WASTE MANAGEMENT PLAN

Valley View Farms

Kings County

Revision: R1
Date of Revision: June 18, 2010

Designated Person(s) Accountable For the Waste Management Plan:

OWNER/OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Dairy Owner

Signature: _____

Print: KEN WALKER

Date: 6-28-10

Dairy Operator

☒ Owner is also the Operator

Signature: _____

Print: _____

Date: _____

ENGINEERING CERTIFICATIONS

Section II Adequate Containment Capacity

I have reviewed Section II Adequate Containment Capacity and certify that this was prepared by me or under my responsible charge, as a registered Civil Engineer who is registered to practice in California pursuant to California law.

Signature: [signature]

Print: Adam K. Maskal

Date: June 22, 2010

REGISTERED PROFESSIONAL ENGINEER
ADAM K. MASKAL
No. 71405
Exp. 12/31/11
CIVIL
STATE OF CALIFORNIA

Section III Adequate Flood Protection

☐ N/A – Facility is outside a relevant flood zone.

I have reviewed Section III Adequate Flood Protection and certify that this was prepared by me or under my responsible charge, a registered Civil Engineer who is registered to practice in California pursuant to California law.

Signature: [signature]

Print: Todd Barnes

Date: 6-22-10

REGISTERED PROFESSIONAL ENGINEER
TODD LYNN BARNES
No. 43793
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

Limitations

Provost & Pritchard performs its services in a manner consistent with the standards of care and skill ordinarily exercised by members of the profession practicing under similar conditions in the geographic vicinity. This Waste Management Plan was prepared in accordance with generally accepted engineering practices which existed at the time the Waste Management Plan was written. Different professionals may reasonably adopt different approaches to similar circumstances. This Waste Management Plan may contain information provided to P&P by the dairyman or other consultants. P&P has not been asked to verify the validity of the data, and we have assumed it is accurate and correct in preparing this plan. Therefore, no warranty or guarantee is provided, expressed or implied.

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Inspection and Reporting Forms

Discharge Report Form
Problem Resolution Form
Routine Visual Inspection Form – Production Area
Significant Storm Event Inspection Form – Production Area
Routine Visual Inspection Form – Lagoons
Significant Storm Event Inspection Form – Lagoons
Mortality Management Practices
Routine Visual Inspection Form – Solid and Liquid Manure Application Equipment
Routine Visual Inspection Form – Surface Water Berm Inspections
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Extra Field Maps

Scope

The purpose of the Waste Management Plan (WMP) is to ensure that the production area of the dairy facility is designed, constructed, operated, and maintained so that dairy wastes generated at the dairy are managed in compliance with Waste Discharge Requirements General Order for Existing Milk Cow Dairies No. R5-2007-0035 in order to prevent adverse impacts to groundwater and surface water quality.

If there is any material change or proposed change in the character, location, or volume of the discharge, including any expansion of the facility or development of any treatment technology, a Report of Waste Discharge in accordance with the California Water Code Section 13260 shall be submitted **140 days prior to any changes**.

If there is a change in owner or operational control of the facility, the Central Valley Water Control Board shall be notified **60 days in advance**.

Coverage must be maintained under the General Order or any revision of the order until all manure, process wastewater, and animal waste impacted soil, including soil within the lagoons, is disposed of or utilized in a manner which does not pose a threat to surface water or groundwater quality or create a condition of nuisance. **At least 90 days before** desiring to terminate coverage under this Order, a closure plan that ensures protection of surface water and groundwater shall be submitted to the Executive Officer.

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Revision Record

Rev	Date	Item #	Section	General Description
New	06/19/08	1	All	Generation of new WMP for July 01, 2008 submittal
R1	06/18/10	1	I	Revision for July 01, 2010 submittal
		2	II	New section
		3	III	New section
		4	IV	New section
		5	VI	Revision for July 01, 2010 submittal

I. DAIRY FACILITY DESCRIPTION

A. Facility Location and Responsible Parties

Listed below is the location of the dairy facility and the responsible parties of this facility.

Facility Location:

Valley View Farms

Ex. 6 Personal Privacy (PP)

County: Kings

Ex. 6 Personal Privacy (PP)

Facility Number:

Basin Plan: Tulare Lake

Responsible Parties:

Owner(s):

John Knevelbaard

Ex. 6 Personal Privacy (PP)

Ken Walker

Ex. 6 Personal Privacy (PP)

Operator(s):

Ken Walker

Ex. 6 Personal Privacy (PP)

Contact Person:

Ken Walker

Ex. 6 Personal Privacy (PP)

Facility Email: knjwalk@sti.net

B. Herd Profile of Dairy

Listed in the table below is the current herd size, maximum herd size within the last 12 months, and the maximum mature herd allowed by the Report of Waste Discharge.

Table I-1 - Herd Profile

Breed of Herd: Holstein

Year Presented: 2009

Date of Present: Dec 30, 2009

	Present	Maximum	RWQCB Current Permit ID 2005 RWD	RWQCB Future Permit ID
Milking:	3,702	3,702	3,694	0
Dry:	872	872	582	0
Heifers 15-24m:	1,715	1,715	0	0
Heifers 7-14m:	1,372	1,372	0	0
Heifers 4-6m:	515	515	0	0
Heifers 0-3m:	517	517	0	0
Total Mature	4,574	4,574	4,276	0
Plus15% of Mature			4,917	
Total Replacements	4,119	4,119	0	0
Total Herd	8,693	8,693	4,276	0

C. Property Associated with the Dairy

The location of the property associated with this dairy is shown in **Figure I-1: Vicinity Map**. This map includes a 5 mile zone from the dairy and indicates if there is any property under the control of the Discharger within that zone where neither process wastewater nor manure will be applied. This does not include residential sites associated with the dairy or fields that during a cropping season or several seasons don't receive manure but could in the future if a different crop is rotated into that field. Seasonal usage will be identified within the annual reporting. If there is property that is not intended to receive manure including potential crop rotations, it is identified in **Section I-D. Dairy Property without Dairy Waste Applications**.

The property associated with this dairy is shown in **Existing Maps: Land Use Map**. This map also identifies all off-property domestic wells within 600 feet or all municipal supply wells within 1,500 feet of the production area or land application areas.

The fields for this facility are shown in **Existing Maps: Farm Field Use**. Each field map also illustrates the direction of irrigation flow across the fields, nearby surface waters, storm water discharge points (if any), tailwater and storm water drainage controls, subsurface drainage systems, irrigation supply wells, groundwater monitoring wells, sampling locations for discharges of storm water.

The fields map also contains the locations of irrigation and process wastewater conveyance structures, discharge points, discharge mixing points with irrigation water supplies, pumping facilities, flow meter locations, drainage ditches, canals, culverts, drainage control, and drainage easements.

A summary of the land application area information under the dairy's control is summarized in **Table I-2 – Land Application Area Information**.

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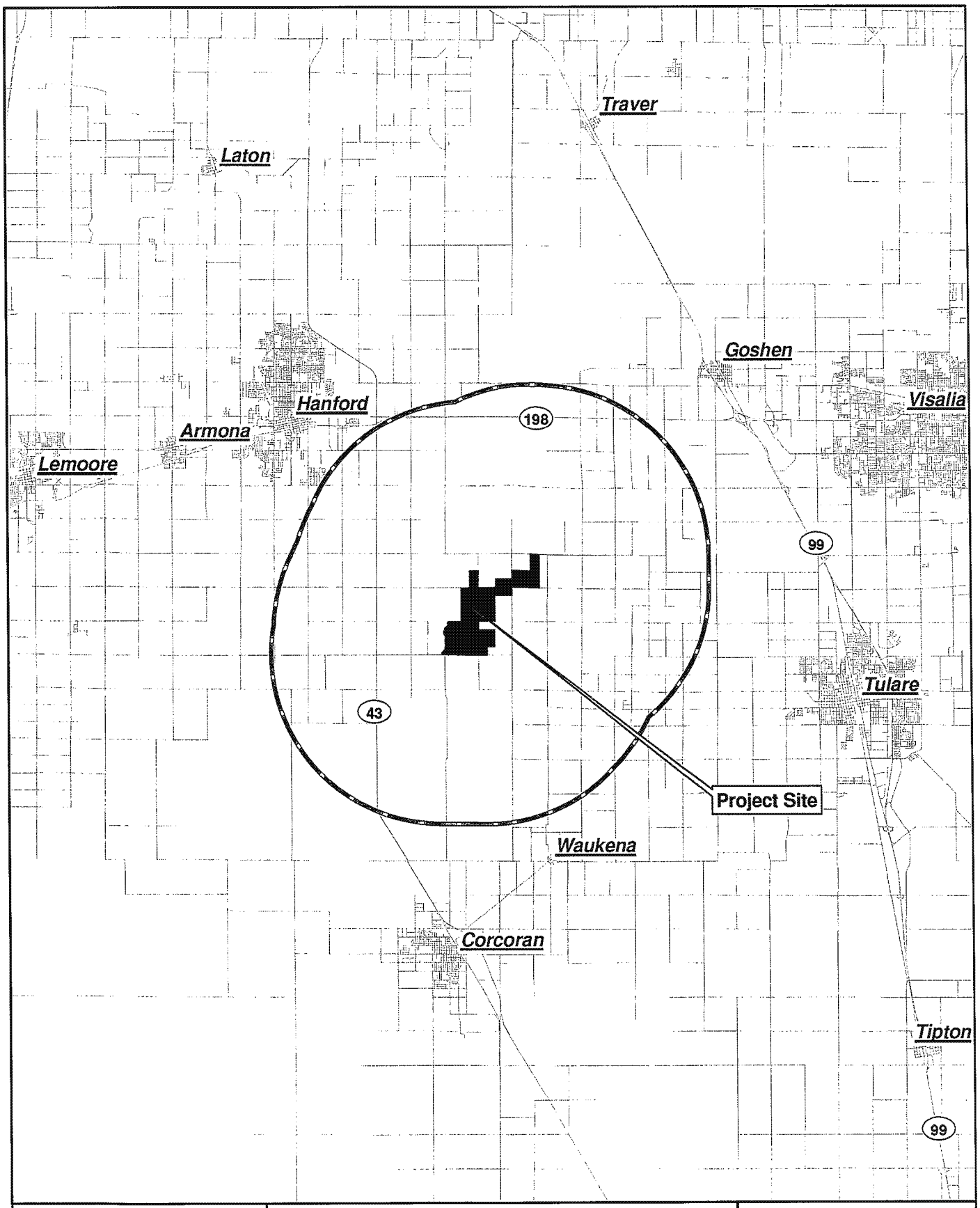

0 2 4 Miles

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Visalia, CA 93277-7055
(559) 636-1166

Legend

- Project Site
- 5-mile Buffer
- Controlled Property (if any) without Manure Application

Valley View Farms

Vicinity Map

Job # 3036-07V1

V:\Clients\Hilandes Larry 3311\3311 Triple H Dairy\2 13075 Ave 200 Tulare\ 3311-OnGoing GIS Map\2003-0617 Vicinity Map.mxd

Table I-2 - Land Application

Field ID	Acres	APN	Own/ Lease	Type of Crops Grown		Capable Of Receiving Manure Type
01A	60.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
01B	76.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
02	98.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
03	100.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
04	98.0	Ex. 6 Personal Privacy (PP)	Own Own	Corn Wheat	Oats Alfalfa	Both
05	10.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
06	75.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
07	52.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
08	77.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Solid

Type Of Manure: *Solid* = Solid manure only, *Liquid* = liquid manure only, *Both* = solid and liquid manure.

Table I-2 - Land Application

Field ID	Acres	APN	Own/ Lease	Type of Crops Grown		Capable Of Receiving Manure Type
09	40.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Solid
10	18.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Solid
11A	8.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Solid
11B	8.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Solid
12	39.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
13	35.0	028-070-018	Own	Corn Wheat	Oats Alfalfa	Both
14	60.0	Ex. 6 Personal Privacy (PP)	Own Own	Corn Wheat	Oats Alfalfa	Both
15	67.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
18	70.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Solid

Type Of Manure: *Solid* = Solid manure only, *Liquid* = liquid manure only, *Both* = solid and liquid manure.

Table I-2 - Land Application

Field ID	Acres	APN	Own/ Lease	Type of Crops Grown		Capable Of Receiving Manure Type
19A	60.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Solid
19B	31.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Solid
20	76.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
21	77.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
22	81.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
23	79.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
24	169.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both
25	80.0	Ex. 6 Personal Privacy (PP)	Own	Corn Wheat	Oats Alfalfa	Both

Type Of Manure: *Solid* = Solid manure only, *Liquid* = liquid manure only, *Both* = solid and liquid manure.

D. Dairy Property without Dairy Waste Applications

The **Vicinity Map** identifies (as applicable) any cropland within five miles that is under the control of the dairy owner or operator but is not used for dairy waste applications. A summary of the land application area information under the dairy's control that does not receive any manure is summarized in **Table I-3 - Property Without Manure Applications**.

Table I-3 - Property Without Manure Applications

APN	Acres	Crops Grown	Owner	Own / Lease	Irrigated Lands Waiver
N/A.					

E. Well Identifications

The Land Use and Farm Field Use maps in the attachments identify all associated water supply wells, ground water monitoring wells, and tile drain sumps. A summary of the wells are listed in **Table I-4 - Water Supply Wells.** Surface water supply from irrigation districts are listed in **Table I-5 - Surface Water Supply**. Groundwater monitoring wells are listed in **Table I-6 - Groundwater Monitoring Wells** if this facility has monitoring wells. Tile drain sumps are identified in **Table I-7 - Tile Drain Sumps** if this facility has a tile drain system on the associated property.

Table I-4 - Water Supply Wells

Dairy ID	Well Type	Status	APN
# 1	Ag	Active	Ex. 6 Personal Privacy (PP)
# 1-A	Ag	Active	
# 2	Ag	Active	
# 3	Ag	Active	
# 4	Ag	Active	
# 4 Domestic	Domestic	Active	
# 6 East	Ag	Active	
# 6 West	Ag	Active	
# 7	Ag	Active	
# 9	Ag	Active	
#11B	Ag	Active	
#12	Ag	Active	
#13 Domestic	Domestic	Active	
#14	Ag	Active	
#14 Domestic	Domestic	Active	
#18	Ag	Active	
#20	Ag	Active	
#21	Ag	Active	
#22	Ag	Active	
#23	Ag	Active	
#24 North	Ag	Active	
#24 South	Ag	Active	
#25	Ag	Active	
#26 Office	Domestic	Active	
#26 West	Domestic	Active	
#27 Dairy West	Barn Supply	Active	
#28 Dairy South	Barn Supply	Active	
#29	Ag	Active	
#30 Equipment Yard	Domestic	Active	

Dairy ID	Well Type	Status	APN
Inop Shop		InActive	Ex. 6 Personal Privacy (PP)

Table I-5 - Surface Water Supply

Dairy ID	Well Type	Status	APN
Lift # 7	Lift Pump	Active	Ex. 6 Personal Privacy (PP)
Lift #23	Lift Pump	Active	
Lift #24 North	Lift Pump	Active	
Lift #25	Lift Pump	Active	

Table I-6 - Groundwater Monitoring Wells

Dairy ID	Well Type	Status	APN
N/A			

Table I-7 - Tile Drain Sumps

Dairy ID	Status	APN	Transfer System / Destination
N/A			

F. Daily Process Wastewater Generated

1. Water Generation

Measurements were taken at the milk barn to determine the approximate amount of wastewater that is generated and sent to the lagoon on a daily basis.

A. For the typical dairy, the determination of water generated is performed in the following manner:

Measurements are recorded at the recovery tank (cistern or above ground tank) of the incoming water from the barn equipment and the exiting water going to the sprinkler and flush systems. Measurements are taken while the well water make-up to the recovery tank was off and while there was no overflow water leaving the tank. Calculations are performed using the quantity and duration of the sprinkler cycles and flushes and also the length of the milking day to determine the overall daily process wastewater generated by the milk barn.

Included into the above value determined, is wash water used for cleaning the milk tank(s) and pipeline that does not enter the recovery tank but is routed directly to the storage lagoon. These values are approximated based on the size of the CIP sink(s) and milk tank(s) and the number of wash cycles used in cleaning.

Also included into the daily generation value is an approximate barn hose wash down of the milking parlor following each milking which also is routed directly to the storage lagoon.

B. There are some facilities that are operated with different circumstances that are evaluated as required. In some cases, milk barns do not make use of a flush system or operate sprinklers. In some cases there is additional water included into the calculations accounting for a deck or trough flush (parallel/rotary barns) based on supply line size, pressure, number of cycles, and duration. In some cases there is also a separate hospital barn from the main milk barn.

This milk barn has a single cistern with two milking pits. The cistern reuses the equipment water for both sprinkling and flushing of the milk barn. There is also a separate hospital barn.

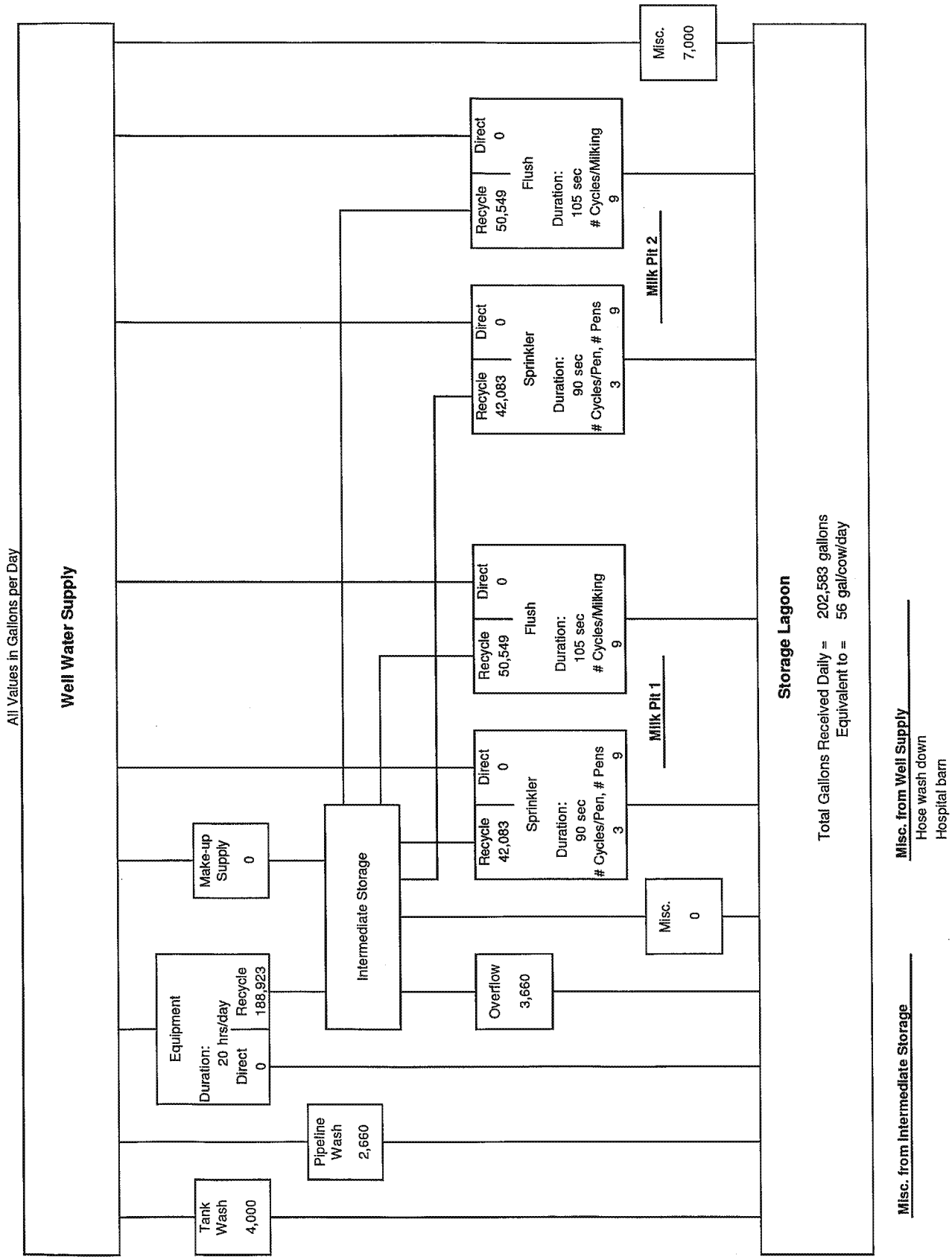
The amount of daily waste water generated by this milk barn was determined to be approximately: (see **Figure I-2 Barn Water Generation and Usage**)

202,583 Gallons/day

2. Precipitation

Process wastewater from precipitation onto the production area and the determination of the amount of runoff into the storage lagoon including the evaporation rate from the lagoon is determined in **Section II. Engineering Report for Adequate Containment Capacity**.

Figure I-2. Barn Water Generation and Usage
Milk Barn 1
1 Intermediate Storage : 2 Milk Pits



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II. Engineering Report for Adequate Containment Capacity

A. Determination of Necessary Capacity

1. Herd Profile and Housing Type

The reported herd numbers along with the predominant type of housing for that age group was used as the basis for the evaluation of the manure loading of the lagoon. **Figure II-3 Herd Profile and Manure Generation, Section A** shows both the annual average and maximum number of animals in each age group.

Excretion values were obtained from *ASABE 384.2 March 2005 Manure Production and Characteristics.* Milk cow values were determined using the equations identified in Section 5.0. Dry cow and heifer values were determined using Table 1b – Section 3 and were linearly interpolated on a by-month age basis and then reassigned into the age categories of the RWQCB. Calf excretion factors that were not identified in ASABE 384.2 were assumed based on personal communication with Dr. Katherine Knowlton of Virginia Tech.

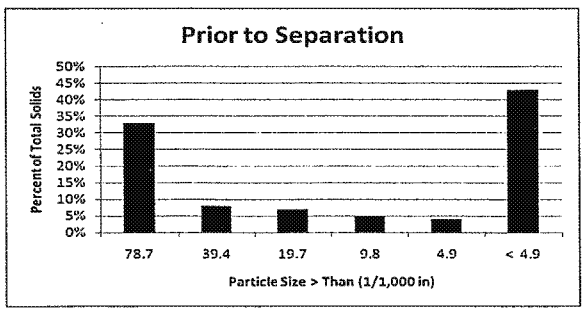
Hours per day spent on flush is based on *Air Emissions Mitigation Techniques and Technologies for California Dairies – Final Report, UC Davis, 2007* and the corral housing type reported. Hours per day spent on flush is further evaluated for two more potential flushing alternatives. During the winter months, nominally December through February, animals in freestalls are potentially confined and not allowed into the exercise areas, which results in 24 hours a day spent on flush. During summer months, nominally June through August, flushed corrals can potentially suspend flushing operations and be dry scraped instead. This results in no time on flush per day for dry cows and heifers. Milk cow time on flush would be limited to hours of time in the milk barn. **Figure II-3 Herd Profile and Manure Generation, Sections D through G** presents values of excreted material if these options are selected under the headings of Winter and Limited.

2. Manure Separation

Manure separation is categorized as 3 types of separators - settling basin, mechanical separator, or weeping wall. A combination of mechanical separator and settling basin can also occur.

Typical manure particle size gradation[1] prior to solids separation is indicated in **Figure II-1** below. Separation efficiencies vary by device, and by constituent for a given device. Site specific separation efficiencies are beyond the scope of this Waste Management Plan. However, general assumptions based on recent research and project experience are included in the livestock waste volume diverted from the lagoon system.

Figure II-1. Typical manure particle gradation prior to separation.



[1] Per Managing Dairy Manure in the Central Valley of California by the University of California Division of Agriculture and Natural Resources Committee of Experts on Dairy Manure Management, Revised June 2005, page 25.

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The volumetric separation efficiencies listed in **Figure II-2** are assumed for purposes of calculating livestock waste volume for storage considerations in the absence of site specific information based on previous published research and previous project experience.

Figure II-2. Volumetric separation efficiencies by separation system type.

Solids Separation System	Volumetric Separation Efficiency (%)
Mechanical Screen	30%
Settling Basin	30%
Screen and Basin in Series	40%
Weeping Wall[1]	60%

The type of manure separation for this facility is presented in **Figure II-3 Herd Profile and Manure Generation, Section C.** Separation efficiency is applied to the estimated livestock waste volume presented in **Figure II-3 Herd Profile and Manure Generation, Section D.**

3. Precipitation, Evaporation, and Runoff

Figure II-4: Precipitation Map identifies the location of the facility site and the nearest weather station. The background of this map identifies the estimated 25yr/24hr storm precipitation in tenths of an inch. **Figure II-5: Evapo-Transpiration (ETo) Zones Map** identifies the evaporation zone that applies to this facility. ETo factors are corrected to ETpan to more closely approximate a liquid surface evaporation. Runoff coefficients were obtained from *NRCS AWMFH (NEH-651) Feedlot Runoff Coefficients* for both surfaced and un-surfaced areas for this site.

Surfaced and un-surfaced areas of this facility were determined based on CAD drawings of the site (ref **Existing Maps: Site Plan**) and used to estimate the amount of precipitation (rainfall and evaporation) that will enter into the storage lagoon. This information is presented in **Figure II-6 Weather Data and Surface Areas**.

4. Lagoons

The outer dimensions and side slopes were measured for each lagoon. Depth to usable bottom was also measured. Full floor depths were assumed based on measured sludge levels in the lagoons. Sizes and volumes are presented in **Figure II-7 Lagoon Sizing and Usage**.

5. Land Application Events Evaluation to Storage Capacity

The determination of the necessary storage volume is to reflect:

> (From Attachment B, Item II A.1.) *The maximum period of time, as defined in the Nutrient Management Plan (item III.B of Attachment C), anticipated between land application events (storage period), which shall consider application of process wastewater or manure to the land application area as allowed by Waste Discharge Requirements General Order No. R5-2007-0035 using proper timing and rate of applications;*

The referenced paragraph in Attachment C addresses the timing of applications for each crop in each land application area:

[1] Derived from Meyers, D., et. Al., "Evaluation of Weeping Wall Efficiency of Solid Liquid Separation," American Society of Agricultural Engineers ISSN 0883-8542, Published in 2004.

(From Attachment C, Item III B.) *The timing of applications for each crop in each land application area and the basis for the timing (Technical Standard V.C below). The maximum period of time anticipated between land application events (storage period) based on proper timing and compliance with Technical Standard V.C. below. This will be used in the Waste Management Plan (item II.A. of Attachment B) to determine storage capacity needs.*

To perform the storage evaluation, the beginning and ending dates of the storage period is provided by the agronomist preparing the dairy's Nutrient Management Plan (NMP). The dates provided are assigned into weekly intervals for the storage evaluation. The evaluation year was preset to start on October 01 which is near the typical transition period between the harvests of spring planted crops and the preparation of fall plantings. The start of the actual period under evaluation is reflected by the reduction of the lagoon water level to the top of the unusable volume. The water balance includes considerations of:

- Manure, process wastewater, and other wastes
- Precipitation and evaporation
- 25yr/24hr storm event
- Minimum freeboard and residual solids

6. Results of Evaluation

Figure II-8 Storage Pond Water Balance presents the planned water level of the lagoon storage through the storage period. The graph also identifies the volume limits of the storage capacity - the unusable portion containing sludge on the bottom, the 25yr/24 hour reserve storm level through the wet season, and the maximum fill to the minimum freeboard level.

Based on the information collected of the dairy site and the planned storage period of the Nutrient Budget (**Figure II-9 NMP Irrigation Plan**) the wastewater storage capacity of this facility is adequate.

Figure II-3. Herd Profile and Manure Generation

A. Herd Size and Housing Type (Displayed as Average, 12 Month Maximum for each housing type)

Age Group	Freestall No Exercise		Freestall w/ Exercise Area		Flushed Corrals/Hutches		Scraped Corrals/Hutches	
Milking					3,636	3,702		
Dry					792	872		
Heifers (15-24m)					1,660	1,715		
Heifers (7-14m)							1,328	1,372
Calves (4-6m)							498	515
Hutched Calves (0-3m)					500	517		

B. Verification of Mature Herd Size

October 2005 Mature Herd	4,276 head
Plus 15%	4,917 head
12m Maximum Mature Herd	4,574 head

This herd size is within the allowable limits.

C. Miscellaneous Information

Milk Production (lbs/day):	70.0	
Number of Milkings/Day:	2	
Type of Breed:	Holstein	
Manure Separation:	No Separation	
% Removal (by Total Soilds):	0%	
Freestall Bedding Type:	None	
F/S Confinement during Winter:	No	(Freestall cows not allowed into exercise areas.)
Reduced Flushing during Summer:	No	(Scraping selected lanes instead of flushing.)

D. Volume of Manure Generated per Day (ft^3)

	Full Flush/day			Winter Flush/day	Limited Flush/day
Excreted Volume	12,250				
Additional Volume from Bedding					
Total Volume Captured in Flush	4,879		39.8%		
In Flush After Separation		4,879			
Separated Solids[1]					
Separated Solids After Drying[1]					
Total Volume Captured in Corrals	7,371		60.2%		
In Corrals After Drying		5,160			

Figure II-3. Herd Profile and Manure Generation - (cont)

E. Potential Sludge Accumulation Volume per Day (ft^3)

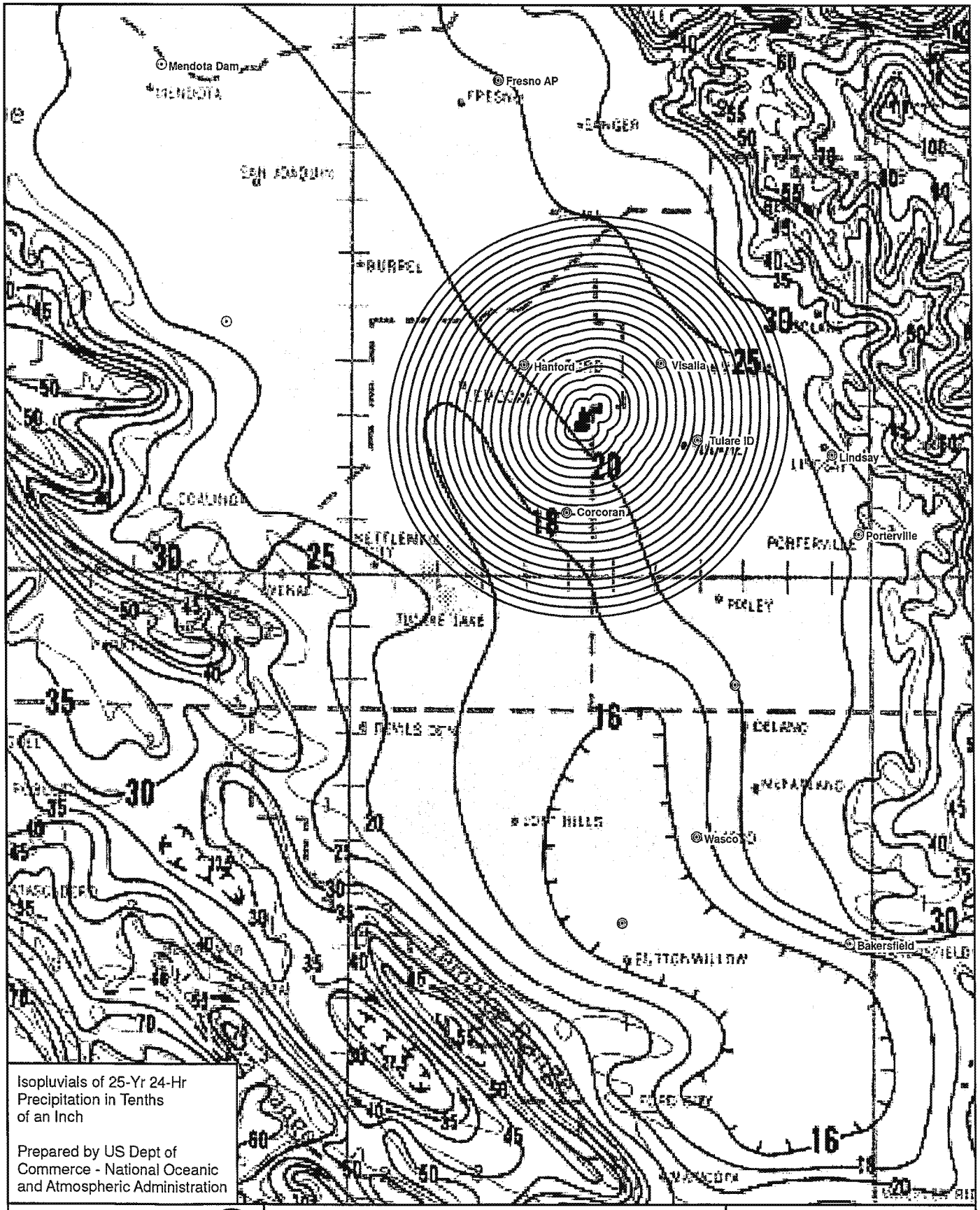
	Full Flush/day	Winter Flush/day	Limited Flush/day
Total Manure Volume Entering Lagoon	4,879		
Potential to Remain as Sludge[2]	2,440		

Notes:

1 Actual volume of separated solids will vary depending on the amount of water retained in separated manure and drying conditions.

2 Potential sludge accumulation estimated conservatively and can vary depending on quantity of non-digestible solids entering lagoon.

3 The above values determined are nominal. Sampling identified in WMP, NMP, and MRP will obtain actual operating conditions.



0 7 14 Miles

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(559) 636-1166

Legend

Project Site

Weather Stations

One Mile Buffers

Valley View Farms

Precipitation Map

Job # 3036-07V1

Reference EvapoTranspiration (ETo) Zones

1 COASTAL PLAINS HEAVY FOG BELT
Lowest ETo in California. Charaterized by dense fog.

2 COASTAL MIXED FOG AREA
Less fog and higher ETo than zone 1.

3 COASTAL VALLEYS AND PLAINS AND NORTH COAST MOUNTAINS
More sunlight than zone 2.

4 SOUTH COAST INLAND PLAINS AND MOUNTAINS NORTH OF SAN FRANCISCO
More sunlight and higher summer ETo than zone 3.

5 NORTHERN INLAND VALLEYS
Valleys north of San Francisco.

6 UPLAND CENTRAL COAST AND LOS ANGELES BASIN
Higher elevation coastal areas.

7 NORTHEASTERN PLAINS

8 INLAND SAN FRANCISCO BAY AREA
Inland area near San Francisco with some marine influence.

9 SOUTH COAST MARINE TO DESERT TRANSITION
Inland area between marine and desert climates.

10 NORTH CENTRAL PLATEAU & CENTRAL COAST RANGE
Cool, high elevation areas with strong summer sunlight. This zone has limited climate data and the zones selection is somewhat subjective.

11 CENTRAL SIERRA NEVADA
Sierra Nevada Mountain valleys east of Sacramento with some influence form the delta breeze in summer.

12 EAST SIDE SACRAMENTO-SAN JOAQUIN VALLEY
Low winter and high summer ETo with slightly lower ETo than zone 14.

13 NORTHERN SIERRA NEVADA
Northern Sierra Nevada mountain valleys with less marine influence than zone 11.

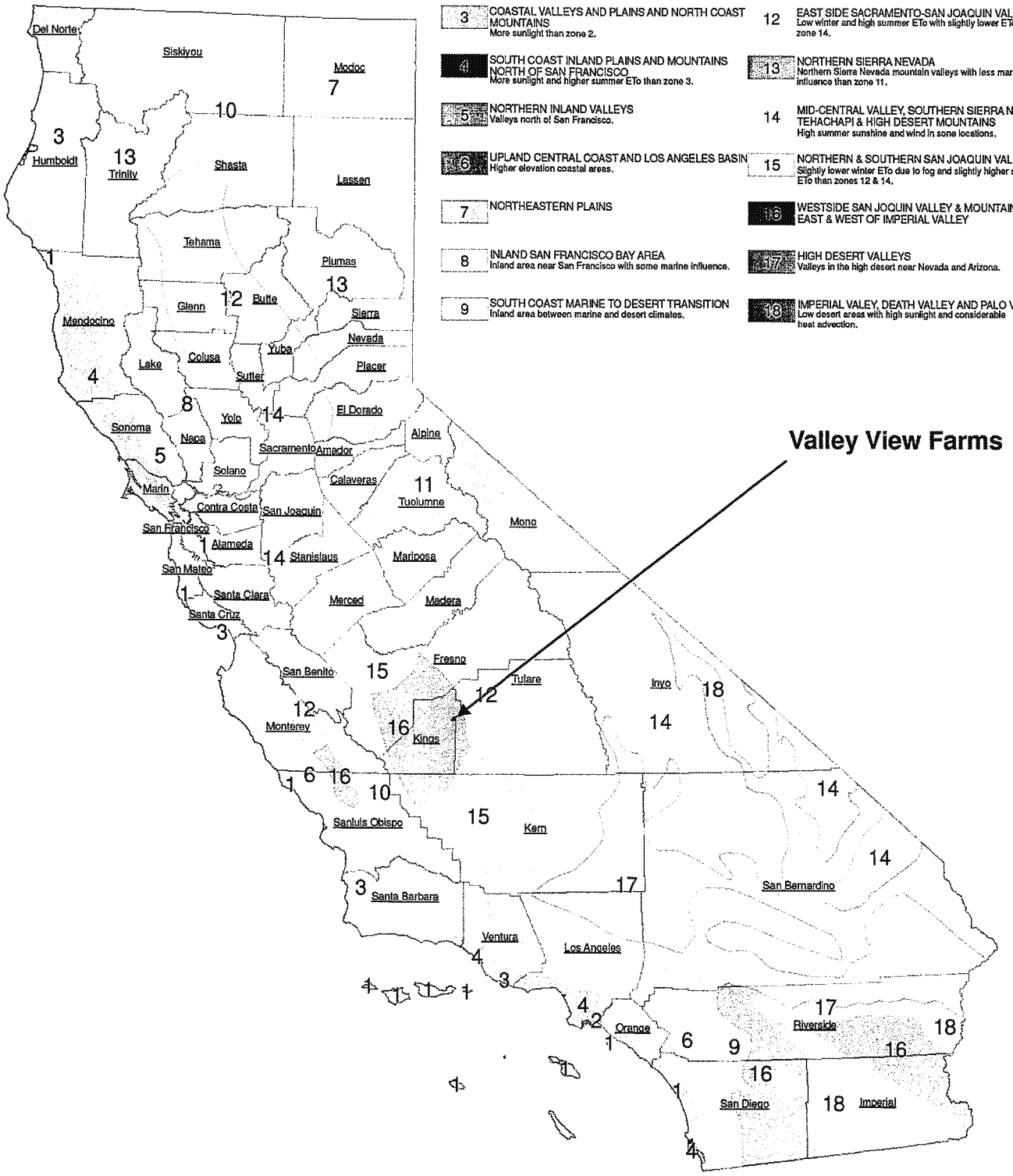
14 MID-CENTRAL VALLEY, SOUTHERN SIERRA NEVADA, TEHACHAPI & HIGH DESERT MOUNTAINS
High summer sunshine and wind in sone locations.

15 NORTHERN & SOUTHERN SAN JOAQUIN VALLEY
Slightly lower winter ETo due to fog and slightly higher summer ETo than zones 12 & 14.

16 WESTSIDE SAN JOQUIN VALLEY & MOUNTAINS EAST & WEST OF IMPERIAL VALLEY

17 HIGH DESERT VALLEYS
Valleys in the high desert near Nevada and Arizona.

18 IMPERIAL VALEY, DEATH VALLEY AND PALO VERDE
Low desert areas with high sunlight and considerable heat advection.



0 25 50 75 100 Miles

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Source: California Irrigation Management Information System (CIMIS)

Developed as a Joint Project by

Department of Land, Air and Water Resources - University of California, Davis and
Water Use Efficiency Office, California Department of Water Resources

Valley View Farms

EvapoTranspiration (ETo) Zones Map

Job # 3036-07V1

V:\Clients\Knevelboard John\3036\3036 Valley View Farms\15673 5 1-2 Ave Hanford 3036 OnGoing\GIS\Map\2009-0610 ETo Zone Map.mxd

Figure II-6 Weather Data and Surface Areas

A. Precipitation, Evaporation, and Runoff Coefficients

Precipitation Station: Hanford
CIMIS Zone: 16
25yr/24hr Storm (in): 2.1

Precipitation Factor: 150% of normal rainfall
A Contingency Plan is not required.

Month	150% of Normal Rainfall (in.)	Evaporation ETpan (in.)	Runoff Coefficients	
			Unsurfaced (%)	Surfaced (%)
July	0.02	13.29	10%	23%
August	0.02	11.96	10%	13%
September	0.38	9.00	12%	47%
October	0.66	6.20	21%	41%
November	1.23	3.43	12%	47%
December	1.59	2.21	20%	46%
January	2.49	2.21	14%	46%
February	2.40	3.60	20%	47%
March	2.64	5.76	15%	35%
April	0.95	8.14	10%	42%
May	0.39	11.07	10%	31%
June	0.12	12.43	10%	32%

B. Surface Areas

Areas	Ft^2	Acres
Unsurfaced	5,567,590	127.8
Surfaced (sum of below)	1,006,650	23.1
Roofed	555,790	12.8
Concrete	450,860	10.4
Settling	--	--
Treatment	--	--
Direct Rainfall		
Treatment	--	--
Storage	569,610	13.1
Evaporation		
Treatment	--	--
Storage	426,920	9.8
Total	7,143,840	164.0

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Figure II-7 Lagoon Sizing

A. Settling Basins (not included as storage volume)

Quantity	Earthen Length (ft)	Earthen Width (ft)	Total Area (ft^2)

B. Anaerobic Treatment Lagoon (not included as storage volume)

Pond ID	Earthen Length (ft)	Earthen Width (ft)	Depth (ft)	Slope (H:V)

Covered or Uncovered	No Treatment
Freeboard Level (feet from surface)	-- ft
Treatment Volume	-- ft^3

C. Storage Ponds (used for storage volume)

Pond ID	Earthen Length (ft)	Earthen Width (ft)	Earthen Depth (ft)	Slope (H:V)
Storage 1	1,478	130	25.0	1.5
Storage 2	1,640	220	25.0	2.0
Storage 3	505	33	8.5	1.0

Pond ID	Freeboard Level (ft from rim)	25yr/24hr Level (ft from rim)	Unusable Level (ft from rim)
Storage 1	1.0	3.4	20.0
Storage 2	1.0	3.4	20.0
Storage 3	1.0	1.0	7.5

D. Total Pond Storage

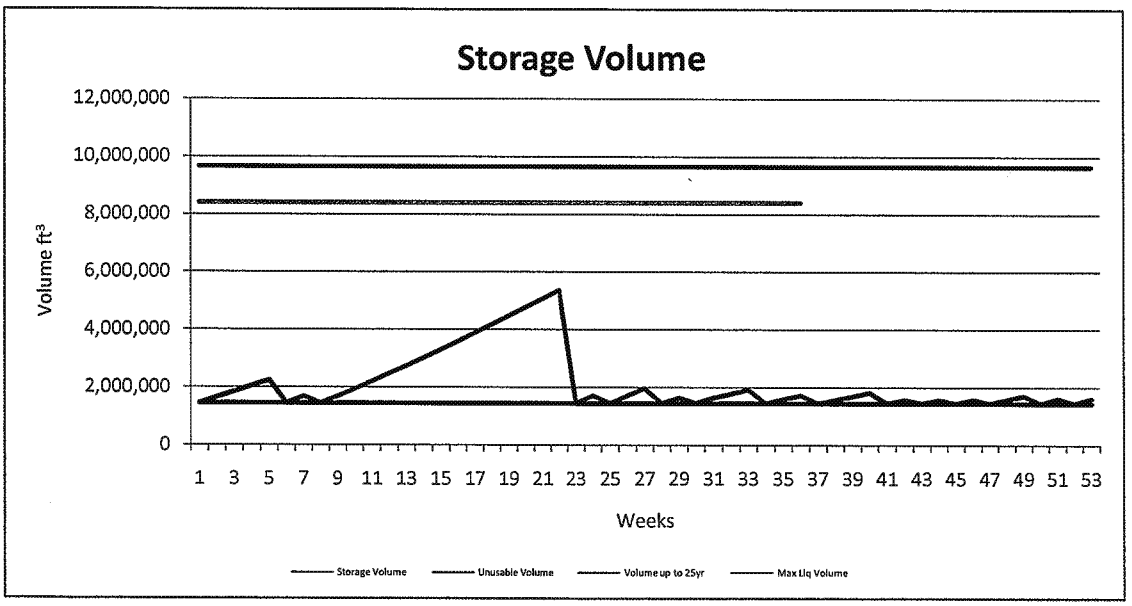
Type	Volume ft^3	Percent of Total Volume
Earthen	10,225,000	106%
Total Liquid	9,662,000	100%
25yr/24hr	1,252,000	13%
Useable	6,953,000	72%
Unusable	1,457,000	15%

Figure II-8 Storage Pond Water Balance

A. Volumes Sent to Storage

Type	Volume
Barn Water Generation	189,570 ft^3/wk
Fresh Corral Flush	0 ft^3/wk
Manure Loading	(see Fig. II-1D)
Rainfall Directly onto Lagoons	(varies through period)
Runoff from Surfaces	(varies through period)
Evaporation	(varies through period)
25yr/24hr Storm Reserve	1,252,000 ft^3

B. Planned Storage Pond Volume



The graph depicts the planned storage volume through the storage period. Time interval is by week starting with October as week 1.

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B. Proposed Modifications or Improvements

Please see the results of the containment capacity evaluation in **Section II. Engineering Report for Adequate Containment Capacity, A. Determination of Necessary Capacity, 6. Results of Evaluation** (above).

The storage capacity is determined to be adequate for this facility.

C. Contingency Plan

Rainfall calculations were performed using normal rainfall times a factor of 1.5 in lieu of preparing a contingency plan for higher than normal precipitation years. **(See Figure II-6 - Weather Data and Surface Areas, Section A.)**

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III. Engineering Report for Adequate Flood Protection

A. Determination of Flood Protection

An engineering report shall be prepared for dairy sites that are inside an established 100-year flood zone. The engineering report shall evaluate the impact of flooding, evaluate existing protection, and determine if any modifications or improvements are required.

Figure III-1: FEMA Flood Zones Map identifies that portions of this facility lie within an established 100-year flood zone.

B. Flood Evaluation

1. Introduction

This engineering report has been prepared for this dairy site to evaluate the impact of flooding, evaluate existing protection, and determine if any modifications or improvements are required per the requirements of the Waste Discharge Requirements *General Order No. R5-2007-0035, Attachment B, Section III, Items A through C.*

The dairy is an existing dairy in Kings County, with the dairy facility encompassing approximately 157 acres.

Ex. 6 Personal Privacy (PP)

Ex. 6 Personal Privacy (PP)

FIRM Panel

Therefore, the dairy facility is entirely within the FEMA Flood Zone A, an area subject to a 100-year flood. The map does not indicate base flood elevations.

During the development of the FEMA FIRM flood zone boundaries, areas having a low development potential or minimal flood hazard are studied using approximate methods. These areas are shown on the FEMA FIRM maps as Zone "A" areas, and have undefined base flood elevation. FEMA's "Managing Floodplain Development in Approximate Zone A Areas – A Guide for Obtaining and Developing Base (100-Year) Flood Elevations" gives guidance on establishing the base flood elevations in Zone "A" areas. The methods outlined in this manual were used to establish water surface elevations (WSEL) at the dairy site.

Ex. 6 Personal Privacy (PP)

0 2,000 4,000 Feet

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Legend

Photograph - Air Express, 2008

Production Area
Project Site

A - 100 yr - elevation not determined
AE - 100 yr - with base elevation
X - outside 500 yr

Valley View Farms

FIRM Panels 06031C0225C, 06031C0375C)

Job #3036-07V1

Peak Flood Flows

The areas subjected to flooding shown on the FEMA flood map, in the area of the facility, are largely due to the over topping of Cross Creek. Peak discharges from Cross Creek are the result of inflows from the St. Johns River, Mill Creek, and Cottonwood Creek (**see Attachment A**). Flood flows in Cross Creek originate from four sources: Lake Kaweah, Dry Creek, Sand Creek, and Cottonwood Creek. A portion of the flood flows from Dry Creek and Lake Kaweah make their way into the St. Johns River and Mill Creek. Sand Creek feeds into Cottonwood Creek west of Hwy 63. Cottonwood Creek combines with the St. Johns River east of Hwy 99 to form Cross Creek. Mill Creek connects to Cross Creek a few miles north of the dairy site. Cross Creek conveys flood flows south to the Tulare Lake Basin.

The maximum channel capacities of Cottonwood Creek, St. Johns River, and Mill Creek are 1,500 cfs, 3,500 cfs, and 350 cfs respectively. The maximum peak stream flow near the dairy site for Cross Creek would be the sum of the maximum channel capacities of three contributing creeks. This method conservatively assumes that the peak flows in each of the three upstream channels coincide at the same time and make their way to the dairy site unaltered. Summing the maximum channel capacities of the three creeks yields a peak stream flow for Cross Creek of 5,350 cfs. To account for overland flow and increases in hydraulic head due to ponding behind road crossings, a 120% peaking factor was multiplied to Cross Creek's peak stream flow. Based upon coincidence of maximum channel flows upstream of Cross Creek and a 120% peaking factor, a 100-year peak stream flow of 6,420 cfs will be used for the analysis within this report.

2. Flood Plain Analysis

A topographical survey (**see Attachment B**) of the dairy perimeter, adjacent farm land, local county roads, and 8000 ft of Cross Creek adjacent to the dairy site was conducted for this flood study. A Digital Train Model (DTM) based upon the survey data was generated and twenty two cross-sections (**see Attachment C**) along Cross Creek were evaluated. Cross-sections 1 through 6 pertain to the evaluation of this dairy site. A 100-year peak stream flow of 6,420 cfs at the dairy site was used for WSEL calculations. Manning's values for Cross Creek and the adjacent flood plain are listed in Table III-1.

Table III-1: HEC-RAS Manning's Value

Mannings Value (n)		
Main Channel Cross Creek	Flood Plain Row Corps	Flood Plain Orchard
0.045	0.04	0.06

The US Army Corps of Engineers HEC-RAS computer program (**see Attachment D, E, and F**) was used to calculate water surface elevations (WSEL) for a 100-year peak stream flow of 6,420 cfs. Analysis results are presented in Table III-2 and are as follows:

Table III-2: HEC-RAS WSEL Results

Dairy Flood Analysis (Flood Flow 6,420 cfs)							
HEC-RAS Cross Section	Calculated Water Surface Elevation (ft)	Elevation of Protective Barrier (ft)	Elevation of Protective Barrier Above WSEL (ft)	HEC-RAS Cross Section	Calculated Water Surface Elevation (ft)	Elevation of Protective Barrier (ft)	Elevation of Protective Barrier Above WSEL (ft)
1	225.22	229.05	3.83	12	227.92	N/A	N/A
2	225.56	229.21	3.65	13	228.14	N/A	N/A
3	226.19	229.54	3.35	14	228.70	N/A	N/A
4	226.56	229.57	3.01	15	229.50	N/A	N/A
5	226.97	229.43	2.46	16	229.72	N/A	N/A
6	227.21	229.49	2.28	17	231.16	N/A	N/A
7	227.45	N/A	N/A	18	231.37	N/A	N/A
8	227.55	N/A	N/A	19	231.68	N/A	N/A
9	227.63	N/A	N/A	20	231.90	N/A	N/A
10	227.67	N/A	N/A	21	232.09	N/A	N/A
11	227.75	N/A	N/A	22	232.02	N/A	N/A

North of Jackson Avenue, low spots along the top of the east bank of the main channel can cause flooding outside of Cross Creek. Flooding in this area is calculated to be minor and only affects the adjacent farm land. Jackson Avenue is elevated above adjacent grade and can prevent overland flooding north of Jackson Avenue from continuing south. Overland flood flows north of Jackson Avenue would eventually make their way back into Cross Creek and pass under Jackson Avenue. North and south of Jackson Avenue, 5th Avenue and 5 ½ Avenue can act as a protective barrier in preventing overland flood flows from continuing east. The East Branch of Lakeside Ditch, along the west edge of Cross Creek, can prevent flooding to the west. South of Jackson Avenue, Cross Creek has adequate capacity to carry a 100-year peak stream flood flow of 6,420 cfs.

3. Conclusions

The calculated WSEL's between cross-sections 1 and 6 caused by a 100-year peak stream flow of 6,420 cfs adjacent to the dairy site range from 225.22' to 227.21' (USGS NAVD 88). The survey elevations of the protective barrier (5 ½ Avenue) range from 229.05' to 229.57' (USGS NAVD 88). Calculated WSEL's range from 2.28' to 3.83' below the crown of the protective barrier. Based upon the analysis within this report, the existing dairy is adequately protected from a 100-year peak stream flow of 6,420 cfs.

4. Construction Recommendations

No additional construction is required.

5. Maintenance and Inspection

No additional maintenance and inspection required.

6. Limitations

Provost & Pritchard Consulting Group (P&P) performs its services in a manner consistent with the standards of care and skill ordinarily exercised by members of the profession practicing under similar conditions in the geographic vicinity. This Flood Study was prepared in accordance with

generally accepted engineering practices which existed at the time the Flood Study was written. Different professionals may reasonably adopt different approaches to similar circumstances. This Flood Study may contain information provided to P&P by the County and/or local water districts in which the flood study was conducted. P&P has not been asked to verify the validity of the data, and we have assumed it is accurate and correct in preparing this plan. Therefore, no warranty or guarantee is provided, expressed or implied.

References

1) Federal Emergency Management Agency (April 1995). Managing Floodplain Development in Approximate Zone A Areas

Enclosures

Attachment A: Flood Routing

Attachment B: Survey Points

Attachment C: Existing Contours

Attachment D: HEC-RAS Results

Attachment E: HEC-RAS Profile and Cross Sections

Attachment F: HEC-RAS Data Input

Attachment A
Flood Routing

Attachment D

HEC-RAS Results

HEC-RAS Plan: Plan 01 River: Cross Creek Reach: Cross Creek Profile: 6420 cfs

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Cross Creek	22	6420 cfs	6420.00	216.41	232.02		232.41	0.001963	5.37	1952.64	1585.51	0.35
Cross Creek	21	6420 cfs	6420.00	215.70	232.09		232.23	0.000189	2.92	2495.55	2188.13	0.24
Cross Creek	20	6420 cfs	6420.00	214.99	231.90		232.12	0.001016	3.84	1910.81	2022.82	0.25
Cross Creek	19	6420 cfs	6420.00	214.70	231.68		231.88	0.000865	3.58	1843.26	1097.90	0.24
Cross Creek	18	6420 cfs	6420.00	214.88	231.37		231.62	0.001277	3.99	1610.89	254.88	0.28
Cross Creek	17	6420 cfs	6420.00	215.07	231.16		231.31	0.000955	3.13	2050.47	376.58	0.24
Cross Creek	16	6420 cfs	6420.00	214.83	229.72		230.63	0.003239	7.63	841.73	97.78	0.46
Cross Creek	15	6420 cfs	6420.00	214.79	229.50		230.22	0.002629	6.80	943.53	112.87	0.41
Cross Creek	14	6420 cfs	6420.00	214.65	228.70		229.12	0.001617	5.22	1230.17	155.00	0.33
Cross Creek	13	6420 cfs	6420.00	214.20	228.14		228.42	0.001082	4.25	1511.60	193.24	0.27
Cross Creek	12	6420 cfs	6420.00	213.98	227.92		228.16	0.000933	3.95	1625.88	207.39	0.25
Cross Creek	11	6420 cfs	6420.00	213.29	227.75		227.94	0.000708	3.46	1855.16	232.40	0.22
Cross Creek	10	6420 cfs	6420.00	212.60	227.67		227.78	0.000423	2.71	2366.79	291.64	0.17
Cross Creek	9	6420 cfs	6420.00	212.13	227.63		227.69	0.000221	2.02	3180.67	378.69	0.12
Cross Creek	8	6420 cfs	6420.00	212.61	227.55		227.63	0.000300	2.22	2897.26	378.96	0.14
Cross Creek	7	6420 cfs	6420.00	213.00	227.45		227.54	0.000378	2.44	2631.93	354.22	0.16
Cross Creek	6	6420 cfs	6420.00	213.39	227.21		227.40	0.000792	3.49	1837.87	250.62	0.23
Cross Creek	5	6420 cfs	6420.00	213.12	226.97		227.19	0.000892	3.73	1720.90	232.17	0.24
Cross Creek	4	6420 cfs	6420.00	212.11	226.56		226.76	0.000805	3.55	1806.31	242.60	0.23
Cross Creek	3	6420 cfs	6420.00	211.10	226.19		226.39	0.000688	3.55	1810.59	216.10	0.22
Cross Creek	2	6420 cfs	6420.00	213.12	225.56		225.88	0.001524	4.56	1408.47	210.24	0.31
Cross Creek	1	6420 cfs	6420.00	210.32	225.22	217.72	225.38	0.000601	3.19	2010.47	254.24	0.20

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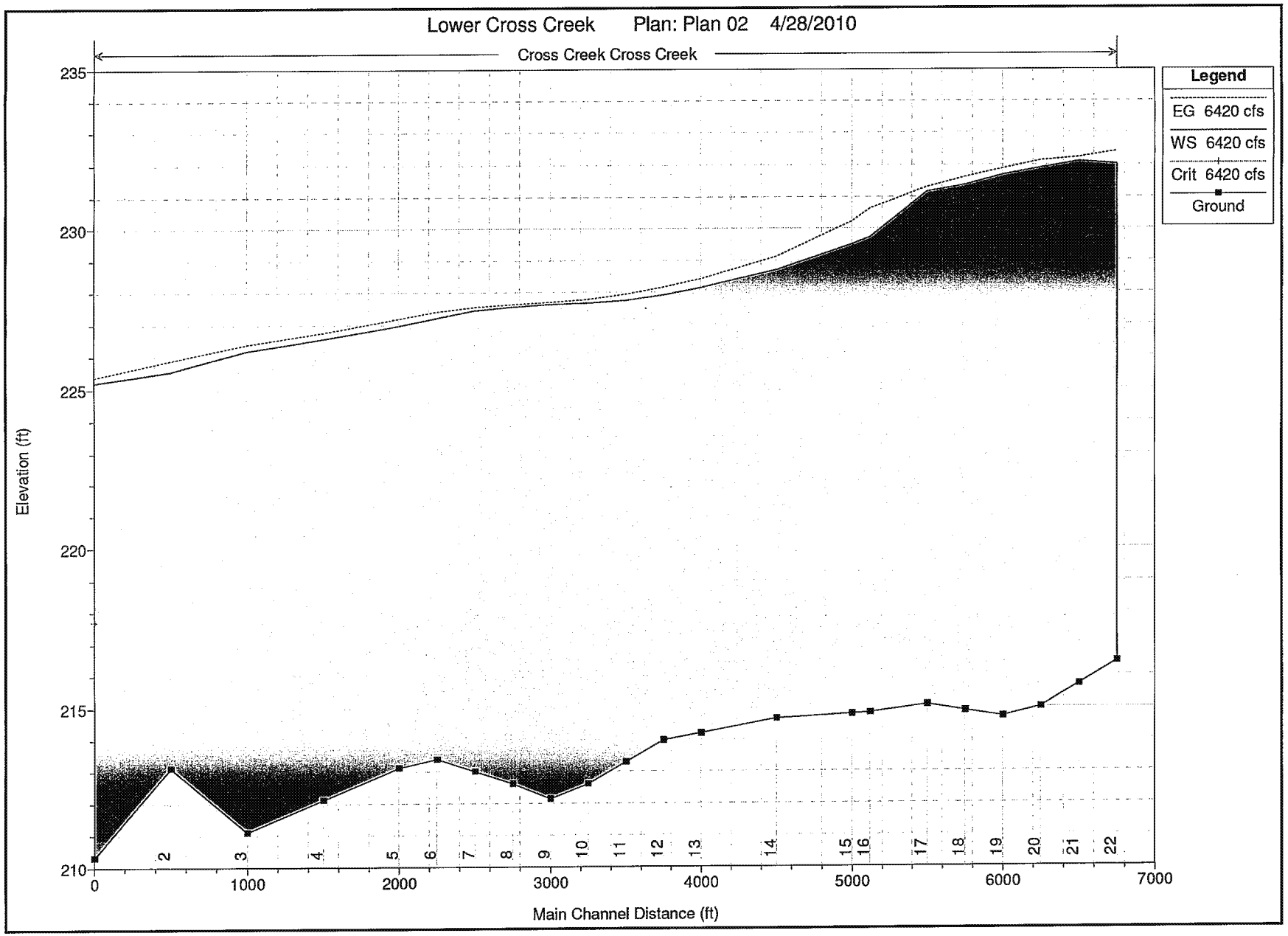
Attachment E

HEC-RAS Profiles and Cross Sections



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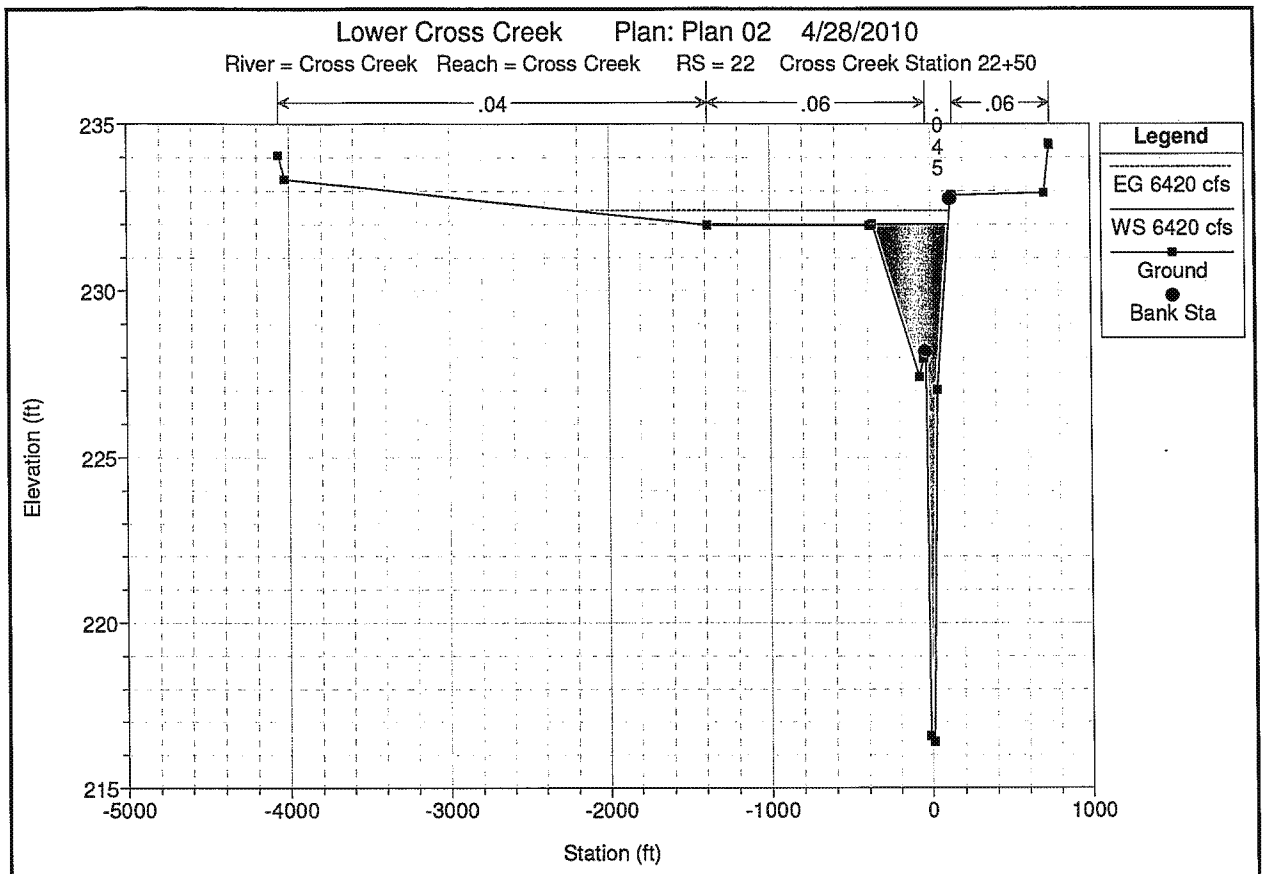
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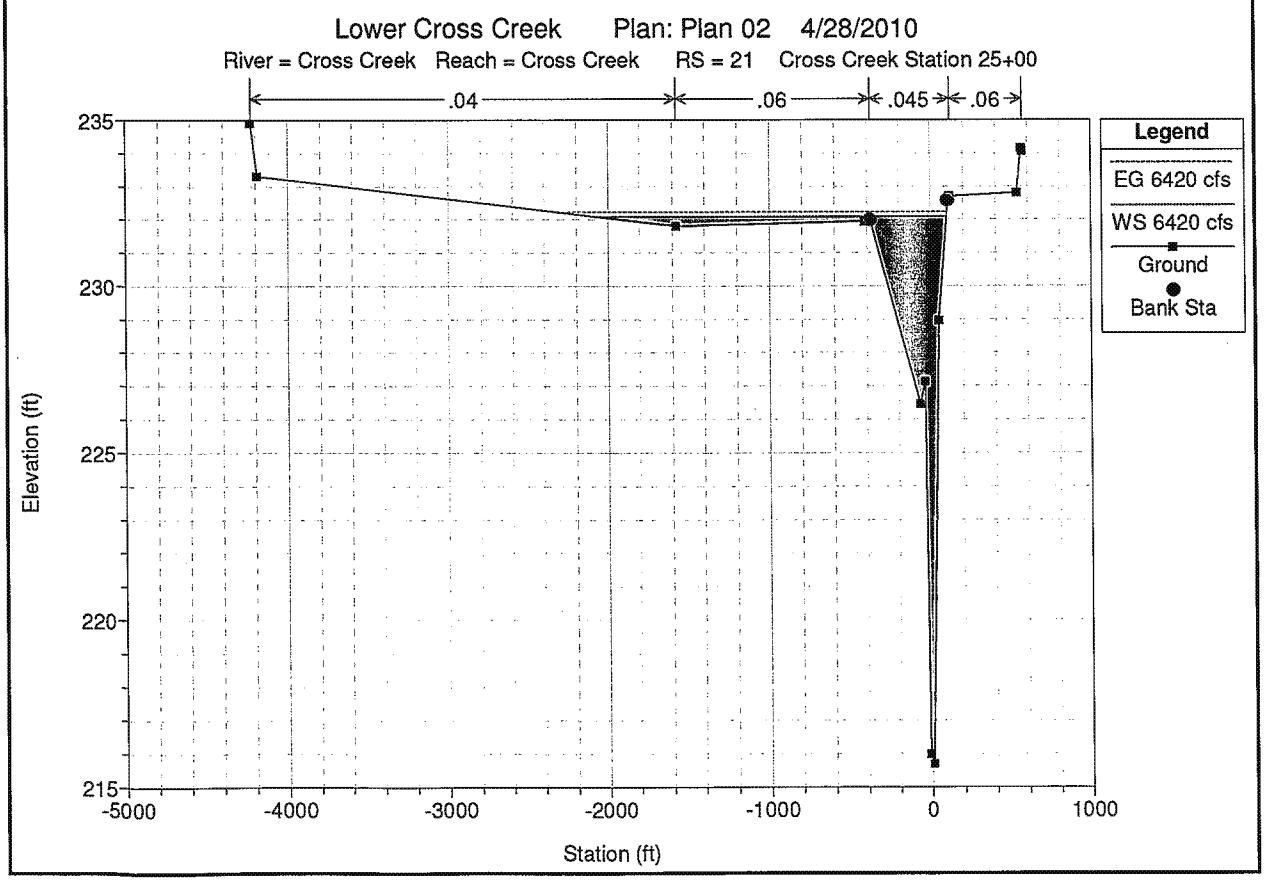
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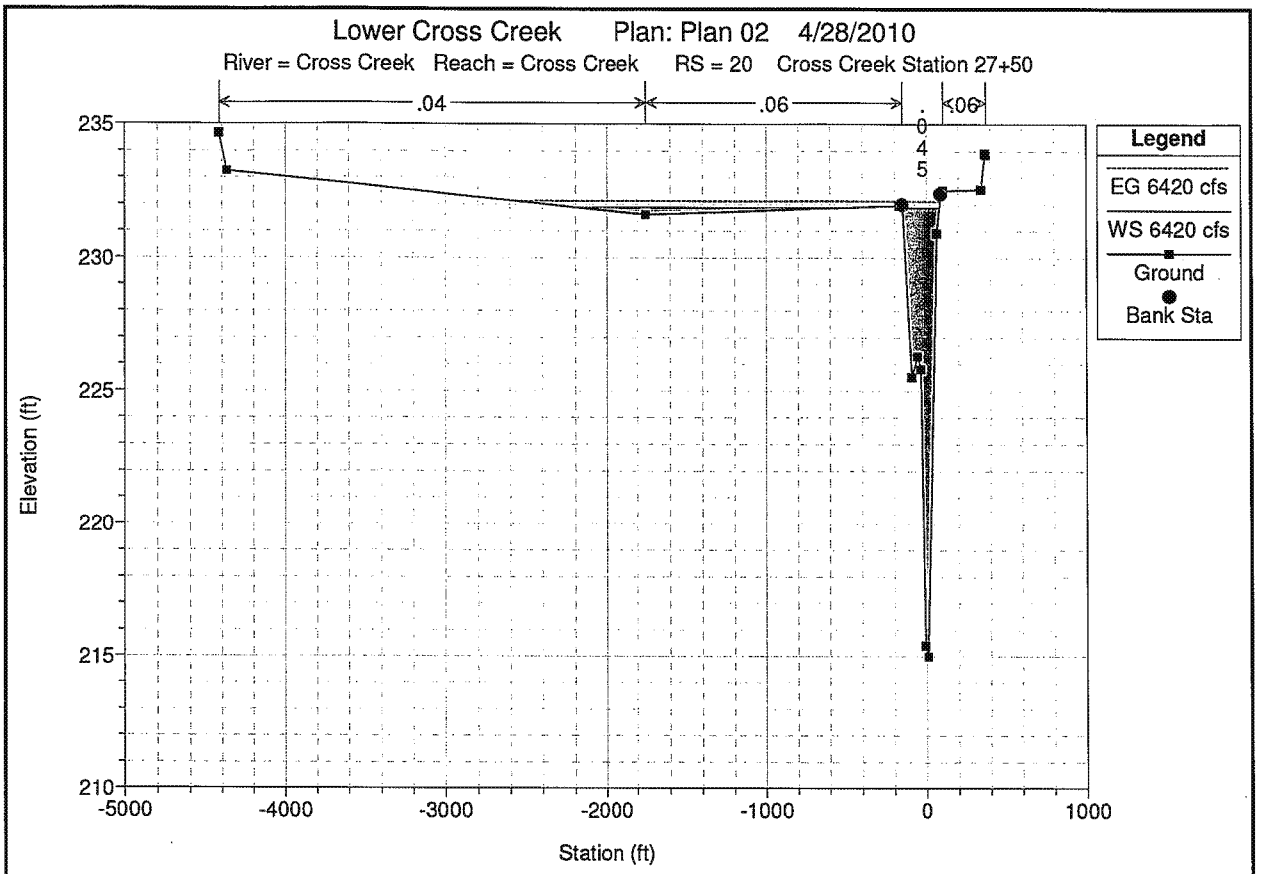
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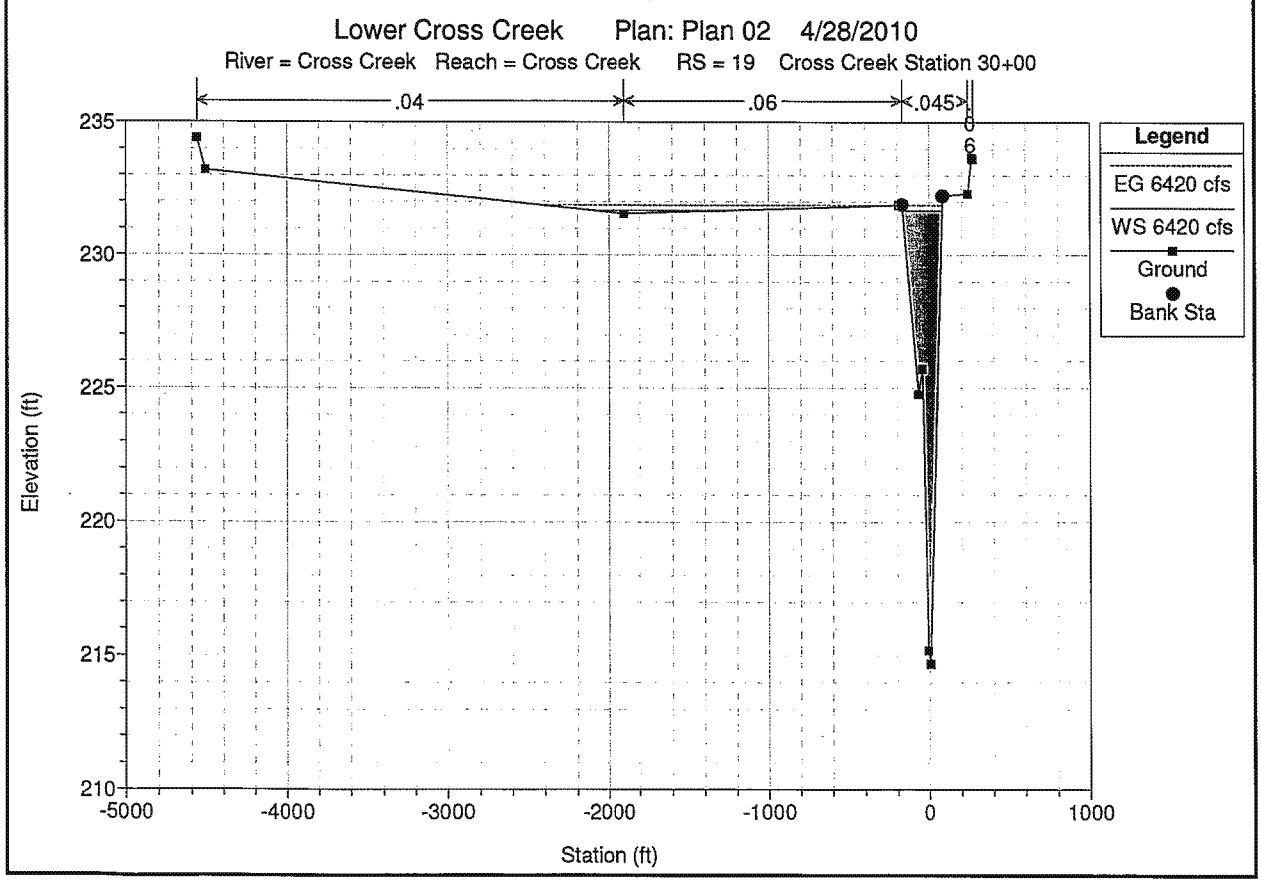
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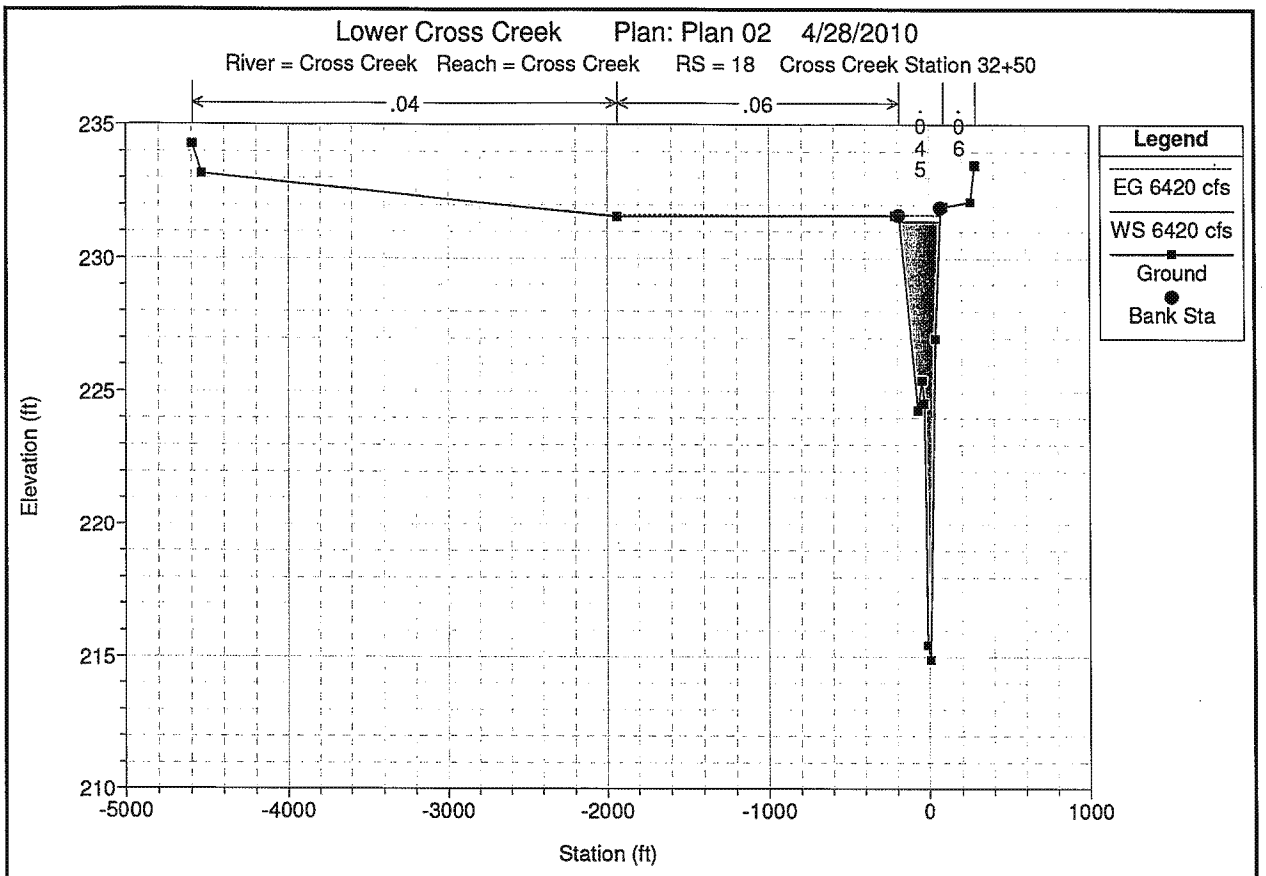
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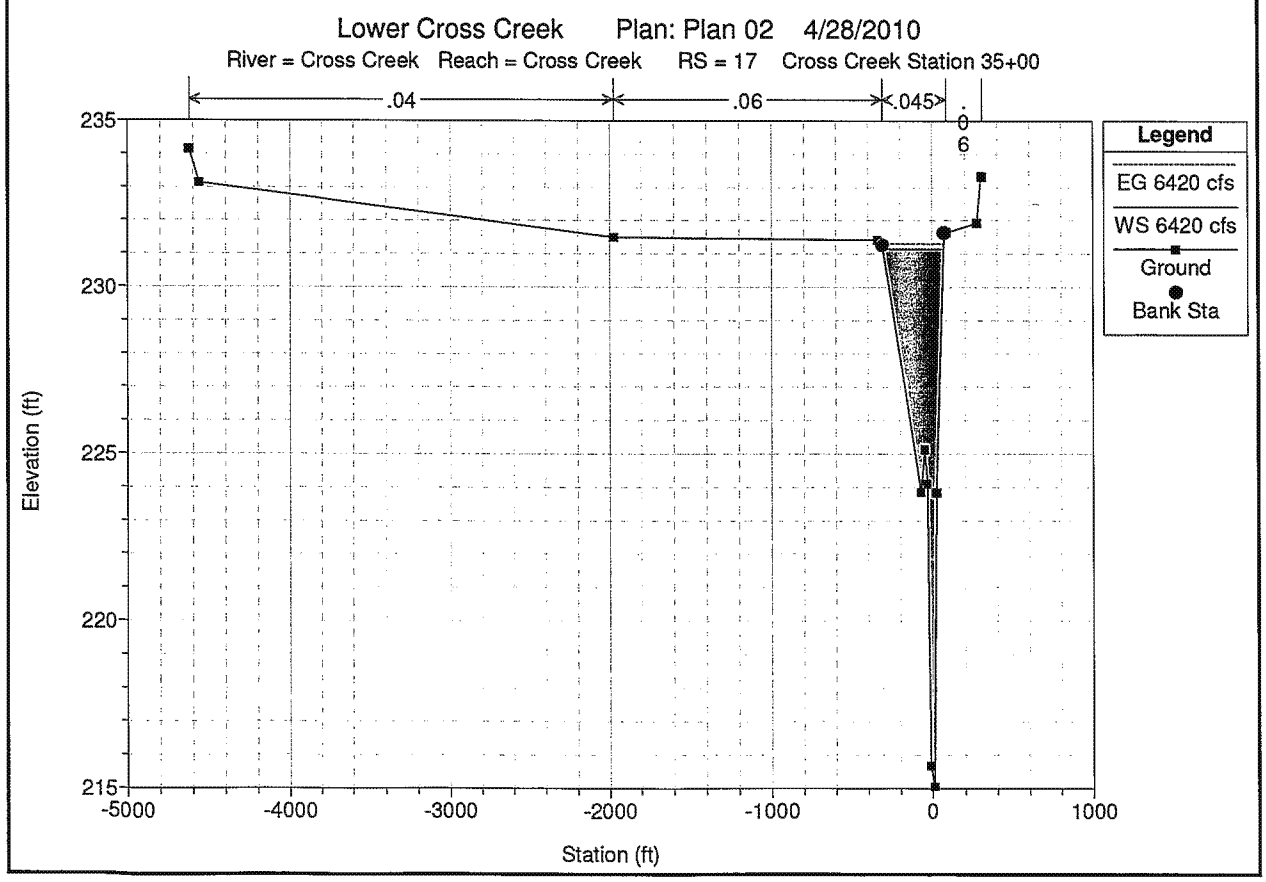
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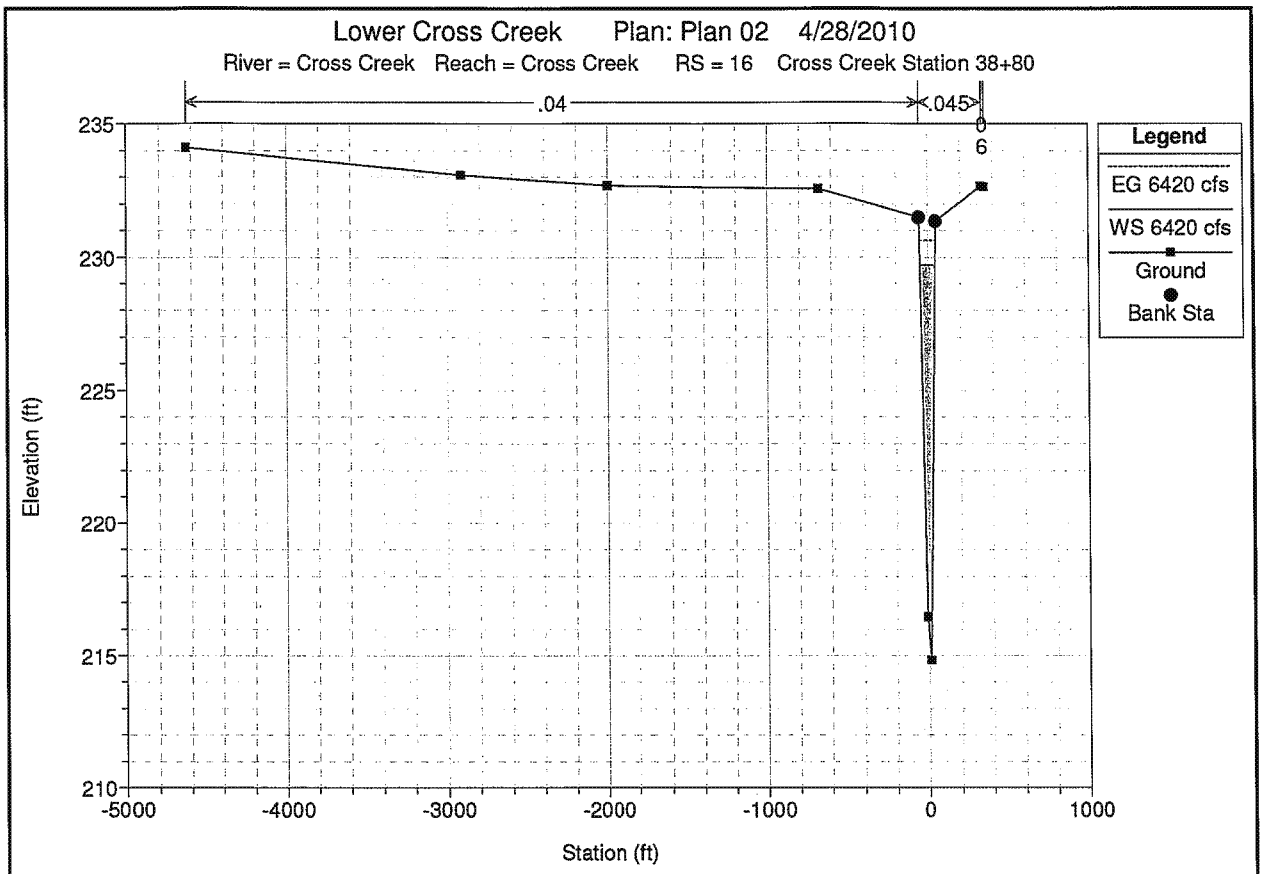
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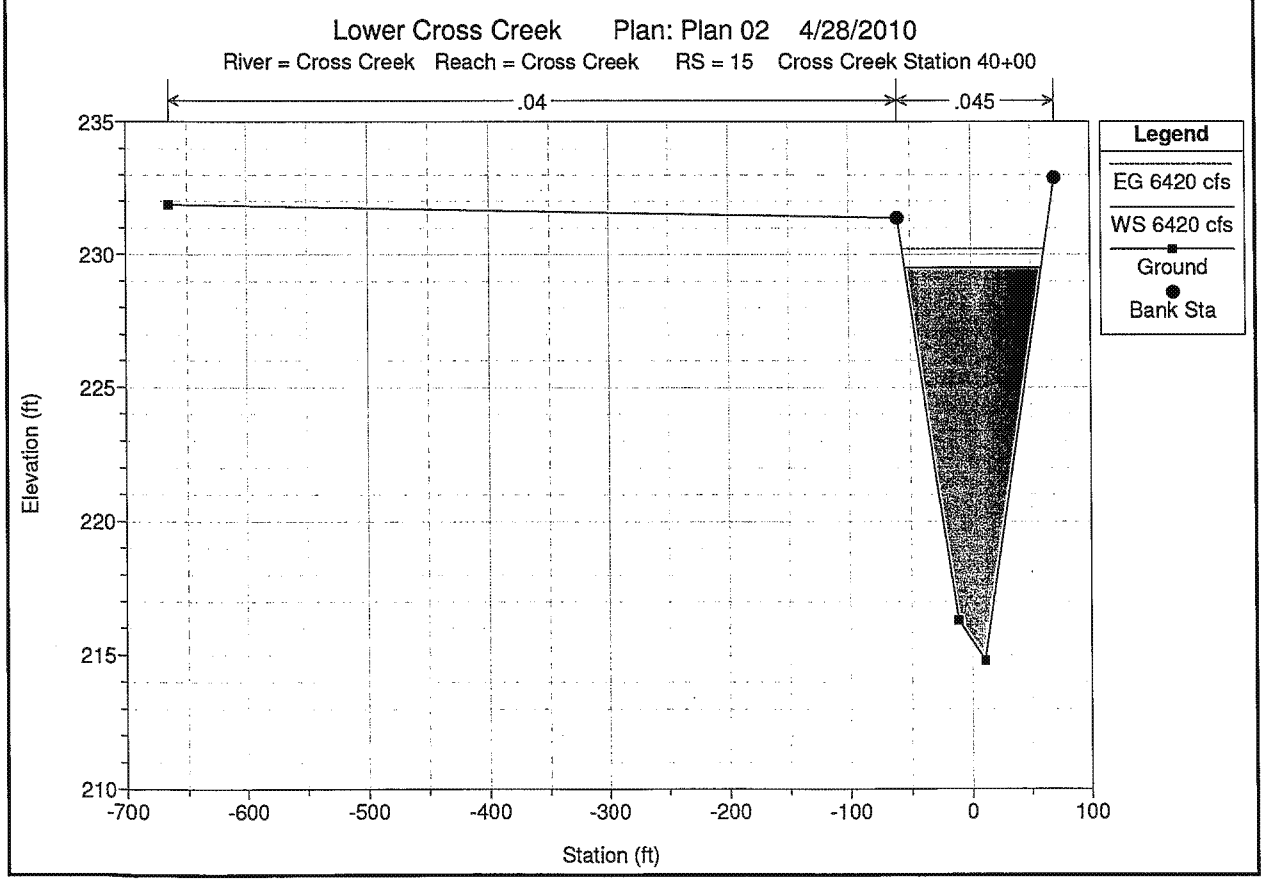
Station (ft)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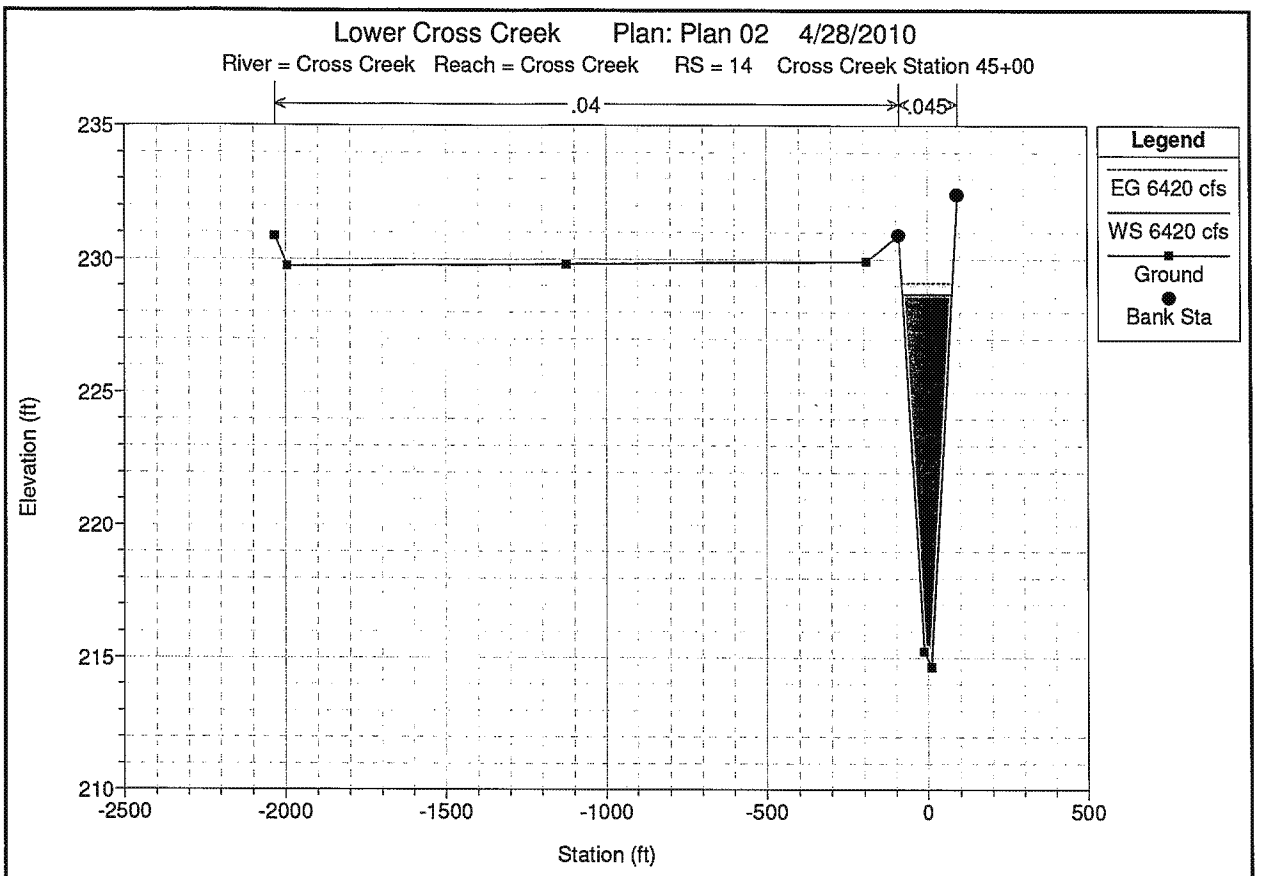
.04
.045
Legend
EG 6420 cfs
WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
-700
-600
-500
-400
-300
-200
-100
0
100
Station (ft)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.04
.045
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WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
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230
225
220
215
210
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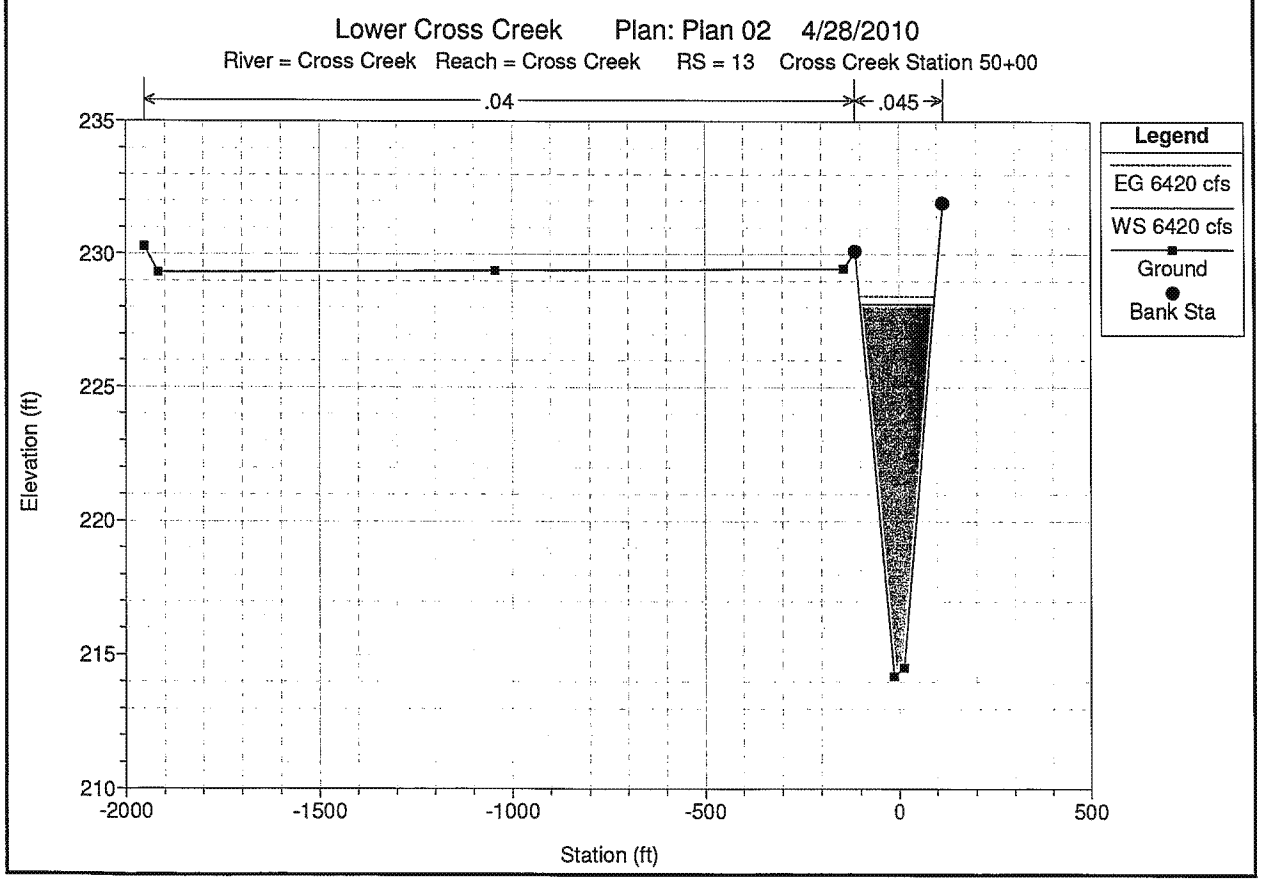
-2000
-1500
-1000
-500
0
500
Station (ft)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.04
.045
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WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
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-1500
-1000
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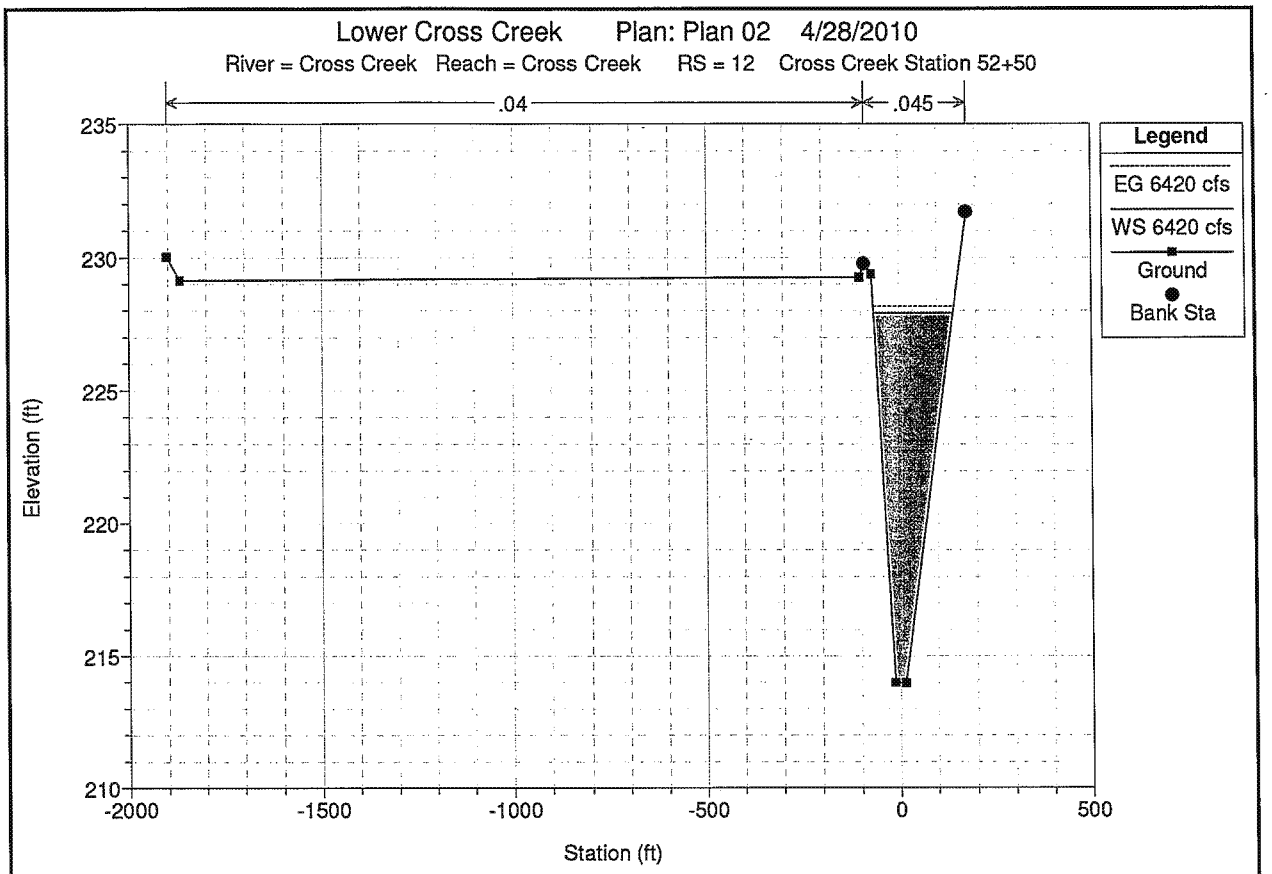
0
500
Station (ft)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.045
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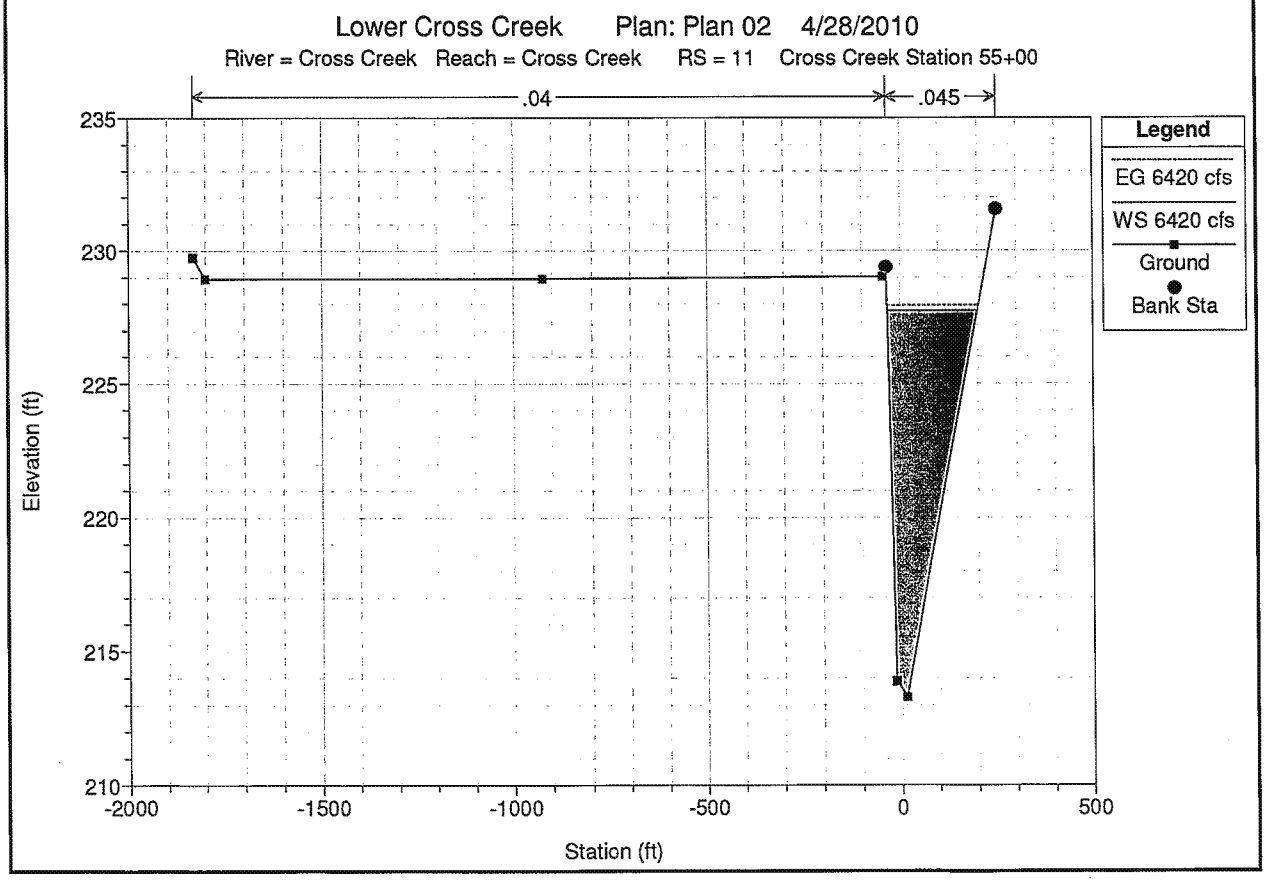
WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
-2000
-1500
-1000
-500
0
500
Station (ft)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.04
.045
Legend
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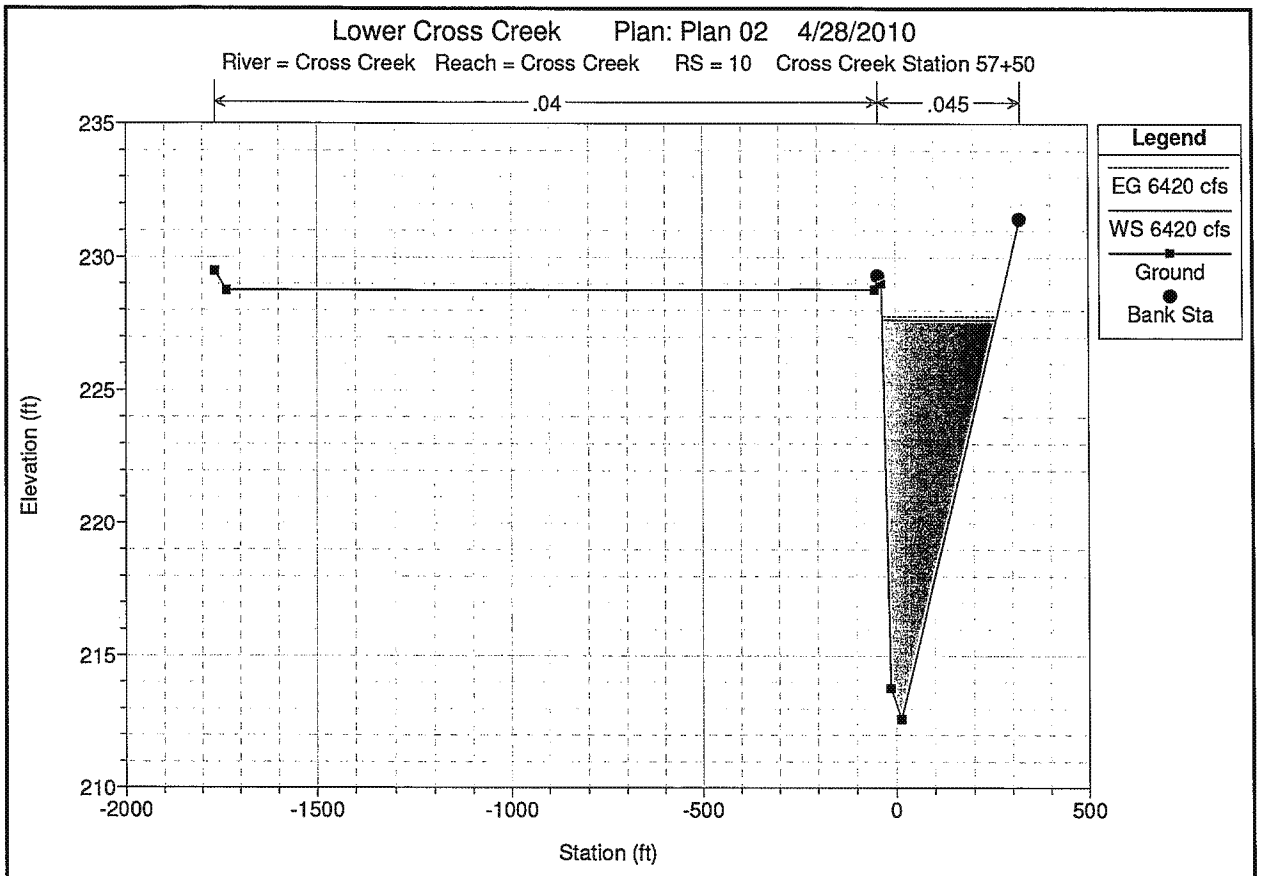
WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
-2000
-1500
-1000
-500
0
500
Station (ft)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.045
Legend
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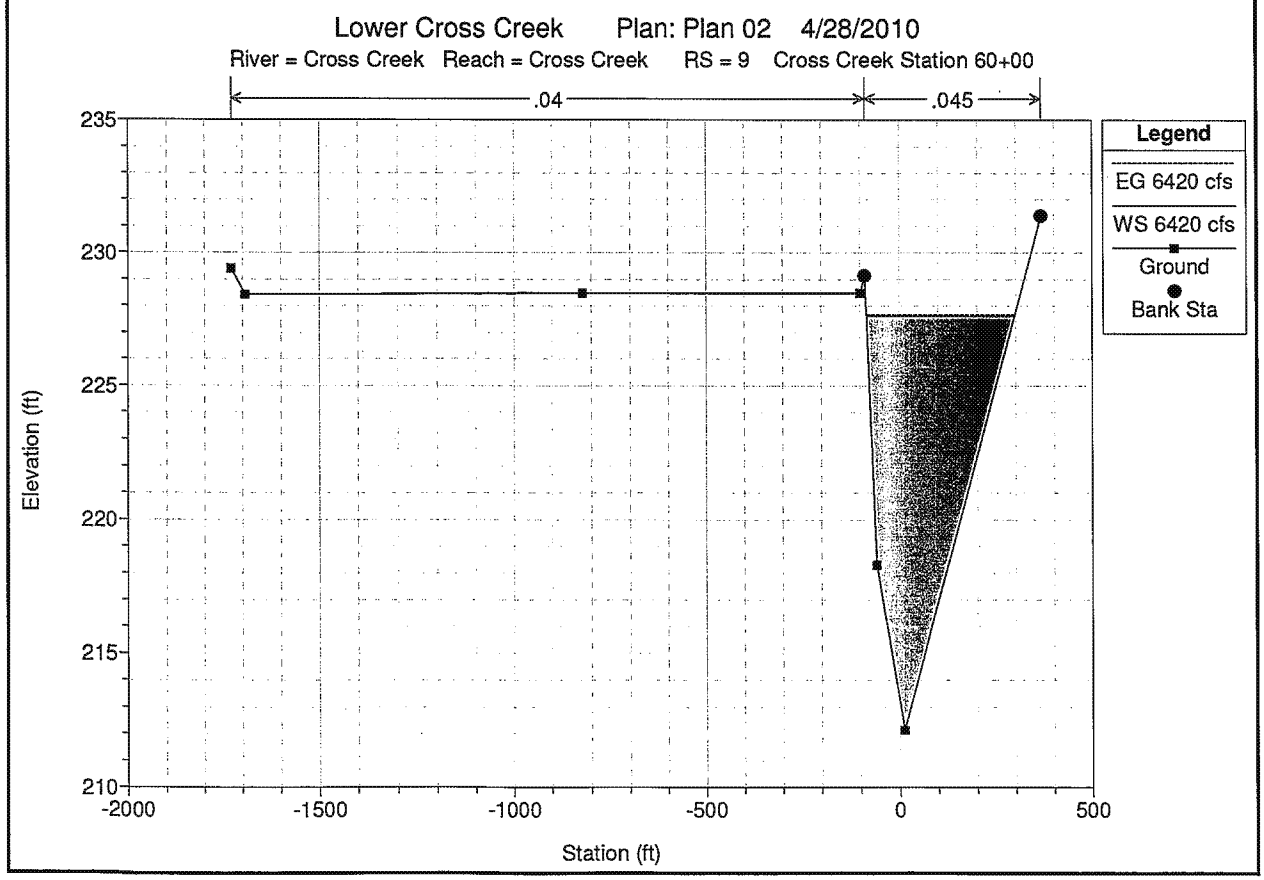
WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
-2000
-1500
-1000
-500
0
500
Station (ft)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.04
.045
Legend
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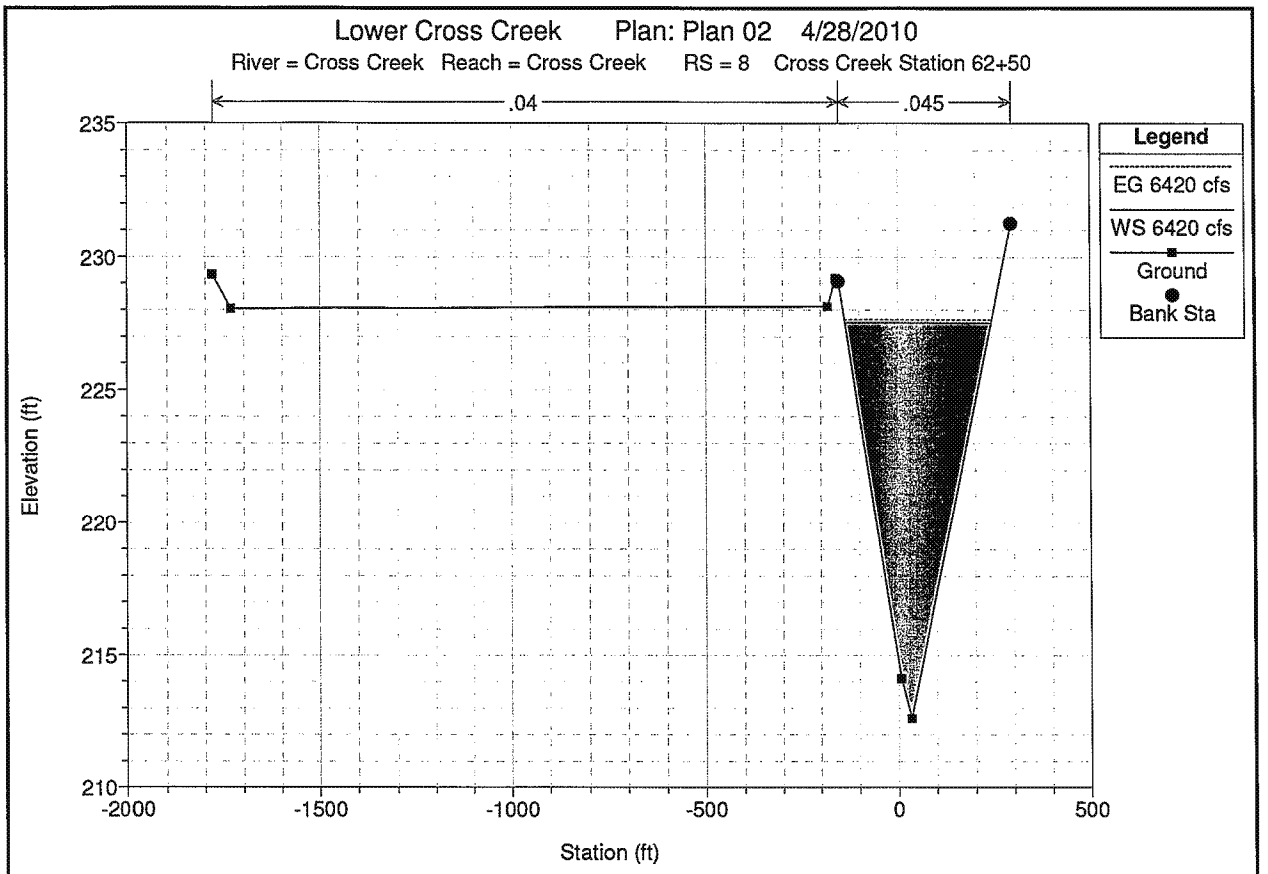
WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
-2000
-1500
-1000
-500
0
500
Station (ft)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.04
.045
Legend
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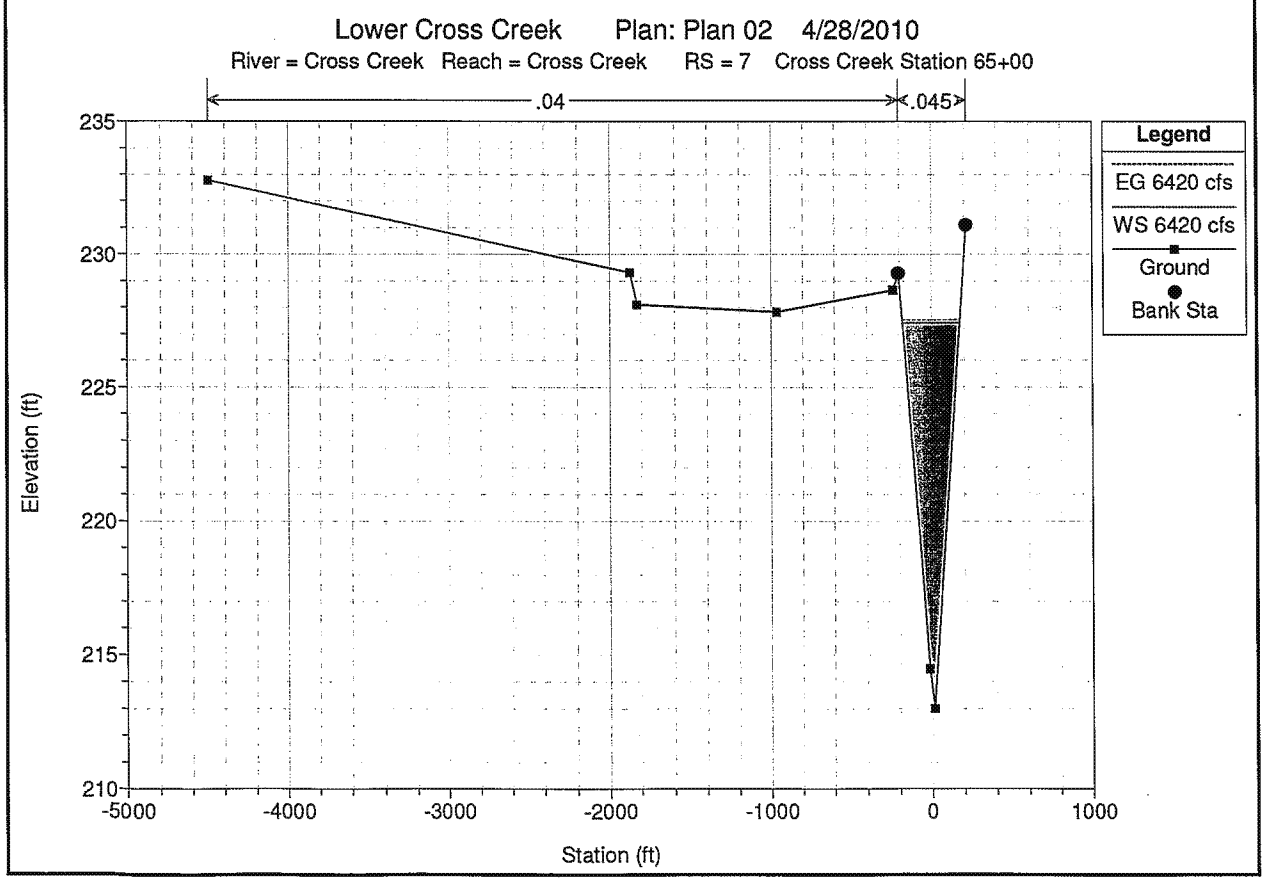
WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
-2000
-1500
-1000
-500
0
500
Station (ft)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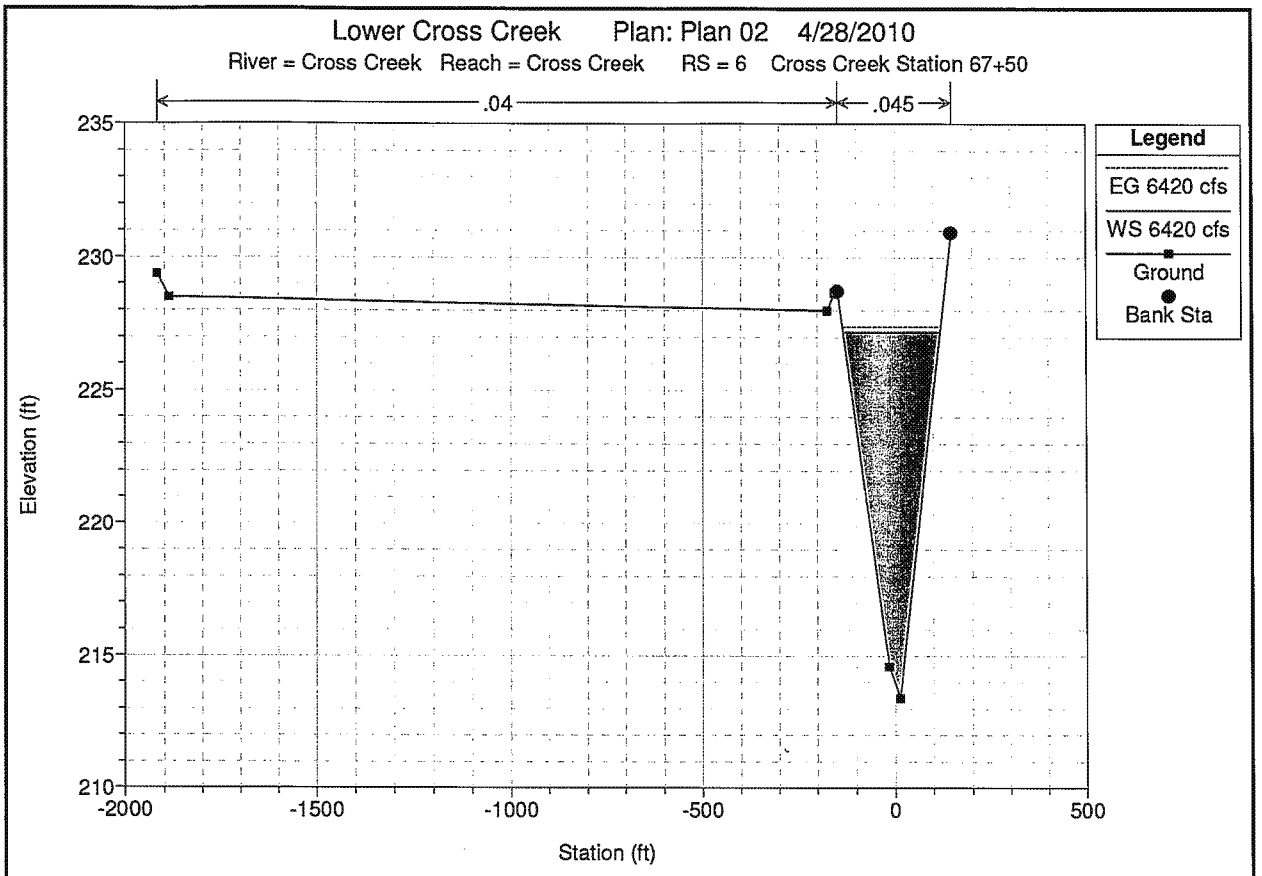
.04
.045
Legend
EG 6420 cfs
WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
-5000
-4000
-3000
-2000
-1000
0
1000
Station (ft)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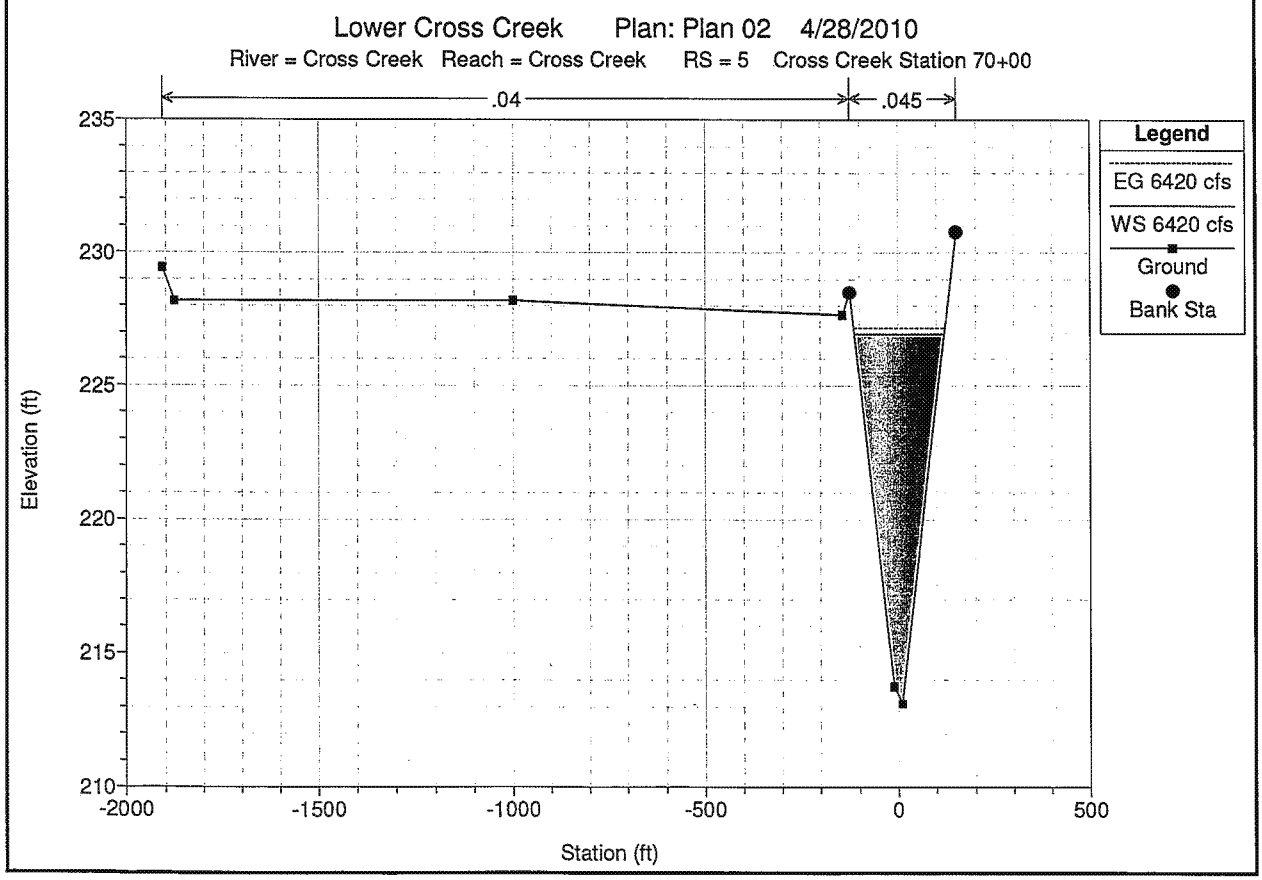
.04
.045
Legend
EG 6420 cfs
WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
-2000
-1500
-1000
-500
0
500
Station (ft)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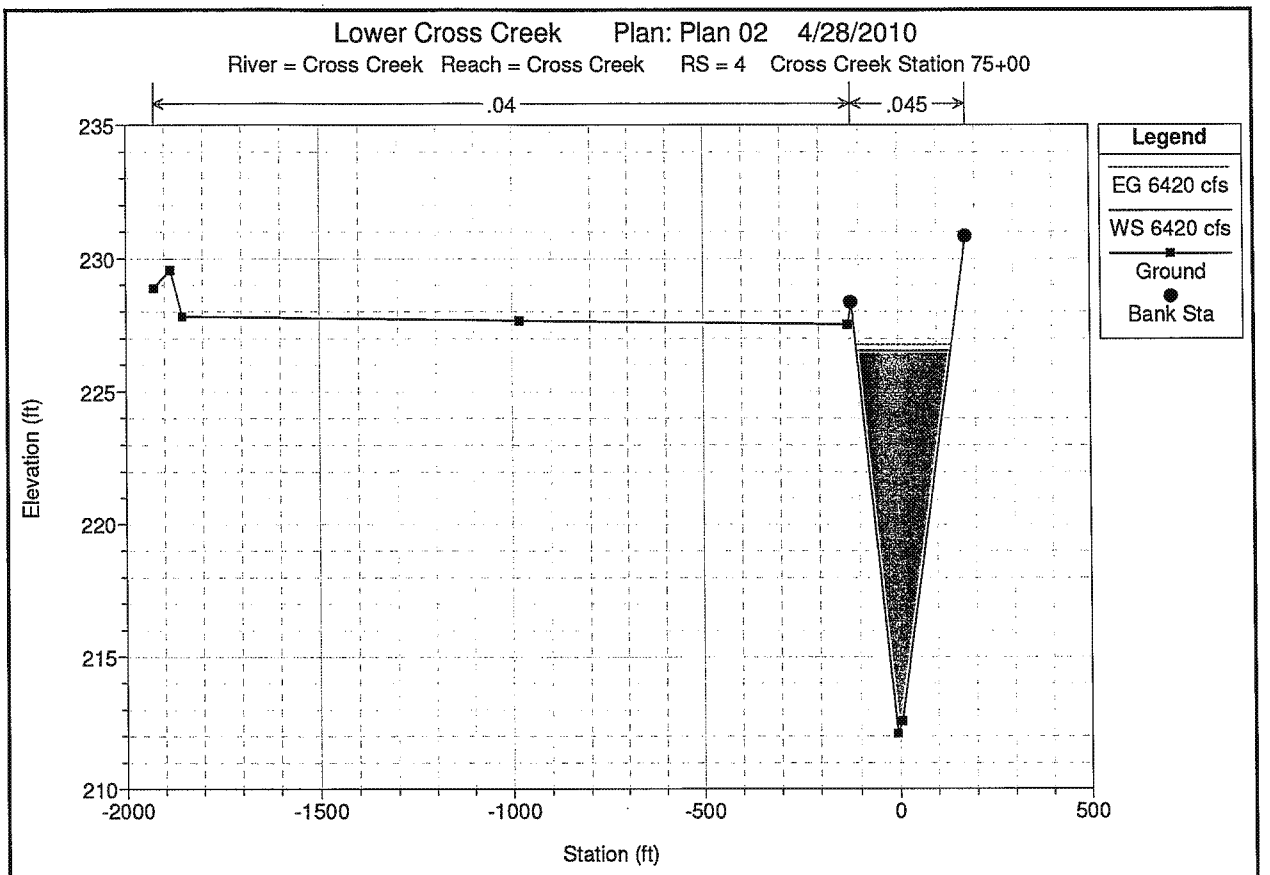
.04
.045
Legend
EG 6420 cfs
WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
-2000
-1500
-1000
-500
0
500
Station (ft)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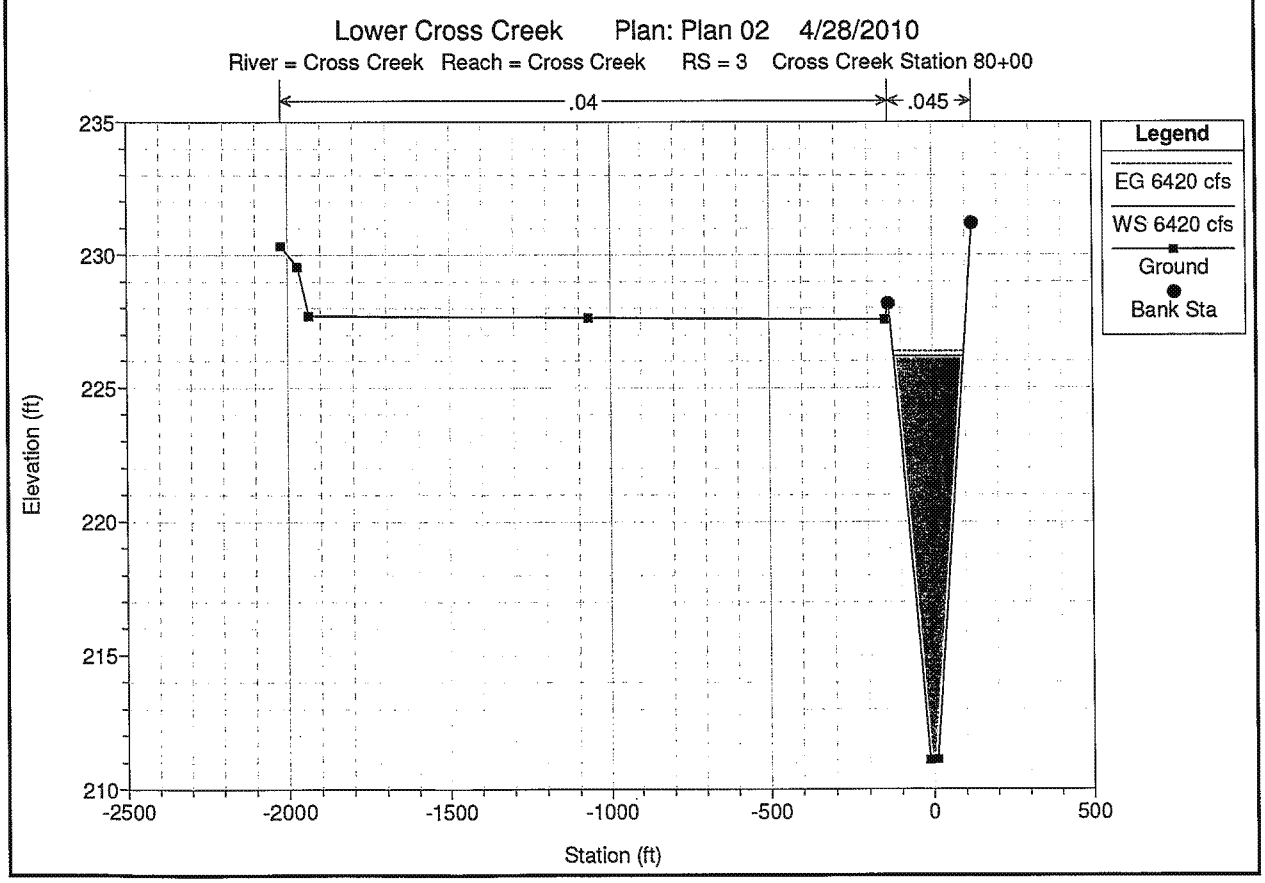
.04
.045
Legend
EG 6420 cfs
WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
-2000
-1500
-1000
-500
0
500
Station (ft)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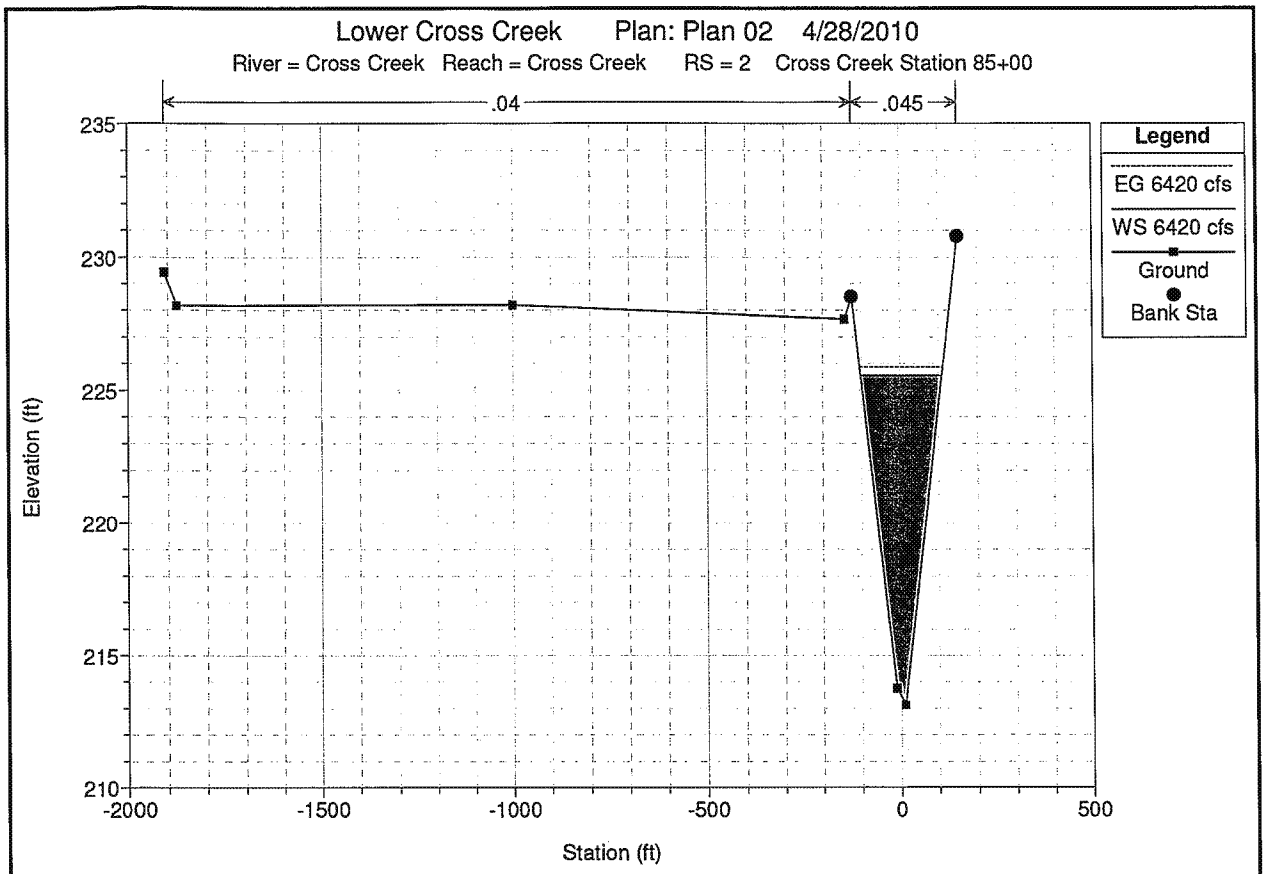
.04
.045
Legend
EG 6420 cfs
WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
-2500
-2000
-1500
-1000
-500
0
500
Station (ft)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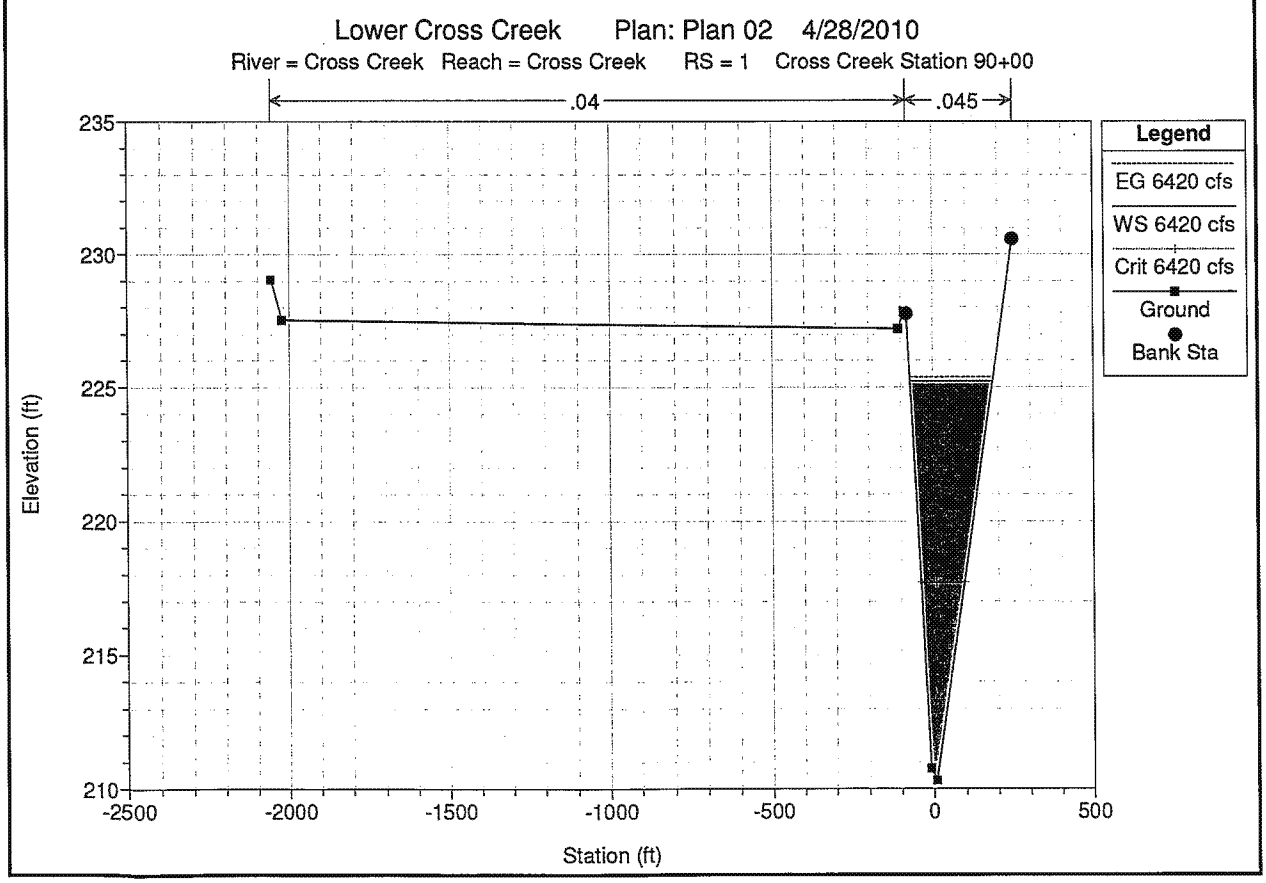
.04
.045
Legend
EG 6420 cfs
WS 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
-2000
-1500
-1000
-500
0
500
Station (ft)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.04
.045
Legend
EG 6420 cfs
WS 6420 cfs
Crit 6420 cfs
Ground
Bank Sta
Elevation (ft)
235
230
225
220
215
210
-2500
-2000
-1500
-1000
-500
0
500
Station (ft)

Attachment F

HEC-RAS Data Input

Provost & Prichard Consulting Inc.
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Visalia, CA 93291
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PROJECT #: 3036-07v1
SHEET #: 1 OF 4
DESIGNED BY: P&P
CHECKED BY: TODD BARNS
SUBJECT: VALLEY VIEW HEC-RAS INPUT DATA

Cross Section 22

Station **22+50**

Left OB	177
Center	250
Right OB	249

Offset	Elevation
-4064	234.06
-4025	233.34
-1383	231.97
-383	231.97
-366	232.00
-72	227.42
-44	227.98
-32	228.18
-13	216.58
12	216.41
42	227.03
124	232.77
135	232.87
709	232.94
741	234.42
745	234.37

Cross Section 21

Station **25+00**

Left OB	280
Center	250
Right OB	280

Offset	Elevation
-4229	234.9
-4187	233.3
-1574	231.8
-414	231.95
-378	232
-67	226.44
-35	227.12
-11	215.99
10	215.70
54	228.97
108	232.59
119	232.70
534	232.80
561	234.15
567	234.07

Cross Section 20

Station **27+50**

Left OB	207
Center	250
Right OB	320

Offset	Elevation
-4417	234.65
-4369	233.24
-1749	231.61
-170	231.95
-150	232.00
-92	225.52
-56	226.31
-37	225.82
-8	215.40
9	214.99
68	230.92
92	232.40
104	232.52
342	232.55
367	233.91
373	233.84

Cross Section 19

Station **30+00**

Left OB	229
Center	250
Right OB	251

Offset	Elevation
-4565	234.4
-4511	233.19
-1899	231.56
-191	231.88
-169	231.90
-69	224.76
-43	225.72
-7	215.19
7	214.70
58	230.14
73	232.13
86	232.23
239	232.30
264	233.67
270	233.62

Cross Section 18

Station **32+50**

Left OB	223
Center	250
Right OB	249

Offset	Elevation
-4594	234.26
-4536	233.16
-1936	231.54
-211	231.59
-188	231.6
-70	224.29
-45	225.42
-31	224.56
-10	215.43
9	214.88
42	226.98
74	231.89
88	231.93
257	232.11
283	233.5
289	233.47

Cross Section 17

Station **35+00**

Left OB	233
Center	380
Right OB	470

Offset	Elevation
-4622	234.14
-4562	233.13
-1972	231.49
-337	231.42
-308	231.27
-71	223.83
-46	225.12
-30	224.09
-11	215.68
13	215.07
27	223.82
75	231.64
89	231.64
274	231.93
300	233.33
306	233.31

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DESIGNED BY: P&P
CHECKED BY: TODD BARNS
SUBJECT: VALLEY VIEW HEC-RAS INPUT DATA

Cross Section 16

Station **38+80**

Left OB	117
Center	120
Right OB	120

Offset	Elevation
-4628	234.1
-2913	233.07
-1996	232.67
-679	232.56
-55	231.49
-10	216.46
12	214.83
52	231.35
331	232.66
348	232.64

Cross Section 15

Station **40+00**

Left OB	499
Center	500
Right OB	500

Offset	Elevation
-4623	234
-4543	231.95
-2928	230.75
-2906	231.35
-1992	232.32
-1940	230.28
-1082	230.34
-694	230.37
-665	231.88
-60	231.38
-11	216.29
11	214.79
70	232.89

Cross Section 14

Station **45+00**

Left OB	499
Center	500
Right OB	500

Offset	Elevation
-6033	233.27
-6018	234.37
-5990	232.97
-4695	232.27
-4663	233.59
-4604	231.60
-2099	229.68
-2033	230.86
-1994	229.72
-1124	229.80
-191	229.92
-90	230.91
-12	215.24
12	214.65
93	232.42

Cross Section 13

Station **50+00**

Left OB	229
Center	250
Right OB	250

Offset	Elevation
-5925	233.54
-5911	234.28
-5883	232.64
-4614	231.81
-4583	233.17
-4543	231.25
-1990	229.17
-1952	230.29
-1916	229.32
-1043	229.39
-141	229.46
-112	230.12
-13	214.20
13	214.51
116	231.94

Cross Section 12

Station **52+50**

Left OB	252
Center	250
Right OB	250

Offset	Elevation
-4525	232.98
-4495	231.09
-1932	228.95
-1902	230.03
-1868	229.14
-101	229.26
-90	229.77
-71	229.38
-13	213.99
13	213.98
177	231.71

Cross Section 11

Station **55+00**

Left OB	237
Center	250
Right OB	250

Offset	Elevation
-4493	231.45
-4462	232.89
-4433	230.89
-1868	228.71
-1832	229.74
-1800	228.94
-924	228.96
-44	229.03
-35	229.39
-13	213.88
13	213.29
249	231.57

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SHEET #:	3 OF 4
DESIGNED BY:	P&P
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SUBJECT:	VALLEY VIEW HEC-RAS INPUT DATA

Cross Section 10

Station	**57+50**
Left OB	274
Center	250
Right OB	250

Offset	Elevation
-4396	232.86
-4364	230.69
-1801	228.48
-1766	229.47
-1735	228.75
-51	228.78
-42	229.3
-34	229
-13	213.77
13	212.6
321	231.43

Cross Section 9

Station	**60+00**
Left OB	269
Center	250
Right OB	250

Offset	Elevation
-4396	231.21
-4359	232.83
-4323	230.46
-1766	228.41
-1729	229.35
-1692	228.43
-821	228.49
-98	228.48
-86	229.15
-57	218.28
12	212.13
366	231.4

Cross Section 8

Station	**62+50**
Left OB	243
Center	250
Right OB	250

Offset	Elevation
-4410	232.8
-4370	230.23
-1821	228.44
-1781	229.33
-1733	228.05
-181	228.13
-160	229.20
-153	229.07
7	214.12
33	212.61
294	231.25

Cross Section 7

Station	**65+00**
Left OB	182
Center	250
Right OB	250

Offset	Elevation
-4499	232.77
-1870	229.31
-1824	228.11
-963	227.84
-236	228.65
-203	229.29
-15	214.48
15	213.00
215	231.11

Cross Section 6

Station	**67+50**
Left OB	250
Center	250
Right OB	250

Offset	Elevation
-1918	229.36
-1887	228.50
-174	228.00
-155	228.67
-147	228.73
-15	214.59
13	213.39
146	230.93

Cross Section 5

Station	**70+00**
Left OB	500
Center	500
Right OB	500

Offset	Elevation
-1951	226.73
-1908	229.43
-1876	228.19
-1000	228.2
-142	227.67
-124	228.51
-11	213.76
11	213.12
150	230.79

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PROJECT #:	3036-07v1
SHEET #:	4 OF 4
DESIGNED BY:	P&P
CHECKED BY:	TODD BARNS
SUBJECT:	VALLEY VIEW HEC-RAS INPUT DATA

Cross Section 4

Station	**75+00**	
Left OB		465
Center		500
Right OB		500
Offset	Elevation	
-1927	228.88	
-1884	229.57	
-1851	227.82	
-981	227.67	
-128	227.52	
-119	228.36	
-6	212.11	
6	212.58	
176	230.85	

Cross Section 3

Station	**80+00**	
Left OB		540
Center		500
Right OB		500
Offset	Elevation	
-2019	230.33	
-1969	229.54	
-1935	227.71	
-1068	227.64	
-147	227.57	
-135	228.17	
-12	211.10	
12	211.12	
123	231.19	

Cross Section 2

Station	**85+00**	
Left OB		483
Center		500
Right OB		500
Offset	Elevation	
-1980	228.98	
-1929	229.21	
-1895	227.66	
-1009	227.34	
-122	227.05	
-112	228.00	
-11	211.15	
11	211.41	
242	231.20	

Cross Section 1

Station	**90+00**
Left OB	
Center	
Right OB	
Offset	Elevation
-2057	229.05
-2023	227.54
-106	227.21
-88	227.87
-81	227.77
-9	210.77
9	210.32
247	230.58

IV. Report of Confinement Areas

The milk barn, animal confinement areas, feed storage, and manure storage areas need to provide a means to convey all water that has contacted animal wastes or feed to the storage lagoons. Standing water should be minimized as of **72 hours after the last rainfall** to minimize infiltration of water into the underlying soils. Unlined ditches, swales, and/or earthen-berm channels may be used for conveyance of water that has contacted animal wastes or feed but not used as storage areas.

The method used in the determination of the storage capacity in **Section II. Engineering Report for Adequate Containment Capacity** includes these confinement areas and therefore diversion of rainwater away from feed or manured areas is not required.

The production area of this facility has a milk barn, hospital barn, open corrals, feed storage area, manure storage area and lagoons. The open corrals are flushed with recycled water from the storage lagoon.

The production area is graded and has provisions to convey rainfall towards the storage lagoon as identified in **Existing Maps: Flush and Drain Plan**. Specific evaluation of the open corrals, covered housing, and manure and feed storage areas are as follows:

A. Determination of Confinement Areas

1. Open Corral Areas

Open corral areas are appropriately sloped and drained such that all water that comes into contact and animal wastes can be diverted to the wastewater retention system to minimize standing water or the infiltration of water into soil. Areas that don't have drain lines connected to the drain system have low points to collect rainwater and can be pumped into the drain system.

Maintenance of the open corral areas will be assured by the inspections and issue resolution process identified in **Section V. Operation and Maintenance Plan, Item F. Open Corrals**. These areas will be inspected weekly during the wet season and monthly during the dry season.

2. Covered Animal Housing Areas

The covered housing areas (milk barn, special needs areas) have been designed and constructed such that all water that comes in contact with animal wastes or feed can be diverted to the wastewater retention system to minimize standing water or the infiltration of water into the soil.

Maintenance of the covered housing areas will be assured by the inspections and issue resolution process identified in **Section V. Operation and Maintenance Plan, Item G. Covered Animal Housing**. These areas will be inspected weekly during the wet season and monthly during the dry season.

3. Manure and Feed Storage Areas

The manure and feed storage areas (hay, commodity, silage) have been designed and constructed such that all water that comes in contact with animal wastes or feed can be diverted to the wastewater retention system to minimize standing water or the infiltration of water into the soil. Areas that don't have drain lines connected to the drain system have low points to collect rainwater and can be pumped into the drain system.

Maintenance of the manure and feed storage areas will be assured by the inspections and issue resolution process identified in **Section V. Operation and Maintenance Plan, Item H. Manure**

and Feed Storage Areas. These areas will be inspected weekly during the wet season and monthly during the dry season.

B. Proposed Modifications or Improvements

No modifications are required at this time.

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V. Operation and Maintenance Plan

The goal of the Operation and Maintenance Plan is to eliminate discharges of waste or storm water to surface waters from the production area and to minimize infiltration of water into underlying soils. Sections A through L below correspond to items identified in **Section V of Attachment B to General Order R5-2007-0035**. Section M below provides for the routine inspection of any solid or liquid manure application equipment satisfying the recordkeeping requirement identified in **B.3.m of the Monitoring and Reporting Program to General Order R5-2007-0035**. Section N below is for those dairies that have irrigation ditches or other waterways within the production and land application areas and need routine inspections of the berms providing the setback. Section O below is for those dairies that are within a flood zone and need routine inspections of the berms identified in the engineering report provided within this Waste Management Plan. Section P below is for those dairies that have one or more double chemigation check valves in lieu of an air gap which require routine inspections satisfying the requirements of the backflow prevention section of this Waste Management Plan.

Forms to document inspections are provided at the end of this Waste Management Plan. If a discrepancy is determined during the performance of an inspection, complete the *Problem Resolution Form* (or equivalent). Discrepant items need to be reported in the Annual Report.

A. Precipitation and Surface Drainage of Non-Manured Areas

This facility is configured such that rainfall onto non-manured areas which is not routed into the storage lagoon is diverted from away from any manured areas.

Rainfall onto non-manured areas that may come into contact with manure or feed can be collected and routed to the storage lagoon. These areas have been included into the storage requirement calculations identified in **Section II. Engineering Report for Adequate Containment Capacity**.

Prior to the wet season, these areas will be checked for holes and depressions that may prohibit drainage of rainwater. These areas will be maintained such that rainfall will funnel to drainage systems and removed from low areas within 72 hours after the last rainfall.

Routine inspections will be performed of non-manured area drainage systems to insure proper collection and diversion capabilities are prepared for precipitation by verifying in the following areas:

- Drainage conveyance systems from non-manured areas routed away from the storage lagoon are not obviously obstructed.
- Drainage conveyance systems from non-manured areas to the storage lagoon are not obviously obstructed.
- Holes or depressions are filled, minimizing ponding areas.
- Roof gutters and downspouts are free of obvious obstructions.
- Pumps and other equipment used for rain water conveyance are serviced and operational.

Routine inspections will be performed of non-manured area drainage systems to insure that during or following rain events that conveyance systems operate properly. Portable pumps will be used as required. Standing water should be removed and minimized within 72 hours after the last rainfall.

Inspections will occur at times indicated below in accordance with *Routine Visual Inspection Form - Production Area* (or equivalent) and also *Significant Storm Event Inspection Form - Production Area (or equivalent)*:

Monthly from June 01 through September 30 (dry season)

Weekly from October 01 through May 31 (wet season)

Significant Storm Event (per event)

Note: A significant storm event is defined as a storm event that results in continuous runoff of storm water for a minimum of one hour, or intermittent runoff for a minimum of three hours in a 12-hour period.

B. Lagoon Management

Lagoon freeboard will be routinely monitored to verify adequate reserve capacity and adequate minimum freeboard. Photographs of the freeboard will be taken at the monthly inspection point (1st day of month), date identified, and maintained with the dairy inspection records. Routine inspection intervals are as follows:

Monthly from June 01 through September 30 (dry season)

Weekly from October 01 through May 31 (wet season)

While performing inspections in accordance with the *Routine Visual Inspection Form – Lagoon* (or equivalent), the sides and surface of the lagoons will also be inspected for causes of excessive odors and berm integrity. Discrepancies will be identified/repaired if found:

- Prevention of odors
- Breeding of mosquitoes
- Burrowing animals
- Solids removal damage
- Embankment slumping, cracking, and/or erosion
- Seepage
- Excess vegetation
- Dead algae, vegetation, and other debris accumulating on the water surface

During and after a significant storm event the lagoon freeboard will be monitored to verify adequacy of freeboard.

Note: A significant storm event is defined as a storm event that results in continuous runoff of storm water for a minimum of one hour, or intermittent runoff for a minimum of three hours in a 12-hour period.

While performing inspections in accordance with the *Significant Storm Event Inspection Form – Lagoons* (or equivalent), the lagoons will also be inspected for berm integrity and discrepancies identified/repaired if found:

- Evidence of discharge
- Berm integrity – including cracking, slumping, erosion and/or seepage

C. Lagoon Preparation for Winter Months

The duration of the winter storage period is determined in the NMP (Nutrient Management Plan) based on the period of time between irrigation schedules of the Nutrient Budget. Calculations of required lagoon storage volume and location of the 25 yr storm marker are determined in **Section II. Engineering Report for Adequate Containment Capacity**.

The planned irrigation schedule of the NMP includes consideration of the winter season storage requirements. Prior to the winter period, the NMP planned irrigation schedule will be compared to the actual storage lagoon level. Any discrepancies noted will be resolved under the guidance of the Certified Agronomist that has approved the NMP.

D. Prevention of Waste or Storm Water Discharge to Surface Waters from Production Area

The facility will be operated and maintained such that wastewater or storm water that has contacted animal wastes will not be discharged into surface waters. All such water will be collected and conveyed to the to the storage lagoon.

Inspections will be covered by sections:

A. Precipitation and Surface Drainage of Non-Manured Areas

F. Open Corrals

G. Covered Animal Housing

H. Manure and Feed Storage Areas

If however a discharge were to occur, perform the instructions outlined in *Discharge Report Form* (or equivalent).

E. Procedures for Solids Cleaning of a Lined Lagoon

Whenever the storage lagoon is pumped down to its lowest point, per the irrigation schedule of the NMP, the buildup of solids on the bottom of the storage lagoon will be observed and evaluated to determine if a cleaning will be necessary to provide ample volume to contain the wastewater during the wet season. An acceptable value of sludge buildup is identified in **Section II. Engineering Report for Adequate Containment Capacity** allowing for adequate containment based on a planned irrigation schedule. Any revised irrigation plan or cleaning will be resolved under the guidance of the Certified Agronomist that has approved the NMP.

Existing Clay Liner. If the removal of solids is required, the following items should be performed to ensure that the clay liner does not become damaged from the cleaning process:

- Determine/locate where the floor of the lagoon is in relation to the side slopes. Identify the location of any pipes or other equipment that may be hidden.
- Ensure that any equipment that enters the lagoon is placed and removed in such a manner that it does not cause any damage to the clay lining. Water may need to be added during the cleaning process for the removal of floating equipment at completion of cleaning.
- Determine/verify the floor depth and the depth of the sludge material to be removed.
- Clean primarily over the floor area of the lagoon avoiding the side slopes as much as possible. Sludge should continue to slide down the slopes to the floor area during cleaning.
- Verify/ensure that the cleaning equipment does not come into contact with the clay liner while performing cleaning operations. Observe water level changes to verify clearances are adequate.

F. Open Corrals

Open corrals will be operated and maintained such that they will collect and divert rainfall to the storage lagoon. Also corrals will be maintained such that rainfall will funnel to drainage systems and removed from low areas within 72 hours after the last rainfall.

Prior to the wet season, corrals will be scraped of excess manure from locations that would prohibit drainage of rainwater to the retention pond. Holes or depressions that will prevent the conveyance or collection of rainwater will be filled or graded.

Routine inspections will be performed of manured area drainage systems to insure proper collection and diversion capabilities are prepared for precipitation by verifying in the following areas:

- Drainage conveyance systems from manured areas to the storage.
- Holes or depressions are filled, minimizing ponding areas.
- Roof gutters and downspouts are free of obvious obstructions.
- Pumps and other equipment used for rain water conveyance to the storage lagoon are serviced and operational.

Routine inspections will be performed of manured area drainage systems to insure that during or following rain events that conveyance systems operate properly. Portable pumps will be used as required. Standing water should be removed and minimized as of 72 hours after the last rainfall.

Inspections will occur at times indicated below in accordance with the *Routine Visual Inspection Form - Production Area* and also *Significant Storm Event Inspection Form - Production Area* (or equivalent):

Monthly from June 01 through September 30 (dry season)

Weekly from October 01 through May 31 (wet season)

Significant Storm Event (per event)

Note: A significant storm event is defined as a storm event that results in continuous runoff of storm water for a minimum of one hour, or intermittent runoff for a minimum of three hours in a 12-hour period.

G. Covered Animal Housing

The milk barn is sloped and drained such that all flush/cleaning water that has contacted animal wastes will be conveyed to the storage lagoon.

Routine flushing/cleaning keeps these areas clean and operational. Equipment is maintained routinely ensuring proper operation and repaired as problems occur.

Routine inspections will be performed of the drainage systems to insure proper collection and diversion capabilities are prepared for precipitation by verifying in the following areas:

- Drainage conveyance systems from covered housing areas to the storage lagoon are not obviously obstructed.
- Roof gutters and downspouts are free of obvious obstructions.
- Pumps and other equipment used for the flush/cleaning system to the storage lagoon are serviced and operational.

Routine inspections will be performed of the drainage systems to insure that during or following rain events that conveyance systems operate properly. Portable pumps will be used as required. Standing water should be removed and minimized as of 72 hours after the last rainfall.

Inspections will occur at times indicated below in accordance with the *Routine Visual Inspection Form - Production Area* and also *Significant Storm Event Inspection Form - Production Area* (or equivalent):

Monthly from June 01 through September 30 (dry season)

Weekly from October 01 through May 31 (wet season)

Significant Storm Event (per event)

Note: A significant storm event is defined as a storm event that results in continuous runoff of storm water for a minimum of one hour, or intermittent runoff for a minimum of three hours in a 12-hour period.

H. Manure and Feed Storage Areas

Manure storage and feed storage areas will be operated and maintained such that rainfall and leachate will collect and/or be conveyed to the storage lagoon. Also these areas will be maintained such that rainfall will not be distributed such that it cannot be collected and removed within 72 hours after the last rainfall.

Prior to the wet season, manure storage and feed storage areas will be checked for locations that would prohibit drainage of rainwater to the retention pond. Holes or depressions that will prevent the conveyance or collection of rainwater will be filled or graded.

Routine inspections will be performed of the drainage systems to insure proper collection and diversion capabilities are prepared for precipitation by verifying in the following areas:

- Drainage conveyance systems from manured and feed storage areas to the storage lagoon are not obviously obstructed.
- Holes or depressions are filled, minimizing ponding areas.
- Roof gutters and downspouts are free of obvious obstructions.
- Pumps and other equipment used for rain water conveyance to the storage lagoon are serviced and operational.

Routine inspections will be performed of manured and feed storage area drainage systems to insure that during or following rain events that conveyance systems operate properly. Portable pumps will be used as required. Standing water should be removed and minimized as of 72 hours after the last rainfall.

Inspections will occur at times indicated below in accordance with *Routine Visual Inspection Form - Production Area* and also *Significant Storm Event Inspection Form - Production Area* (or equivalent):

Monthly from June 01 through September 30 (dry season)

Weekly from October 01 through May 31 (wet season)

Significant Storm Event (per event)

Note: A significant storm event is defined as a storm event that results in continuous runoff of storm water for a minimum of one hour, or intermittent runoff for a minimum of three hours in a 12-hour period.

I. Dead Animal Management

This facility uses a rendering service to remove the carcasses of fallen animals from the facility. A location has been set aside for personnel to place the fallen animal carcasses until the service arrives.

Service:	Baker Commodities
Phone #:	(559) 582-0271 - Hanford

Burial or otherwise disposing of carcasses on site is prohibited except when federal, state, or local officials declare a State of Emergency and where all other options for disposal have been pursued and failed and the onsite disposal complies with all state and local policies for disposal of dead animals.

Guidance for this emergency condition is provided by the *CAL/EPA Emergency Animal Disease Regulatory Guidance for Disposal and Decontamination (October 20, 2004).*

J. Chemical Handling

All hazardous products and hazardous wastes that are not normally used in the facility waste water stream will be stored away from entry points into the process waste water system. These include but are not limited to: new and used motor oil, hydraulic oil, fuels, pesticides, and fertilizers.

K. Animal Confinement from Surface Waters

The location and design of this facility is such that the animals are prohibited from entering any surface water within the confined area.

L. Limitation of Salt in Rations

The rations fed to the animals are balanced to provide optimum health, growth, and milk production while limiting the salt content as much as possible. Continuous monitoring and adjustments of the ration are performed by a professional nutritionist.

M. Manure & Process Wastewater Equipment Inspections

Equipment used to apply solid manure and process wastewater to the fields will typically be serviced as necessary if the equipment fails during use. The purpose of these inspections is to perform periodic observations to monitor the overall condition of the equipment so that repair or replacements can be scheduled as necessary to minimize any potential failures during use.

Solid manure applications to the fields are routinely performed using an outside service for many dairy operations. In this case inspections of application equipment by the dairy are not necessary. If this dairy uses its own equipment to apply solid manure, the equipment should be inspected annually for wear that may require replacement of major components or the equipment itself. Inspections will be reported on *Routine Visual Inspection Form – Solid and Liquid Manure Application Equipment* (or equivalent).

Liquid manure applications to the fields originate from a pump typically located in the lagoon and not easily accessible. Inspections should be performed to check the general condition of the pump and lines that connect to the irrigation system. Inspections should check at minimum the following conditions as applicable.

- Pump operates without abnormal sounds indicating a potential bearing, belt, or some other similar deteriorating component.
- Pump (if floating pump) is upright and not visually indicating a loss of floatation.
- Discharge connection, hose, or piping does not have any or excessive leakage between the pump and connection to the irrigation system. If there is a leak beyond the containment of the lagoon or causes erosion of the lagoon side, it needs to be repaired before continuing normal operations.
- Discharge hose (if floating pump) does not have excessive wear from abrasion at the side of the lagoon.

These inspections should be performed annually in accordance with *Routine Visual Inspection Form - Solid and Liquid Manure Application Equipment* (or equivalent).

N. Surface Water Berm Inspections

Berms are used to provide an alternative setback protection to surface waters (irrigation ditches, creeks, or equivalent) at this facility. These surface water areas are identified on the **Farm Field Use Maps** provided. These berms will be maintained such that they will prohibit discharge of water into the surface water or surface water into the production or land application areas. The purpose of these inspections is to perform a monthly observation to monitor the overall condition. During irrigations of process wastewater, a different inspection form is used to inspect daily the integrity of the area being irrigated.

Inspections will include review of any holes or depressions, erosion, burrowing animals, or any other item that may affect the integrity of the berms. Inspections will be documented on *Routine Visual Inspection Form – Surface Water Berm Inspections* (or equivalent).

O. Flood Protection Berm Inspections

Flood protection berms will be maintained such that they will provide protection from flooding events. Prior to the beginning of the wet season, flood protection berms will be checked for holes or depressions and filled to maintain the height and integrity of the berm.

Routine inspections will be performed during the wet season of the berms to insure proper diversion capabilities are prepared for precipitation by verifying in the following areas:

- Significant erosion
- Holes or depressions
- Side slope failure
- Excess vegetation
- Burrowing animals

Inspections will be documented monthly on *Routine Visual Inspection Form – Flood Protection Berm* (or equivalent) from October 01 through May 31 (wet season)

P. Backflow Prevention Check Valve Inspections

There are no anti-siphon double chemigation check valves in use at this dairy.

VI. Backflow Verification

This section evaluates the locations of potential cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on **Existing Maps: Farm Field Use Map**.

There are two types of effective measures to prevent a backflow condition for wells or lift pumps. These are double chemigation check valves or an effective air gap.

1. Double chemigation check valves require monthly maintenance inspections. If used, the inspections will be identified in **Section V. Operation and Maintenance Plan, Item M** and an inspection sheet provided in the **Inspection and Reporting Forms** (or equivalent).

2. An effective air gap can be either 1x or 2x the diameter of the pump discharge pipe depending on the sizing of the standpipe and irrigation line. If the ratio of standpipe diameter to irrigation line diameter is greater than 1.5 then a 1x air gap is an effective measure. If the ratio is less than 1.5, then a 2x air gap is effective.

A listing of the locations of potential cross-connections, and determination if the current preventative measure applied is sufficient is provided in **Table VI-1 – Backflow Evaluation**.

Documentation of No Cross-Connection Conditions Allowing Potential Backflow

As a trained professional in backflow prevention, I certify that, based on the information provided to me by the Discharger named and my personal examination of the wastewater system, the information in Table VI-1 is true, accurate, and complete. The measures identified as "effective" will be effective to prevent the backflow of wastewater into a water supply well, irrigation well, or surface water.

Signature of Trained Professional Date

Print or Type Name

Documentation of Cross-Connection Conditions Allowing Potential Backflow

As a trained professional in backflow prevention, I certify that, based on the information provided to me by the Discharger named and my personal examination of the wastewater system, the information in Table VI-1 is true, accurate, and complete. The measures identified as "not effective" will be corrected to prevent the backflow of wastewater into a water supply well, irrigation well, or surface water.

Scheduled completion date: 07-01-2010

6-23-10

Signature of Trained Professional Date

Jon Vander Schuur, REHS, RDI

Print or Type Name

Table VI-1 Backflow Evaluation

Name or Location of Potential Backflow	Is the Ratio Greater than 1.5?	Pump Discharge Diameter (in)	Minimum Required Air Gap (in)	Is Prevention Measure Effective?
#1	Yes	6	6	Yes
#1A	Yes	6	6	Yes
#2	Yes	6	6	Yes
#3	Yes	8	8	No
#4	Yes	8	8	No
#6 East	Yes	8	8	Yes
#6 West	Yes	10	10	Yes
#7	Yes	8	8	Yes
#9	Yes	8	8	Yes
#11B	Yes	6	6	Yes
#12	Yes	8	8	No
#14	Yes	8	8	Yes
#18	Yes	8	8	Yes
#20	Yes	8	8	No
#21	Yes	10	10	Yes
#22	Yes	6	6	No
#23	Yes	6	6	No
#24 North	Yes	8	8	Yes
#24 South	Yes	8	8	Yes
#25	Yes	6	6	Yes
LP #7	Yes	8	8	No
LP 23	Yes	10	10	No
LP 25	Yes	10	10	Yes

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DISCHARGE REPORT FORM

Reporting Year: _____

Dairy Name: _____

Dairy Address: _____

Response is required within 24 hours of becoming aware of the occurrence. Information and the report generated **must be submitted** in the Annual Report of the year of the occurrence. Notify California Regional Water Quality Control Board, Local Environmental Health Department and California Office of Emergency Services (24/7) within 24 hours of Land Discharges, Non-15. Contact Information is as follows:

A. Record Data

Date: _____ Time: _____

Location of Discharge: _____

Destination of Discharge: _____

Approximant Volume: _____

Check Type of Discharge:

_____Manure or process wastewater from production area to surface water or land areas not according to NMP.

_____Storm water form production area to surface water.

_____Any discharge from land application area receiving manure to surface water.

B. Notify the following 3 agencies within 24 hours of becoming aware of the occurrence:

1. California Regional Water Quality Control Board

Jo Anne Kipps:
(Merced, Stanislaus, Tuolomne Counties Only)
(559) 445-5035
Doug Patteson:
(Fresno, Kern, Kings, Madera, Mariposa, and Tulare Counties Only)
(559) 445-5156

2. Contact Local Environmental Health and Human Services

Fresno County Environmental Health
1221 Fulton Mall, Third Floor
P. O. Box 11867
Fresno, CA 93775
(559) 445–3357 FAX (559) 445–3379

Kern County Environmental Health Services
2700 M Street, Suite 300
Bakersfield, CA 93301
(661) 862–8700 FAX (661) 862–8701

Kings County Environmental Health Services
300 Campus Drive
Hanford, CA 93230
(559) 584–1411 FAX (559) 584–6040

Madera County Department of Environmental Health
2037 West Cleveland Avenue MS–E
Madera, CA 93637
(559) 675–7823 FAX (559) 675–7919

Merced County Health Department
Division of Environmental Health
777 West 22nd Street
Merced, CA 95340
(209) 381–1100 FAX (209) 384–1593

Tulare County Environmental Health Department
5957 South Mooney Boulevard
Visalia, CA 93277
(559) 733–6441

3. Contact California Office of Emergency Services (24/7)
3650 Schriever Ave, Mather, CA 95655
Main Number (916) 845-8510
Website www.oes.ca.gov

C. Submit written report within 2 weeks of the occurrence:

Follow report requirements outlined in Priority Reporting of Significant Events, pages MRP 10 through MRP 11 of the General Order.

Signature of Property Owner/ Operator: _____

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PROBLEM RESOLUTION FORM

Form Number: _____

Reporting Year: _____

Dairy Name: _____

Dairy Address: _____

Date of Inspection: _____ Date of Closure: _____

This form is to be used to document problems found during inspections. The information contained on this form **must be submitted** in the Annual Report of the year of occurrence. **Problems must be resolved within 30 days of the inspection.** Items not corrected within 30 days must submit an explanation of the factors preventing immediate correction.

A. This problem originated on:

___ Routine Inspection – Production Area

___ Routine Inspection – Lagoons

___ Significant Storm Event – Production Area

___ Significant Storm Event – Lagoons

___ Other _____

B. Description of Problem: _____

_____

_____

_____

C. Was there a discharge to surface water or from the property?

___ No

___ Yes If Yes, complete the *Discharge Report Form* **within 24 hours.**

D. Corrective Action Taken: _____

_____

_____

_____

Signature of Property Owner/ Operator: _____

Information in this document supports the operation and maintenance plan within the Waste Management Plan for this facility.

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ROUTINE VISUAL INSPECTION FORM
PRODUCTION AREA

Reporting Year: _____

Dairy Name: _____

Dairy Address: _____

Conduct routine visual inspections and record results. ***Verify that there are no conditions that could result in discharges to surface water and/or from property*** under the control of the Discharger. If no discrepancy exists, record "None". If a discrepancy exists, mark area with Discrepancy Resolution form number and fill out the Discrepancy Resolution form.

Inspection the following area drainage systems to verify proper collection and diversion capability for:

- Drainage conveyance systems to the storage lagoon are not obviously obstructed.
- Roof gutters and downspouts are free of obvious obstructions.
- Pumps and other equipment used for rain water distribution to the storage lagoon are serviced and operational.

For non-manured areas, verify that the drainage systems route away from manured areas and are free and unobstructed.

For open corrals, prior to wet season, scrape excess manure away from drainage locations fill any holes or depressions.

For open corrals, feed storage and manure storage areas, ponding areas must be minimized and rainwater removed prior to 72 hours after the last rainfall.

Inspections are to be performed: **Monthly from June 01 through September 30 (dry season) and Weekly from October 01 through May 31 (wet season).**

Month/ WK	Date	Signature	A. Non Manure Areas	F. Open Corrals	G. Covered Animal Housing	H. Manure and Storage Areas
Jan – 1ST						
Jan – wk2						
Jan – wk3						
Jan – wk 4						
Jan – wk 5						
Feb – 1ST						
Feb – wk2						
Feb – wk3						
Feb – wk4						
Feb – wk5						
Mar – 1ST						
Mar – wk2						
Mar – wk3						
Mar – wk4						
Mar – wk5						
Apr – 1ST						
Apr – wk2						
Apr – wk3						

Routine Visual Inspection Form – Production Area (continued)

Month/ WK	Date	Signature	A. Non Manure Areas	F. Open Corrals	G. Covered Animal Housing	H. Manure and Storage Areas
Apr – wk4						
Apr – wk5						
May – 1ST						
May – wk2						
May – wk3						
May – wk 4						
May – wk 5						
Jun – 1ST						
Jul – 1ST						
Aug – 1ST						
Sep – 1ST						
Oct – 1ST						
Oct – wk2						
Oct – wk3						
Oct – wk4						
Oct – wk5						
Nov – 1ST						
Nov – wk2						
Nov – wk3						
Nov – wk4						
Nov – wk5						
Dec – 1ST						
Dec – wk2						
Dec – wk3						
Dec – wk4						
Dec – wk5						

Information in this document supports the operation and maintenance plan within the Waste Management Plan for this facility.

NOTE: THIS RECORD MUST BE MAINTAINED ON-SITE FOR A PERIOD OF FIVE YEARS AFTER IT IS CREATED

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SIGNIFICANT STORM EVENT INSPECTION FORM
PRODUCTION AREA

Reporting Year: _____

Dairy Name: _____

Dairy Address: _____

A significant storm event is defined to be either: ***A storm with continuous runoff of storm water for a minimum of 1 hour*** or ***A storm with intermittent runoff for a minimum of 3 hours in a 12 hour period.*** Conduct significant storm event visual inspections and record results. ***Verify that there are no conditions that could result in discharges to surface water and/or from property*** under the control of the Discharger. If no discrepancy exists, record "None". If a discrepancy exists, mark area with Discrepancy Resolution form number and fill out the Discrepancy Resolution form.
Inspect the following area drainage systems to verify proper collection and diversion capability for:

- Drainage conveyance systems to the storage lagoon are not obstructed.
- Roof gutters and downspouts are free of obstructions.
- Pumps and other equipment used for rain water distribution to the storage lagoon are operational.

For non-manured areas be sure rainfall is diverted away from manured areas, verify that the drainage systems route away from manure and are free and unobstructed.
For open corrals, feed storage and manure storage areas, ponding areas must be removed prior to 72 hours after the last rainfall.

Date	Signature	A. Non Manured Areas	F. Open Corrals	G. Covered Animal Housing	H. Manure and Feed Storage Areas

Information in this document supports the operation and maintenance plan within the Waste Management Plan for this facility.

NOTE: THIS RECORD MUST BE MAINTAINED ON-SITE FOR A PERIOD OF FIVE YEARS AFTER IT IS CREATED

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ROUTINE VISUAL INSPECTION FORM
LAGOONS

Reporting Year: _____

Dairy Name: _____

Dairy Address: _____

Monthly (on the first day of each month) – Photograph each pond showing the current freeboard. All Photos shall be dated and maintained as part of the discharger's record. **Weekly during the wet season (October 1 to May 31) and monthly between June 1 and September 30** – Conduct routine visual inspections and record results. **Verify that there are no conditions that could result in discharges to surface water and/or from property under the control of the Discharger**. If no discrepancy exists, record "None". If a discrepancy exists, mark area with Discrepancy Resolution form number and fill out the Discrepancy Resolution form.
For proper freeboard verification, record the name or number of each lagoon under the category of Less than Minimum, Equal to, or Greater than Minimum for each inspection period.
Inspect the sides and surfaces of the lagoons for causes of excessive odors and berm integrity. Check for: Prevention of odors, breeding of mosquitoes, burrowing animals, solids removal damage, embankment slumping/cracking/erosion/seepage, excessive vegetation, or other debris accumulating on the surface.

Month/ Week	Date of Inspection/ Picture	Signature	Photo Taken (yes/ no)	**Freeboard within each liquid storage structure** *(minimum requirement is two feet for above ground ponds and one foot for below ground ponds)*			Discrepancies
				Less then Minimum	**Equal to Minimum**	**Greater than Minimum**	
Jan – 1ST							
Jan – wk2			N/A				
Jan – wk3			N/A				
Jan – wk 4			N/A				
Jan – wk 5			N/A				
Feb – 1ST							
Feb – wk2			N/A				
Feb – wk3			N/A				
Feb – wk4			N/A				
Feb – wk5			N/A				
Mar – 1ST							
Mar – wk2			N/A				
Mar – wk3			N/A				
Mar – wk4			N/A				
Mar – wk5			N/A				
Apr – 1ST							
Apr – wk2			N/A				
Apr – wk3			N/A				
Apr – wk4			N/A				

Routine Visual Inspection Form – Lagoons (continued)

Month/ Week	Date of Inspection/ Picture	Signature	Photo Taken (yes/ no)	**Freeboard within each liquid storage structure** *(minimum requirement is two feet for above ground ponds and one foot for below ground ponds)*			Discrepancies
				Less then Minimum	**Equal to Minimum**	**Greater than Minimum**	
Apr – wk5			N /A				
May – 1ST							
May – wk2			N/A				
May – wk3			N/A				
May – wk 4			N/A				
May – wk 5			N/A				
Jun – 1ST							
Jul – 1ST							
Aug – 1ST							
Sep – 1ST							
Oct – 1ST							
Oct – wk2			N/A				
Oct – wk3			N/A				
Oct – wk4			N/A				
Oct – wk5			N/A				
Nov – 1ST							
Nov – wk2			N/A				
Nov – wk3			N/A				
Nov – wk4			N/A				
Nov – wk5			N/A				
Dec – 1ST							
Dec – wk2			N/A				
Dec – wk3			N/A				
Dec – wk4			N/A				
Dec – wk5			N /A				

Information in this document supports the operation and maintenance plan within the Waste Management Plan for this facility.

NOTE: THIS RECORD MUST BE MAINTAINED ON-SITE FOR A PERIOD OF FIVE YEARS AFTER IT IS CREATED

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SIGNIFICANT STORM EVENT INSPECTION FORM
LAGOONS

Reporting Year: _____

Dairy Name: _____

Dairy Address: _____

A significant storm event* is defined as a storm event that results in continuous runoff of storm water for a minimum of one hour, or intermittent runoff for a minimum of three hours in a 12-hour period.)** – Conduct routine visual inspections and record results. ***Verify that there are no conditions that could result in discharges to surface water and/or from property under the control of the Discharger. If no discrepancy exists, record "None". If a discrepancy exists, mark area with Discrepancy Resolution form number and fill out the Discrepancy Resolution form. For proper freeboard verification, record the name or number of each lagoon under the category of Less than Minimum, Equal to, or Greater than Minimum for each inspection period. Inspect the sides and surfaces of the lagoons for berm integrity. Check for: Slumping, cracking, erosion or seepage. Fill out a separate inspection form for each storm event.

DATE OF SIGNIFICANT STORM EVENT INSPECTION: _____

Pond ID	**Freeboard?** *(minimum requirement is two feet for above ground ponds and one foot for below ground ponds, check one)*			Discrepancies
	Less than minimum	Equal to minimum	Greater than minimum	

Signature of Property Owner/ Operator: _____

Information in this document supports the operation and maintenance plan within the Waste Management Plan for this facility.

NOTE: THIS RECORD MUST BE MAINTAINED ON-SITE FOR A PERIOD OF FIVE YEARS AFTER IT IS CREATED

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MORTALITY MANAGEMENT PRACTICES

Reporting Year: _____

Dairy Name: _____

Dairy Address: _____

A. If the dairy has a regularly scheduled pickup, describe the schedule: _____

_____

_____

_____

B. If not regularly scheduled, identify who is responsible to call for pickups: _____

_____

C. Maintain copies of invoices from hauler for 5 years.

Information in this document supports the operation and maintenance plan within the Waste Management Plan for this facility.

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ROUTINE VISUAL INSPECTION FORM SOLID AND LIQUID MANURE APPLICATION EQUIPMENT

Reporting Year: _____

Dairy Name: _____

Dairy Address: _____

Perform a visual inspection of the equipment used for applying solid and liquid manure once annually. The purpose of these inspections is to perform periodic observations to monitor the overall condition of the equipment so that repair or replacements can be scheduled as necessary to minimize any potential failures during use. This inspection form in not intended for documentation of any repairs needed while in use. **If manure is spilled during the operation of this equipment due to equipment failure**, then document the occurrence on the **Problem Resolution Form**.

A. Solid Manure Application Equipment

Perform a visual inspection of the equipment used for applying solid manure annually. Check the equipment for excessive wear and determine if components should be replaced or repaired. If needed, evaluate the effective remaining use of the equipment and potential timeframe for replacement.

_____ This dairy does not use its own equipment to spread solid manure.

Visually inspect all solid manure handling equipment and record condition, repairs needed, potential future replacements, as required.

_____

_____

_____

_____

Signature _____ Date _____

B. Liquid Manure Application Equipment

Perform a visual inspection of the lagoon pump and lines connected to the irrigation system. Check the equipment for excessive wear and determine if components should be replaced or repaired. If needed, evaluate the effective remaining use of the equipment and potential timeframe for replacement.

Check for abnormal sounds from the pump. If floating pump, check to insure that the pump is floating properly and the connecting line does not have excessive wear. Check for leakage or excessive leakage if contained within the lagoon. If eroding the side of the lagoon or leakage outside of the lagoon, repairs must be made.

_____

_____

_____

_____

Signature _____ Date _____

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ROUTINE VISUAL INSPECTION FORM
SURFACE WATER BERM INSPECTIONS

Reporting Year: _____

Dairy Name: _____

Dairy Address: _____

These inspections are to be performed for all areas bordered by ditches, creeks, or equivalent surface waters to verify the setback protection of the berm (see Farm Field Use Maps for locations). Potential flow should be controlled from either the production or land application area to the surface water OR the surface water to the production or land application area.

Inspect monthly for the following condition to insure the setback protection berm's structural integrity:

- Significant erosion has not occurred to the seetback protection berm.
- There are no holes or depressions.
- The side slopes of the setback protection berm are still intact and no visible side slope failure has occurred.
- Control of excessive vegetation.
- There are no visible animal holes in or around the setback protection berm.

If no discrepancy exists, record "None". If a discrepancy exists, mark area with Discrepancy Resolution form number and fill out the Discrepancy Resolution form.

Month	Date	Signature	Significant Erosion	Holes or Depressions	Side Slope Failure	Excessive Vegetation	Burrowing Animals
January							
February							
March							
April							
May							
June							
July							
August							
September							
October							
November							
December							

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ROUTINE VISUAL INSPECTION FORM
FLOOD PROTECTION BERM

Reporting Year: _____

Dairy Name: _____

Dairy Address: _____

Prior to the beginning of the wet season (approximately September 15 to 30) – Conduct visual inspections of the flood protection berm and record the results. Verify that there are no conditions that could result in failure to provide protection during a 100 year flooding event. Verify all holes or depressions are filled to maintain the height and integrity of the berm. All problems should be resolved before the wet season begins.

During the wet season (October 1 to May 31) Inspect monthly for the following conditions to insure the flood protection berm's structural integrity:

- Significant erosion has not occurred to the flood protection berm.
- There are no holes or depressions.
- The side slopes of the flood protection berm are still intact and no visible side slope failure has occurred.
- Control of excessive vegetation.
- There are no visible animal holes in or around the flood protection berm.

If no discrepancy exists, record "None". If a discrepancy exists, mark area with Discrepancy Resolution form number and fill out the Discrepancy Resolution form.

Month	Date	Signature	Significant Erosion	Holes or Depressions	Side Slope Failure	Excessive Vegetation	Burrowing Animals
Sep 15 - 30							
October							
November							
December							
January							
February							
March							
April							
May							

WASTE MANAGEMENT PLAN

Prepared for

Valley View Farms

Ex. 6 Personal Privacy (PP)

Kings County

June 18, 2010

Prepared by:

EST. 1968
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OVERSIZED MAPS (SEE FILE)

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