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AUG 17 2016

Attachment E – Notice of Intent

WATER QUALITY ORDER NO. 2013-0002-DWQ
 GENERAL PERMIT NO. CAG990005

DIVISION OF WATER QUALITY

STATEWIDE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
 (NPDES) PERMIT FOR RESIDUAL AQUATIC PESTICIDE DISCHARGES TO WATERS OF
 THE UNITED STATES FROM ALGAE AND AQUATIC WEED CONTROL APPLICATIONS

I. NOTICE OF INTENT STATUS (see Instructions)

Mark only one item A. New Applicator B. Change of Information: WDID# 5B24NP00003
 C. Change of ownership or responsibility: WDID# _____

II. DISCHARGER INFORMATION

A. Name Grassland Water District			
B. Mailing Address 200 W. Willmott Avenue			
C. City Los Banos	D. County Merced	E. State CA	F. Zip 93635
G. Contact Person Michael Gardner	H. E-mail address Mgardner@gwdwater.org	I. Title Operations Manager	J. Phone 209-704-5394

III. BILLING ADDRESS (Enter Information only if different from Section II above)

A. Name			
B. Mailing Address			
C. City	D. County	E. State	F. Zip
G. E-mail address	H. Title	I. Phone	

IV. RECEIVING WATER INFORMATION

A. Algaecide and aquatic herbicides are used to treat (check all that apply):

1. Canals, ditches, or other constructed conveyance facilities owned and controlled by Discharger.
Name of the conveyance system: All GWD conveyance systems

2. Canals, ditches, or other constructed conveyance facilities owned and controlled by an entity other than the Discharger.
Owner's name: _____
Name of the conveyance system: _____

3. Directly to river, lake, creek, stream, bay, ocean, etc.
Name of water body: _____

B. Regional Water Quality Control Board(s) where treatment areas are located
(REGION 1, 2, 3, 4, 5 6, 7, 8, or 9): Region 5
(List all regions where algaecide and aquatic herbicide application is proposed.)

V. ALGAECIDE AND AQUATIC HERBICIDE APPLICATION INFORMATION

A. Target Organisms: _____ Primrose, parrots feather, water hyacinth, cattail,
tule, south american

B. Algaecide and Aquatic Herbicide Used: List Name and Active ingredients
Nufarm AquaNeat (glyphosate)

C. Period of Application: Start Date May _____ End Date December _____

D. Types of Adjuvants Used: Loveland Liberate

VI. AQUATIC PESTICIDE APPLICATION PLAN

Has an Aquatic Pesticide Application Plan been prepared and is the applicator familiar with its contents?
 Yes No

If not, when will it be prepared? _____

VII. NOTIFICATION

Have potentially affected public and governmental agencies been notified? Yes No

VIII. FEE

Have you included payment of the filing fee (for first-time enrollees only) with this submittal?
 YES NO NA

IX. CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I certify that the provisions of the General Permit, including developing and implementing a monitoring program, will be complied with."

A. Printed Name: Michael Gardner

B. Signature:  Date: 04/20/2016

C. Title: Operations Manager/Watermaster

XI. FOR STATE WATER BOARD STAFF USE ONLY

WDID:	Date NOI Received:	Date NOI Processed:
Case Handler's Initial:	Fee Amount Received: \$	Check #:
<input type="checkbox"/> Lyris List Notification of Posting of APAP	Date _____	Confirmation Sent _____

Aquatic Pesticide Application Plan (APAP)

**For the Statewide General NPDES Permit for Residual Aquatic Pesticide
Discharges to the Waters of the United States
From Aquatic Weed Control Applications
Water Quality Order No. 2013-0002-DWQ
General Permit # CAG990005**

Prepared by:
Grassland Water District
March 2016

Submitted to:
California Regional Water Quality Control Board
1685 E. Street
Fresno, CA 93706
ATTN: Douglas K. Patterson, P.E.

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1. Description of the Water System

Grassland Water District (District) is a California Water District formed under Section 34000 of the State Water Code. The District is approximately 51,537 acres in size with the majority of this land in wetland habitat. The District's primary function is the delivery of water to the landowners within its boundaries. The canal system for carrying out water deliveries is approximately 110 miles in length and is operated and maintained by the District. A typical conveyance system consists of an earthen canal approximately 30 feet in width and 6 feet in depth. Grasses are encouraged on the banks to help minimize erosion.

Major conveyance located in the South Grasslands include the Helm Canal, 240 Ditch, Agatha Canal, Mesquite Drain, Sorsky Ditch, Britto Ditch, Camp 13 Ditch, Almaden Ditch, Old Los Banos Drain, Stillbow Ditch, Big Water Drain, Reedley Ditch, Almond Drive Ditch, Gadwall Ditch, Mud Slough and Bennett Drain. Major conveyance located in the North Grasslands include the Santa Fe Canal, Cross Channel Canal, Rubino Ditch, Malia Ditch, Mosquito Ditch, Standard Ditch, Fremont Canal, Kesterson Ditch, Eagle Ditch, Garzas Creek, Westside Ditch and Hollow Tree Drain. The private landowners and sportsmen within the Grasslands, working with the District and other public agencies, have been responsible for the preservation and maintenance of the largest remaining freshwater marsh habitat on the Pacific Flyway by securing and managing a long-term water supply to preserve and enhance one of the nation's most valuable wildlife resource areas.

2. Description of the Treatment Area

The District may apply aquatic herbicides to any of the above mentioned water bodies if aquatic weed treatment thresholds are met.

Map of Application Sites: Attachment A includes updated District maps with the Application Sites marked and listed.

3. Description of Weeds to be Controlled

The District's water delivery system consisting of irrigation channels and associated natural waterways, as well as standing bodies of water are prone to infestations by emergent, submerged and floating aquatic weeds such as water primrose (*Ludwigia* spp.), parrotfeather (*Myriophyllum aquaticum*), water hyacinth (*Eichhornia crassipes*), South American Spongeplant (*Limnobium laevigatum*), and horned pondweed (*Zannichellia palustris*).

The presence of these weeds in the various bodies of water can cause obstruction of the water delivery control structures such as gates and pumps and displace more desirable aquatic flora; thus impacting the habitat quality, and reducing water quality.



Figure 1. Primrose *Ludwigia* sp.



Figure 2. Parrots Feather *Myriophyllum aquaticum*



Figure 3. Water Hyacinth *Eichhornia crassipes*



Figure 4. Cattail *Typha latifolia*



Figure 5. Tule *Schoenoplectus acutus*



Figure 6. S. American Spongeplant *Limnobium laevigatum*

4. Aquatic Herbicide to be Used, Known Degradation Byproducts, Application Methods and Surfactants

In 2015 the District used a Glyphosate-based product called Nufarm AquaNeat. This was used in all applications. Along with the chemical applications, the District began using a surfactant called Loveland Liberate, a non-ionic spray adjuvant that contains **NO** Nonylphenol using a concentration of .003%. This product produced the same results as the previous adjuvant, R-11, that the District historically used. There were no reports of any chemical-related problems throughout the District.

All applications in 2015 complied with the application rate recommended by the product manufacturer. For normal aquatic control approximately 96 ounces per acre, or 3 quarts per acre, was the targeted rate for the use of Nufarm AquaNeat. More difficult aquatics required a target rate of 122-143 ounces per acre. The maximum application rate per season is 8 quarts or 256 oz per acre. Please see graph below.

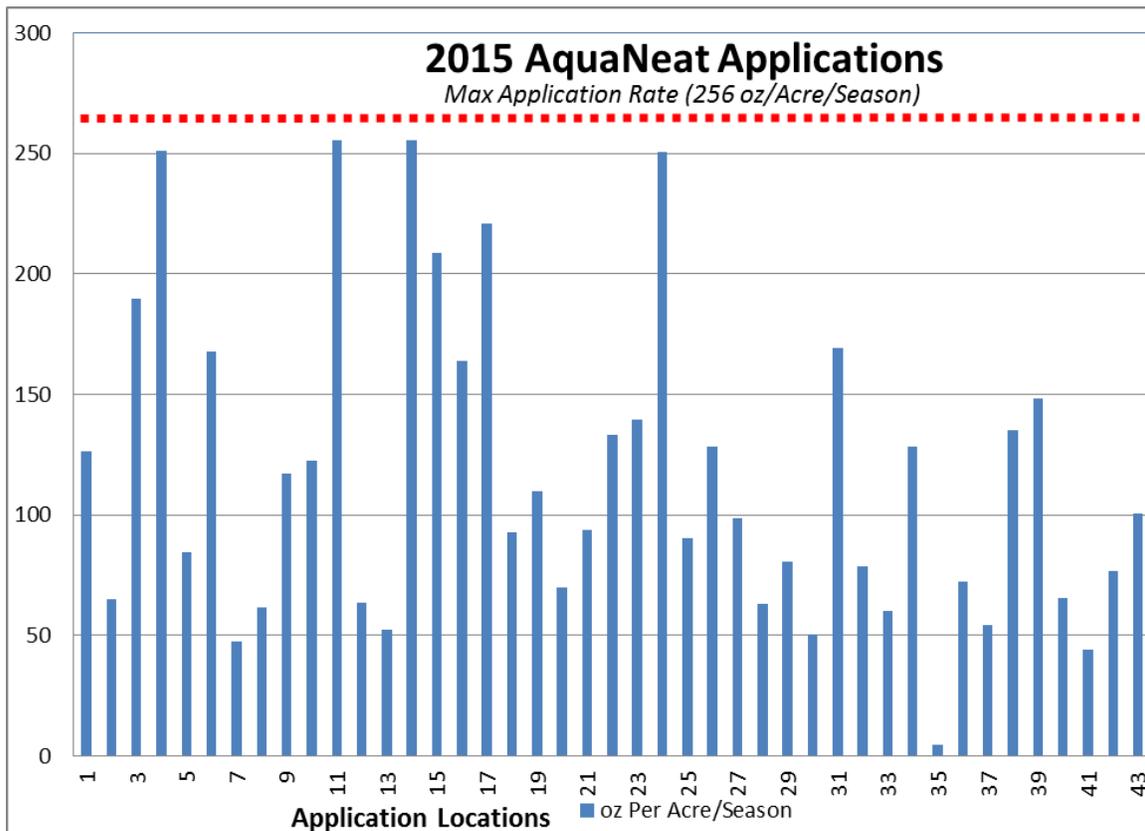


Figure 7. 2015 AquaNeat Applications

In all applications, the Loveland Liberate performed very well with the aquatic plants at this concentration. The District's self-contained spray vehicle contains 500 gallons of water and is injection fed. This gives the District the ability to be very precise in its applications. The injection system allows the District to precisely apply this dosage. The spray vehicle is equipped with a speed sensor insuring that the rate of application remains constant regardless of the speed

of the vehicle. The vehicle is also equipped with an articulating boom that has the ability to conform to the terrain and cover a 20-30 foot horizontal spray area.

After all applications of aquatic pesticides within the District are completed, assessments were made as to efficacy of the application and evaluations of any possible damage due to contamination were completed. The District's staff monitors environmental effects that may occur. In 2015 the District received no reports of any contamination or harm to the surrounding environment or to wildlife nor was any witnessed by District personnel.

Surface Area and Volume: 649 surface acres in 2015 were treated with aquatic pesticides by the District. This information is provided along with a complete list of pesticides and the volumes used in Attachment C.

Types and Amounts of Pesticides Used: A complete list of aquatic pesticides used in 2015 is provided as Attachment C. Nufarm AquaNeat, a Glyphosate product, along with Loveland Liberate, a **NO** Nonylphenol adjuvant, was applied in 2015.

In 2007, the District upgraded to an injection type, self-contained spray vehicle. This vehicle is equipped with a GPS regulated injection systems. The overall condition of the District's conveyance facilities and the application efficiency of chemicals are greatly improved. One individual is now assigned to aquatic pesticide application from the once five-man crew required prior to the acquisition of the new spray vehicle. Additionally, the new vehicle is equipped with a centralized reporting and accounting system enabling single digital file logging and recordation. These enhancements have enabled most areas to require only a single annual application. The District plans to continue the present course of aquatic spray application since it appears to be the most efficient and effective means of aquatic vegetation control.



Figure 8. *GPS Regulated Injection Application Vehicle*

A review of GPS data, application rates and vegetative response has established optimal application efficiency of chemicals. The variance in application rate from hand application and concentration type boom application to Helicopter and GPS regulated injection application has dramatically improved. The District's goal is to reduce the amount of chemicals applied to any given area yet still accomplish the intended vegetative response. Excess application results in inefficient use of chemicals. Likewise, insufficient chemical application requiring retreatment again results in inefficient chemical usage. In addition, with the boom spray technique, the application and coverage is more consistent and efficacy is greatly improved.

5. Factors Influencing the Decision to Use Aquatic Herbicides

The District utilizes an Integrated Pest Management (IPM) Program approach in the treatment of aquatic vegetations on its properties. One of the goals of this program is to establish a reasonable set of control measures that aid in the management of aquatic vegetation infestations. An action threshold level is the point at which action should be taken to control aquatic vegetation before the water conveyance system is appreciably impacted. One of the main functions of an IPM program is to determine when a control action is necessary, for the mere presence of some aquatic vegetation species may be an indicator of a flourishing ecosystem in a state of equilibrium. If the aquatic vegetation is present in quantities sufficient to meet or exceed the action threshold, a control method is implemented. Control methods may include mechanical, cultural, biological and/or chemical, and the choice of options will be based on the feasibility, biological efficacy, environmental impacts, minimal public intrusiveness and availability of fiscal resources. An integrated pest management approach will be utilized whenever possible. Occasionally herbicide applications may be made prior to the threshold exceedance based on predicted aquatic vegetation growth rate and density, historical growth trends, weather, and water flow. Some aquatic weeds may be treated shortly after emergence or when appropriate based on the herbicide to be used; especially since younger plants are more susceptible and less plant mass to target means a reduction in herbicide needed.

Part of the District's IPM approach is the evaluation of alternative control methods and these may be implemented as a part of a test program.

Alternative control methods tend to be more expensive, labor intensive, not as effective, spread aquatic weeds and can cause temporary water quality degradation and therefore will be evaluated based on site and weed characteristics.

6. Gates and Control Structures

List of Gates in Treatment Area:

There are seven main discharge sites that are listed on the District maps provided in Attachment A. City Gates is the only one of these sites that is controlled by a screw gate. This is most often used as a flood release gate to discharge City of Los Banos storm water.

The District has completed the installation of float blocks at 30 locations throughout the District to assist in preventing encroachment of floating aquatic nuisance vegetation throughout the conveyance.

6.1. Inspection Schedule of Gates and Control Structures

7. State Implementation Policy(Section 5.3) Exceptions

The proposed herbicides and surfactant are not priority pollutants, and therefore do not require an exception from Section 5.3.

8. Monitoring Program

Water monitoring studies are performed in compliance with the Monitoring and reporting Program (MRP) for Water Quality No. 2013-0002-DWQ. Samples will be collected and analyzed per MRP guidelines.

Summary of Monitoring Data

The summary spray logs for the 2015 spray year are included in Attachment C. In addition, a review of the overall compliance with the General Permit follows:

Summary of Monitoring Data: One individual is responsible for the collection of water quality samples at all three sampling locations. All samples were directly taken to APPL, Inc Laboratories (908 Temperance Ave, Clovis, California) for processing.

8.1. Sample Analysis

Sampling Results: A summary of the laboratory analysis reports are included in Attachment B. All samples were processed by APPL, Inc Laboratories in Clovis, California.

8.2. Monitoring Frequency and Locations

Three sample point locations, fulfilling the 10% sampling location requirement of total application areas, were selected along major District conveyance, including the San Luis Canal, Santa Fe Canal, and Cross Channel Ditch. Samples were collected in two one-gallon, clean plastic containers. The waters were mixed thoroughly between the two containers seven times. This resulted in a total volume of about 1-½ gallons that was used to produce the samples. All samples were delivered to APPL, Inc. Laboratories in Clovis, California within 4 hours of sampling.

Laboratory analysis reports are included as Attachment B-Water Quality Results. Laboratory analysis results indicate that water quality was adequately restored to pre-application conditions within the guidelines of the General Permit testing requirements.

8.2.1. Background Monitoring

Background monitoring samples shall be collected upstream at the time of application event, or in the application area just prior to (up to 24 hours in advance of) the application event.

8.2.2. Event Monitoring

Event monitoring samples shall be collected immediately downstream of the treatment area in flowing waters or immediately outside of the treatment area in non-flowing waters, immediately after the application event, but after sufficient time has elapsed such that a treated water would have exited the treatment area.

8.2.3. Post-Event Monitoring

Post-event monitoring samples shall be collected within the treatment area within one week after application.

8.2.4. Post Event Monitoring Samples

One full set of three samples (Background, Event and Post Event) will be collected during each treatment from the representative site(s) treated within the District.

8.3. Sample Collection

For water depths of 6 feet or greater, the sample will be collected at a depth of three feet. If the water depth is less than 6 feet, the sample will be collected at the approximate mid-depth. A long handled sampling pole may be used for locations that are difficult to access.

8.4. Field Measurements

In addition to the collection of water samples, visual parameters (water body description, appearance of waterway and weather conditions) and physical readings (with the exception of turbidity, which will be analyzed by a lab) will be done at the sampling sites and recorded on the field data form shown below (Figure 1). All field meters will be calibrated according to the manufacturer's specifications at the recommended frequency and checked with a standard prior to the start of the sampling season.

8.5. Sample Preservation and Delivery

Samples will be collected in unpreserved containers. Should an analytical method require preservation, it will occur at the laboratory by the appropriate lab personnel. Once collected and labeled, samples will be immediately placed in a dark, cold (~4°C) environment, typically a cooler with ice. Delivery of samples to the laboratory needs to occur as soon as possible.

8.6. Annual Reporting

An annual report will be submitted to the appropriate regional Water Quality Board ((RWQCB) by March 1 of the year of the following treatment. If no aquatic herbicide treatments are done that year, a letter stating no applications have been done will be sent to the appropriate RWQCB in lieu of an annual report.

9. How to Prevent Sample Contamination

Samples shall be, if possible, collected upwind and not in close proximity to application equipment. There shall not be any contact with aquatic herbicide application equipment, containers or personal protective equipment.

When done sampling in a given location, the equipment will be cleaned with a non-phosphate cleaner and tripled rinsed with distilled water. Once at a new sampling location, the equipment will be rinsed once with the water being sampled prior to collection. Gloves will be changed between collection sites.

Samples will be tightly sealed at the point of collection and placed upright within an ice chest used solely for sample transport.

10. Description of BMPs to be Implemented

BMPs and Effectiveness: Of the seven listed BMPs, the BMP with the most pronounced effect on the goal of reducing the discharge of aquatic pesticides was the use of Alternative Methods. The District scheduled the excavation of over twenty miles of drainages and canal systems to effectively reduce the need to apply herbicides to these areas. Although vegetation is a secondary reason for excavation, the consideration of vegetation control in the scheduling of this work greatly reduces the need to apply aquatic pesticides. However, excavation alone is not a cost-effective method of vegetation control.

The most effective BMP that the District implemented proved to be the dewatering of systems prior to application, eliminating the application of aquatic pesticides directly to water. Of the 79 field application reports, 17 applications were made over conveyances that were dry or dewatered. The District is limited in its ability to dewater channels due to demand for water to maintain wetland habitat, but where feasible the District did dewater. Efficacy in these dewatered areas proved to be the most efficient of all applications. This is due to the spray's ability to come in contact with more of the targeted vegetation's surface area.

The planned upgrading of application equipment has been completed as per the BMP Plan. This has given the District much better control of its application and recording methods. GPS tracking systems log and document acres sprayed in a far more accurate manner than in previous years.

Modification of BMPs: None of the seven BMPs in the APAP were modified for the application process in 2015.

10.1. Aquatic Herbicide Spill Prevention and Containment

All herbicide applications will be supervised by a California Department of Pesticide Regulation-certified applicator who has received training specific to the herbicide and surfactant/adjunct products to be used. Label language is followed to ensure safe handling and loading of herbicides. Application equipment is routinely maintained and checked to identify and/or minimize the possibility of leak development or failure that might lead to a spill. Tank mixing and filling will be done well away from all surface waters. In the

unlikely event that of an aquatic herbicide spill, the material will be prevented from entering any water bodies to the extent practicable. The District's staff is trained to contain spilled herbicide products, apply absorbent material, and remove products to a landfill. Label instructions will be followed and reporting as required as required by local, state and federal laws will be done for all spills.

10.2. Appropriate Application Rate

10.2.1. Site Evaluation

The District's qualified staff will evaluate sites that have aquatic weed populations to determine if thresholds have or likely will be exceeded. Thresholds relate to the ability of the water conveyance system to move water, the native species being negatively impacted, and the degradation of water quality. If it is determined that a threshold has or likely will be exceeded, an aquatic herbicide application is considered; and barring any concerns of water quality degradation, an application plan will be initiated.

The evaluation of pest management alternatives is conducted jointly by the District's Maintenance Foreman (Duke Hass, dhass@gwdwater.org) and one of the following spray technicians:

Mike Hansen, 209-704-5186

Mark Freitas, 209-675-5514

Each if these spray technicians has obtained their pesticide applicator certification from the California Department of Pesticide Regulation and receives annual training on pesticide safety, invasive weed biology and control. The evaluations are conducted annually on an on-site basis, but may be revised more frequently if conditions change dramatically during the treatment year. The evaluation process includes the consideration of both chemical and non-chemical methods with the most effective and efficient method being selected many times, the selected control strategy involves an integrated approach that uses both chemical and non-chemical methods.

10.2.2. Applications Made According to Label and PCA Recommendation

All aquatic herbicide applications are to be made according to the product label in accordance with regulations of the U.S. EPA, CalEPA, Cal OSHA, DPR and the local Agricultural Commissioner. Prior to application, the PCA will prepare a written recommendation that specifies rates of applications and any warnings or conditions that limit the application so that non-target flora and fauna are not negatively affected.

10.2.3. Application Made By Qualified Personnel

Aquatic herbicide applications will be made by the District's personnel holding a valid Qualified Applicator Certificate (QAC) or Qualified Applicator License (QAL), or staff

under the supervision of QACs or QALs. These applicators will have the training necessary to utilize proper equipment loading, nozzle selection, calibration, and operation to ensure that spills are minimized, only target vegetation is treated, and precise application rates are made according to the label.

10.3. Plan for Educating Applicators on Avoiding Adverse Effect from Pesticide Applications

Licensed QACs and QALs must complete 20 hours of continuing education every 2 years to remain licensed, thus ensuring that all applicators are up-to-date on the latest pest control techniques.

10.4. Plan on Informing Landowners and Agencies Who Have Water Rights on the Receiving Waters

Appropriate gates, weirs, etc. will be closed to prevent discharge of residual aquatic herbicide into receiving waters of adjacent landowners (private or public). Additionally, water users potentially affected by any water use restrictions will be notified prior to an application being made, per the aquatic herbicide label.

10.5. Preventing Fish Kills

All herbicide applications will be supervised by a California Department of Pesticide Regulation-certified applicator who has received training specific to the herbicide and surfactant products to be used. The PCA written recommendation will include rates of application and any warnings or conditions that limit the application so that fish are not adversely affected. All manufacturers label instructions for rates and mixing and precautions to prevent fish kills will be followed. Additionally, all aquatic applications will be made from the downstream end of a project to the upstream end to avoid a buildup of product in the flowing water. It is import to note that even with proper application and the use of precautions; in rare circumstances aquatic herbicide may result in impacts to non-target fauna.

11. Evaluation of Alternative Control Methods

11.1. Other Management Options

The District utilizes an Integrated Pest Management (IPM) Program approach in the treatment of aquatic weeds on its properties. One of the goals of this program is to establish a reasonable set of control measures that aid in the management if aquatic weed infestations. An action threshold level is the point at which action should be taken to control aquatic weeds before any and all of the following occurs: the water conveyance system is appreciably impacted, the native species becomes displaced, or the water quality is degraded. One of the main functions of an IPM program is to determine when a control action is

necessary, for the mere presence of some aquatic vegetation species may be an indicator of a flourishing ecosystem in a state of equilibrium. If the aquatic vegetation is present in quantities sufficient to meet or exceed the action threshold, a control method is implemented. Control methods may include mechanical cultural, biological and/or chemical and the choice of options will be based on feasibility, biological efficacy, environmental impacts, minimal public intrusiveness and availability of fiscal resources. An integrated pest management approach will be utilized whenever possible. Occasionally herbicide applications may be made prior to threshold exceedance based on predicted aquatic vegetation growth rate and density, historical growth trends, weather and water flow. Some aquatic weeds may be treated shortly after emergence or when appropriate based on the herbicide to be used; especially since younger plants are more susceptible and less plant mass to target means a reduction in herbicide needed.

11.1.1. No Action

When feasible, this option is utilized. Once a threshold is reached however, consideration of other control methods needs to be initiated. This alternative would allow the continued spread of the pest species resulting in increased difficulties managing water conveyance and ultimately degrading the environment.

11.1.2. Prevention

Many aquatic weed infestations within the natural waterways on District lands are the result of infestations further upstream on private or public properties. Informing the upstream owners as to the presence of aquatic weed infestations on their properties and presenting eradication and/or control methods would help prevent future infestations. In addition, opportunities for coordinated and cooperative eradication efforts could be implemented in these situations.

Utilization of foreign materials such as plastic liners or concrete within drainage or irrigation channels has the potential to keep submersed weeds under control for a short period of time. However, sediment build-up within these channels will occur over time and require manual removal. This technique is very costly to implement and maintain and will most likely cause increased sediment load downstream, degrade water quality over time and destroy wildlife habitat.

11.1.3. Mechanical Method

This alternative may provide some control of the target species, but it generally does not provide the desired long-term reduction of target species biomass, and therefore cannot accomplish the desired management goals. Further, this alternative will produce a large number of plant fragments that can rapidly spread infestations. Harvesting in dense stands also presents the risk of significant by-catch of non-target animals including fish, amphibians and reptiles.

To aid in mechanical removal of nuisance vegetation the District currently has 30 locations where float blocks are utilized in our conveyance system which collects floating aquatic vegetation in one area for removal using a backhoe. These systems have proven to be very effective in reducing the movement of water hyacinth downstream and preventing additional infestation. The District has found this system is effective at reducing chemical application and will continue to install and maintain float blocks at key problematic areas throughout its major supply channels.

11.1.4. Cultural Methods

Cultural management relies heavily on altering environmental factors relating to pest population size. Common methods include burying (or filling in), lining (with plastic, cement or asphalt) drawing down or draining the water body. These methods can be effective in controlling invasive aquatic weed populations, but each of these carries the risk of damaging other native populations and wildlife habitat.

11.1.5. Biological Control

This method uses biological organism to reduce the number or density of pests within a given pest population. Although goats, sheep and cattle are frequently used in terrestrial settings they would not be effective in controlling submerged vegetation; and the potential for degrading the water quality, makes this a poor option. The use of exotic biocontrol agents for aquatic weed control is not often an option, but when these agents are approved or available they will be considered as alternative control methods.

11.1.6. Pesticide Control

The decision to use an aquatic herbicide is based on the recommendation of the District's Maintenance Foreman (MF). The selection of an appropriate aquatic herbicide, in addition to the inclusion of other control methods (mechanical, cultural, biological) will be based on feasibility, biological efficacy, environmental impacts and availability of fiscal resources.

11.2. Using the Least Intrusive Method of Weed Control

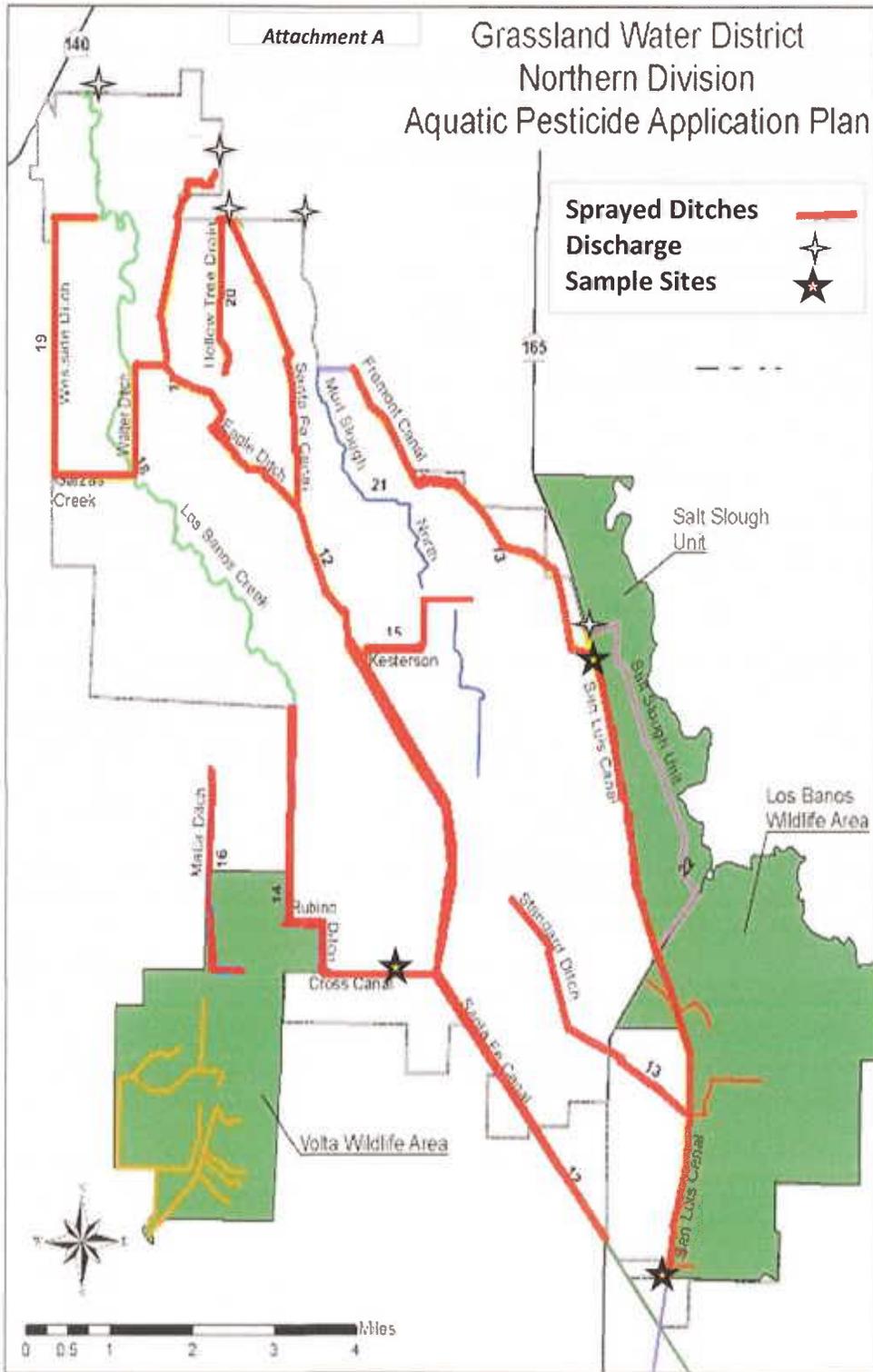
The District evaluates each treatment area to determine the least intrusive method of treatment. The decision as to which delivery system (backpack sprayers, trucks, all-terrain vehicles trailers, etc.) will be based on terrain; ability to hold, safely transport and properly apply herbicide, and the lowest impact to the environment.

11.3. Apply Decision Matrix Concept For Choosing the Most Appropriate Formulation

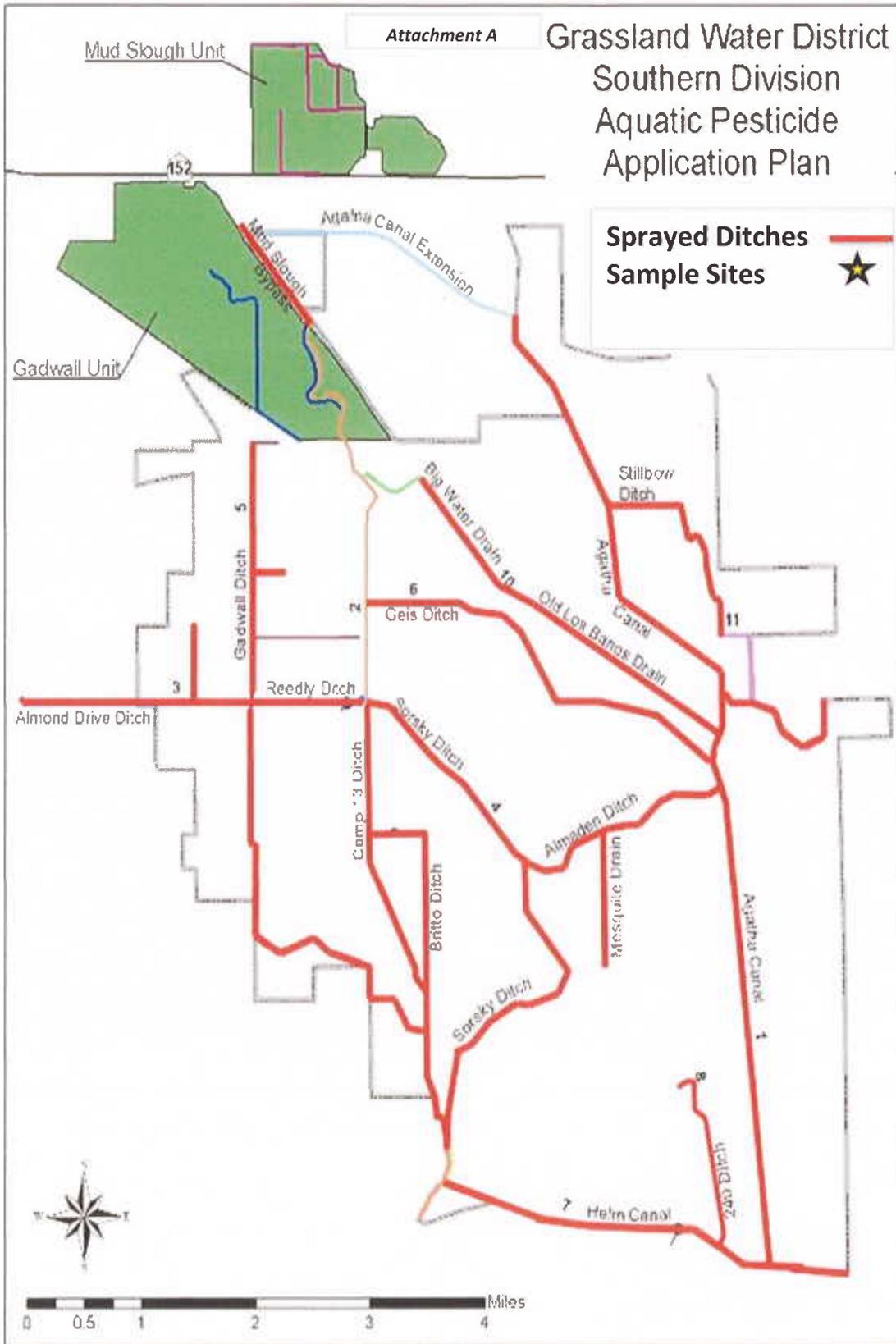
The Districts MF or designee will evaluate the area(s) to be treated prior to herbicide application to verify the presence and the extent of the target aquatic weeds. Aquatic herbicide product labels will be checked for control efficacy, proper dosage and the required

amount necessary for application. A recommendation which will include the rate of application and any warnings or conditions that will limit the application will be rendered by the MF. A recommendation to include an adjuvant/surfactant to enhance the efficacy of the aquatic herbicide may also be made by the MF.

Grassland Water District Northern Division Aquatic Pesticide Application Plan



Grassland Water District Southern Division Aquatic Pesticide Application Plan



Water Quality Summary 2015

Grassland Water District

Appl Inc Laboratory - Clovis Ca.

Attachment B

Site ID	GPS Location	Date Sampled	Application Rate	Appl Laboratory Results				Myron L Meter - Model 6P		
				Glyphosate ug/L	Dissolved oxygen mg/L	Turbidity NTU	Temp C	pH Std Units	EC	
100-A	Cross Channel @ SF Grade	9/29/2015	Pre Treat	ND	7.6	110	20.7	8.1	1218	
100-B	Cross Channel @ SF Grade	9/29/2015	70 oz/ac	430	6.2	53	20.7	8.1	1220	
100-C	Cross Channel @ SF Grade	9/30/2015	Post Treat	ND	7.6	73	20.6	8.2	1228	
200-A	Sante Fe Canal @ Splits	9/29/2015	Pre Treat	35	7.0	37	20.5	9.6	1200	
200-B	Sante Fe Canal @ Splits	9/29/2015	58 oz/ac	230	7.1	47	20.5	9.6	1208	
200-C	Sante Fe Canal @ Splits	9/30/2015	Post Treat	ND	7.5	50	20.4	9.7	1215	
300-A	San Luis Canal @ SL-3	9/29/2015	Pre Treat	ND	6.5	44	20.6	8.0	803	
300-B	San Luis Canal @ SL-3	9/29/2015	42 oz/ac	41	6.2	44	20.6	8.0	807	
300-C	San Luis Canal @ SL-3	9/30/2015	Post Treat	ND	7.3	41	20.5	8.2	815	

Grassland Water District - 2015
 200 W Willmott Ave
 Los Banos, CA 93635 - (209) 826-5188

Amine 4.2,4-D EPA# 34704-120
 Aqua Near EPA # 228-365

Merced Co. Agriculture Permit ID#24014320
 Right of Way

Attachment C

PAGE 1

Application Date	Appl. Site #	Code Number	Site Name	Condition	Flow cfs	Length Miles	Application			Total Acres	Aqua Near oz	Amine 2,4-D oz	Liberate Sulfate oz	Chemical oz/lb	Gallons Water	Length Feet Covered	Spray Width Covered Feet	Applicator
							Hand (Spot)	Boom	Side Boom									
April		5430-001	Cross Channel to SF Canal			3.7				0.0	0		0.00		19,325		MH	
		5430-002	Eagle Ditch			8.4				0.0	0		0.00	#DIV/0!	44,352		MH	
		5430-003	Carter Harrison Canal			6.5				0.0	0		0.00	#DIV/0!	34,320		MH	
		5430-004	Garzas Creek			2.0				0.0	0		0.00	#DIV/0!	10,560		MH	
		5430-005	Gun Club Road Ditch			1.0				0.0	0		0.00	#DIV/0!	5,280		MH	
		5430-006	Kesterson Ditch			4.4				0.0	0		0.00	#DIV/0!	23,232		MH	
		5430-007	Los Banos Creek-Mosquito to Garzas			7.5				0.0	0		0.00	#DIV/0!	39,600		MH	
		5430-008	Los Banos Creek-Garzas to Hwy 140			11.2				0.0	0		0.00	#DIV/0!	59,136		MH	
		5430-009	Los Banos Creek to Cross Channel			1.4				0.0	0		0.00	#DIV/0!	7,498		MH	
		5430-010	Rubino Ditch			3.0				0.0	0		0.00	#DIV/0!	15,840		MH	
		5430-011	San Luis Canal-Splits to Undwd Xing			13.6				0.0	0		0.00	#DIV/0!	71,808		MH	
		5430-012	Santa Fe Canal-Splits to X Channel			9.0				0.0	0		0.00	#DIV/0!	47,520		MH	
		5430-013	Santa Fe Canal X-Channel to MS			15.8				0.0	0		0.00	#DIV/0!	83,424		MH	
		5430-014	Standard Ditch			5.4				0.0	0		0.00	#DIV/0!	28,512		MH	
		5430-015	Westside Ditch			6.0				0.0	0		0.00	#DIV/0!	31,680		MH	
		5430-016	240 Ditch			3.0				0.0	0		0.00	#DIV/0!	15,840		MH	
		5430-017	Agatha Canal Extension			5.0				0.0	0		0.00	#DIV/0!	26,400		MH	
		5430-018	Agatha Canal			16.0				0.0	0		0.00	#DIV/0!	84,480		MH	
		5430-019	Almaden Ditch			2.4				0.0	0		0.00	#DIV/0!	12,672		MH	
		5430-020	Almond Drive Ditch			4.0				0.0	0		0.00	#DIV/0!	21,120		MH	
		5430-021	Bennett Ditch to Agatha Canal			3.5				0.0	0		0.00	#DIV/0!	18,480		MH	
		5430-022	Brito Ditch			4.0				0.0	0		0.00	#DIV/0!	21,120		MH	
		5430-023	Camp 13 Canal			8.4				0.0	0		0.00	#DIV/0!	44,352		MH	
		5430-024	Double H A to Gadwall Drain			2.5				0.0	0		0.00	#DIV/0!	13,200		MH	
		5430-025	Flyway Ditch Private			3.0				0.0	0		0.00	#DIV/0!	15,840		MH	
		5430-026	Gadwall Canal to Almond Drive			7.4				0.0	0		0.00	#DIV/0!	39,072		MH	
		5430-027	Geis Ditch			7.0				0.0	0		0.00	#DIV/0!	36,960		MH	
		5430-028	Helm Canal			7.2				0.0	0		0.00	#DIV/0!	38,016		MH	
		5430-029	Gadwall-Almond Drive to Double H A			2.0				0.0	0		0.00	#DIV/0!	10,560		MH	
		5430-030	Reedley Ditch			2.0				0.0	0		0.00	#DIV/0!	10,560		MH	
		5430-031	Sorsky Ditch			8.8				0.0	0		0.00	#DIV/0!	46,464		MH	
		5430-032	Gadwall Unit Concrete Ditch			0.5				0.0	0		0.00	#DIV/0!	2,640		MH	
		5430-033	Mosquito Ditch			6.2				0.0	0		0.00	#DIV/0!	32,736		MH	
	5430-034	Double D - Bigwater Ditch			3.2				0.0	0		0.00	#DIV/0!	16,896		MH		
	5430-035	Old Los Banos Ditch			2.0				0.0	0		0.00	#DIV/0!	10,560		MH		
	5430-036	Porter-Blake Bypass			5.4				0.0	0		0.00	#DIV/0!	28,512		MH		
	5430-037	Hollow Tree Drain			3.2				0.0	0		0.00	#DIV/0!	16,896		MH		

	5430-038	Meyers Ditch Private	2.0						0.0	0	0.00	#DIV/0!	10,560	MH
	5430-039	Ascott Ditch (Private)	3.0						0.0	0	0.00	#DIV/0!	15,840	MH
	5430-040	Redfern Ditch	3.0						0.0	0	0.00	#DIV/0!	15,840	MH
	5430-041	Gables Ditch (Private)	6.0						0.0	0	0.00	#DIV/0!	31,680	MH
	5430-042	Reeves Lake Drain	3.2						0.0	0	0.00	#DIV/0!	16,896	MH
	5430-043	Mesquite Drain	3.7						0.0	0	0.00	#DIV/0!	19,325	MH
	5430-044	Carter Harrison Drain	3.0						0.0	0	0.00	#DIV/0!	15,840	MH
	5430-045	Charleston Drain	4.6						0.0	0	0.00	#DIV/0!	24,288	MH
	5430-046	Santa Fe Canal - Mueller Weir to Splits	7.8						0.0	0	0.00	#DIV/0!	41,184	MH
	5430-047	Big Water Ditch	6.6						0.0	0	0.00	#DIV/0!	34,848	MH
	5430-048	Ingomar Drain							0.0	0	0.00	#DIV/0!	0	MH
	5430-049	Cotton Drain	1.5						0.0	0	0.00	#DIV/0!	7,920	MH
	5430-050	Mud Slough North - Kesterson to GCR	6.6						0.0	0	0.00	#DIV/0!	34,848	MH
	5430-051	Mud Slough South	8.8						0.0	0	0.00	#DIV/0!	46,464	MH
	5430-052	Santa Fe Canal-Flood Gates (Holister)	1.0						0.0	0	0.00	#DIV/0!	5,280	MH
	5430-053	Holister Ditch (Private)							0.0	0	0.00	#DIV/0!	0	MH
	5430-054	Malia Ditch	4.6						0.0	0	0.00	#DIV/0!	24,288	MH
	5430-055	Cottonwood Lateral	2.0						0.0	0	0.00	#DIV/0!	10,560	MH
	5430-056	Poso Drain	2.6						0.0	0	0.00	#DIV/0!	13,728	MH
	5430-057	Stillbow Drain-Britto to Agatha	3.8						0.0	0	0.00	#DIV/0!	20,064	MH
	5430-058	Fourteen L&C Ditch	0.8						0.0	0	0.00	#DIV/0!	4,224	MH
	5430-059	Dyer Ditch	1.0						0.0	0	0.00	#DIV/0!	5,280	MH
	5430-060	Walter Ditch	2.2						0.0	0	0.00	#DIV/0!	11,616	MH
	5430-061	Stillbow 80 Ditch	1.5						0.0	0	0.00	#DIV/0!	7,920	MH
	5430-062	216 Drain	3.8						0.0	0	0.00	#DIV/0!	20,064	MH
	5430-063	Marland Drain	1.3						0.0	0	0.00	#DIV/0!	6,864	MH
	TOTALS													

Dry

Miles
289.94

Acres
0.0

Gal
0.00

Gal
0.00

Gal
0.00

Feet
1,530,883

MH

Grassland Water District - 2015
 200 W Willimott Ave
 Los Banos, CA 93835 - (209) 826-5188

Amine 4,2,4-D EPA# 34704-120
 Aqua Neat EPA # 228-365

Merced Co. Agriculture Permit ID#24014320
 Right of Way

Application Date	Appl. Site #	Code Number	Site Name	Condition	Flow cfs	Length Miles	Application			Total Acres	Aqua Neat oz	Amine 2,4-D oz	Liberate Sulfactant oz	Chemical oz/lb	Gallons Water	Length Feet Covered	Spray Width Covered Feet	Applicator
							Hand Spot	Boom	Side Boom									
MAY		5430-001	Cross Channel to SF Canal			3.7				0.0	0		0.00	#DIV/0!	19,325			MH
		5430-002	Eagle Ditch			8.4				0.0	0		0.00	#DIV/0!	44,352			MH
		5430-003	Carter Harrison Canal			6.5				0.0	0		0.00	#DIV/0!	34,320			MH
		5430-004	Garzas Creek			2.0				0.0	0		0.00	#DIV/0!	10,560			MH
		5430-005	Gun Club Road Ditch			1.0				0.0	0		0.00	#DIV/0!	5,280			MH
		5430-006	Kesterson Ditch			4.4				0.0	0		0.00	#DIV/0!	23,232			MH
		5430-007	Los Banos Creek-Mosquito to Garzas			7.5				0.0	0		0.00	#DIV/0!	39,600			MH
		5430-008	Los Banos Creek-Garzas to Hwy 140			11.2				0.0	0		0.00	#DIV/0!	59,136			MH
		5430-009	Los Banos Creek to Cross Channel			1.4				0.0	0		0.00	#DIV/0!	7,498			MH
		5430-010	Rubino Ditch			3.0				0.0	0		0.00	#DIV/0!	15,840			MH
		5430-011	San Luis Canal-Splits to Undwd Xing			13.6				0.0	0		0.00	#DIV/0!	71,808			MH
		5430-012	Santa Fe Canal-Splits to X Channel			9.0				0.0	0		0.00	#DIV/0!	47,520			MH
		5430-013	Santa Fe Canal X-Channel to MS			15.8				0.0	0		0.00	#DIV/0!	83,424			MH
		5430-014	Standard Ditch			5.4				0.0	0		0.00	#DIV/0!	28,512			MH
		5430-015	Westside Ditch			6.0				0.0	0		0.00	#DIV/0!	31,680			MH
		5430-016	240 Ditch			3.0				0.0	0		0.00	#DIV/0!	15,840			MH
		5430-017	Agatha Canal Extension			5.0				0.0	0		0.00	#DIV/0!	26,400			MH
		5430-018	Agatha Canal			16.0				0.0	0		0.00	#DIV/0!	84,480			MH
		5430-019	Almaden Ditch			2.4				0.0	0		0.00	#DIV/0!	12,672			MH
		5430-020	Almond Drive Ditch			4.0				0.0	0		0.00	#DIV/0!	21,120			MH
		5430-021	Bennett Ditch to Agatha Canal			3.5				0.0	0		0.00	#DIV/0!	18,480			MH
		5430-022	Britto Ditch			4.0				0.0	0		0.00	#DIV/0!	21,120			MH
		5430-023	Camp 13 Canal			8.4				0.0	0		0.00	#DIV/0!	44,352			MH
		5430-024	Double H A to Gadwall Drain			2.5				0.0	0		0.00	#DIV/0!	13,200			MH
		5430-025	Flyway Ditch Private			3.0				0.0	0		0.00	#DIV/0!	15,840			MH
		5430-026	Gadwall Canal to Almond Drive			7.4				0.0	0		0.00	#DIV/0!	39,072			MH
		5430-027	Geis Ditch			7.0				0.0	0		0.00	#DIV/0!	36,960			MH
		5430-028	Helm Canal			7.2				0.0	0		0.00	#DIV/0!	38,016			MH
		5430-029	Gadwall-Almond Drive to Double H A			2.0				0.0	0		0.00	#DIV/0!	10,560			MH
		5430-030	Reedley Ditch			2.0				0.0	0		0.00	#DIV/0!	10,560			MH
		5430-031	Sorsky Ditch			8.8				0.0	0		0.00	#DIV/0!	46,464			MH
		5430-032	Gadwall Unit Concrete Ditch			0.5				0.0	0		0.00	#DIV/0!	2,640			MH
		5430-033	Mosquito Ditch			6.2				0.0	0		0.00	#DIV/0!	32,736			MH
		5430-034	Double D - Bigwater Ditch			3.2				0.0	0		0.00	#DIV/0!	16,896			MH
		5430-035	Old Los Banos Ditch			2.0				0.0	0		0.00	#DIV/0!	10,560			MH
		5430-036	Porter Blake Bypass			5.4				0.0	0		0.00	#DIV/0!	28,512			MH
		5430-037	Hollow Tree Drain			3.2				0.0	0		0.00	#DIV/0!	16,896			MH

Grassland Water District - 2015
 200 W Willimott Ave
 Los Banos, CA 93635 - (209) 826-5188

Amine 4 2,4-D EPA# 34704-120
 Aqua Neat EPA # 228-365

Merced Co. Agriculture Permit ID#24014320
 Right of Way

Application Date	Appl. Site #	Code Number	Site Name	Condition	Flow cfs	Length Miles	Application rate target per application 96 oz/ac			Total Acres	Aqua Neat oz	Amine 2,4-D oz	Liberate Sulfuric acid lb	Chemical oz/ac	Gallons Water	Length Covered Feet	Spray Width Covered Feet	Applicator
							Hand	Boom	Side Boom									
June		5430-001	Cross Channel to SF Canal			3.7				6.7	0	0.00	0	0	19,325	15	MH	
		5430-002	Eagle Ditch			8.4			15.3	0	0.00	0	0.00	0	44,352	15	MH	
30	1	5430-003	Carter Harrison Canal		2	6.5		X	11.8	1280	640.00	108	500	34,320	15	MH		
		5430-004	Garzas Creek			2.0			3.6	0	0.00	0	0	10,560	15	MH		
29	1	5430-005	Gun Club Road Ditch			1.0			1.8	0	0.00	0	0	5,280	15	MH		
		5430-006	Kesterson Ditch		6	4.4		X	8.0	499	249.60	62	195	23,232	15	MH		
		5430-007	Los Banos Creek-Mosquito to Garzas			7.5			13.6	0	0.00	0	0	39,600	15	MH		
		5430-008	Los Banos Creek-Garzas to Hwy 140			11.2			20.4	0	0.00	0	0	59,136	15	MH		
18	1	5430-009	Los Banos Creek to Cross Channel			1.4			2.6	0	0.00	0	0	7,498	15	MH		
		5430-010	Rubino Ditch		3	3.0		X	5.5	640	320.00	117	260	15,840	15	MH		
16, 30	2	5430-011	San Luis Canal-Splits to Undwd Xing		15	13.6		X	24.7	1510	755.20	61	560	71,808	15	MH		
		5430-012	Santa Fe Canal-Splits to X Channel		4	9.0		X	16.4	2304	1152.00	141	900	47,520	15	MH		
24	1	5430-013	Santa Fe Canal X-Channel to MS			15.8			28.7	0	0.00	0	0	83,424	15	MH		
		5430-014	Standard Ditch			5.4			9.8	0	0.00	0	0	28,512	15	MH		
24, 25	2	5430-015	Westside Ditch		1	6.0		X	10.9	1900	899.84	165	703	31,680	15	MH		
		5430-016	240 Ditch			3.0			5.5	0	0.00	0	0	15,840	15	MH		
24	1	5430-017	Agatha Canal Extension		3.5	5.0		X	9.1	870	435.20	96	340	26,400	15	MH		
		5430-018	Agatha Canal			16.0			29.1	0	0.00	0	0	84,480	15	MH		
		5430-019	Almaden Ditch			2.4			4.4	0	0.00	0	0	12,672	15	MH		
		5430-020	Almond Drive Ditch			4.0			7.3	0	0.00	0	0	21,120	15	MH		
		5430-021	Bennett Ditch to Agatha Canal			3.5			6.4	0	0.00	0	0	18,480	15	MH		
		5430-022	Britto Ditch			4.0			7.3	0	0.00	0	0	21,120	15	MH		
		5430-023	Camp 13 Canal			8.4			15.3	0	0.00	0	0	44,352	15	MH		
		5430-024	Double H A to Gadwall Drain			2.5			4.5	0	0.00	0	0	13,200	15	MH		
23	1	5430-025	Flwyway Ditch Private			3.0			5.5	0	0.00	0	0	15,840	15	MH		
		5430-026	Gadwall Canal to Almond Drive		1	7.4		X	13.5	1792	896.00	133	700	39,072	15	MH		
5	1	5430-027	Geis Ditch		3	7.0		X	12.7	1267	633.60	100	495	36,960	15	MH		
		5430-028	Helm Canal			7.2		X	13.1	1956	983.04	150	768	38,016	15	MH		
		5430-029	Gadwall-Almond Drive to Double H A			2.0			3.6	0	0.00	0	0	10,560	15	MH		
		5430-030	Reedley Ditch			2.0			3.6	0	0.00	0	0	10,560	15	MH		
		5430-031	Sorsky Ditch			8.8			16.0	0	0.00	0	0	46,464	15	MH		
		5430-032	Gadwall Unit Concrete Ditch			0.5			0.9	0	0.00	0	0	2,640	15	MH		
		5430-033	Mosquito Ditch			6.2			11.3	0	0.00	0	0	32,736	15	MH		
		5430-034	Double D - Bigwater Ditch			3.2			5.8	0	0.00	0	0	16,896	15	MH		
		5430-035	Old Los Banos Ditch			2.0			3.6	0	0.00	0	0	10,560	15	MH		
		5430-036	Porter Blake Bypass			5.4			9.8	0	0.00	0	0	28,512	15	MH		

Application rate target per application 96 oz/ac

Max application per season per site is 256 oz

	5430-037	Hollow Tree Drain		3.2		5.8	0		0.00	0		16,896	15	MH		
	5430-038	Meyers Ditch Private		2.0		3.6	0		0.00	0		10,560	15	MH		
	5430-039	Ascott Ditch (Private)		3.0		5.5	0		0.00	0		15,840	15	MH		
	5430-040	Redfern Ditch		3.0		5.5	0		0.00	0		15,840	15	MH		
	5430-041	Gables Ditch (Private)		6.0		10.9	0		0.00	0		31,680	15	MH		
	5430-042	Reeves Lake Drain		3.2		5.8	0		0.00	0		16,896	15	MH		
	5430-043	Mesquite Drain		3.7		6.7	0		0.00	0		19,325	15	MH		
	5430-044	Carter Harrison Drain		3.0		5.5	0		0.00	0		15,840	15	MH		
	5430-045	Charleston Drain		4.6		8.4	0		0.00	0		24,288	15	MH		
	5430-046	Santa Fe Canal - Mueller Weir to Splits		7.8		14.2	0		0.00	0		41,184	15	MH		
	5430-047	Big Water Ditch		6.6		12.0	0		0.00	0		34,848	15	MH		
	5430-048	Ingomar Drain		3.0		5.5	0		0.00	0		15,840	15	MH		
	5430-049	Cotton Drain		1.5		2.7	0		0.00	0		7,920	15	MH		
	5430-050	Mud Slough North - Kesterson to GCR		6.6		12.0	0		0.00	0		34,848	15	MH		
	5430-051	Mud Slough South		8.8		16.0	0		0.00	0		46,464	15	MH		
	5430-052	Santa Fe Canal-Flood Gates (Hollister)		1.0		1.8	0		0.00	0		5,280	15	MH		
	5430-053	Hollister Ditch (Private)		2.0		3.6	0		0.00	0		10,560	15	MH		
	5430-054	Malia Ditch		4.6		8.4	0		0.00	0		24,288	15	MH		
	5430-055	Cottonwood Lateral		2.0		3.6	0		0.00	0		10,560	15	MH		
	5430-056	Poso Drain		2.6		4.7	0		0.00	0		13,728	15	MH		
	5430-057	Stillbow Drain-Britto to Agatha		3.8		6.9	0		0.00	0		20,064	15	MH		
	5430-058	Fourteen L&C Ditch		0.8		1.5	0		0.00	0		4,224	15	MH		
	5430-059	Dyer Ditch		1.0		1.8	0		0.00	0		5,280	15	MH		
	5430-060	Walter Ditch		2.2		4.0	0		0.00	0		11,616	15	MH		
	5430-061	Stillbow 80 Ditch		1.5		2.7	0		0.00	0		7,920	15	MH		
	5430-062	216 Drain		3.8		6.9	0		0.00	0		20,064	15	MH		
	5430-063	Marland Drain		1.3		2.4	0		0.00	0		6,864	15	MH		
		TOTALS														
Total Apps	13		Dry	0	Miles	294.9	Acres	536.3	Gal	108.8	Gal	0.00	Gal	54.41	Feet	1,557,283

0

294.9

536.3

108.8

0.00

54.41

1,557,283

0.20

Grassland Water District - 2015
 200 W Willmott Ave
 Los Banos, CA 93835 - (209) 826-5188

Amine 4 2,4-D EPA# 34704-120
 Aqua Neat EPA # 228-365

Merced Co. Agriculture Permit ID#24014320
 Right of Way

Application Date	Appl. Site #	Code Number	Site Name	Condition	Flow cfs	Length Miles	Application rate target per application 96 oz/ac			Total Acres	Aqua Neat oz	Amine 2,4-D oz	Liberam Sulfactant oz	Chemical oz/ac	Gallons Water	Length Feet Covered	Spray Width Covered Feet	Applicator
							Hand (Spool)	Boom	Side Boom									
July																		
1	1	5430-001	Cross Channel to SF Canal			3.7				6.7	842	421.12	127	329	19,325	15	MH	
30	1	5430-002	Eagle Ditch			8.4				15.3	996	497.92	65	369	44,352	15	MH	
15	1	5430-003	Carter Harrison Canal			6.5				11.8	435	217.60	37	170	34,320	15	MH	
6	1	5430-004	Garzas Creek			2.0				3.6	402	200.96	111	157	10,560	15	MH	
		5430-005	Gun Club Road Ditch			1.0				1.8	0	0.00	0	0	5,280	15	MH	
1	1	5430-006	Kesterson Ditch			4.4				8.0	842	421.12	105	329	23,232	15	MH	
6	1	5430-007	Los Banos Creek-Mosquito to Garzas			7.5				13.6	650	325.12	48	254	39,600	15	MH	
		5430-008	Los Banos Creek-Garzas to Hwy 140			11.2				20.4	0	0.00	0	0	59,136	15	MH	
15	1	5430-009	Los Banos Creek to Cross Channel			1.4				2.6	159	79.36	61	62	7,498	15	MH	
		5430-010	Rubino Ditch			3.0				5.5	0	0.00	0	0	15,840	15	MH	
27, 28, 29	3	5430-011	San Luis Canal-Splits to Uhdwd Xing			13.6				24.7	1103	551.68	45	431	71,808	15	MH	
15, 24	2	5430-012	Santa Fe Canal-Splits to X Channel			9.0				16.4	1093	546.56	67	427	47,520	15	MH	
15, 16	2	5430-013	Santa Fe Canal X-Channel to MS			15.8				28.7	1820	910.08	63	711	83,424	15	MH	
28	1	5430-014	Standard Ditch			5.4				9.8	512	256.00	52	200	28,512	15	MH	
27	1	5430-015	Westside Ditch			6.0				10.9	986	492.80	90	385	31,680	15	MH	
		5430-016	240 Ditch			3.0				5.5	0	0.00	0	0	15,840	15	MH	
13, 24, 29	3	5430-017	Agatha Canal Extension			5.0				9.1	1027	513.28	113	401	26,400	15	MH	
7, 13	2	5430-018	Agatha Canal			16.0				29.1	3215	1607.68	111	1256	84,480	15	MH	
		5430-019	Almaden Ditch			2.4				4.4	0	0.00	0	0	12,672	15	MH	
14	1	5430-020	Almond Drive Ditch			4.0				7.3	868	433.92	119	339	21,120	15	MH	
		5430-021	Bennett Ditch to Agatha Canal			3.5				6.4	0	0.00	0	0	18,480	15	MH	
		5430-022	Britto Ditch			4.0				7.3	0	0.00	0	0	21,120	15	MH	
28	1	5430-023	Camp 13 Canal			8.4				15.3	1065	532.48	70	416	44,352	15	MH	
		5430-024	Double H A to Gadwall Drain			2.5				4.5	0	0.00	0	0	13,200	15	MH	
		5430-025	Flwyway Ditch Private			3.0				5.5	0	0.00	0	0	15,840	15	MH	
		5430-026	Gadwall Canal to Almond Drive			7.4				13.5	0	0.00	0	0	39,072	15	MH	
		5430-027	Geis Ditch			7.0				12.7	0	0.00	0	0	36,960	15	MH	
7	1	5430-028	Helm Canal			7.2				13.1	573	286.72	44	224	38,016	15	MH	
28, 29	2	5430-029	Gadwall-Almond Drive to Double H A			2.0				3.6	328	163.84	90	128	10,560	15	MH	
		5430-030	Reedley Ditch			2.0				3.6	0	0.00	0	0	10,560	15	MH	
14	1	5430-031	Sorsky Ditch			8.8				16.0	1293	646.40	81	505	46,464	15	MH	
		5430-032	Gadwall Unit Concrete Ditch			0.5				0.9	0	0.00	0	0	2,640	15	MH	
		5430-033	Mosquito Ditch			6.2				11.3	0	0.00	0	0	32,736	15	MH	
29	1	5430-034	Double D - Bigwater Ditch			3.2				5.8	468	234.24	81	183	16,896	15	MH	
		5430-035	Old Los Banos Ditch			2.0				3.6	0	0.00	0	0	10,560	15	MH	

Application rate target per application 96 oz/ac

Max application per season per site is 256 oz

		5430-036	Porter Blake Bypass		5.4	9.8	0	0.00	0	28,512	15	MH
		5430-037	Hollow Tree Drain		3.2	5.8	294	147.20	51	16,896	15	MH
30	1	5430-038	Meyers Ditch Private		2.0	3.6	287	143.36	79	10,560	15	MH
29	1	5430-039	Ascott Ditch (Private)		3.0	5.5	0	0.00	0	15,840	15	MH
		5430-040	Redfern Ditch		3.0	5.5	328	163.84	60	15,840	15	MH
29	1	5430-041	Gables Ditch (Private)		6.0	10.9	0	0.00	0	31,680	15	MH
		5430-042	Reeves Lake Drain		3.2	5.8	0	0.00	0	16,896	15	MH
		5430-043	Mesquite Drain		3.7	6.7	0	0.00	0	19,325	15	MH
		5430-044	Carter Harrison Drain		3.0	5.5	0	0.00	0	15,840	15	MH
		5430-045	Charleston Drain		4.6	8.4	0	0.00	0	24,288	15	MH
28	1	5430-046	Santa Fe Canal - Mueller Weir to Splitts		7.8	14.2	64	32.00	5	41,184	15	MH
		5430-047	Big Water Ditch		6.6	12.0	0	0.00	0	34,848	15	MH
		5430-048	Ingomar Drain		3.0	5.5	0	0.00	0	15,840	15	MH
		5430-049	Cotton Drain		1.5	2.7	0	0.00	0	7,920	15	MH
		5430-050	Mud Slough North - Kesterson to GCR		6.6	12.0	0	0.00	0	34,848	15	MH
29	1	5430-051	Mud Slough South		8.8	16.0	26	12.80	2	46,464	15	MH
		5430-052	Santa Fe Canal-Flood Gates (Holister)		1.0	1.8	0	0.00	0	5,280	15	MH
		5430-053	Holister Ditch (Private)		2.0	3.6	0	0.00	0	10,560	15	MH
		5430-054	Malta Ditch		4.6	8.4	0	0.00	0	24,288	15	MH
		5430-055	Cottonwood Lateral		2.0	3.6	0	0.00	0	10,560	15	MH
		5430-056	Poso Drain		2.6	4.7	0	0.00	0	13,728	15	MH
		5430-057	Stillbow Drain-Britto to Agatha		3.8	6.9	0	0.00	0	20,064	15	MH
28	1	5430-058	Fourteen L&C Ditch		0.8	1.5	64	32.00	44	4,224	15	MH
		5430-059	Dyer Ditch		1.0	1.8	0	0.00	0	5,280	15	MH
		5430-060	Walter Ditch		2.2	4.0	0	0.00	0	11,616	15	MH
		5430-061	Stillbow 80 Ditch		1.5	2.7	0	0.00	0	7,920	15	MH
		5430-062	216 Drain		3.8	6.9	0	0.00	0	20,064	15	MH
		5430-063	Marland Drain		1.3	2.4	0	0.00	0	6,864	15	MH
TOTALS												
Total Apps	34			Dry	Miles	Acres	Gal	Gal	Gal	Feet		
				0	295	536	154.2	0.00	77.1	1,557,283		

155.1

232.0

0.29

Grassland Water District - 2015
 200 W Willmott Ave
 Los Banos, CA 93635 - (209) 826-5188

Amine 4.2.4-D EPA# 34704-120
 Aqua Neat EPA # 228-365

Merced Co. Agriculture Permit ID#24014320
 Right of Way

Application Date	Appl. Site #	Code Number	Site Name	Condition	Flow cfs	Length Miles	Application			Total Acres	Aqua Neat oz	Amine 2.4-D oz	Liberate Surfactant oz	Chemical oz/ac	Gallons Water	Length Feet Covered	Spray Width Covered Feet	Applicator
							Hand (Spot)	Boom	Side Boom									
August		5430-001	Cross Channel to SF Canal			3.7				6.7	0	0.00	0		19,325	15		MH
		5430-002	Eagle Ditch			8.4				15.3	0	0.00	0		44,352	15		MH
8/25/2015	1	5430-003	Carter Harrison Canal	Dry		6.5				11.8	525	262.40	44	205	34,320	15		MH
8/31/2015	1	5430-004	Garzas Creek	Dry		2.0				3.6	512	256.00	141	200	10,560	15		MH
8/31/2015	1	5430-005	Gun Club Road Ditch	Dry		1.0				1.8	154	76.80	84	60	5,280	15		MH
		5430-006	Kesterson Ditch			4.4				8.0	0	0.00	0		23,232	15		MH
		5430-007	Los Banos Creek-Mosquito to Garzas			7.5				13.6	0	0.00	0		39,600	15		MH
		5430-008	Los Banos Creek-Garzas to Hwy 140			11.2				20.4	0	0.00	0		59,136	15		MH
		5430-009	Los Banos Creek to Cross Channel			1.4				2.6	0	0.00	0		7,498	15		MH
		5430-010	Rubino Ditch			3.0				5.5	0	0.00	0		15,840	15		MH
8/25/2015	2	5430-011	San Luis Canal-Splits to Undwd Xing			13.6				24.7	417	208.64	17	183	71,808	15		MH
8/19/2015	2	5430-012	Santa Fe Canal-Splits to X Channel	Dry		9.0				16.4	781	390.40	48	305	47,520	15		MH
		5430-013	Santa Fe Canal X-Channel to MS			15.8				28.7	0	0.00	0		83,424	15		MH
		5430-014	Standard Ditch			5.4				9.8	0	0.00	0		28,512	15		MH
		5430-015	Westside Ditch			6.0				10.9	0	0.00	0		31,680	15		MH
		5430-016	240 Ditch			3.0				5.5	0	0.00	0		15,840	15		MH
		5430-017	Agatha Canal Extension			5.0				9.1	0	0.00	0		26,400	15		MH
8/6/2015	2	5430-018	Agatha Canal			16.0				29.1	1549	774.40	53	605	84,480	15		MH
		5430-019	Almarden Ditch			2.4				4.4	0	0.00	0		12,672	15		MH
8/26/2015	1	5430-020	Almond Drive Ditch	Dry		4.0				7.3	737	368.64	101	288	21,120	15		MH
8/24/2015	1	5430-021	Bennett Ditch to Agatha Canal			3.5				6.4	589	294.40	93	230	18,480	15		MH
8/5/2015	1	5430-022	Britto Ditch	Dry		4.0				7.3	799	399.36	110	312	21,120	15		MH
		5430-023	Camp 13 Canal			8.4				15.3	0	0.00	0		44,352	15		MH
		5430-024	Double H A to Gadwall Drain			2.5				4.5	0	0.00	0		13,200	15		MH
8/3/2015	1	5430-025	Flyway Ditch Private			3.0				5.5	512	256.00	94	200	15,840	15		MH
		5430-026	Gadwall Canal to Almond Drive			7.4				13.5	0	0.00	0		39,072	15		MH
8/25/2015	1	5430-027	Geis Ditch	Dry		7.0				12.7	502	250.88	39	196	36,960	15		MH
8/26/2015	1	5430-028	Helm Canal			7.2				13.1	740	369.92	57	289	38,016	15		MH
		5430-029	Gadwall-Almond Drive to Double H A			2.0				3.6	0	0.00	0		10,560	15		MH
		5430-030	Reedley Ditch			2.0				3.6	0	0.00	0		10,560	15		MH
8/5/2015	2	5430-031	Sorsky Ditch	Dry		8.8				16.0	763	381.44	48	298	46,464	15		MH
8/5/2015	1	5430-032	Gadwall Unit Concrete Ditch			0.5				0.9	90	44.80	99	35	2,640	15		MH
8/3/2015	1	5430-033	Mosquito Ditch			6.2				11.3	712	355.84	63	278	32,736	15		MH
		5430-034	Double D - Bigwater Ditch			3.2				5.8	0	0.00	0		16,896	15		MH

Application rate target per application \$6 oz/ac

Max application per season per site is 256 oz

8/20/2015	1	5430-036	Old Los Banos Ditch		2.0	3.6	0	0.00	0	10,560	15	MH				
8/20/2015	1	5430-037	Porter Blake Bypass	Dry	5.4	9.8	494	247.04	50	28,512	15	MH				
8/20/2015	1	5430-038	Hollow Tree Drain	Dry	3.2	5.8	691	345.60	119	16,896	15	MH				
		5430-039	Meiers Ditch Private		2.0	3.6	0	0.00	0	10,560	15	MH				
		5430-040	Ascott Ditch (Private)		3.0	5.5	0	0.00	0	15,840	15	MH				
		5430-041	Redfern Ditch		3.0	5.5	0	0.00	0	15,840	15	MH				
8/19/2015	2	5430-042	Gables Ditch (Private)		6.0	10.9	0	0.00	0	31,680	15	MH				
		5430-043	Reeves Lake Drain	Dry	3.2	5.8	748	373.76	128	16,896	15	MH				
		5430-044	Mesquite Drain		3.7	6.7	0	0.00	0	19,325	15	MH				
		5430-045	Carter Harrison Drain		3.0	5.5	0	0.00	0	15,840	15	MH				
		5430-046	Charleston Drain		4.6	8.4	0	0.00	0	24,288	15	MH				
8/3/2015	2	5430-047	Santa Fe Canal - Mueller Weir to Splitts		7.8	14.2	0	0.00	0	41,184	15	MH				
		5430-048	Big Water Ditch	Dry	6.6	12.0	865	432.64	72	34,848	15	MH				
		5430-049	Ingomar Drain		3.0	5.5	0	0.00	0	15,840	15	MH				
		5430-050	Cotton Drain		1.5	2.7	0	0.00	0	7,920	15	MH				
8/13/2015	1	5430-051	Mud Slough North - Kesterson to GCR		6.6	12.0	0	0.00	0	34,848	15	MH				
8/20/2015	1	5430-052	Mud Slough South	Dry	8.8	16.0	840	419.84	52	46,464	15	MH				
		5430-053	Santa Fe Canal-Flood Gates (Hollister)	Dry	1.0	1.8	246	122.88	135	5,280	15	MH				
		5430-054	Hollister Ditch (Private)		2.0	3.6	0	0.00	0	10,560	15	MH				
		5430-055	Malia Ditch		4.6	8.4	0	0.00	0	24,288	15	MH				
8/6/2015	2	5430-056	Cottonwood Lateral		2.0	3.6	0	0.00	0	10,560	15	MH				
8/24/2015	1	5430-057	Poso Drain		2.6	4.7	701	350.72	148	13,728	15	MH				
		5430-058	Stillbow Drain-Brito to Agatha	Dry	3.8	6.9	453	226.56	66	20,064	15	MH				
		5430-059	Fourteen L&C Ditch		0.8	1.5	0	0.00	0	4,224	15	MH				
8/31/2015	1	5430-060	Dyer Ditch		1.0	1.8	0	0.00	0	5,280	15	MH				
		5430-061	Walter Ditch	Dry	2.2	4.0	307	153.60	77	11,616	15	MH				
8/14/2015	1	5430-062	Stillbow 80 Ditch		1.5	2.7	0	0.00	0	7,920	15	MH				
		5430-063	216 Drain	Dry	3.8	6.9	694	346.88	100	20,064	15	MH				
			Marland Drain		1.3	2.4	0	0.00	0	6,864	15	MH				
TOTALS				Dry												
Total Apps	32			17	Miles	294.9	Acres	536.3	Gal	120.5	Gal	0.00	Gal	60.23	Feet	1,557,283

80.3

632.8

24.8

Grassland Water District - 2015
 200 W Willmott Ave
 Los Banos, CA 93635 - (209) 826-5188

Amine 4 2,4-D EPA# 34704-120
 Aqua Neat EPA # 228-365

Merced Co. Agriculture Permit ID#24014320
 Right of Way

Application Date	Appl. Site #	Code Number	Site Name	Condition	Flow cfs	Length Miles	Application rate target per application 96 oz/ac			Total Acres	Aqua Neat oz	Amine 2,4-D oz	Litterate Esterate oz	Chemical oz/ac	Gallons Water	Length Feet Covered	Spray Width Covered Feet	Applicator
							Hand /Spot/	Boom	Side Boom									
September		5430-001	Cross Channel to SF Canal			3.7				6.7	0	0.00	0		19,325	15	MH	
		5430-002	Eagle Ditch			8.4			15.3	0	0.00	0	0		44,352	15	MH	
		5430-003	Carter Harrison Canal			6.5			11.8	0	0.00	0	0		34,320	15	MH	
		5430-004	Garzas Creek			2.0			3.6	0	0.00	0	0		10,560	15	MH	
		5430-005	Gun Club Road Ditch			1.0			1.8	0	0.00	0	0		5,280	15	MH	
		5430-006	Kesterson Ditch			4.4			8.0	0	0.00	0	0		23,232	15	MH	
		5430-007	Los Banos Creek-Mosquito to Garzas			7.5			13.6	0	0.00	0	0		39,600	15	MH	
		5430-008	Los Banos Creek-Garzas to Hwy 140			11.2			20.4	0	0.00	0	0		59,136	15	MH	
		5430-009	Los Banos Creek to Cross Channel			1.4			2.6	0	0.00	0	0		7,498	15	MH	
		5430-010	Rubino Ditch			3.0			5.5	0	0.00	0	0		15,840	15	MH	
		5430-011	San Luis Canal-Splits to Undwd Xing			13.6			24.7	0	0.00	0	0		71,808	15	MH	
		5430-012	Santa Fe Canal-Splits to X Channel			9.0			16.4	0	0.00	0	0		47,520	15	MH	
		5430-013	Santa Fe Canal X-Channel to MS			15.8			28.7	0	0.00	0	0		83,424	15	MH	
		5430-014	Standard Ditch			5.4			9.8	0	0.00	0	0		28,512	15	MH	
		5430-015	Westside Ditch			6.0			10.9	0	0.00	0	0		31,680	15	MH	
		5430-016	240 Ditch			3.0			5.5	0	0.00	0	0		15,840	15	MH	
		5430-017	Agatha Canal Extension			5.0			9.1	0	0.00	0	0		26,400	15	MH	
		5430-018	Agatha Canal			16.0			29.1	0	0.00	0	0		84,480	15	MH	
		5430-019	Almaden Ditch			2.4			4.4	0	0.00	0	0		12,672	15	MH	
		5430-020	Almond Drive Ditch			4.0			7.3	0	0.00	0	0		21,120	15	MH	
		5430-021	Bennett Ditch to Agatha Canal			3.5			6.4	0	0.00	0	0		18,480	15	MH	
		5430-022	Britto Ditch			4.0			7.3	0	0.00	0	0		21,120	15	MH	
		5430-023	Camp 13 Canal			8.4			15.3	0	0.00	0	0		44,352	15	MH	
		5430-024	Double H A to Gadwall Drain			2.5			4.5	0	0.00	0	0		13,200	15	MH	
		5430-025	Flwyway Ditch Private			3.0			5.5	0	0.00	0	0		15,840	15	MH	
		5430-026	Gadwall Canal to Almond Drive			7.4			13.5	0	0.00	0	0		39,072	15	MH	
		5430-027	Geis Ditch			7.0			12.7	0	0.00	0	0		36,960	15	MH	
		5430-028	Helm Canal			7.2			13.1	0	0.00	0	0		38,016	15	MH	
		5430-029	Gadwall-Almond Drive to Double H A			2.0			3.6	0	0.00	0	0		10,560	15	MH	
		5430-030	Reedley Ditch			2.0			3.6	0	0.00	0	0		10,560	15	MH	
		5430-031	Sorsky Ditch			8.8			16.0	0	0.00	0	0		46,464	15	MH	
		5430-032	Gadwall Unit Concrete Ditch			0.5			0.9	0	0.00	0	0		2,640	15	MH	
		5430-033	Mosquito Ditch			6.2			11.3	0	0.00	0	0		32,736	15	MH	

Max application per season per site is 256 oz

	5430-034	Double D - Bigwater Ditch		3.2		5.8	0	0.00	0		16,896	15	MH
	5430-035	Old Los Banos Ditch		2.0		3.6	0	0.00	0		10,560	15	MH
	5430-036	Porter Blake Bypass		5.4		9.8	0	0.00	0		28,512	15	MH
	5430-037	Hollow Tree Drain		3.2		5.8	0	0.00	0		16,896	15	MH
	5430-038	Mevers Ditch Private		2.0		3.6	0	0.00	0		10,560	15	MH
	5430-039	Ascott Ditch (Private)		3.0		5.5	0	0.00	0		15,840	15	MH
	5430-040	Redfern Ditch		3.0		5.5	0	0.00	0		15,840	15	MH
	5430-041	Gables Ditch (Private)		6.0		10.9	0	0.00	0		31,680	15	MH
	5430-042	Reeves Lake Drain		3.2		5.8	0	0.00	0		16,896	15	MH
	5430-043	Mesquite Drain		3.7		6.7	0	0.00	0		19,325	15	MH
	5430-044	Carter Harrison Drain		3.0		5.5	0	0.00	0		15,840	15	MH
	5430-045	Charleston Drain		4.6		8.4	0	0.00	0		24,288	15	MH
	5430-046	Santa Fe Canal - Mueller Weir to Splitts		7.8		14.2	0	0.00	0		41,184	15	MH
	5430-047	Big Water Ditch		6.6		12.0	0	0.00	0		34,848	15	MH
	5430-048	Ingomar Drain		3.0		5.5	0	0.00	0		15,840	15	MH
	5430-049	Cotton Drain		1.5		2.7	0	0.00	0		7,920	15	MH
	5430-050	Mud Slough North - Kesterson to GCR		6.6		12.0	0	0.00	0		34,848	15	MH
	5430-051	Mud Slough South		8.8		16.0	0	0.00	0		46,464	15	MH
	5430-052	Santa Fe Canal-Flood Gates (Hollister)		1.0		1.8	0	0.00	0		5,280	15	MH
	5430-053	Hollister Ditch (Private)		2.0		3.6	0	0.00	0		10,560	15	MH
	5430-054	Malia Ditch		4.6		8.4	0	0.00	0		24,288	15	MH
	5430-055	Cottonwood Lateral		2.0		3.6	0	0.00	0		10,560	15	MH
	5430-056	Poso Drain		2.6		4.7	0	0.00	0		13,728	15	MH
	5430-057	Stillbow Drain-Britto to Agatha		3.8		6.9	0	0.00	0		20,064	15	MH
	5430-058	Fourteen L&C Ditch		0.8		1.5	0	0.00	0		4,224	15	MH
	5430-059	Dyer Ditch		1.0		1.8	0	0.00	0		5,280	15	MH
	5430-060	Walter Ditch		2.2		4.0	0	0.00	0		11,616	15	MH
	5430-061	Stillbow 80 Ditch		1.5		2.7	0	0.00	0		7,920	15	MH
	5430-062	216 Drain		3.8		6.9	0	0.00	0		20,064	15	MH
	5430-063	Marland Drain		1.3		2.4	0	0.00	0		6,864	15	MH
		TOTALS											

Total Apps 0

Dry

Miles 294.94

Acres 536.3

Gal 0.0

Gal 0.00

Gal 0.00

Feet 1,557,283

Grassland Water District - 2015
 200 W Willinott Ave
 Los Banos, CA 93835 - (209) 826-5188

Amine 4.2.4-D EPA# 34704-120
 Aqua Neat EPA # 228-365

Merced Co. Agriculture Permit ID#24014320
 Right of Way

Application Date	Appl. Site #	Code Number	Site Name	Condition	Flow cfs	Length Miles	Application			Total Acres	Aqua Neat oz	Amine 2,4-D oz	Lisinate Reductant oz	Chemical oz/ac	Gallons Water	Length Feet Covered	Spray Width Covered Feet	Applicator
							Hand (Spot)	Boom	Side Boom									
October		5430-001	Cross Channel to SF Canal			3.7				6.7	0		0.00	0	19,325	15	MH	
		5430-002	Eagle Ditch			8.4				15.3	0		0.00	0	44,352	15	MH	
		5430-003	Carter Harrison Canal			6.5				11.8	0		0.00	0	34,320	15	MH	
		5430-004	Garzas Creek			2.0				3.6	0		0.00	0	10,560	15	MH	
		5430-005	Gun Club Road Ditch			1.0				1.8	0		0.00	0	5,280	15	MH	
		5430-006	Kesterson Ditch			4.4				8.0	0		0.00	0	23,232	15	MH	
		5430-007	Los Banos Creek-Mosquito to Garzas			7.5				13.6	0		0.00	0	39,600	15	MH	
		5430-008	Los Banos Creek-Garzas to Hwy 140			11.2				20.4	0		0.00	0	59,136	15	MH	
		5430-009	Los Banos Creek to Cross Channel			1.4				2.6	0		0.00	0	7,498	15	MH	
		5430-010	Rubino Ditch			3.0				5.5	0		0.00	0	15,840	15	MH	
		5430-011	San Luis Canal-Splits to Undwd Xing			13.6				24.7	0		0.00	0	71,808	15	MH	
		5430-012	Santa Fe Canal-Splits to X Channel			9.0				16.4	0		0.00	0	47,520	15	MH	
		5430-013	Santa Fe Canal X-Channel to MS			15.8				28.7	0		0.00	0	83,424	15	MH	
		5430-014	Standard Ditch			5.4				9.8	0		0.00	0	28,512	15	MH	
		5430-015	Westside Ditch			6.0				10.9	0		0.00	0	31,680	15	MH	
		5430-016	240 Ditch			3.0				5.5	0		0.00	0	15,840	15	MH	
		5430-017	Agatha Canal Extension			5.0				9.1	0		0.00	0	26,400	15	MH	
		5430-018	Agatha Canal			16.0				29.1	0		0.00	0	84,480	15	MH	
		5430-019	Almadden Ditch			2.4				4.4	0		0.00	0	12,672	15	MH	
		5430-020	Almond Drive Ditch			4.0				7.3	0		0.00	0	21,120	15	MH	
		5430-021	Bennett Ditch to Agatha Canal			3.5				6.4	0		0.00	0	18,480	15	MH	
		5430-022	Britto Ditch			4.0				7.3	0		0.00	0	21,120	15	MH	
		5430-023	Camp 13 Canal			8.4				15.3	0		0.00	0	44,352	15	MH	
		5430-024	Double H A to Gadwall Drain			2.5				4.5	0		0.00	0	13,200	15	MH	
		5430-025	Flyway Ditch Private			3.0				5.5	0		0.00	0	15,840	15	MH	
		5430-026	Gadwall Canal to Almond Drive			7.4				13.5	0		0.00	0	39,072	15	MH	
		5430-027	Geis Ditch			7.0				12.7	0		0.00	0	36,960	15	MH	
		5430-028	Helm Canal			7.2				13.1	0		0.00	0	38,016	15	MH	
		5430-029	Gadwall-Almond Drive to Double H A			2.0				3.6	0		0.00	0	10,560	15	MH	
		5430-030	Reedley Ditch			2.0				3.6	0		0.00	0	10,560	15	MH	
		5430-031	Sorsky Ditch			8.8				16.0	0		0.00	0	46,464	15	MH	
		5430-032	Gadwall Unit Concrete Ditch			0.5				0.9	0		0.00	0	2,640	15	MH	
		5430-033	Mosquito Ditch			6.2				11.3	0		0.00	0	32,736	15	MH	

Application rate target per application 96 oz/ac

Max application per season per site is 258 oz

5430-034	Double D - Bigwater Ditch	3.2	5.8	0	0.00	0	16,896	15	MH				
5430-035	Old Los Banos Ditch	2.0	3.6	0	0.00	0	10,560	15	MH				
5430-036	Porter Blake Bypass	5.4	9.8	0	0.00	0	28,512	15	MH				
5430-037	Hollow Tree Drain	3.2	5.8	0	0.00	0	16,896	15	MH				
5430-038	Meyers Ditch Private	2.0	3.6	0	0.00	0	10,560	15	MH				
5430-039	Ascott Ditch (Private)	3.0	5.5	0	0.00	0	15,840	15	MH				
5430-040	Redfern Ditch	3.0	5.5	0	0.00	0	15,840	15	MH				
5430-041	Gables Ditch (Private)	6.0	10.9	0	0.00	0	31,680	15	MH				
5430-042	Reeves Lake Drain	3.2	5.8	0	0.00	0	16,896	15	MH				
5430-043	Mesquite Drain	3.7	6.7	0	0.00	0	19,325	15	MH				
5430-044	Carter Harrison Drain	3.0	5.5	0	0.00	0	15,840	15	MH				
5430-045	Charleston Drain	4.6	8.4	0	0.00	0	24,288	15	MH				
5430-046	Santa Fe Canal - Mueller Weir to Spliffs	7.8	14.2	0	0.00	0	41,184	15	MH				
5430-047	Big Water Ditch	6.6	12.0	0	0.00	0	34,848	15	MH				
5430-048	Ingomar Drain	3.0	5.5	0	0.00	0	15,840	15	MH				
5430-049	Cotton Drain	1.5	2.7	0	0.00	0	7,920	15	MH				
5430-050	Mud Slough North - Kesterson to GCR	6.6	12.0	0	0.00	0	34,848	15	MH				
5430-051	Mud Slough South	8.8	16.0	0	0.00	0	46,464	15	MH				
5430-052	Santa Fe Canal-Flood Gates (Holister)	1.0	1.8	0	0.00	0	5,280	15	MH				
5430-053	Hollister Ditch (Private)	2.0	3.6	0	0.00	0	10,560	15	MH				
5430-054	Malta Ditch	4.6	8.4	0	0.00	0	24,288	15	MH				
5430-055	Cottonwood Lateral	2.0	3.6	0	0.00	0	10,560	15	MH				
5430-056	Poso Drain	2.6	4.7	0	0.00	0	13,728	15	MH				
5430-057	Stillbow Drain-Brito to Agatha	3.8	6.9	0	0.00	0	20,064	15	MH				
5430-058	Fourteen L&C Ditch	0.8	1.5	0	0.00	0	4,224	15	MH				
5430-059	Dyer Ditch	1.0	1.8	0	0.00	0	5,280	15	MH				
5430-060	Walter Ditch	2.2	4.0	0	0.00	0	11,616	15	MH				
5430-061	Stillbow 80 Ditch	1.5	2.7	0	0.00	0	7,920	15	MH				
5430-062	216 Drain	3.8	6.9	0	0.00	0	20,064	15	MH				
5430-063	Marland Drain	1.3	2.4	0	0.00	0	6,864	15	MH				
TOTALS													
Total Apps	0	Miles	294.94	Acres	536.3	Gal	0.0	Gal	0.00	Gal	0.00	Feet	1,557,283

DRY

294.94

Grassland Water District - 2015
 200 W Willmott Ave
 Los Banos, CA 93635 - (209) 826-5188

Amine 4.2.4-D EPA# 34704-120
 Aqua Neat EPA # 228-365

Merced Co. Agriculture Permit ID#24014320
 Right of Way

Application Date	Appl. Site #	Code Number	Site Name	Condition	Flow cfs	Length Miles	Application rate target per application 96 oz/ac			Total Acres	Aqua Neat oz	Amine 2.4-D oz	Liberate Sulfactant oz	Chemical oz/ac	Gallons Water	Length Feet Covered	Spray Width Covered Feet	Applicator
							Hand (Spot)	Boom	Side Boom									
November		5430-001	Cross Channel to SF Canal			3.7				6.7	0	0.00	0		19,325	15		MH
		5430-002	Eagle Ditch			8.4				15.3	0	0.00	0		44,352	15		MH
		5430-003	Carter Harrison Canal			6.5				11.8	0	0.00	0		34,320	15		MH
		5430-004	Garzas Creek			2.0				3.6	0	0.00	0		10,560	15		MH
		5430-005	Gun Club Road Ditch			1.0				1.8	0	0.00	0		5,280	15		MH
		5430-006	Kesteron Ditch			4.4				8.0	0	0.00	0		23,232	15		MH
		5430-007	Los Banos Creek-Mosquito to Garzas			7.5				13.6	0	0.00	0		39,600	15		MH
		5430-008	Los Banos Creek-Garzas to Hwy 140			11.2				20.4	0	0.00	0		59,136	15		MH
		5430-009	Los Banos Creek to Cross Channel			1.4				2.6	0	0.00	0		7,498	15		MH
		5430-010	Rubino Ditch			3.0				5.5	0	0.00	0		15,840	15		MH
		5430-011	San Luis Canal-Splits to Undwd Xing			13.6				24.7	0	0.00	0		71,808	15		MH
		5430-012	Santa Fe Canal-Splits to X Channel			9.0				16.4	0	0.00	0		47,520	15		MH
		5430-013	Santa Fe Canal X-Channel to MS			15.8				28.7	0	0.00	0		83,424	15		MH
		5430-014	Standard Ditch			5.4				9.8	0	0.00	0		28,512	15		MH
		5430-015	Westside Ditch			6.0				10.9	0	0.00	0		31,680	15		MH
		5430-016	240 Ditch			3.0				5.5	0	0.00	0		15,840	15		MH
		5430-017	Agatha Canal Extension			5.0				9.1	0	0.00	0		26,400	15		MH
		5430-018	Agatha Canal Extension			16.0				29.1	0	0.00	0		84,480	15		MH
		5430-019	Almaden Ditch			2.4				4.4	0	0.00	0		12,672	15		MH
		5430-020	Almond Drive Ditch			4.0				7.3	0	0.00	0		21,120	15		MH
		5430-021	Bennett Ditch to Agatha Canal			3.5				6.4	0	0.00	0		18,480	15		MH
		5430-022	Britto Ditch			4.0				7.3	0	0.00	0		21,120	15		MH
		5430-023	Camp 13 Canal			8.4				15.3	0	0.00	0		44,352	15		MH
		5430-024	Double H A to Gadwall Drain			2.5				4.5	0	0.00	0		13,200	15		MH
		5430-025	Flyway Ditch Private			3.0				5.5	0	0.00	0		15,840	15		MH
		5430-026	Gadwall Canal to Almond Drive			7.4				13.5	0	0.00	0		39,072	15		MH
		5430-027	Geis Ditch			7.0				12.7	0	0.00	0		36,960	15		MH
		5430-028	Helm Canal			7.2				13.1	0	0.00	0		38,016	15		MH
		5430-029	Gadwall-Almond Drive to Double H A			2.0				3.6	0	0.00	0		10,560	15		MH
		5430-030	Reedley Ditch			2.0				3.6	0	0.00	0		10,560	15		MH
		5430-031	Sorsky Ditch			8.8				16.0	0	0.00	0		46,464	15		MH
		5430-032	Gadwall Unit Concrete Ditch			0.5				0.9	0	0.00	0		2,640	15		MH
		5430-033	Mosquito Ditch			6.2				11.3	0	0.00	0		32,736	15		MH

Application rate target per application 96 oz/ac

Max application per season per site is 256 oz

5430-034	Double D - Bigwater Ditch	3.2	5.8	0	0.00	0	16,896	15	MH
5430-035	Old Los Banos Ditch	2.0	3.6	0	0.00	0	10,560	15	MH
5430-036	Porter Blake Bypass	5.4	9.8	0	0.00	0	28,512	15	MH
5430-037	Hollow Tree Drain	3.2	5.8	0	0.00	0	16,896	15	MH
5430-038	Meyers Ditch Private	2.0	3.6	0	0.00	0	10,560	15	MH
5430-039	Ascott Ditch (Private)	3.0	5.5	0	0.00	0	15,840	15	MH
5430-040	Redfern Ditch	3.0	5.5	0	0.00	0	15,840	15	MH
5430-041	Gables Ditch (Private)	6.0	10.9	0	0.00	0	31,680	15	MH
5430-042	Reeves Lake Drain	3.2	5.8	0	0.00	0	16,896	15	MH
5430-043	Mesquite Drain	3.7	6.7	0	0.00	0	19,325	15	MH
5430-044	Carter Harrison Drain	3.0	5.5	0	0.00	0	15,840	15	MH
5430-045	Charleston Drain	4.6	8.4	0	0.00	0	24,288	15	MH
5430-046	Santa Fe Canal - Mueller Weir to Splits	7.8	14.2	0	0.00	0	41,184	15	MH
5430-047	Big Water Ditch	6.6	12.0	0	0.00	0	34,848	15	MH
5430-048	Ingomar Drain	3.0	5.5	0	0.00	0	15,840	15	MH
5430-049	Cotton Drain	1.5	2.7	0	0.00	0	7,920	15	MH
5430-050	Mud Slough North - Kesterson to GCR	6.6	12.0	0	0.00	0	34,848	15	MH
5430-051	Mud Slough South	8.8	16.0	0	0.00	0	46,464	15	MH
5430-052	Santa Fe Canal-Flood Gates (Hollister)	1.0	1.8	0	0.00	0	5,280	15	MH
5430-053	Hollister Ditch (Private)	2.0	3.6	0	0.00	0	10,560	15	MH
5430-054	Malia Ditch	4.6	8.4	0	0.00	0	24,288	15	MH
5430-055	Cottonwood Lateral	2.0	3.6	0	0.00	0	10,560	15	MH
5430-056	Poso Drain	2.6	4.7	0	0.00	0	13,728	15	MH
5430-057	Stillbow Drain-Britto to Agatha	3.8	6.9	0	0.00	0	20,064	15	MH
5430-058	Fourteen L&C Ditch	0.8	1.5	0	0.00	0	4,224	15	MH
5430-059	Dyer Ditch	1.0	1.8	0	0.00	0	5,280	15	MH
5430-060	Walter Ditch	2.2	4.0	0	0.00	0	11,616	15	MH
5430-061	Stillbow 80 Ditch	1.5	2.7	0	0.00	0	7,920	15	MH
5430-062	216 Drain	3.8	6.9	0	0.00	0	20,064	15	MH
5430-063	Marland Drain	1.3	2.4	0	0.00	0	6,864	15	MH
TOTALS									
Total Apps	0		536.3	0.0	0.00	0.00	1,557,283		

Dry

Miles
294.94



Grassland Water District - 2015
 200 W Willmott Ave
 Los Banos, CA 93635 - (209) 826-5188

Amrine 4.2.4-D EPA# 34704-120
 Aqua Neat EPA # 228-365

Merced Co. Agriculture Permit ID#24014320
 Right of Way

Application Date	Appl. Site #	Code Number	Site Name	Condition	Flow cfs	Length Miles	Application			Total Acres	Aqua Neat oz	Amrine 2.4.D oz	Liberite Surfactant oz	Chemical oz/lb	Gallons Water	Length Feet Covered	Spray Width Covered Feet	Applicator
							Hand (Spot)	Boom	Side Boom									
December		5430-001	Cross Channel to SF Canal			3.7				6.7	0		0.00	0		19,325	15	MH
		5430-002	Eagle Ditch			8.4				15.3	0		0.00	0		44,352	15	MH
		5430-003	Carter Harrison Canal			6.5				11.8	0		0.00	0		34,320	15	MH
		5430-004	Garzas Creek			2.0				3.6	0		0.00	0		10,560	15	MH
		5430-005	Gun Club Road Ditch			1.0				1.8	0		0.00	0		5,280	15	MH
		5430-006	Kesterson Ditch			4.4				8.0	0		0.00	0		23,232	15	MH
		5430-007	Los Banos Creek-Mosquito to Garzas			7.5				13.6	0		0.00	0		39,600	15	MH
		5430-008	Los Banos Creek-Garzas to Hwy 140			11.2				20.4	0		0.00	0		59,136	15	MH
		5430-009	Los Banos Creek to Cross Channel			1.4				2.6	0		0.00	0		7,488	15	MH
		5430-010	Rubino Ditch			3.0				5.5	0		0.00	0		15,840	15	MH
		5430-011	San Luis Canal-Splits to Undwd Xing			13.6				24.7	0		0.00	0		71,808	15	MH
		5430-012	Santa Fe Canal-Splits to X Channel			9.0				16.4	0		0.00	0		47,520	15	MH
		5430-013	Santa Fe Canal X-Channel to MS			15.8				28.7	0		0.00	0		83,424	15	MH
		5430-014	Standard Ditch			5.4				9.8	0		0.00	0		28,512	15	MH
		5430-015	Westside Ditch			6.0				10.9	0		0.00	0		31,680	15	MH
		5430-016	240 Ditch			3.0				5.5	0		0.00	0		15,840	15	MH
		5430-017	Agatha Canal Extension			5.0				9.1	0		0.00	0		26,400	15	MH
		5430-018	Agatha Canal			16.0				29.1	0		0.00	0		84,480	15	MH
		5430-019	Almaden Ditch			2.4				4.4	0		0.00	0		12,672	15	MH
		5430-020	Almond Drive Ditch			4.0				7.3	0		0.00	0		21,120	15	MH
	5430-021	Bennett Ditch to Agatha Canal			3.5				6.4	0		0.00	0		18,480	15	MH	
	5430-022	Britto Ditch			4.0				7.3	0		0.00	0		21,120	15	MH	
	5430-023	Camp 13 Canal			8.4				15.3	0		0.00	0		44,352	15	MH	
	5430-024	Double H A to Gadwall Drain			2.5				4.5	0		0.00	0		13,200	15	MH	
	5430-025	Flyway Ditch Private			3.0				5.5	0		0.00	0		15,840	15	MH	
	5430-026	Gadwall Canal to Almond Drive			7.4				13.5	0		0.00	0		39,072	15	MH	
	5430-027	Geis Ditch			7.0				12.7	0		0.00	0		36,960	15	MH	
	5430-028	Helm Canal			7.2				13.1	0		0.00	0		38,016	15	MH	
	5430-029	Gadwall-Almond Drive to Double H A			2.0				3.6	0		0.00	0		10,560	15	MH	
	5430-030	Reedley Ditch			2.0				3.6	0		0.00	0		10,560	15	MH	
	5430-031	Sorsky Ditch			8.8				16.0	0		0.00	0		46,464	15	MH	
	5430-032	Gadwall Unit Concrete Ditch			0.5				0.9	0		0.00	0		2,640	15	MH	
	5430-033	Mosquito Ditch			6.2				11.3	0		0.00	0		32,736	15	MH	

Application rate target per application 96 oz/ac

Max application per season per site is 256 oz

	5430-034	Double D - Bigwater Ditch	3.2	5.8	0	0.00	0	16,896	15	MH				
	5430-035	Old Los Banos Ditch	2.0	3.6	0	0.00	0	10,560	15	MH				
	5430-036	Porter Blake Bypass	5.4	9.8	0	0.00	0	28,512	15	MH				
	5430-037	Hollow Tree Drain	3.2	5.8	0	0.00	0	16,896	15	MH				
	5430-038	Meyers Ditch Private	2.0	3.6	0	0.00	0	10,560	15	MH				
	5430-039	Ascott Ditch (Private)	3.0	5.5	0	0.00	0	15,840	15	MH				
	5430-040	Redfern Ditch	3.0	5.5	0	0.00	0	15,840	15	MH				
	5430-041	Gables Ditch (Private)	6.0	10.9	0	0.00	0	31,680	15	MH				
	5430-042	Reeves Lake Drain	3.2	5.8	0	0.00	0	16,896	15	MH				
	5430-043	Mesquite Drain	3.7	6.7	0	0.00	0	19,325	15	MH				
	5430-044	Carter Harrison Drain	3.0	5.5	0	0.00	0	15,840	15	MH				
	5430-045	Charleston Drain	4.6	8.4	0	0.00	0	24,288	15	MH				
	5430-046	Santa Fe Canal - Mueller Weir to Splits	7.8	14.2	0	0.00	0	41,184	15	MH				
	5430-047	Big Water Ditch	6.6	12.0	0	0.00	0	34,848	15	MH				
	5430-048	Ingomar Drain	3.0	5.5	0	0.00	0	15,840	15	MH				
	5430-049	Cotton Drain	1.5	2.7	0	0.00	0	7,920	15	MH				
	5430-050	Mud Slough North - Kesterson to GCR	6.6	12.0	0	0.00	0	34,848	15	MH				
	5430-051	Mud Slough South	8.8	16.0	0	0.00	0	46,464	15	MH				
	5430-052	Santa Fe Canal-Flood Gates (Holister)	1.0	1.8	0	0.00	0	5,280	15	MH				
	5430-053	Hollister Ditch (Private)	2.0	3.6	0	0.00	0	10,560	15	MH				
	5430-054	Malia Ditch	4.6	8.4	0	0.00	0	24,288	15	MH				
	5430-055	Cottonwood Lateral	2.0	3.6	0	0.00	0	10,560	15	MH				
	5430-056	Poso Drain	2.6	4.7	0	0.00	0	13,728	15	MH				
	5430-057	Stillbow Drain-Britto to Agatha	3.8	6.9	0	0.00	0	20,064	15	MH				
	5430-058	Fourteen L&C Ditch	0.8	1.5	0	0.00	0	4,224	15	MH				
	5430-059	Dyer Ditch	1.0	1.8	0	0.00	0	5,280	15	MH				
	5430-060	Walter Ditch	2.2	4.0	0	0.00	0	11,616	15	MH				
	5430-061	Stillbow 80 Ditch	1.5	2.7	0	0.00	0	7,920	15	MH				
	5430-062	216 Drain	3.8	6.9	0	0.00	0	20,064	15	MH				
	5430-063	Marland Drain	1.3	2.4	0	0.00	0	6,864	15	MH				
	TOTALS													
		Dry												
Total Apps	0		Miles	294.94	Acres	536.3	Gal	0.0	Gal	0.00	Gal	0.00	Feet	1,557,283

