



INSTRUCTION SHEET 2013 FARM AND RANCH IRRIGATION SURVEY (FRIS)

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.

If you did not irrigate or water any cropland, pastureland, or rangeland in 2013, go to Section 22 on the back page and complete the remainder of the questionnaire. If you operated no land in 2013, go to Section 24 on the back page and complete the remainder of the questionnaire.

Partial Year Operation

If you stopped farming at any time 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 questionnaires in the same envelope with the completed questionnaire(s). In the address area of the questionnaire(s) 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 proper spaces 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

Section 1 - Acreage in 2013

Report land owned, rented, or used by the respondent, spouse, partnership, corporation, or organization identified on the questionnaire. **Include** all land, regardless of location or use; Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP) land, Farmable Wetlands Program (FWP), Conservation Reserve Enhancement Program (CREP), cropland, pastureland, rangeland, woodland, idle land, greenhouses or other area under protection, house lots, etc. **Exclude** land used under a grazing permit. All responses in this section should be rounded to whole acres. Small horticulture operations less than one acre should be reported as one acre.

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, farmsteads, etc.

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 for cash or for a share of the crops, if the acres were part of the acreage reported in items 1 or 2.

Item 4 - The acres in item 4 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 necessary that this number is correct as it is used in editing to establish consistency throughout the questionnaire. The acreage of this operation must equal the acreage reported later in Section 2, item 4, column 1.

Section 2 - Land in 2013

Distribute all acres in **this operation** in column 1 and all 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 listed that applies.

In addition to fully irrigated land, in column 2 report as irrigated any land to which partial, supplemental, or semi-irrigation was applied. 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.

Report 2013 conservation program land such as CRP, WRP, FWP, and CREP use as follows. 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 cropland used for pasture. Except for disaster designation uses, almost all conservation program land will be reported in item 1c, other cropland.

Item 1a - Include land from which crops, including hay and forage, were harvested and 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. If all or part of your crop acreage was double cropped, the sum of acres of crops harvested and irrigated crops harvested in sections 8 and 9 may exceed item codes 0029 and 0030, respectively.

Item 1b - Include rotation pasture and grazing land that could have been used for crops without additional improvements. Exclude land used under a grazing permit. 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 1c.

Item 2b - Include woodland pastured. Report the acres in Christmas trees and short rotation woody crops that were cut in 2013 and will be cut in later years as "cropland harvested." A short rotation woody crop is a tree that is harvested in 10 years or less. These trees are used by the paper or pulp industry or as engineered wood.

Item 2c - Include any pastured land other than cropland and woodland pastured.

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

Item 4 - This should equal the sum of all land uses listed in items 1 through 3. Also, Section 2, item 4 acres must equal acres in "this operation" reported in Section 1, item 4.

Anyone who irrigated any land in 2013 should complete the entire report form. **Note:** If acres irrigated in column 2, item 4, equals zero, skip to Section 22.

Item 7 - Report the state with the largest amount of irrigated land for "this operation." If you irrigate in more than one state and the amount irrigated happens to be the same, then report the state that includes your farmstead.

Section 3 - Government Programs in 2013

If you received any government payment, you should answer this section for those questions that apply.

Section 4 - Method of Water Distribution 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 categories.

Item 2 - Sprinkler irrigation is separated into five categories: center pivot, linear move tower, solid set and permanent systems, mechanical move systems, and hand move systems. Report the pressure at the nozzle.

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 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 near the plant's roots.

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

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

Item 3c - Report acres 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 4 - Subirrigation is sometimes referred to as water seepage. It is used to maintain a water table at a predetermined depth. These systems may be permanently in place below the rootline. Water is usually applied by using emitters. Subirrigation includes ebb and flow, trough, flooded floor, or other hydroponic methods.

The total acres, by method of water distribution, should be equal to or greater than Section 2, column 2, item 5, total acres irrigated, code 0042. Every acre reported as irrigated in Section 2 needs to be reported by method of irrigation in Section 4. If you use multiple methods of water distribution for the same acres, this sum may be larger than item code 0042.

Section 5 - Acres Irrigated, Estimated Quantity of Water Used, and Off-farm Supplied Water Used on This Operation by Source in 2013

One method of estimating pumped water is to multiply the hours recorded on the pump engine by the gallons per minute (G.P.M.). Estimate, if exact figures are not known.

Water usage for this survey will be published in acre-feet. This is the quantity of water needed to cover one acre to the depth of one foot, or 326,000 gallons.

The sum of acres irrigated from all water sources in Section 5, item 1 must be equal to or greater than item code 0042, total acres irrigated, in Section 2, item 5, column 2. If you use multiple sources of water for the same acres, the sum of acres in Section 5 may be larger than item code 0042.

Item 1 - Report acres irrigated by ground water, on farm surface water, and off farm surface water.

Definitions for Water Sources

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

Item 2 - Report estimated quantity of water used on this operation by only one of the following units:

- (a) total acre feet; or
- (b) average acre feet per acre; or
- (c) average inch applied per acre; or
- (d) average gallons of water applied per minute (GPM) and duration in total number of 24 day equivalents; or
- (e) average flow in cubic feet per second (CFS) and duration in total number of 24-hour day equivalents.

Item 3 - Report if this operation received any off-farm water and total cost, if any was purchased. Report in whole dollars.

Item 4 - Report the supplier of off-farm water, if any was received.

Section 6 - Water Transfers in 2013

Item 1 - If you rented or leased part or all of the 2013 water allotment for the farm operation **to others** for use off the farm, then record a YES for item 1 and continue with item 2. If your response to Item 1 is NO, check the NO response box and then go to Section 7.

Item 2 - Record your best estimate of the quantity of water (in acre-feet) transferred to others in 2013 by water source. Include only the water you rented or leased to others for either agricultural or non-agricultural use off this operation.

Item 3 - Water that is transferred off-farm may be put to one or more alternative uses. To the best of your knowledge, indicate the uses of the transferred water. Be sure to check only those uses that apply. Your response may include from 1 to 3 checks (for options 1 - 3). If the use of the transferred water is unknown, check option 4 and then check one of the reasons, (a) or (b), why the use of the transferred water was unknown.

Section 7 - Expenditures for Irrigation Facilities and Equipment on This Operation in 2013

For the construction and improvement categories report the expenditures in column 1, the principal purpose of the expenditure in column 2, and the primary source of funding assistance or whether funding assistance was needed. Report any expense incurred in **maintaining** the irrigation system in Section 13.

Section 8 - Acres Harvested, Crop Yields, and Pasture 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 acre-inches 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 8 should be equal to or greater than Section 2, item 5, column 2, item code 0042, total acres irrigated, less any acres reported in column two, item 1c, other cropland irrigated that do not relate to Section 8.

Any harvested crop 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 9 - Primary Method of Water Distribution, Application of Agricultural Chemicals in Irrigation Water, and Water Source by Irrigated Acreage Harvested on This Operation in 2013

For each crop with irrigated acres harvested reported in Section 8, report the primary type of irrigation system in column 1 by selecting the appropriate irrigation system ID code from the system ID code list above the table. Report the percent of the crop acres irrigated using this system in the second column.

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 8.

Report the acres of the irrigated crop by water source.

Section 10 - Number of Irrigation Wells on This Operation in 2013, Including Well Depth and Pumping Capacity

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

Item 2 - Report the total number of wells used on this operation in 2013. Any well not used will be reported later in item 7.

Item 2a - Report the well characteristics and use 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 individual well characteristics and use 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 2b - If you used more than 3 wells in 2013, then for all other wells (excluding the 3 primary wells), report the average value for each well characteristic and use.

Item 3 - Report the number of pumping stations for all wells reported in item 2 above that used backflow prevention devices (check valves) in 2013.

Item 3a - Report the number of acres irrigated in 2013 with water pumped from wells with backflow prevention devices.

Item 4 - Report how many wells reported in item 2 above used flow meters or flow measuring devices.

Item 4a - Report the number of acres irrigated in 2013 with water from wells with flow measurement devices.

Item 5 - 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.

Item 6 - Free flowing wells refers to artesian wells that 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. Pumps may be used to distribute the water from a holding pond or other type of basin to the field and/or to create sufficient pressure for the field-level irrigation system. Report the number of free-flowing (artesian) wells used in 2013.

Item 7 - Report the number of operational wells that could have been used in 2013 but were not used. This includes any well that was not used due to needed repairs but only if the respondent plans to repair the well in the future and continue to use the well. Any well which is not operational, and for which the respondent has no plans to ever use again, should be considered abandoned. If all operational wells were in use check the "none" box.

Section 11 - Pumps, Other Than Well Pumps, Used For Irrigation on This Operation in 2013

These are pumps that were or could be used for lifting 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 wells to provide additional lift, especially on farms with large distribution systems or irregular terrain. These pumps are often referred to as booster pumps. Do not include pumps here that were reported in Section 10.

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 12 - Energy Used on This Operation in 2013 for Pumping Water by Power Source

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 5, column 2, item code 0042. The difference should equal those acres irrigated using no pumps to supply water to the field.

Section 13 - Maintenance and Repair Costs for Irrigation Equipment and Facilities on This Operation in 2013

Report any expense incurred in maintaining the irrigation system including landlord's share. For this section do not include payments made for expanding the system, increasing efficiency, or new construction reported in Section 7.

Section 14 - Labor Costs for Irrigation on This Operation in 2013

Report hired labor expenses for irrigation activities 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 15 - 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. If "other," is marked, report the practice in the "specify" response area.

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 16 - Other Uses of Irrigation Water on This Operation in 2013

Report acres on which irrigation water was used for other than crop consumptive use. Report the area only once, regardless of how many applications were applied to the same area. If acres are reported in the "other" technique, report the technique in the "specify" response area.

Section 17 - Water Management Practices for Gravity Irrigation Systems

If you reported gravity irrigation in Section 4, then complete this section. For each item a through j, report the number of gravity irrigated acres using the specific technique.

Section 18 - Improvements to Irrigation Systems on This Operation Since 2003 that Reduced Energy Use and/or Conserved Water

Report results of improvements made to existing irrigation systems since 2003 listed in item 2. Any changes to the system to increase its size and bring more acres under irrigation should not be included here. Report in item 2 all the results of improvements on existing irrigation systems. For example, if a farmer installs new equipment on 200 acres of existing irrigated land that reduced energy use, and at the same time increases his irrigation by another 100 acres, the responses should only be for the original 200 acres. Report in item 3 any barriers to implementing improvements to existing irrigation systems.

Section 20 - Sources of Irrigation Information

Mark all that apply. If "other" is marked, report the source of information in the "specify" response area.

Section 20 - Recycled and/or Reclaimed Water Use on This Operation in 2013

Report recycled and reclaimed water use separately. 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. Include any water obtained from off-farm suppliers or from livestock operations.

Item 1 - Report whether this operation used recycled water to irrigate any crops in 2013.

Item 1a - Report the area 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 2 - Report whether this operation used reclaimed water to irrigate any crops in 2013.

Item 2a - Report the area 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 2b - Report how much reclaimed irrigation water was used on this operation in 2013. Report the quantity of reclaimed water to the nearest tenth acre-foot **or** total gallons.

Item 3 - Identify the source(s) of reclaimed water used on this operation by marking an 'X' in all the sources that apply.

Item 4 - Report whether this operation purchased any reclaimed water to irrigate any crops in 2013.

Item 4a - Report the quantity of reclaimed water purchase for irrigation in acre-feet or gallons.

Item 4b - Report the average price paid for the quantity of reclaimed water reported in item 4a. Report the average price paid as either dollars per acre-foot or dollars per 1,000 gallons.

Item 5 - Report whether this operation **received any payments for using** reclaimed water for irrigation in 2013.

Item 5a - Report the quantity of reclaimed water that his operation received payment for in 2013. Report the quantity in either acre-feet or gallons.

Item 5b - Report the average price received for using the quantity of reclaimed irrigation water in item 5a. Report the average price received as dollars per acre-foot or dollars per 1,000 gallons.

Section 22 - Irrigated Land in 2012

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

This section references both 2007 and 2013 irrigation. Report in item 1 whether any land was irrigated on this operation in 2007. 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 crop 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 copy of the survey results in the mail.