 plus item 2 minus item 3. All responses to this questionnaire should refer to these **total acres in this operation**. It is important that this number is correct as it is used to establish consistency throughout the questionnaire. The acreage of this operation must equal the acreage reported in Section 2, item 4, column 1, **Box B**.

Section 2 – Land in 2013

Account for total acres in **this operation** in column 1 and irrigated land in **this operation** in column 2. If the same land had more than one use in 2013, report that land only once in the first use that applies. Irrigation refers to the one or more applications of water to land or crops by any artificial or controlled means.

In addition to fully irrigated land, report as irrigated any land to which partial, supplemental, or semi-irrigation was applied in column 2. Also include any acreage which received only preplant irrigation (watered before planting). Hayland, pastureland or rangeland should be reported as irrigated if spring flood water was spread by man-made canals, ditches, spreader dikes, pipes, or other water works. Include acres where lagoon wastewater from livestock operations was distributed by a sprinkler or flood system.

For conservation program land, if the operator was allowed to cut conservation program land for hay, then this land should be considered cropland harvested; if it was grazed it is other pasture and grazing land. Except for disaster designation uses, almost all conservation program land will be reported in item 1b, cropland not harvested or grazed.

Item 1a - Include as cropland harvested: hay and forage, land in groves, vineyards, berries, orchards, Christmas trees (whether harvested in 2013 or not), short rotation woody crops, nursery and greenhouse crops.

For winter wheat, report the 2013 acres harvested.

For double cropped acres if more than one crop was harvested from the same land in 2013, report those acres only once as cropland harvested.

Item 1b - Include cropland used for cover crops, cropland on which all crops failed, idle cropland, cropland in summer fallow, and cropland in government programs, including conservation program land unless used for grazing, hay, or forage. Land on which sugarcane and pineapples were grown but not harvested in 2013, are reported as other cropland.

Item 2a - Exclude land used under a grazing permit.

Item 2b - Report woodland pastured.

Item 2c - Include any pastured land other than cropland and woodland pastured. Include rotation pasture and grazing land that could have been used for crops without additional improvements.

Item 3 - Any land that does not fit into one of the above categories. Include land in roads, buildings, farmsteads, woodland not pastured, and wasteland.

Item 4 - This should equal the sum of all land uses reported in items 1 through 3. Also, **Box B** acres must equal acres in "this operation" reported in Section 1, item 4, **Box A**. Anyone who irrigated any land in 2013 should complete the entire report form.

Item 5 - This question helps determine if this operation irrigated any area in the open or under protection in 2013. If the answer to this question is 'Yes', then continue completing the form. If you did not irrigate any area in the open or under protection, check the 'No' box and go to Section 22 on the back page.

Item 6 - Report the state with the largest amount of irrigated land for "this operation." If you irrigate in more than one state and the acres irrigated happens to be the same, then report the state that includes your farmstead.

Section 3 – Ground Water From Wells Used on This Operation in 2013

Water usage for this survey will be published in acre-feet. An acre-foot is the quantity of water needed to cover one acre to the depth of one foot, or 326,000 gallons. Ground water is water from a well or wells located on this operation.

Item 1 - Report if this operation irrigated any land with ground water from wells on this operation at any time during 2013.

Item 2 - Report acres in the open irrigated with ground water from wells and the estimated quantity of ground water used in one of the following units:

- total acre-feet; or
- total gallons; or
- average inches applied per acre

Item 3 - Report the area under protection irrigated with ground water in square feet. Report the area only once, regardless of how many crops were grown for sale from the same area.

Item 4 - Report the total number of wells used on this operation in 2013.

Item 4a - Report the number of free-flowing (artesian) wells used in 2013. Free flowing wells do not require pumping the water to the surface. Water flows to the surface under natural pressure. These are most commonly found in Florida and some western states.

Item 4b - Report the number of wells reported in item 4 above that used backflow prevention devices (check valves) in 2013. Report the number of acres and area under protection irrigated in 2013 with water pumped from wells with backflow prevention devices.

Item 4c - Report how many wells reported in item 4 above used flow meters or flow measuring devices. Report the number of acres and area under protection irrigated in 2013 with water from wells with flow measurement devices.

Item 5 - Report the well characteristics for up to 3 primary wells pumped on this operation in 2013. **Note:** The 3 primary wells should include those wells with the greatest quantity of water pumped in 2013. Report the characteristics for each individual well even if these values are similar across wells. If less than 3 wells were pumped in 2013, then only report for those wells used.

Item 5a - If you used more than 3 wells in 2013, then for all other wells (excluding the 3 primary wells), report the average value for well characteristics.

Item 6 - Change in depth to water is defined as a change in the depth of water from the well-head to the water table level that has occurred over the last five years prior to 2013.

Section 4 – On-Farm Surface Water Used on This Operation in 2013

On farm surface water is a water supply not controlled by a water supply organization and includes water from a stream, drainage ditch, lake, pond, spring, or reservoir on or adjacent to your farm.

Item 1 - Report if this operation used any on-farm surface water including recycled and reclaimed water. For this survey, recycled water is the reuse of irrigation water that was previously used to irrigate a crop on the operation. Reclaimed water is treated wastewater used for irrigation.

Item 2 - Report acres in the open on this operation irrigated with on-farm surface water and the estimated quantity used in one of the following units:

- total acre-feet; or
- total gallons; or
- average inches applied per acre

Item 3 - Report the total area under protection irrigated with on-farm surface water in square feet. Report the area only once, regardless of how many crops were grown for sale from the same area.

Item 4 - Report whether this operation used recycled water to irrigate any crops in 2013.

Item 4a - Report the area on which one or more applications of recycled water for irrigation were made in 2013. Report the acres only once even if multiple applications were made to the same acreage.

Item 5 - Report whether this operation used reclaimed water to irrigate any crops in 2013.

Item 5a - Report the area on which one or more applications of reclaimed water for irrigation were made in 2013. Report the acres only once even if multiple applications were made to the same acreage.

Item 5b - Report how much reclaimed irrigation water was used on this operation in 2013. Report the quantity of reclaimed water in acre-feet or total gallons.

Section 5 – Off-Farm Water From All Suppliers Used on This Operation in 2013

Off-farm surface water is surface or ground water from U.S. Bureau of Reclamation, other Federal agencies, or other suppliers.

Item 1 - Report if this operation used any water from off-farm sources.

Item 2 - Report acres in the open on this operation irrigated with off-farm water and the estimated quantity used in one of the following units:

- total acre-feet; or
- total gallons; or
- average inches applied per acre

Item 3 - Report the total area under protection irrigated with off-farm water in square feet. Report the area only once, regardless of how many crops were grown for sale from the same area.

Item 4 - Report if this operation received any off-farm water and total cost, if any was purchased. Report in whole dollars.

Item 5 - Report the supplier of off-farm water, if any was received.

Item 6 - Report whether this operation used reclaimed water to irrigate any crops in 2013.

Item 6a - Report the area on which one or more applications of reclaimed water for irrigation were made in 2013. Report the acres only once even if multiple applications were made to the same acreage.

Item 6b - Report how much reclaimed irrigation water was used on this operation in 2013. Report the quantity of reclaimed water in acre-feet or total gallons.

Item 6c - Identify the source(s) of reclaimed water used on this operation by marking an 'X' in all the sources that apply.

Section 6 – Pumps, Other Than Well Pumps, Used For Irrigation on This Operation in 2013

These are pumps that were used for pumping surface water from rivers and streams, irrigation channels, ponds and other water holding systems. Tailwater pits hold water that was recovered from irrigated land for recycling.

Some irrigation systems using water from wells may also have pumps in places other than their well pumps to provide additional lift, especially on farms with large distribution systems or irregular terrain. These pumps are often referred to as booster pumps. Include these booster pumps in Section 6.

Vertical lift refers to the average surface-level feet-of-lift the pumps must raise the water in order to distribute the water through the field irrigation system. Discharge capacity refers to average pumping capacity in gallons per minute (GPM). Discharge operating pressure refers to the average operating pressure in pounds per square inch at the point of discharge.

Section 7 – Energy Expense By Power Source for All Well and Other Irrigation Pumps Used On This Operation in 2013

For each energy source report the number of well pumps and other pumps, the cost of the energy used to power pumps (include the landlord's share of pumping costs), and the number of acres irrigated by water source. The sum of acres irrigated across all energy types may be less than the total acres irrigated for the operation reported in Section 2, item 4, column 2, Box C. The difference should equal those acres irrigated using no pumps to supply water to the field.

Section 8 – Method of Water Distribution in Fields in the Open on this Operation in 2013

This section refers to the method used to distribute irrigation water. Report the acres of land irrigated by each of the distribution systems listed. If the same land was irrigated by more than one method, then report acres irrigated by each method used. **Note:** Do not report information for the delivery system used to convey water from the source to the field. Report the method only for the field distribution system.

Item 1 - Gravity irrigation refers to the free flowing application of water across a field. The water is distributed across a field using either pipes or open ditches near the head of the field from which water is released to flow down furrows or to flood the field.

Item 1a - Row crops are generally irrigated by water flowing down furrows.

Item 1b - Report the controlled flooding acreage for crops such as rice or cranberries which are flooded across the entire field with the water contained within borders or basins.

Item 1c - Uncontrolled flooding is often used to water pasture or rangeland. Water is directed to the area by artificial or controlled means but there are no furrows or borders within the field when uncontrolled flooding is used.

Item 1d - Report acreage here if not reported in any of the above gravity system categories.

Item 2 - Sprinkler irrigation is separated into six categories: center pivot, linear move tower, solid set and permanent systems, mechanical move systems, hand move systems, and other sprinkler systems. Use nozzle pressure for the pressure categories.

Item 2a - A center pivot system uses a boom half the width of the field. It is anchored at the center of the field and sweeps in a circle.

Item 2b - Linear move tower systems and other linear continuous move drive systems are self-propelled systems that travel in straight lines across the field.

Item 2c - Report for solid set and permanent systems. Exclude low-flow micro systems.

Item 2di - Mechanical move systems include side roll, wheel move, other mechanical move systems, and other discrete move systems.

Item 2dii - Big gun or traveler systems use large pulsating sprinklers and travel across the area being watered.

Item 2e - Hand move systems are any non-self-propelled system which must be moved manually.

Item 2f - Report acreage here if not reported in any of the above sprinkler system categories.

Item 3 - Drip, trickle or low-flow micro irrigation water is generally distributed by tubes or tapes which meter out small amounts of water at low pressure.

Item 3a - Report acres on which on or above ground surface drip irrigation was used.

Item 3b - Report acres on which sub-surface or root zone, drip was used.

Item 3c - Report acres on which low-flow micro sprinklers were used. This refers to micro sprinklers that apply water at low pressure and are not self-propelled or easily moved.

Item 3d - Report acreage here if not reported in any of the above drip, trickle, or low-flow system categories.

The total acres, by method of water distribution, should be equal to or greater than Section 2, column 2, item 4, total acres irrigated, Box C. Every acre reported as irrigated in Section 2 needs to be reported by method of irrigation in Section 8. If you use multiple methods of water distribution for the same acres, this sum may be larger than item code 0042.

Section 9 – Acres Harvested in the Open and Crop Yields on This Operation in 2013

Report the acres of each crop harvested and its corresponding average yield per acre separately for irrigated acres and for non-irrigated acres. Report acres of each crop harvested, even when multiple crops have been harvested off the same land. In addition, for each irrigated crop harvested, report the estimated average quantity of water applied per acre for the 2013 irrigation season. Report water applied in average acre-feet per acre or in inches per acre (but not both). Acre-feet per acre should be reported to the nearest tenth of a foot (for example, 1.6 or 2.3 acre-feet per acre), while acreinches per acre should be reported to the nearest whole inch (for example, 19 or 28 inches per acre).

The sum of irrigated acres harvested in Section 9 should be equal to or greater than Section 2, item 4, column 2, Box C, total acres irrigated.

Any harvested crop grown in the open not pre-listed should be entered under item 19 'all other crops.' Report the crop name in the 'specify' area. **Note:** For winter wheat, report the acres harvested in 2013.

Section 10 – Primary Method of Field Water Distribution, Water Source, and Acreage of Chemigation in Irrigation Water for Crops Irrigated in the Open in 2013

For each crop with irrigated acres harvested reported in Section 9, report the primary type of irrigation system in the first column by selecting the appropriate water distribution ID code from the water distribution ID code list above the table. Report the number of acres irrigated from each water source (ground, on-farm surface, and off-farm suppliers).

Then, for each irrigated crop, report the number of acres that were irrigated applying chemigation, that is, the application of fertilizers or pesticides through the irrigation water. Report the acres of commercial fertilizer application and acres for pesticide application separately.

Note: For each crop, an irrigated acre harvested may be reported in both the fertilizer and pesticide columns. Therefore, for each crop, the sum of chemigation acres may total more than the corresponding irrigated harvested acres reported for that crop in column 1 of section 9.

Report the acres of the irrigated crop by water source.

Section 11 – Irrigation Area, Methods, and Water Applied to Horticultural Crops in the Open in 2013

Report whether this operation irrigated any nursery, greenhouse, floriculture, mushrooms, propagative materials, or other horticultural crops grown in the open in 2013. If any horticultural crops on your operation were grown in the open, then complete this section.

Item 2 - Report the total acres and irrigated acres for horticulture crops grown in the open to the nearest tenth acre. Report the acres only once even when multiple crops were harvested off the same land. Irrigation refers to the application of water to land or crops by any artificial or controlled means.

Item 3 - Report acres for each horticulture crop listed to the nearest tenth acre. Report acres of each crop harvested, even when multiple crops were harvested off the same land. For example, if annual bedding plants

and a nursery crop were harvested from the same 2 acres, enter 2.0 acres in the Floriculture and bedding crops category and 2.0 acres in the Nursery crop category. For each category, enter the total acres grown in the open and irrigated acres.

Report for each crop category grown on this operation the total acres in the open and irrigated acres in the appropriate category:

- a. Floriculture and bedding crops - bedding/garden plants, cut flowers and cut florist greens, indoor foliage plants, potted flowering plants
- b. Nursery crops - ornamentals, shrubs, shade trees, fruit and nut trees, vines, palms, ornamental grasses, evergreens not for Christmas trees, deciduous trees and shrubs, aquatic plants
- c. Sod
- d. Propagative materials - bulbs, corms, rhizomes, and tubers; cuttings, seedlings, linings, and plugs; flower and vegetable seeds; tobacco transplants; vegetable transplants
- e. Christmas trees and short rotation woody crops - A short rotation woody crop is a tree that grows from seed to a mature tree in 10 years or less.
- f. Other - If more than one crop was grown for this category, report the primary type of crop in the specify area.

Item 4 - Report the area irrigated or watered for horticultural crops grown in the open in 2013 by irrigation method used on this operation. If more than one method was used, report area in all methods that apply. Report quantity of water in the unit of measure most used for each method. If the total quantity of water, column 2a, and the unit of measure, column 2b, is known, then skip column 3.

Report for the following irrigation methods:

- a. Hand Watered
- b. Gravity Irrigation - refers to the free-flowing application of water.
- c. Sprinkler - Exclude hand-held sprinklers.
- d. Drip, trickle, or low-flow micro irrigation - the water is distributed down the rows by tapes which meter out small amounts of water at low pressure near the plant's roots.
- e. Subirrigation - this is sometimes referred to as water seepage. It is used to maintain a water table at a predetermined depth. Normally these systems are permanently in place below the rootline. Water is usually applied by using emitters. Include hydroponic in this category.

The total area reported, by method used, should be equal to or greater than item 2, irrigated area, code 0738.

Section 12 – Irrigation of Horticultural Crops Grown in the Open by Water Source in 2013

Report the water source percentage for each irrigation method listed. The percentage for ground water, on-farm water, and off-farm water should add to 100% for each method (row).

Section 13 – Irrigation Area, Methods, and Water Applied to Horticultural Crops Under Protection in 2013

Report whether this operation irrigated any nursery, greenhouse, floriculture, mushrooms, propagative materials, or other horticultural crops grown under protection. Under protection includes horticultural crops grown under glass, rigid plastic, plastic film, including “tunnel” protection and hoop houses. If any horticultural crops on your operation were grown under protection, then complete this section.

Item 2 - Report the total area and irrigated area under protection in square feet. Report the area only once, regardless of how many crops were grown for sale from the same area. Irrigation refers to one or more applications of water to land or crops by any artificial or controlled means.

Item 3 - Report the area irrigated in square feet for each horticultural category listed. Report the area of each horticulture crop, even when multiple crops were harvested off the same land. For example, if two crops of annual bedding plants were grown from 1,000 square feet, enter 1,000 in the Floriculture and Bedding Crops category. If 500 square feet of food crops were also grown in the same area, then also report 500 in the Food crops grown under protection category. For each category, enter the total area under protection that was irrigated.

Report crops grown on this operation in the appropriate category:

- a. Floriculture and bedding crops - Bedding/garden plants, cut flowers and cut florist greens, indoor foliage plants, potted flowering plants
- b. Nursery crops - Ornamentals, shrubs, shade trees, fruit and nut trees, vines, palms, ornamental grasses, evergreens not for Christmas tree production, deciduous trees and shrubs, aquatic plants
- c. Propagative materials - Bulbs, corms, rhizomes, and tubers; cuttings, seedlings, linings, and plugs; flower and vegetable seeds; tobacco transplants; vegetable transplantsd.
- d. Food crops grown under protection
- e. Mushrooms
- f. Other - If more than one crop was grown for this category, report the primary type of crop in the specify area.

Item 4 - Report the area irrigated or watered for horticultural crops grown under protection in 2013 by irrigation method used on this operation.

If more than one method was used, report area in all methods that apply. Report quantity of water in the unit of measure most used for each method. If the total quantity of water, column 2a, and the unit of measure, column 2b, is known, then skip column 3.

Report for the following irrigation methods:

- a. Hand Watered
- b. Gravity Irrigation - refers to the free-flowing application of water.
- c. Sprinkler - Exclude hand-held sprinklers.
- d. Drip, trickle, or low-flow micro irrigation - the water is distributed down the rows by tapes which meter out small amounts of water at low pressure near the plant's roots.
- e. Subirrigation - this is sometimes referred to as water seepage. It is used to maintain a water table at a predetermined depth. Normally these systems are permanently in place below the rootline. Water is usually applied by using emitters. Include hydroponic in this category.

The total area reported, by method used, should be equal to or greater than item 2, irrigated area, code 0629.

Section 14 – Irrigation of Horticultural Crops Grown Under Protection by Water Source in 2013

Report the water source percentage for each irrigation method listed. The percentage for ground water, on-farm water, and off-farm water should add to 100% for each method (row).

Definitions of Water Sources

Ground water is water from a well or wells located on this farm.

On farm surface water is a water supply not controlled by a water supply organization and includes water from a stream, drainage ditch, lake, pond, spring, or reservoir on or adjacent to your farm.

Off-farm surface water is surface or ground water from U.S. Bureau of Reclamation, other Federal agencies, or other suppliers.

Section 15 – Expenditures for Irrigation Facilities and Equipment on This Operation in 2013

For the construction and improvement categories report the cost of the expenditure in column 1, the irrigated acres affected in column 2, the primary purpose ID code of the expenditure in column 3, and the primary source ID code of the funding assistance in column 4 if any were received.

Section 16 – Barriers to Implementing Improvements to Reduce Energy Use or Conserve Water in this Operation’s Irrigation System During the Past Five Years

Report any issues which prevented you from implementing improvements to existing irrigation systems during the past five years. Mark all that apply.

Section 17 – Water Management Practices for Gravity Irrigation Systems in the Open

If you reported gravity irrigation in Section 8, then complete this section. For each item a through d, report the number of gravity irrigated acres using the specific practice.

Section 18 – Irrigation Practices in 2013

Item 1 - Report on the method or approach used to decide when to schedule water applications in 2013. Mark all that apply.

Item 2 - Report in item 2 whether this operation had to discontinue irrigation in 2013 long enough to affect crop yield. Report the reason(s) if irrigation was discontinued. Mark all that apply. If “other,” is marked, report the reason for discontinuing irrigation in the “specify” response area.

Section 19 – Labor Used for Irrigation on this Operation in 2013

If you paid any labor cost for the irrigation activities, report total hours and average hourly wage in item 1a and report contract labor expenses for irrigation activities in item 1b. Labor costs here should pertain only to the operation and maintenance of the irrigation system and facilities. **Include** the landlord’s share of irrigation labor costs. **Exclude** cost for custom work and contract labor for harvesting.

Section 20 – Sources of Irrigation Information

Mark all that apply.

Section 21 – Technical and Financial Assistance Received During the Past Five Years

If you made irrigation and/or drainage improvements above regular maintenance in the past five years, then mark item 1 ‘Yes’. If you received any technical or financial assistance for these improvements, you should mark all that apply.

Section 22 – Irrigated Land in 2012

Complete this section ONLY if you did not irrigate in 2013.

This section references both 2012 and 2013 irrigation. Report in item 1 whether any land was irrigated on this operation in 2012. Report in item 2, the reasons for not irrigating in 2013. Mark all that apply in item 2 and if ‘other’ is marked, report the reason in the “specify” response area. In item 3, report whether the discontinuance of irrigation is permanent.

Section 23 – Value of Farm Sales in 2013

Item 1 - Select the appropriate category for the gross value of sales of all agricultural products sold from this operation in 2013. Agricultural products include all crops and livestock sold from this operation.

Item 2 - Report the percent of the total gross value of sales that were from irrigated crops.

Item 3 - Report the percent of the total gross value of sales that were from **non-irrigated crop** or **livestock** sales. The sum of items 2 and 3 should equal 100 percent.

Section 24 – Person Completing this Form

Please print the name of the person completing this form, the date completed, and telephone number. Please indicate if you would like a free summary of the survey results in the mail.