

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD,  
LAHONTAN REGION  
PUBLIC HEARING SCHEDULED FOR  
MARCH 13-14, 2013**

**TRANSMITTAL OF PROSECUTION TEAM'S WRITTEN MATERIALS  
FOR CONSIDERATION OF CEASE AND DESIST ORDER NO. R6T-2013-(DRAFT)**

**FOR**

**LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT  
LAKE ARROWHEAD  
SAN BERNARDINO COUNTY  
WDID NO. 6B360107001**

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**Public-Joshua/Enforcement Orders 2013/Lake Arrowhead CSD/Lake Arrowhead Written  
Evidentiary Materials**

## SECTIONS I and II

### LIST OF WITNESSES and SUMMARY OF TESTIMONY

- **Mike Coony, P.E (CA Registration C-26156) – Associate Water Resources Control Engineer**
  - Evidence showing Lake Arrowhead Community Services District (LACSD) discharges are regulated under Water Board Waste Discharge Requirements contained in Orders 6-89-110 and R6V-2009-0037 and Cease and Desist Orders No 6-93-44 and 6-93-44-A1;
  - Evidence showing LACSD has periodically violated these orders with regard to unauthorized discharges to Grass Valley Creek by exceeding outfall line capacity;
  - Evidence showing LACSD has not fully committed to a system wide reduction of infiltration and inflow into its sewer collection system, thereby contributing to excess flow;
  - Legal authority for the Water Board to impose a Cease and Desist Order for unauthorized discharges to waters of the United States and State;
  - Application of State Water Board Enforcement Policy, effective May 20, 2010; and
  - Recommendation to the Water Board.
- **Jehiel Cass, P.E, (CA Registration C-48169) – Senior Water Resources Control Engineer**
  - Supporting information as required
- **Mike Plaziak, P.G. (CA Registration G-7289) – Supervising Engineering Geologist**
  - Supporting information as required
- **Lauri Kemper, P.E. (CA Registration C-44283) – Assistant Executive Officer**
  - Supporting information as required

### SECTION III

**TABLE 1 - LIST OF EXHIBITS**

Exhibit No.	BATE Page No.	Description of Exhibit
1	8	<p>Excerpts/pages 4, 13 and 14 from Board Order No. R6V-2009-0037 containing:</p> <ul style="list-style-type: none"> <li>• Description of authorized disposal location, Finding No. 8</li> <li>• General Requirements and Prohibitions Nos. I.D.1, I.D.3, I.D.5, I.D.6, and I.D.7</li> <li>• Prohibition against discharge to areas other than authorized discharge locations, General Requirements and Prohibitions No. I.D.8</li> </ul>
2	12	<p>Excerpts/page 7 from Board Order No. 6-89-110 containing:</p> <ul style="list-style-type: none"> <li>• Discharge Specification Nos. I.D.1, I.D.3, and I.D.5</li> </ul>
3	14	<p>Excerpts/pages 26, 27, and 28 from LACSD letter dated April 20, 2012, Sources for CDO Table A data:</p> <ul style="list-style-type: none"> <li>• Rainfall, daily flow, and proof of unauthorized discharge</li> </ul>
4	18	<p>Calculation Analysis completed by Water Board staff engineer Mike Coony on January 16, 2013 based upon self-monitoring report data demonstrating there was a “significant reduction in treatment efficiency” at the Grass Valley plant during high I/I events cited in Table A (see CDO Page 5, 1<sup>st</sup> paragraph) – Flow, Influent BOD/TSS, Effluent BOD/TSS</p>
5	30	<p>Excerpts/pages from self-monitoring reports providing coliform data (see CDO Page 5, Table C)</p> <ul style="list-style-type: none"> <li>• Jan 2005</li> <li>• Feb 2005</li> </ul>
6	33	<p>Information from December 2, 2010 meeting, providing CTR Analysis from samples taken in December 2010 (see CDO Page 7)</p>
7	46	<p>LACSD letter dated July 13, 2011 I/I Progress Report, sources for CDO Table E (see CDO page 9)</p>
8	50	<p>Excerpts/page (1) Attachment 2 from LACSD letter dated April 20, 2012, providing data in CDO Table F (see CDO</p>

**TABLE 1 - LIST OF EXHIBITS**

<b>Exhibit No.</b>	<b>BATE Page No.</b>	<b>Description of Exhibit</b>
		Page 10)
9	52	Table 3-1 of Lake Arrowhead CSD's 2008 Wastewater Facilities Master Plan
10	54	Lahontan Water Board Staff March 7, 2012 Letter to Lake Arrowhead CSD
11	59	Lahontan Water Board Staff August 21, 2012 Letter to Lake Arrowhead CSD
12	62	Excerpts/pages of self-monitoring reports providing data supporting average dry-weather flow analysis for period 2009 – 2012 (see CDO Page 14, 2 <sup>nd</sup> paragraph) <ul style="list-style-type: none"><li>• May 2009</li><li>• Jun 2009</li><li>• Jul 2009</li><li>• Aug 2009</li><li>• Sep 2009</li><li>• May 2010</li><li>• Jun 2010</li><li>• Jul 2010</li><li>• Aug 2010</li><li>• Sep 2010</li><li>• May 2011</li><li>• Jun 2011</li><li>• Jul 2011</li><li>• Aug 2011</li><li>• Sep 2011</li><li>• May 2012</li><li>• Jun 2012</li><li>• Jul 2012</li><li>• Aug 2012</li><li>• Sep 2012</li></ul>

## SECTION IV

**TABLE 2 - LIST OF DOCUMENTS INCORPORATED BY REFERENCE**

Item	Document
1	Water Quality Control Plan for the Lahontan Region (Basin Plan), as amended <ul style="list-style-type: none"> <li>• Included for water quality standards</li> </ul>
2	California Water Code sections 13301, 13267, 13268, 13350 and 13385 <ul style="list-style-type: none"> <li>• Included as the legal basis for seeking CDO and technical information</li> </ul>
3	California Environmental Quality Act, Public Resources Code section 21000 <ul style="list-style-type: none"> <li>• Included to show compliance with CEQA</li> </ul>
4	California Code of Regulations, Section 15308 (Title 14, Chp. 3, Div. 3) <ul style="list-style-type: none"> <li>• Included to show compliance with CEQA</li> </ul>
5	Federal Clean Water Act, Title II, Construction Grants Program <ul style="list-style-type: none"> <li>• Included to show funding for LACSD's I&amp;I study</li> </ul>
6	Code of Federal Regulations, Title 40, Part 35, Subpart I <ul style="list-style-type: none"> <li>• Included to show requirements for Clean Water Act funding</li> </ul>
7	State Water Resources Control Board, Water Quality Enforcement Policy, Effective May 20, 2010 <ul style="list-style-type: none"> <li>• Included to provide guidance to Board when considering CDO</li> </ul>
	Water Board Files for Lake Arrowhead Community Services District (WDID No's. 6B360107001 and 6SSO11152) (excluding all privileged documents). Documents include, but are not limited to, the following:
8	Waste Discharge Requirements – Board Order No. R6V-2009-0037 <ul style="list-style-type: none"> <li>• Included to show previous requirements for LACSD</li> </ul>
9	Waste Discharge Requirements – Board Order No. R6V-2002-0008 <ul style="list-style-type: none"> <li>• Included to show previous requirements for LACSD</li> </ul>
10	Waste Discharge Requirements – Board Order No. 6-89-110 <ul style="list-style-type: none"> <li>• Included to show previous requirements for LACSD</li> </ul>

**TABLE 2 - LIST OF DOCUMENTS INCORPORATED BY REFERENCE**

Item	Document
11	Cease and Desist Order No. 6-93-44 <ul style="list-style-type: none"><li>• Included to show previous enforcement against LACSD</li></ul>
12	Cease and Desist Order No. 6-93-44A1 <ul style="list-style-type: none"><li>• Included to show previous enforcement against LACSD</li></ul>
13	Document providing data listed in CDO-Table C <ul style="list-style-type: none"><li>• Included to show coliform results with current treatment</li></ul> <i>*Note: The January 18, 2005 result contains a typographical error and is actually from January 8, 2005.*</i>
14	Facilities Planning and Project Report for I/I Remediation and Effluent Disposal Facilities (July 1999) <ul style="list-style-type: none"><li>• Included to show LACSD infrastructure at that time</li></ul>
15	Report providing analytical results of December 2010 sampling for CTR compliance <ul style="list-style-type: none"><li>• Included to show sampling results with current treatment</li></ul>
16	Lahontan Water Board Investigative Order No. R6V-2011-0083 <ul style="list-style-type: none"><li>• Included to show previous enforcement against LACSD</li></ul>
17	Lake Arrowhead CSD's 2007 Non-Excessive Infiltration Analysis <ul style="list-style-type: none"><li>• Included to show extent of I&amp;I affecting LACSD's system</li></ul>
18	Lake Arrowhead CSD's July 13, 2011 I/I Progress Report <ul style="list-style-type: none"><li>• Included to show status of I&amp;I improvements</li></ul>
19	Lake Arrowhead CSD's 2008 Wastewater Facilities Master Plan <ul style="list-style-type: none"><li>• Included to show LACSD infrastructure at that time</li></ul>
20	Lake Arrowhead CSD's April 27, 2012 Past Inflow/Infiltration Activities Report <ul style="list-style-type: none"><li>• Included to show status of I&amp;I Activities</li></ul>
21	Lake Arrowhead CSD's February 1, 2012 2008 Master Plan Status Report <ul style="list-style-type: none"><li>• Included to show status of I&amp;I Activities/upgrades to infrastructure</li></ul>
22	Lake Arrowhead CSD's April 20, 2012 Revised 2008 Master Plan Status Report <ul style="list-style-type: none"><li>• Included to show status of I&amp;I Activities/upgrades to infrastructure</li></ul>

**TABLE 2 - LIST OF DOCUMENTS INCORPORATED BY REFERENCE**

<b>Item</b>	<b>Document</b>
23	Lake Arrowhead CSD's October 1, 2012 Inflow Remediation Plan <ul style="list-style-type: none"><li>• Included to show potential I&amp;I Activities/upgrades to infrastructure and schedule for same</li></ul>
24	Documents providing data supporting average dry-weather flow analysis for period 2009-2012 <ul style="list-style-type: none"><li>• Included to provide information regarding capacity and treatment</li></ul>
25	Lake Arrowhead CSD's 1983 Sewer Master Plan <ul style="list-style-type: none"><li>• Included to show LACSD infrastructure at that time</li></ul>
26	Lake Arrowhead CSD's 1999 Inflow/Infiltration Facilities Plan <ul style="list-style-type: none"><li>• Included to show LACSD infrastructure at that time</li></ul>

# EXHIBIT NO. 1



**Table 2**  
**Flow Characterization Used for Design<sup>1</sup>**  
**Grass Valley Wastewater Treatment Plant**

Flow (Million Gallons per Day)	Type of Flow Measurement
Dry periods with <u>no</u> sewer inflow <sup>2</sup>	
2.7	Average during a 24-hour period
3.75	Average during a 72-hour period; holiday weekends (e.g., July 4th)
Wet periods with sewer inflow	
6.0	Average during a 24-hour period
8.0	Average during a 72-hour period; holiday weekends (e.g., January 1st)
12.0	Maximum instantaneous (or peak)
Table footnotes: 1. Adapted from Table 3-1 from the report titled: Final Basis of Design and Engineering Report, Grass Valley Wastewater Treatment Plant Recycled Water System Phase I Project, Prepared by CH2MHill, August 2006. 2. The term "sewer inflow" is defined as inflow of groundwater and surface water into the sewer system.	

7. Locations of Facilities

The Willow Creek and Grass Valley WTPs are located within the W/2, Section 3, and the SW/4, Section 5, T2N, R3W, SBB&M, respectively. The Hesperia EMS is located within the SE/4, Section 1, T3N, R4W, SBB&M. The treatment facilities and the Hesperia EMS are located as shown on Attachment "A", which is made a part of this Order. The locations of existing monitoring wells at the Hesperia EMS are shown on Attachment "B", which is made a part of this Order.

8. Authorized Disposal/Recycling Site

The discharges of treated wastewater at the Hesperia EMS is subject to waste discharge requirements as set forth in this Order. The Hesperia EMS consists of 350-acres of land owned by the Discharger. The Discharger's percolation ponds and fodder-crop irrigation area are located at the Site. The EMS percolation ponds and fodder-crop irrigation area has a disposal capacity of 4.0 MGD.

9. Sludge Treatment and Disposal

Biosolids are hauled offsite to an authorized facility for recycling/disposal.

D. General Requirements and Prohibitions

1. There shall be no discharge, bypass, or diversion of untreated or partially treated sewage, sewage sludge, grease, or oils from the collection, transport, treatment, or disposal facilities to adjacent land areas or surface waters.
2. Surface flow or visible discharge of sewage or sewage effluent from the authorized disposal/recycling site to adjacent land areas or surface waters is prohibited.
3. All facilities used for collection, transport, treatment or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage, or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.
4. The vertical distance between the liquid surface elevation and the lowest point of a pond dike or the invert of an over flow structure shall not be less than 2.0 feet.
5. The Discharger shall comply with USEPA standards for Collection System infiltration, which is 120 gallons per capita per day (gpcd). During any seven-day period, which has no measurable rainfall but follows a day with measurable rainfall, the average daily influent flowrates ( $Q_{\text{gpcd, infiltration}}$ ) to the treatment facilities shall not exceed 120 gpcd. [ $Q_{\text{gpcd, infiltration}} = Q_{\text{gpd, infiltration}} \div P$  where:
  - i.  $Q_{\text{gpd, infiltration}}$  is the average daily influent flowrate (gallons per day) for the seven-day period
  - ii. P equals the estimated population, which is determined by dividing the average monthly dry-weather influent flow ( $Q_{\text{gpd, dw}}$ ) to the treatment facilities by 80 gpcd. <sup>3</sup>  $Q_{\text{gpd, dw}}$  is the average influent flowrate during dry weather (A period during the previous summer when there is no rainfall.)]
6. The Discharger shall comply with USEPA standards for Collection System inflow, which is 275 gpcd. The daily flow ( $Q_{\text{gpcd, inflow}}$ ) on any day shall not exceed 275 gpcd. [ $Q_{\text{gpcd, inflow}} = Q_{\text{gpd, inflow}} \div P$  where  $Q_{\text{gpd, inflow}}$  is the flow for the day in gpd and P equals the estimated population, which is calculated as described in the preceding discharge specification.]
7. Neither the treatment nor the discharge shall cause pollution, threatened pollution or nuisance as defined in the CWC.

<sup>3</sup> The Discharger developed the value of 80 gpcd in its 1983 Sewer Master Plan (LKACSD, 1998).

8. The discharge of wastewater except to the authorized disposal/recycling site is prohibited.
9. The discharge of waste, as defined in the CWC, which causes violation of any narrative WQO contained in the Basin Plan is prohibited.
10. The discharge of waste, which causes violation of any numeric WQO contained in the Basin Plan, is prohibited.
11. Where any numeric or narrative WQO contained in the Basin Plan is already being exceeded, the discharge of waste, which causes further degradation or pollution, is prohibited.
12. The Discharger shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices.

## II. PROVISIONS

### A. Waste Discharge Requirements

Provision No. II.B. of Board Order No. R6V-2002-0008 states that:

"Discharge Specifications No. I.D.1, I.D.3 and I.D.5 of Board Order No. 6-89-110 shall remain in effect and unchanged. All other Discharge Specifications and Findings of Board Order No. 6-89-110, and all Provisions of Board Order No. 6-89-110 are no longer in effect."

The above provision shall remain in effect and unchanged. All other Provisions and all Discharge Specifications and Findings of Board Order No. R6V-2002-0008 are no longer in effect.

### B. Farm Management Plan

At least 120 days prior to using recycled water to grow crops at the Hesperia EMS the District must submit a Farm Management Plan describing methods to ensure recycled water is applied at agronomic rates.

### C. Compliance Schedule

Pursuant to the CWC, section 13267, the Discharger must meet the following compliance milestones:

## EXHIBIT NO. 2

4. The discharge shall not cause the below-listed receiving water limitations to be exceeded in surface or ground waters of the Mojave River (at Lower Narrows):

<u>Constituent</u>	<u>Units</u>	<u>Maximum</u>
Nitrate as NO <sub>3</sub>	mg/L	5
Total Dissolved Solids	mg/L	312

D. General Requirements and Prohibitions

1. There shall be no discharge, bypass, or diversion of raw or partially treated sewage, sewage sludge, grease, or oils from the collection, transport, treatment, or disposal facilities to adjacent land areas or surface waters.
2. Surface flow or visible discharge of sewage or sewage effluent from the authorized disposal sites to adjacent land areas or surface waters is prohibited.
3. All facilities used for collection, transport, treatment, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.
4. The vertical distance between the liquid surface elevation and the lowest point of a pond dike or the invert of an overflow structure shall not be less than 1.5 feet.
5. Neither the treatment nor the discharge shall cause pollution, threatened pollution or nuisance as defined in the California Water Code.
6. The disposal of waste residue, including sludge, shall be in a manner approved by the Regional Board Executive Officer and in compliance with all local, state, and federal requirements.

II. PROVISIONS

1. Board Order No. 6-88-10 is hereby rescinded.
2. The discharger shall comply with Monitoring and Reporting Program No. 89-110 and the "General Provisions for Monitoring and Reporting" as specified by the Executive Officer.

EXHIBIT NO. 3



Attachment 4-1: USEPA I&amp;I Standards Evaluation (Assuming 80 gpcd for sewer permanent population)

I&I Induced Discharge Event from WWTP	Discharge Volume to Grass Valley Creek (MG)	Storm Event Date (No I&I Induced Discharge)	Storm Event Date & Rainfall (Inches)	Q <sub>gpcd, infiltration</sub>	Meets USEPA Infiltration Standard (Q <sub>gpcd, infiltration</sub> < 120 gpcd)	Q <sub>gpcd, infiltration</sub>	Estimated Population, P	Q <sub>gpcd, dw</sub>	Q <sub>gpcd, inflow</sub>	Meets USEPA Inflow Standard (Q <sub>gpcd, inflow</sub> < 275 gpcd)	Q <sub>gpcd, inflow</sub>	Estimated Population, P	Q <sub>gpcd, dw</sub>	
			1/2/05 to 1/10/05 23.4" rain on 20" snow	141	NO	3,127,000	22,163	1,773,000	185	YES	4,109,082	22,163	1,773,000	
		01/02/2005	0.1	141	NO	3,127,000	22,163	1,773,000	115	YES	2,548,900	22,163	1,773,000	
		01/03/2005	2.2	141	NO	3,127,000	22,163	1,773,000	96	YES	2,138,300	22,163	1,773,000	
		01/04/2005	-	141	NO	3,127,000	22,163	1,773,000	86	YES	1,912,300	22,163	1,773,000	
		01/05/2005	-	141	NO	3,127,000	22,163	1,773,000	80	YES	1,771,600	22,163	1,773,000	
		01/06/2005	-	141	NO	3,127,000	22,163	1,773,000	70	YES	1,560,900	22,163	1,773,000	
		01/07/2005	3.3	141	NO	3,127,000	22,163	1,773,000	142	YES	3,156,900	22,163	1,773,000	
01/08/2005	13.876 MG to GV Creek		8.2	141	NO	3,127,000	22,163	1,773,000	295	NO	6,547,000	22,163	1,773,000	
01/09/2005			3.1	141	NO	3,127,000	22,163	1,773,000	322	NO	7,133,000	22,163	1,773,000	
01/10/2005			6.5	141	NO	3,127,000	22,163	1,773,000	357	NO	7,905,000	22,163	1,773,000	
01/11/2005			-	141	NO	3,127,000	22,163	1,773,000	319	NO	7,070,000	22,163	1,773,000	
01/12/2005			-	141	NO	3,127,000	22,163	1,773,000	156	YES	3,456,000	22,163	1,773,000	
				2/10/05 to 2/22/05 17" rain	137	NO	3,042,000	22,163	1,773,000	147	YES	3,249,278	22,163	1,773,000
			02/10/2005	1.0	137	NO	3,042,000	22,163	1,773,000	82	YES	1,807,000	22,163	1,773,000
		02/11/2005	3.5	137	NO	3,042,000	22,163	1,773,000	150	YES	3,314,000	22,163	1,773,000	
		02/12/2005	-	137	NO	3,042,000	22,163	1,773,000	131	YES	2,904,000	22,163	1,773,000	
		02/13/2005	-	137	NO	3,042,000	22,163	1,773,000	140	YES	3,104,000	22,163	1,773,000	
		02/14/2005	-	137	NO	3,042,000	22,163	1,773,000	133	YES	2,958,000	22,163	1,773,000	
		02/15/2005	-	137	NO	3,042,000	22,163	1,773,000	113	YES	2,498,000	22,163	1,773,000	
		02/16/2005	-	137	NO	3,042,000	22,163	1,773,000	111	YES	2,459,000	22,163	1,773,000	
		02/17/2005	2.2	137	NO	3,042,000	22,163	1,773,000	111	YES	2,459,000	22,163	1,773,000	
		02/18/2005	2.2	137	NO	3,042,000	22,163	1,773,000	152	YES	3,363,000	22,163	1,773,000	
		02/19/2005	2.2	137	NO	3,042,000	22,163	1,773,000	165	YES	3,662,000	22,163	1,773,000	
02/20/2005	12.064 MG to GV Creek		2.2	137	NO	3,042,000	22,163	1,773,000	173	YES	3,825,000	22,163	1,773,000	
02/21/2005			2.2	137	NO	3,042,000	22,163	1,773,000	198	YES	4,383,000	22,163	1,773,000	
02/22/2005			1.4	137	NO	3,042,000	22,163	1,773,000	173	YES	3,841,000	22,163	1,773,000	
02/23/2005			-	137	NO	3,042,000	22,163	1,773,000	188	YES	4,156,000	22,163	1,773,000	
02/24/2005	8.134 MG to Hillside Ponds		-	137	NO	3,042,000	22,163	1,773,000	184	YES	4,079,000	22,163	1,773,000	
02/25/2005			-	137	NO	3,042,000	22,163	1,773,000	181	YES	4,020,000	22,163	1,773,000	
02/26/2005			-	137	NO	3,042,000	22,163	1,773,000	165	YES	3,662,000	22,163	1,773,000	
02/27/2005			-	137	NO	3,042,000	22,163	1,773,000	90	YES	1,993,000	22,163	1,773,000	
01/27/2008	0.880 MG to GV Creek		4.5" rain on 20" snow	137	NO	2,028,000	14,825	1,186,000	227	YES	3,358,000	14,825	1,186,000	
			2/5/10 to 2/7/10 6.7" rain on 18" snow	152	NO	2,253,000	14,825	1,186,000	237	YES	3,512,000	14,825	1,186,000	
		02/05/2010	1.2	152	NO	2,253,000	14,825	1,186,000	154	YES	2,282,000	14,825	1,186,000	
02/06/2010	0.670 MG to GV Creek		5.5	152	NO	2,253,000	14,825	1,186,000	336	NO	4,980,000	14,825	1,186,000	
02/07/2010			-	152	NO	2,253,000	14,825	1,186,000	221	YES	3,274,000	14,825	1,186,000	
			12/16/10 to 12/24/10 30" rain	180	NO	2,851,000	15,800	1,264,000	271	YES	4,278,889	15,800	1,264,000	
		12/16/2010	0.2	180	NO	2,851,000	15,800	1,264,000	63	YES	997,000	15,800	1,264,000	
		12/17/2010	1.3	180	NO	2,851,000	15,800	1,264,000	85	YES	1,339,000	15,800	1,264,000	
		12/18/2010	0.8	180	NO	2,851,000	15,800	1,264,000	98	YES	1,552,000	15,800	1,264,000	
		12/19/2010	7.0	180	NO	2,851,000	15,800	1,264,000	258	YES	4,076,000	15,800	1,264,000	
12/20/2010	9.184 MG to GV Creek		9.1	180	NO	2,851,000	15,800	1,264,000	464	NO	7,339,000	15,800	1,264,000	
12/21/2010			4.7	180	NO	2,851,000	15,800	1,264,000	478	NO	7,552,000	15,800	1,264,000	
12/22/2010			6.9	180	NO	2,851,000	15,800	1,264,000	483	NO	7,633,000	15,800	1,264,000	
12/23/2010			-	180	NO	2,851,000	15,800	1,264,000	271	YES	4,288,000	15,800	1,264,000	
12/24/2010			-	180	NO	2,851,000	15,800	1,264,000	236	YES	3,734,000	15,800	1,264,000	
I&I Induced Discharge Event from Collection System			Storm Event Date & Rainfall (Inches)	Q <sub>gpcd, infiltration</sub>	Meets USEPA Infiltration Standard (Q <sub>gpcd, infiltration</sub> < 120 gpcd)	Q <sub>gpcd, infiltration</sub>	Estimated Population, P	Q <sub>gpcd, dw</sub>	Q <sub>gpcd, inflow</sub>	Meets USEPA Inflow Standard (Q <sub>gpcd, inflow</sub> < 275 gpcd)	Q <sub>gpcd, inflow</sub>	Estimated Population, P	Q <sub>gpcd, dw</sub>	
			12/20/10 to 12/24/10 28" rain											
12/22/2010	0.06875 MG to Willow Creek		6.9	180	NO	2,851,000	15,800	1,264,000	483	NO	7,633,000	15,800	1,264,000	



Attachment 4-2: USEPA I&amp;I Standards Evaluation (Assuming 60 gpcd for sewer permanent population)

I&I Induced Discharge Event from WWTP	Discharge Volume to Grass Valley Creek (MG)	Storm Event Date (No I&I Induced Discharge)	Storm Event Date & Rainfall (Inches)	$Q_{\text{good, infiltration}}$	Meets USEPA Infiltration Standard ( $Q_{\text{good, infiltration}} < 120 \text{ gpcd}$ )	$Q_{\text{good, infiltration}}$	Estimated Population, P	$Q_{\text{good, dw}}$	$Q_{\text{good, inflow}}$	Meets USEPA Inflow Standard ( $Q_{\text{good, inflow}} < 275 \text{ gpcd}$ )	$Q_{\text{good, inflow}}$	Estimated Population, P	$Q_{\text{good, dw}}$	
			1/2/05 to 1/10/05 23.4" rain on 20" snow	106	YES	3,127,000	29,550	1,773,000	139	YES	4,109,082	29,550	1,773,000	
		01/02/2005	0.1	106	YES	3,127,000	29,550	1,773,000	86	YES	2,548,900	29,550	1,773,000	
		01/03/2005	2.2	106	YES	3,127,000	29,550	1,773,000	72	YES	2,138,300	29,550	1,773,000	
		01/04/2005	-	106	YES	3,127,000	29,550	1,773,000	65	YES	1,912,300	29,550	1,773,000	
		01/05/2005	-	106	YES	3,127,000	29,550	1,773,000	60	YES	1,771,800	29,550	1,773,000	
		01/06/2005	-	106	YES	3,127,000	29,550	1,773,000	53	YES	1,560,900	29,550	1,773,000	
		01/07/2005	3.3	106	YES	3,127,000	29,550	1,773,000	107	YES	3,156,900	29,550	1,773,000	
01/08/2005	13.876 MG to GV Creek		8.2	106	YES	3,127,000	29,550	1,773,000	222	YES	6,547,000	29,550	1,773,000	
01/09/2005			3.1	106	YES	3,127,000	29,550	1,773,000	241	YES	7,133,000	29,550	1,773,000	
01/10/2005			6.5	106	YES	3,127,000	29,550	1,773,000	268	YES	7,905,000	29,550	1,773,000	
01/11/2005			-	106	YES	3,127,000	29,550	1,773,000	239	YES	7,070,000	29,550	1,773,000	
01/12/2005			-	106	YES	3,127,000	29,550	1,773,000	117	YES	3,456,000	29,550	1,773,000	
				2/10/05 to 2/22/05 17" rain	103	YES	3,042,000	29,550	1,773,000	110	YES	3,249,278	29,550	1,773,000
		02/10/2005	1.0	103	YES	3,042,000	29,550	1,773,000	61	YES	1,807,000	29,550	1,773,000	
		02/11/2005	3.5	103	YES	3,042,000	29,550	1,773,000	112	YES	3,314,000	29,550	1,773,000	
		02/12/2005	-	103	YES	3,042,000	29,550	1,773,000	98	YES	2,904,000	29,550	1,773,000	
		02/13/2005	-	103	YES	3,042,000	29,550	1,773,000	105	YES	3,104,000	29,550	1,773,000	
		02/14/2005	-	103	YES	3,042,000	29,550	1,773,000	100	YES	2,958,000	29,550	1,773,000	
		02/15/2005	-	103	YES	3,042,000	29,550	1,773,000	85	YES	2,498,000	29,550	1,773,000	
		02/16/2005	-	103	YES	3,042,000	29,550	1,773,000	83	YES	2,459,000	29,550	1,773,000	
		02/17/2005	2.2	103	YES	3,042,000	29,550	1,773,000	83	YES	2,459,000	29,550	1,773,000	
		02/18/2005	2.2	103	YES	3,042,000	29,550	1,773,000	114	YES	3,363,000	29,550	1,773,000	
		02/19/2005	2.2	103	YES	3,042,000	29,550	1,773,000	124	YES	3,662,000	29,550	1,773,000	
02/20/2005	12.064 MG to GV Creek		2.2	103	YES	3,042,000	29,550	1,773,000	129	YES	3,825,000	29,550	1,773,000	
02/21/2005			2.2	103	YES	3,042,000	29,550	1,773,000	148	YES	4,383,000	29,550	1,773,000	
02/22/2005			1.4	103	YES	3,042,000	29,550	1,773,000	130	YES	3,841,000	29,550	1,773,000	
02/23/2005	8.134 MG to Hillside Ponds		-	103	YES	3,042,000	29,550	1,773,000	141	YES	4,156,000	29,550	1,773,000	
02/24/2005			-	103	YES	3,042,000	29,550	1,773,000	138	YES	4,079,000	29,550	1,773,000	
02/25/2005			-	103	YES	3,042,000	29,550	1,773,000	136	YES	4,020,000	29,550	1,773,000	
02/26/2005			-	103	YES	3,042,000	29,550	1,773,000	124	YES	3,662,000	29,550	1,773,000	
02/27/2005			-	103	YES	3,042,000	29,550	1,773,000	67	YES	1,993,000	29,550	1,773,000	
01/27/2008	0.880 MG to GV Creek		4.5" rain on 20" snow	103	YES	2,028,000	19,767	1,186,000	170	YES	3,358,000	19,767	1,186,000	
			2/5/10 to 2/7/10 6.7" rain on 18" snow	114	YES	2,253,000	19,767	1,186,000	178	YES	3,512,000	19,767	1,186,000	
		02/05/2010	1.2	114	YES	2,253,000	19,767	1,186,000	115	YES	2,282,000	19,767	1,186,000	
02/06/2010	0.670 MG to GV Creek		5.5	114	YES	2,253,000	19,767	1,186,000	252	YES	4,980,000	19,767	1,186,000	
02/07/2010			-	114	YES	2,253,000	19,767	1,186,000	166	YES	3,274,000	19,767	1,186,000	
			12/16/10 to 12/24/10 30" rain	135	NO	2,851,000	21,067	1,264,000	203	YES	4,278,889	21,067	1,264,000	
		12/16/2010	0.2	135	NO	2,851,000	21,067	1,264,000	47	YES	997,000	21,067	1,264,000	
		12/17/2010	1.3	135	NO	2,851,000	21,067	1,264,000	64	YES	1,339,000	21,067	1,264,000	
		12/18/2010	0.8	135	NO	2,851,000	21,067	1,264,000	74	YES	1,552,000	21,067	1,264,000	
		12/19/2010	7.0	135	NO	2,851,000	21,067	1,264,000	193	YES	4,076,000	21,067	1,264,000	
12/20/2010	9.184 MG to GV Creek		9.1	135	NO	2,851,000	21,067	1,264,000	348	NO	7,339,000	21,067	1,264,000	
12/21/2010			4.7	135	NO	2,851,000	21,067	1,264,000	358	NO	7,552,000	21,067	1,264,000	
12/22/2010			6.9	135	NO	2,851,000	21,067	1,264,000	362	NO	7,633,000	21,067	1,264,000	
12/23/2010			-	135	NO	2,851,000	21,067	1,264,000	204	YES	4,288,000	21,067	1,264,000	
12/24/2010			-	135	NO	2,851,000	21,067	1,264,000	177	YES	3,734,000	21,067	1,264,000	
<b>RB16</b>														
I&I Induced Discharge Event from Collection System			Storm Event Date & Rainfall (Inches)	$Q_{\text{good, infiltration}}$	Meets USEPA Infiltration Standard ( $Q_{\text{good, infiltration}} < 120 \text{ gpcd}$ )	$Q_{\text{good, infiltration}}$	Estimated Population, P	$Q_{\text{good, dw}}$	$Q_{\text{good, inflow}}$	Meets USEPA Inflow Standard ( $Q_{\text{good, inflow}} < 275 \text{ gpcd}$ )	$Q_{\text{good, inflow}}$	Estimated Population, P	$Q_{\text{good, dw}}$	
			12/20/10 to 12/24/10 28" rain											
12/22/2010	0.06875 MG to Willow Creek		6.9	135	NO	2,851,000	21,067	1,264,000	362	NO	7,633,000	21,067	1,264,000	



Attachment 4-3: USEPA I&I Standards Evaluation (Assuming 140 gpcd for sewer permanent population)

I&I Induced Discharge Event from WWTP	Discharge Volume to Grass Valley Creek (MG)	Storm Event Date (No I&I Induced Discharge)	Storm Event Date & Rainfall (inches)	Q <sub>gpcd, infiltration</sub>	Meets USEPA Infiltration Standard (Q <sub>gpcd, infiltration</sub> < 120 gpcd)	Q <sub>gpcd, infiltration</sub>	Estimated Population, P	Q <sub>gpcd, dis</sub>	Q <sub>gpcd, inflow</sub>	Meets USEPA Inflow Standard (Q <sub>gpcd, inflow</sub> < 275 gpcd)	Q <sub>gpcd, inflow</sub>	Estimated Population, P	Q <sub>gpcd, dis</sub>	
			1/2/05 to 1/10/05 23.4" rain on 20" snow	247	NO	3,127,000	12,664	1,773,000	324	NO	4,109,082	12,664	1,773,000	
		01/02/2005	0.1	247	NO	3,127,000	12,664	1,773,000	201	YES	2,548,900	12,664	1,773,000	
		01/03/2005	2.2	247	NO	3,127,000	12,664	1,773,000	169	YES	2,138,300	12,664	1,773,000	
		01/04/2005	-	247	NO	3,127,000	12,664	1,773,000	151	YES	1,912,300	12,664	1,773,000	
		01/05/2005	-	247	NO	3,127,000	12,664	1,773,000	140	YES	1,771,600	12,664	1,773,000	
		01/06/2005	-	247	NO	3,127,000	12,664	1,773,000	123	YES	1,560,900	12,664	1,773,000	
		01/07/2005	3.3	247	NO	3,127,000	12,664	1,773,000	249	YES	3,156,900	12,664	1,773,000	
01/08/2005	13.876 MG to GV Creek		8.2	247	NO	3,127,000	12,664	1,773,000	517	NO	6,547,000	12,664	1,773,000	
01/09/2005			3.1	247	NO	3,127,000	12,664	1,773,000	563	NO	7,133,000	12,664	1,773,000	
01/10/2005			6.5	247	NO	3,127,000	12,664	1,773,000	624	NO	7,905,000	12,664	1,773,000	
01/11/2005			-	247	NO	3,127,000	12,664	1,773,000	558	NO	7,070,000	12,664	1,773,000	
01/12/2005			-	247	NO	3,127,000	12,664	1,773,000	273	YES	3,456,000	12,664	1,773,000	
				2/10/05 to 2/22/05 17" rain	240	NO	3,042,000	12,664	1,773,000	257	YES	3,249,278	12,664	1,773,000
		02/10/2005	1.0	240	NO	3,042,000	12,664	1,773,000	143	YES	1,807,000	12,664	1,773,000	
		02/11/2005	3.5	240	NO	3,042,000	12,664	1,773,000	262	YES	3,314,000	12,664	1,773,000	
		02/12/2005	-	240	NO	3,042,000	12,664	1,773,000	229	YES	2,904,000	12,664	1,773,000	
		02/13/2005	-	240	NO	3,042,000	12,664	1,773,000	245	YES	3,104,000	12,664	1,773,000	
		02/14/2005	-	240	NO	3,042,000	12,664	1,773,000	234	YES	2,958,000	12,664	1,773,000	
		02/15/2005	-	240	NO	3,042,000	12,664	1,773,000	197	YES	2,498,000	12,664	1,773,000	
		02/16/2005	-	240	NO	3,042,000	12,664	1,773,000	194	YES	2,459,000	12,664	1,773,000	
		02/17/2005	2.2	240	NO	3,042,000	12,664	1,773,000	194	YES	2,459,000	12,664	1,773,000	
		02/18/2005	2.2	240	NO	3,042,000	12,664	1,773,000	266	YES	3,363,000	12,664	1,773,000	
		02/19/2005	2.2	240	NO	3,042,000	12,664	1,773,000	289	NO	3,662,000	12,664	1,773,000	
02/20/2005	12.064 MG to GV Creek		2.2	240	NO	3,042,000	12,664	1,773,000	302	NO	3,825,000	12,664	1,773,000	
02/21/2005			2.2	240	NO	3,042,000	12,664	1,773,000	346	NO	4,383,000	12,664	1,773,000	
02/22/2005			1.4	240	NO	3,042,000	12,664	1,773,000	303	NO	3,841,000	12,664	1,773,000	
02/23/2005			-	240	NO	3,042,000	12,664	1,773,000	328	NO	4,156,000	12,664	1,773,000	
02/24/2005	8.134 MG to Hillside Ponds		-	240	NO	3,042,000	12,664	1,773,000	322	NO	4,079,000	12,664	1,773,000	
02/25/2005			-	240	NO	3,042,000	12,664	1,773,000	317	NO	4,020,000	12,664	1,773,000	
02/26/2005			-	240	NO	3,042,000	12,664	1,773,000	289	NO	3,662,000	12,664	1,773,000	
02/27/2005			-	240	NO	3,042,000	12,664	1,773,000	157	YES	1,993,000	12,664	1,773,000	
01/27/2008	0.880 MG to GV Creek		4.5" rain on 20" snow	239	NO	2,028,000	8,471	1,186,000	396	NO	3,358,000	8,471	1,186,000	
			2/5/10 to 2/7/10 6.7" rain on 18" snow	266	NO	2,253,000	8,471	1,186,000	415	NO	3,512,000	8,471	1,186,000	
		02/05/2010	1.2	266	NO	2,253,000	8,471	1,186,000	269	YES	2,282,000	8,471	1,186,000	
02/06/2010	0.670 MG to GV Creek		5.5	266	NO	2,253,000	8,471	1,186,000	538	NO	4,980,000	8,471	1,186,000	
02/07/2010			-	266	NO	2,253,000	8,471	1,186,000	386	NO	3,274,000	8,471	1,186,000	
			12/16/10 to 12/24/10 30" rain	316	NO	2,851,000	9,029	1,264,000	474	NO	4,278,889	9,029	1,264,000	
		12/16/2010	0.2	316	NO	2,851,000	9,029	1,264,000	110	YES	997,000	9,029	1,264,000	
		12/17/2010	1.3	316	NO	2,851,000	9,029	1,264,000	148	YES	1,339,000	9,029	1,264,000	
		12/18/2010	0.8	316	NO	2,851,000	9,029	1,264,000	172	YES	1,552,000	9,029	1,264,000	
		12/19/2010	7.0	316	NO	2,851,000	9,029	1,264,000	451	NO	4,076,000	9,029	1,264,000	
12/20/2010	9.184 MG to GV Creek		9.1	316	NO	2,851,000	9,029	1,264,000	813	NO	7,339,000	9,029	1,264,000	
12/21/2010			4.7	316	NO	2,851,000	9,029	1,264,000	836	NO	7,552,000	9,029	1,264,000	
12/22/2010			6.9	316	NO	2,851,000	9,029	1,264,000	845	NO	7,633,000	9,029	1,264,000	
12/23/2010			-	316	NO	2,851,000	9,029	1,264,000	475	NO	4,288,000	9,029	1,264,000	
12/24/2010			-	316	NO	2,851,000	9,029	1,264,000	414	NO	3,734,000	9,029	1,264,000	
I&I Induced Discharge Event from Collection System			Storm Event Date & Rainfall (inches)	Q <sub>gpcd, infiltration</sub>	Meets USEPA Infiltration Standard (Q <sub>gpcd, infiltration</sub> < 120 gpcd)	Q <sub>gpcd, infiltration</sub>	Estimated Population, P	Q <sub>gpcd, dis</sub>	Q <sub>gpcd, inflow</sub>	Meets USEPA Inflow Standard (Q <sub>gpcd, inflow</sub> < 275 gpcd)	Q <sub>gpcd, inflow</sub>	Estimated Population, P	Q <sub>gpcd, dis</sub>	
			12/20/10 to 12/24/10 28" rain											
12/22/2010	0.06875 MG to Willow Creek		6.9	316	NO	2,851,000	9,029	1,264,000	845	NO	7,633,000	9,029	1,264,000	

# EXHIBIT NO. 4

Exhibit No. 4: Comparison of plant efficiency between non-storm and storm event.

Exhibit 4 Checklist

The following SMR data sheets are collected to correspond to Table A, in draft CDO, storm events.

Period	Q	Conc	Q	Conc
Dec-04	_____	_____	_____	_____
Jan-05	_____	_____	_____	_____
Feb-05	_____	_____	_____	_____
Mar-05	_____	_____	_____	_____
Dec-07	_____	_____	_____	_____
Jan-08	_____	_____	_____	_____
Feb-08	_____	_____	_____	_____
Mar-08	_____	_____	_____	_____
Jan-10	_____	_____	_____	_____
Feb-10	_____	_____	_____	_____
Mar-10	_____	_____	_____	_____
Nov-10	_____	_____	_____	_____
Dec-10	_____	_____	_____	_____
Jan-11	_____	_____	_____	_____
Feb-11	_____	_____	_____	_____

Sheet 1 of 11

Calculations were completed by Mike Coony on Jan 16 2013

No	Date	Inf BOD	Inf SS	Eff BOD	Eff SS	Flow
1	1/2/05	88	81	22.5	20.8	2.549
2	1/5/05	85.5	93	13.7	15.5	1.772
3	1/8/05	100	276	32.3	37.1	6.547
4	1/12/05	41.5	53	22.6	21.2	3.456
5	1/15/05	55	53	15.3	50.5	3.425
6	1/19/05	49.5	61	38.9	50.4	2.482
7	1/22/05	48.0	58	14.7	19.2	2.460
8	1/26/05	98.3	78	12.8	15.8	2.270
9	1/29/05	79.6	71	13.1	16.4	2.262
10	2/3/05	80	60	12.0	17.2	2.058
11	2/5/05	126	132	14.6	14.2	1.977
12	2/9/05	117	96	10.9	13.4	1.640
13	2/12/05	46	39	13.7	21.2	2.904
14	2/16/05	64	83	12.0	18.0	2.459
15	2/19/05	60	74	13.9	17.2	3.662
16	2/23/05	22	57	10.6	14.2	4.156
17	2/24/05	36	37	14.6	15.4	3.662
18	12/1/07	163	195	13.9	11.8	1.053
19	12/8/07	211	210	16.4	20.8	1.872
20	12/15/07	234	250	14.7	17.4	1.584
21	12/22/07	141	121	12.6	13.0	1.166
22	12/29/07	296	314	20.5	22.2	1.294
23	3/1/08	86	58	10.2	22.0	2.159
24	3/8/08	162	143	10.2	12.4	1.581
25	3/15/08	138	134	9.3	10.8	1.528
26	3/22/08	127	173	9.4	19.0	1.539
27	3/29/08	145	265	11.6	16.6	1.437
28	2/2/08	126	76	13.2	11.6	1.656

No.	Date	Int ROD	Int SS	Ext ROD	Ext SS	Flow
29	2/9/08	130	141	13.6	17.6	1.644
30	2/16/08	135	124	11.9	17.4	1.771
31	2/23/08	87	81	11.2	15.1	2.413
32	1/5/08	159	230	26.4	27.6	2.185
33	1/12/08	145	116	15.7	19.2	1.375
34	1/19/08	221	195	14.2	11.6	1.109
35	1/24/08	220	202	12.7	14.8	2.642
36	12/1/04	115	74	17.2	16.0	1.233
37	12/4/04	348	392	14.1	18.6	1.360
38	12/8/04	182	170	13.7	17.8	1.161
39	12/11/04	199	181	10.8	15.8	1.178
40	12/15/04	222	217	15.8	14.2	1.149
41	12/18/04	212	231	11.2	14.4	1.129
42	12/21/04	211	222	11.9	10.6	1.106
43	12/26/04	294	290	13.6	17.4	1.187
44	12/29/04	105	163	23.2	30.2	3.021
45	3/2/05	67	7	16	13	3.086
46	3/5/05	50	44	12.6	11	2.980
47	3/9/05	68	59	12.2	13.8	2.328
48	3/12/05	133	122	15.4	28.4	2.360
49	3/16/05	89	101	10	20.6	1.867
50	3/19/05	90	98	11.3	22.4	2.371
51	3/23/05	78	106	13.3	24.8	2.795
52	3/26/05	71	94	10.8	23.2	2.247
53	3/30/05	100	91	12.7	19.8	1.889
54	12/1/10	475	497	28.0	19.6	2.376
55	12/8/10	196	160	15.1	11.3	1.584
56	12/15/10	324	378	15.9	14.0	2.304



No	Date	Inf BOD	Inf SS	Eff BOD	Eff SS	Flow
57	12/23/10	47	34	12.9	24.5	4.288
58	12/29/10	140	168	18.7	14	2.522
59	11/3/10	24	238	17.3	15.4	0.905
60	11/9/10	146	117	29.2	19.2	1.367
61	11/17/10	225	171	24.9	20.8	0.927
62	11/24/10	242	180	19.5	18.8	1.080
63	3/6/10	81	79	11.2	12.5	2.170
64	3/13/10	143	164	9.7	9.0	1.697
65	3/20/10	89	125	9.3	12.2	1.574
66	3/27/10	67	74	8.6	10.2	2.397
67	2/6/10	106	147	26.3	36.0	4.980
68	2/13/10	56	129	10.8	14.2	2.307
69	2/20/10	68	69	9.9	17.8	1.863
70	2/27/10	106	114	13.1	16.0	3.005
71	1/2/10	356	269	18.6	16.2	1.471
72	1/9/10	159	169	22.8	23.4	1.140
73	1/16/10	243	256	21.3	17.1	1.197
74	1/23/10	77	72	13.3	11.4	1.724
75	1/30/10	73	64	12.8	11.2	1.866
76	2/2/11	124	185	23.3	11.2	1.124
77	2/9/11	102	83	21.2	11.6	1.257
78	2/17/11	117	132	12.4	9.6	1.462
79	2/23/11	72	72	11.2	12.0	2.311
80	1/5/11	60.3	91.1	15.2	15.7	1.693
81	1/12/11	66.8	132.0	12.4	13.8	1.410
82	1/20/11	72.3	79	24.9	11.6	1.387
83	1/26/11	111.0	96	22.2	11.9	1.277
<del>84</del>	<del>1/5/08</del>	<del>159</del>	<del>230</del>	<del>26.4</del>	<del>27.6</del>	<del>2.185</del>

Event ID

EV ID

EV Desc

1 Before / after event

2 During event + 7 days after 1st rainfall

AH EV ID

AH EV

AH Event

1 Before 1st event of season

2 During <sup>any</sup> ~~an~~ event + 7 days after event

3 after event

Seasonal ranges

DER - nst

1. Dec 04 to Mar 05

2. Dec-07 to Mar 08

3. Jan-10 to Mar 10

4. Nov-10 to Feb 11

Event assignment

Date Range

1) 12/1/04 to 1/1/05 EV ID = 1 AH EV ID = 1

Exhibit No. 4

Sheet 6 of 11

	<u>EV ID</u>	<u>AH EV ID</u>
1/2/05 to 1/12/05	2	2
1/13/05 to 1/19/05	2	2
1/20/05 to 2/9/05	1	3
2/10 to 2/27/05	2	2
2/28/05 to 3/6/05	2	2
3/7/05 to 3/31/05	1	3
2) Dec 07 to Mar 08		
	<u>EV ID</u>	<u>AH EV ID</u>
12/1/07 to 1/26/08	1	1
1/27/08 to 2/3/08	2	2
2/4/08 to 3/31/08	1	3
3) Jan -10 to Mar-10		
	<u>EV ID</u>	<u>AH EV ID</u>
1/1/10 to 2/4/10	1	1
2/5/10 to 2/14/10	2	2
2/15/10 to 3/31/10	1	3
4) Nov 10 to Feb 10		
	<u>EV ID</u>	<u>AH EV ID</u>
11/1/10 to 12/15/10	1	1





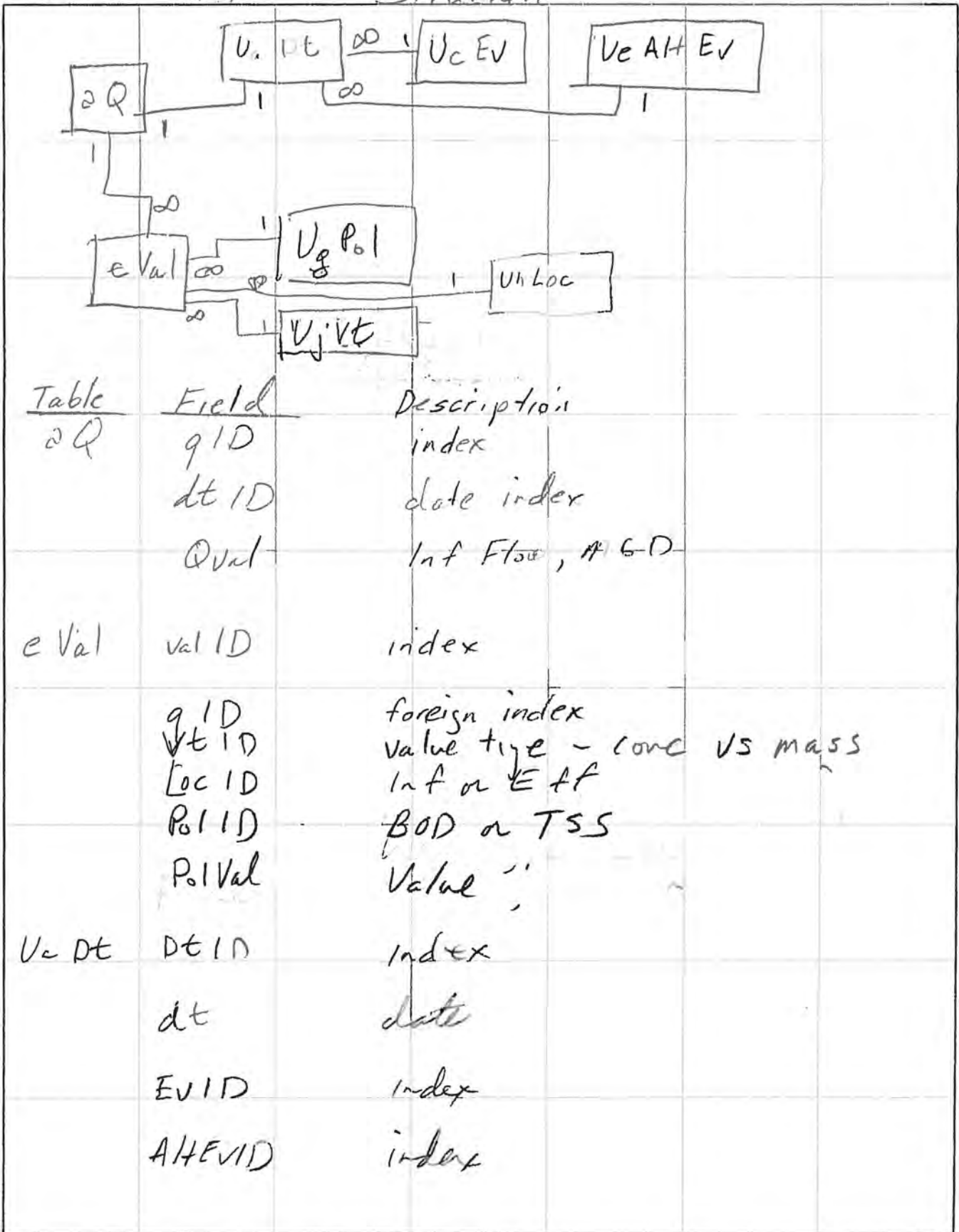


Table	Field	Description
aQ	qID	index
	dtID	date index
	Qual	Inf Flow, A/G-D
eVal	valID	index
	qID	foreign index
	vtID	value type - conc VS mass
	LocID	Inf or Eff
	PolID	BOD or TSS
	PolVal	Value
Uc Dt	DtID	index
	dt	date
	EVID	index
	AHEVID	index

		Structure, continued	
Uc EV			
	EV ID	EV <del>DESC</del>	
	1	a) Not during an event	
	2	c) During an event	
Uc ALT EV			
	ALT EV ID	ALT EV <del>DESC</del> <sup>DESC</sup>	
	1	a) Before 1 <sup>st</sup> Event of Season	
	2	c) During Event	
	3	e) after event.	
Ug Pol			
	Pol ID	Pol Name	
	1	BOD	
	2	TSS	
Uh Loc			
	Loc ID	Loc	
	1	a) In Effluent	

6

c Effluent

$V_j V_t$

$VtID$

$V_t$

1

a Concentration

2

b Mass rate

Results of calculations

Mass, lbs (vtID = 2)

VtD	AltEvID	AltEvDes	PolNme	Query1.St Inf	Query2.St Eff	Expr1 Frac Rem
2	1	aBefore1s	BOD	78846	6591	0.083593
2	1	aBefore1s	TSS	81339	6588	0.080994
2	2	cEvent	BOD	33321	9214	0.276522
2	2	cEvent	TSS	46254	11885	0.256951
2	3	eAfterEve	BOD	53978	7110	0.13172
2	3	eAfterEve	TSS	57853	9188	0.158816

Average concentration, mg/L (vtID =1)

VtD	AltEvID	AltEvDes	PolNme	Query1.A Inf	Query2.A Eff	Expr1 Frac Rem
1	1	aBefore1s	BOD	207.2667	17.24333	0.083194
1	1	aBefore1s	TSS	211.4667	17.06	0.080675
1	2	cEvent	BOD	68.86111	17.81111	0.258653
1	2	cEvent	TSS	84.11111	22.56111	0.26823
1	3	eAfterEve	BOD	99.06571	13.02286	0.131457
1	3	eAfterEve	TSS	108.0029	15.86286	0.146874

## Summary of results

1. Fraction of remaining BOD and total suspended solids before major storm event is 0.08. It is the <sup>same</sup> on both a mass and concentration basis
2. Fraction of remaining BOD and suspended solids during a major storm event ranges from 0.26 to 0.28.
3. Therefore, the fraction of BOD and total suspended solids remaining after treatment is at least 3 times higher ( $0.26 \div 0.08 = 3\frac{1}{4}$ ) during a storm event compared to the period before the storm event

EXHIBIT NO. 5

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: JAN

YEAR: 2005

GRASS VALLEY WASTEWATER TREATMENT PLANT

DATE	INFLUENT				EFFLUENT				TOTAL COLIFORM per 100ml	CHLORINE RESIDUAL Mg/L
	B.O.D. UNFILT'd	M.B.A.S.	T.S.S.	TEMP	B.O.D. UNFILT'd	M.B.A.S.	T.S.S.	TEMP		
	Mg/L	Mg/L	Mg/L	C.	Mg/L	Mg/L	Mg/L	C.		
1										2.4
2	88.00	2.25	81	11	22.5	0.555	20.8	10	33	2.2
3										2.2
4										2.2
5	85.50		93	11	13.7		15.5	10	5	2.2
6										8.0
7										2.8
8	100.00	1.44	278	9	32.3	0.389	37.4	9	46	2.2
9										2.2
10										5.4
11										1.5
12	41.50		53	10	22.6		21.2	11	2	4.5
13										7.3
14										8.0
15	55.00	1.56	53	11	15.3	0.314	50.5	10	920	6.0
16										8.4
17										5.0
18										8.8
19	49.50		61	11	38.9		50.4	11	11	7.9
20										7.8
21										10.0
22	48.00	1.33	58	11	14.7	0.353	19.2	11	22	8.2
23										8.8
24										8.6
25										8.8
26	98.30		78	12	12.8		15.8	12	13	8.0
27										8.5
28										8.4
29	79.60	1.53	71	11	13.1	0.167	16.4	10	< 2	8.2
30										8.0
31										8.7
MEAN	71.71	1.62	91.56		20.7	0.356	27.5			
LIMIT					30.0		1.0			
MAX					45.0		2.0			

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: FEB

GRASS VALLEY WASTEWATER TREATMENT PLANT

YEAR: 2005

DATE	INFLUENT				EFFLUENT				TOTAL COLIFORM per 100ml	CHLORINE RESIDUAL Mg/L
	B.O.D. UNFILT'd	M.B.A.S.	T.S.S.	TEMP	B.O.D. UNFILT'd	M.B.A.S.	T.S.S.	TEMP		
	Mg/L	Mg/L	Mg/L	C.	Mg/L	Mg/L	Mg/L	C.		
1										8.8
2										8.8
3	80		60	7	12.0		17.2	10	2	8.8
4										8.8
5	126	1.44	132	7	14.6	0.337	14.2	11	5	8.8
6										8.8
7										8.8
8										8.8
9	117		96	7	10.9		13.4	11	< 2	8.8
10										8.7
11										6.6
12	46	0.67	39	7	13.7	0.283	21.2	10	180	3.5
13										6.2
14										4.4
15										6.9
16	64		83	7	12.0		18.0	11	13	7.9
17										8.8
18										5.9
19	60	1.33	74	7	13.9	0.178	17.2	10	>2400	3.4
20										3.9
21										6.6
22										8.8
23	22		57	7	10.6		14.2	10	79	5.7
24										5.6
25										4.3
26	36	0.79	37	7	14.6	0.247	15.4	11	8	2.1
27										8.8
28										4.0
29										
30										
31										
MEAN	69	1.06	72.025		12.8	0.261	16.4			
LIMIT					30.0		1.0			
MAX					45.0		2.0			



# EXHIBIT NO. 6



## **Agenda**

Achievement Status of "Wet Weather" Draft NPDES Permit  
December 2, 2010 10:00 am to 12 noon  
Victorville Lahontan Water Board Office

Objective: How will Lake Arrowhead CSD will achieve compliance with selected pollutants in the draft wet weather NPDES permit

1. Introductions
2. Proposed wet weather permit limits
3. Next steps

### Lake Arrowhead Wet-weather Sample Comparison to tentative NDPES permit effluent limitations

» **Dark shaded** values indicate actual violation of maximum daily effluent limitation; light shaded values indicate potential to exceed average monthly effluent limit.

» **Large type bold italicized values** indicate detection limit values that exceed average monthly effluent limitation

Parameter	Units	Sample Results			Effluent Limitations					Lab MDL
		1/21/2010	2/6/2010	2/7/2010	Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Minimum	
<b>Conventional Pollutants</b>										
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	11.9	24	<2.00	20	25	30	--	--	°
pH	std units	7.46	7.61	7.37	--	--	--	6.5	8.5	
Total Suspended Solids	mg/L	6.9	20.2	<0.20	20	25	30		--	°
<b>Priority Pollutants</b>										
Bis (2-ethylhexyl) phthalate	µg/L	<b>&lt;2.6</b>	<sup>2</sup>	<b>&lt;2.6</b>	1.8	--	3.6	--	--	□
Chlorodibromomethane	µg/L	<b>&lt;1.0</b>	<sup>2</sup>	<b>&lt;1.0</b>	0.41	--	0.82	--	--	0.10
Chloroform	µg/L	1.0	<sup>2</sup>	<1.0	5.7	--	11.4	--	--	°
Copper, Total Recoverable	µg/L	<b>&lt;50</b>	<sup>2</sup>	<b>&lt;50</b>	3.1	--	6.3	--	--	2.8
Dichlorobromomethane	µg/L	<b>&lt;1.0</b>	<sup>2</sup>	<b>&lt;1.0</b>	0.56	--	1.12	--	--	0.13
<b>Non-Conventional Pollutants</b>										
Total Ammonia (as N)	mg/L	0.764	2.22	0.61	1.7	--	3.9	--	--	°
Chlorine, Total Residual	mg/L	0.06 <sup>3</sup>	<0.004	<0.004	--	--	0.003	--	--	°
Total Haloacetic Acids <sup>1</sup>	µg/L	<1.0	<sup>2</sup>	2.2	30	--	60	--	--	°
Methylene Blue Active Substances	mg/L	0.213	0.256	0.425	0.5	--	0.9	--	--	°
Total Nitrogen (as N)	mg/L	9.24	10.42 <sup>4</sup>	1.43	8	--	10	--	--	°

<sup>1</sup>Total haloacetic acids include monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid

<sup>2</sup>Not analyzed.

<sup>3</sup>Result erroneous; chlorination was not in operation during sample collection.

<sup>4</sup>MMP potential – MMP will occur if the average monthly effluent value exceeded the average monthly effluent limitation in 3 months over a 6 month period.

°MDL is lower than sample results

□Laboratory has yet to specify MLD

Plant Flow at time of sampling: 1/21/2010, appr. 5.0 MGD; 2/6/10, appr. 5 MGD; 2/7/10, appr. 4.3 MGD.

Last updated: 6/29/10 D:\My Documents\gcLakeArrowheadTasks\ccWetWeatherNpdes\laWetWeatherData\CompEffLimits.doc/ xls

**From:** Curt Shifrer  
**To:** rgross@lakearrowheadcsd.com  
**CC:** Mitton, Cindi; Plaziak, Mike  
**Date:** 1/27/2009 3:34 PM  
**Subject:** DRAFT LAKE ARROWHEAD WDRs/NPDES PERMIT  
**Attachments:** Dilution tbl (2009-01-27 v).xls

Ryan

As I discussed with you during our telephone conversation today, we need to reschedule the proposed January 29, 2009 meeting to February 11, 2009 (10:00 am) when our Assistant Executive Officer will be in our Victorville office.

We cannot proceed with further administrative processing of the WDRs/NPDES permit. Our evaluation indicates Treated Wet Weather Discharges will exceed effluent limits in the permit. The District concluded in a September 18, 2008 letter that it can meet effluent limits in the permit. The District, however, has not provided technical information to support this conclusion. I discussed this problem with you during our January 22nd telephone conversation.

As part of your application, you sent us effluent sampling results for approximately 250 constituents. Review of these results indicates concentrations for nine constituents are higher than effluent limits in the draft permit (See shaded effluent concentrations in the attached table.). As summarized in the table, Board staff evaluation indicates some effluent limits may be met as a result of various factors. Coliform and dichlorobromomethane, however, would still exceed effluent limits.

Regards  
Curt



Wet Weather Discharges  
Evaluation of Whether the Discharger Will Meet Effluent Limits and Water Quality Objectives

1	A										K						R						X		Y			
											Evaluation of Compliance with Effluent Limits						Evaluation of Compliance with WQOs											
											Dilution Needed to Meet Effluent Limits			Dilution Available to Meet Effluent Limits			Adequate Dilution to Meet Effluent Limits?			Unnamed Creek (Combination of Dilution Shown in Column P & Unnamed Creek following a Mixing Zone; Column P multiplied by 2.0; See Footnote d)		Grass Valley Creek (Combination of Dilution Shown in Columns P & S and Grass Valley Creek following a Mixing Zone; Column P multiplied by 12.0; See Footnote d)		West Fork of the Mojave River (Combination of Dilution Shown in Columns P, S & U and West Fork of the Mojave River following a Mixing Zone; Column U multiplied by 2.0; See Footnote e)		WQOs		
2											(Dilution is from sewer inflow & other factors)									Dilution Available to Meet WQOs		Dilution Available to Meet WQOs		Dilution Available to Meet WQOs		Dilution Available to Meet WQOs		
3											Effluent Limits (ELs)			Treated Effluent Concentrations						Dilution Available to Meet WQOs		Dilution Available to Meet WQOs		Dilution Available to Meet WQOs		Dilution Available to Meet WQOs		
4	Constituents	Units	Weather (During Effluent Sampling Event)	AMEL	MDEL	Other EL	N	Ave	Max	Min	Q/Q <sub>aw</sub> for AMEL (Rounded Off)	Q/Q <sub>aw</sub> for MDEL (Rounded Off)	Range of Ratios - Q <sub>i</sub> /Q <sub>aw</sub> (From preceding two columns)	Foot-notes	Q <sub>i</sub> /Q <sub>dw</sub> (Rounded Off)	Foot-notes									WQOs	Source		
5	Bis(2-ethylhexyl)phthalate (CTR#68)	ug/L	dry	1.8	3.6	—	2	4.3	6.1	<5.0	1	1	1:1 to 1:1	a	Up to 6:1	b	Likely	—	—	—	—	—	—	—	—	1.8	SIP/CTR	
6	Copper (CTR#6)	ug/L	dry	3.1	6.3	—	1	18	18	18	5	2	2:1 to 5:1	a	Up to 6:1	b	Likely	—	—	—	—	—	—	—	—	6.0	SIP/CTR	
7	Total Trihalomethanes	ug/L	dry	—	—	—	2	26	26	26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	80	MCL	
8	- Chlorodibromomethane (CTR#23)	ug/L	dry	0.41	0.82	—	2	0.87	1.1	0.64	1	0	0:1 to 1:1	a	Up to 3:1	c	Likely	—	—	—	—	—	—	—	—	0.41	SIP/CTR	
9	- Chloroform (CTR#25)	ug/L	dry	5.7	11.4	—	2	19	20	18	2	1	1:1 to 2:1	a	Up to 3:1	c	Likely	—	—	—	—	—	—	—	—	5.7	SIP/CTR	
10	- Dichlorobromomethane (CTR#27)	ug/L	dry	0.56	1.12	—	2	0.87	1.1	0.64	9	5	5:1 to 9:1	a	Up to 3:1	c	PF Violation	Up to 6:1	PF Violation	Up to 36:1	Likely	—	—	—	—	0.56	SIP/CTR	
11	- Bromoform (CTR#20)	ug/L	dry	—	—	—	2	0.87	1.1	0.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.3	SIP/CTR		
12	Total Haloacetic Acids	ug/L	dry	30	60	—	1	108	108	109	3	1	1:1 to 3:1	a	Up to 3:1	c	Likely	—	—	—	—	—	—	—	—	60	MCL	
13	- Monochloroacetic Acid	ug/L	dry	—	—	—	1	21.0	21.0	21.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
14	- Dichloroacetic Acid	ug/L	dry	—	—	—	1	30.0	30.0	30.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
15	- Trichloroacetic Acid	ug/L	dry	—	—	—	1	54.0	54.0	54.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
16	- Monobromoacetic Acid	ug/L	dry	—	—	—	1	2.8	2.8	2.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
17	- Dibromoacetic Acid	ug/L	dry	—	—	—	1	<1.0	<1.0	<1.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
18	Total Residual Chlorine	mg/L	wet	—	0.003	0.002	13	4.7	8.8	1.5	Potential for Violation (With implementation of dechlorination, Treated Wet Weather Discharges should meet effluent limits.)						—	—	—	—	—	—	—	—	—	0.002	BP	
19	Total Coliform (MPN/100 mL)	—	wet	—	—	2.2	12	12	9200	2	Potential for Violation (With implementation of the 1.0 mgd filtration/UV treatment facility, there will be a decrease in effluent volume needing chlorination, allowing the Discharger more flexibility to increase the contact time in the chlorine contact chamber.)						—	—	—	—	—	—	—	—	—	—	—	
20	Total Coliform (MPN/100 mL)	—	wet	—	—	23	12	12	9200	2							—	—	—	—	—	—	—	—	—	—	—	
21	Fecal Coliform (MPN/100 mL)	—	wet	—	—	—	13	35	350	<2							—	—	—	—	—	—	—	—	—	20	BP	
22																												
23	Footnotes (See next page)																											

RB-38

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	
24																										
25	Footnotes (For Table on Previous Page):																									
26	The following mass balance equation was used:																									
27	$Q_i = \frac{(C_{dw} - C_{EL})}{(C_{EL} - C_i)} Q_{dw}$																									
28	<p><math>Q_i</math> = "Sewer inflow" (dilution) required to meet effluent limit, where "sewer inflow" is the flow of ground &amp; surface water into sewers.</p> <p><math>C_i</math> = constituent conc. in the inflow. Data and evaluation shows this is either zero or close to zero.</p> <p><math>C_{dw}</math> = concentration in the treated wastewater during dry weather</p> <p><math>Q_{dw}</math> = maximum flow of treated wastewater during dry weather</p> <p><math>C_{EL}</math> = effluent limit (concentration in effluent)</p>																									
29																										
30																										
31																										
32																										
33																										
34	<p>b A mass balance equation was used to calculate dilution for bis(2-ethylhexyl)phthalate and copper. The dilution available is based on a maximum wet weather flow of 12 mgd and a maximum dry weather flow of 1.8 mgd. The <math>Q_i</math> is 10.2 mgd. The ratio is, therefore, 5.67:1 (or approximately 6:1).</p>																									
35	<p>c A mass balance equation was used to calculate dilution for chlorine Disinfection By-Products (DBPs). The ratio (3:1) is based on the ratio of the average concentrations of Total Organic Carbon (TOC) in dry and weather effluent flows, 22 mg/L and 11 mg/L, respectively; and dilution as a result of the use of the 1.0 mgd membrane filtration-UV tertiary treatment unit. TOC can be useful in predicting concentrations of organic precursors to the formation of Chlorine DBPs. Total Residual Chlorine concentrations in dry and wet weather effluent are 4.0 mg/L and 4.7 mg/L, respectively. The higher Total Residual Chlorine concentration in wet weather effluent (approximately 18% higher) would likely cause corresponding higher chlorine DBPs concentrations. This amount 18%, however, would not affect the conclusions in Column R.</p>																									
36	<p>d A mass balance equation was used to calculate dilution for these constituents. The flows used to calculate the dilutions are based on the Discharger's proposal. The Discharger will initiate Wet Weather Discharges from the GVVWTP to the unnamed creek only when the storm runoff flow in Grass Valley Creek (up gradient of its confluence with the unnamed creek) is equal to or greater than 40 MGD (62 cfs). At this magnitude of stormwater runoff, the rate of flow in the unnamed creek up gradient of the discharge point is approximately 4 MGD (6.2 cfs). The Discharger expects to limit the flow of Wet Weather Discharges to a maximum of 4.0 million gallons per 24-hour period. The evaluation assumes no further formation of DBPs following dechlorination. Dechlorination should prevent formation of further DBPs downstream of dechlorination. Since dechlorination follows the chlorine contact chamber, it does not help reduce DBPs produced in the contact chamber.</p>																									
37	<p>e The flow in the West Fork of the Mojave River would be greater than the flow in Grass Valley Creek, during wet weather where Grass Valley Creek is flowing at a rate greater than 40 MGD (62 cfs). The dilution provided by the River would therefore be greater than 1:1.</p>																									
38																										
39																										
40																										

Attachment A  
Spills since Fall 2004 to January 2008, Lake Arrowhead CSD

Type	Facility name	Location of spill	Substance released	Spill Date	Volume	Description of Spill event	Discharged to (ground? pavement? surface water?)	Status- especially of Regional Board staff action, Further Action? No Further Action? Enforcement?
Wet Weather Discharge	Outfall pipeline	GV WWTP	Disinfected secondary effluent	10/20/2004	400,000 GALS	INFLOW EXCEEDED CAPACITY. 11" RAIN IN 24 HRS. DISINFECTED TREATED EFF RELEASED AT EMERGENCY DISC POINT TO GV CREEK. WRITTEN RPT REC'D.	Tributary to Grass Valley Creek	DISCHARGE DUE TO HIGH INTENSITY RAINSTORM. DISTRICT PROCEEDING WITH CEQA ANALYSIS FOR DISCHARGES TO GRASS VALLEY CREEK.
Wet Weather Discharge	Outfall pipeline	WC WWTP	Disinfected secondary effluent	12/29/2004	0.8 MGALS	INFLOW EXCEEDED OUTFALL CAPACITY. DISINFECTED TREATED EFF RELEASED AT WET WEATHER DISC POINT TO HILLSIDE PONDS. DISC BEGAN 12/29 & ENDED 12/30.	PONDS	DISCHARGE DUE TO HIGH INTENSITY RAINSTORM. DISTRICT PROCEEDING WITH CEQA ANALYSIS FOR DISCHARGES TO GV CREEK DURING LIMITED WET WEATHER PERIODS.
Wet Weather Discharge	Outfall pipeline	WC & GV WWTPs	Disinfected secondary effluent	2/19/2005	20 MGals	Inflow exceeded outfall capacity. Disinfected treated eff released at wet weather disc point to hillside ponds & GV Cr. Lasted 9 days.	Hillside ponds & tributary to GV Creek	To reduce inflow, investigating (smoke testing, etc) for new inflow sources not present during previous investigations.
Wet Weather Discharge	Outfall pipeline	GV WWTP	Disinfected secondary effluent	1/27/2008	163,300 gal	Late initial verbal notification by the Discharger; the Discharger verbally reported the spill on Feb 5, 2008. The area received 4.5 in of rain on existing snowpack. Inflow exceeded outfall capacity. Disinfected treated effluent released at wet weather d	Tributary to Grass Valley Creek	Water Board staff currently evaluating need for enforcement. District proceeding with completing application for discharges to Grass Valley Creek during limited wet weather periods. A meeting is scheduled with the Discharger on Feb 29, 2008.

RB-40



Wet weather overflows Feb 2008 to June 2010

1/21/2010	5.0 MGD
2/6/2010	5 MGD
2/7/10	4.3 MGD

From: Ryan Gross <rgross@lakearrowheadcsd.com>  
 To: 'Mike Coony' <MCoony@waterboards.ca.gov>  
 Date: 6/30/2010 1:27 PM  
 Subject: RE: Wet Weather Results - Method Detection Limit

Mike,

We can have our contract lab run the analysis down to this method detection limit (MDL) at an additional cost of \$247.00 per sample run. The lab can report down to the MDL as a "J flag" which is an estimated concentration. We originally sent these samples in under at EPA's title 22 detection standard.

Ryan

From: Mike Coony [mailto:MCoony@waterboards.ca.gov]  
 Sent: Wednesday, June 30, 2010 8:53 AM  
 To: Ryan Gross  
 Subject: Wet Weather Results - Method Detection Limit

Ryan,

A question has come up concerning the method detection limits for the following selected priority pollutants and their measured wet weather values:

Parameter	Units	Sample Results		Prop. Effluent Limit	
		1/21/10	2/7/10	Average Monthly	Maximum Daily
Selected Priority Pollutant					
Bis (2-ethylhexyl) phthalate	µg/L	<2.6	<2.6	1.8	3.6
Chlorodibromomethane	µg/L	<1.0	<1.0	0.41	0.82
Copper, Total Recoverable	µg/L	<50	<50	3.1	6.3
Dichlorobromomethane	µg/L	<1.0	<1.0	0.56	1.12

You reported in your email of May 11, 2010 that the laboratory method detection limit for three of the four listed priority pollutants are the following:

Chlorodibromomethane 0.10 ug/L  
 Copper 2.8 ug/L  
 Dichlorobromomethane 0.13 ug/L

A question is: Why couldn't the laboratory analyze the wet weather samples for these pollutants down to the method detection limit? Was it due to sample quality (high turbidity)? Or was it because Lake Arrowhead CSD did not instruct the laboratory to analyze down to the method detection limit?

Mike

**From:** Ryan Gross <rgross@lakearrowheadcsd.com>  
**To:** 'Mike Coony' <MCoony@waterboards.ca.gov>  
**Date:** 5/11/2010 8:00 AM  
**Subject:** Detection Limits  
**Attachments:** FW: FW: Selected wet weather (01/21/2010 and 02/07/2010) GVWWTPSample Results; RE: Clinical Lab / Low Level DEHP

Mike, attached are the responses on the detection limits you asked about.

*Ryan Gross, P.E., B.C.E.L.*  
District Engineer  
Lake Arrowhead CSD  
Direct: 909.336.7137  
fax: 909.336.5875

---

Message Divider

---

**From:** Bob Bobik <bobik@lakearrowheadcsd.com>  
**To:** Ken Nelsen <knelsen@lakearrowheadcsd.com>  
**CC:** Rick Dever <rdever@lakearrowheadcsd.com>, Ryan Gross <rgross@lakearrowhe...>  
**Date:** 5/3/2010 7:47 AM  
**Subject:** FW: FW: Selected wet weather (01/21/2010 and 02/07/2010) GVWWTPSample Results

----- Original Message-----

From: Clinical / Glaubig [mailto:glaubig@clinical-lab.com]  
Sent: Monday, May 03, 2010 7:31 AM  
To: Bob Bobik  
Subject: Re: FW: Selected wet weather (01/21/2010 and 02/07/2010) GVWWTP Sample Results

Bob,

I am checking into your request for low level results. It appears we can meet your requirements for three of the components. Our method detection limits (MDL) for these three are as follows:

Chlorodibromomethane 0.10 ug/L  
Copper 2.8 ug/L  
Dichlorobromomethane 0.13 ug/L

We can report down to the MDL as a J flag (estimated concentration).

I am checking with our sub-contract lab for their low level limits on bis (2-ethylhexyl) phthalate.

Bob Glaubig  
Laboratory Director  
Clinical Laboratory of San Bernardino, Inc.

----- Original Message-----

>From: Bob Bobik <bobik@lakearrowheadcsd.com>  
>Sent: Apr 30, 2010 3:32 PM  
>To: "Glaubig@Clinical-lab.com" <Glaubig@Clinical-lab.com>  
>Subject: FW: Selected wet weather (01/21/2010 and 02/07/2010) GVWWTP Sample Results  
>

> Bob,  
> Having trouble dialing out today (new phones were installed overnight out here!) I've been out of luck calling folk all day. I'd like to speak w/you about the communication below, from my regulatory agency  
> Leaving here soon, so nxt. Wk. probably best. Maybe by then I can call you.

> Thanks,  
> Bob Bobik  
> Wastewater Operations Supervisor

>  
> Lake Arrowhead Community Services District P.O. Box 700 27000 Pilot  
> Rock Road Lake Arrowhead, CA 92352

>  
> (909) 336-7152  
> bbobik@lakearrowheadcsd.com

>  
>  
> -----Original Message-----

> From: Ryan Gross  
> Sent: Friday, April 30, 2010 2:53 PM  
> To: Bob Bobik  
> Subject: RE: Selected wet weather (01/21/2010 and 02/07/2010) GVVWTP  
> Sample Results

>  
> yes

>  
> -----Original Message-----

> From: Bob Bobik  
> Sent: Friday, April 30, 2010 2:45 PM  
> To: Ryan Gross  
> Subject: RE: Selected wet weather (01/21/2010 and 02/07/2010) GVVWTP  
> Sample Results

>  
> OK TO FORWARD THIS IN WHOLE TO THE DIRECTOR OF CLINICAL LAB, TO HELP ME DISCUSS THIS WITH HIM MORE SUCCINCTLY?

>  
> -----Original Message-----

> From: Ryan Gross  
> Sent: Friday, April 30, 2010 2:36 PM  
> To: Ken Nelsen; Bob Bobik; Rick Dever  
> Subject: Selected wet weather (01/21/2010 and 02/07/2010) GVVWTP Sample  
> Results

>  
> Ken & Bob, could you please check with our lab to see if they can suggest an alternate analytical method that reduces the detection limit for these 4 priority pollutants? Please see email from Mike Coony below.

>  
> -----Original Message-----

> From: Mike Coony [mailto:MCoony@waterboards.ca.gov]  
> Sent: Thursday, April 29, 2010 11:51 AM  
> To: Ryan Gross  
> Cc: Cindi Mitton  
> Subject: Fwd: Selected wet weather (01/21/2010 and 02/07/2010) GVVWTP  
> Sample Results

>  
> Ryan,  
>

>In case the table appears scrambled in the email, attached is a .txt file that contains the sample data in a formatted form.

>

>- Mike

>

>>>> Mike Coony 4/29/2010 11:47 AM >>>

>Ryan,

>

>Subject: Selected wet weather (01/21/2010 and 02/07/2010) GVWWTP

>Sample Results

>

>We are reviewing your wet weather sample results, which will be used in the planned wet weather NPDES permit. The values for these 4 of the 5 pollutants and their corresponding effluent limitations are presented in the following table. The values for the 4 priority pollutants are less than (<) values. Of concern is that the results for the 4 pollutants exceed the average monthly effluent limitation, and the results for 2 pollutants exceed the maximum daily effluent limitation.

>

> Sample

>Results Effluent Limitations

>

>-----

>

> Average Maximum

>Selected Priority Pollutants Units 1/21/10 2/7/10 Monthly

>Daily

>-----

>

>Bis (2-ethylhexyl) phthalate µg/L <2.6 <2.6 1.8

> 3.6

>Chlorodibromomethane µg/L <1.0 <1.0 0.41

> 0.82

>Copper Total Recoverable µg/L <50 <50 3.1

> 6.3

>Dichlorobromomethane µg/L <1.0 <1.0 0.56

> 1.12

>

>We need you to evaluate if the laboratory can use an alternate or modified analytical method that reduces the detection limit for these 4 priority pollutants. Otherwise, less than results above the effluent limitations could result in mandatory minimum penalties.

>

>Mike

>

# EXHIBIT NO. 7



Lake Arrowhead



7/13/11

CRWQCB REG6	
REC'D	RECEIVED JUL 14 2011
MC ✓	7/15
FILE	

6B360107001

July 13, 2011

Mr. Mike Cooney  
Lahontan Regional Water Quality Control Board  
14440 Civic Drive, Suite 200  
Victorville, CA 92392-2306

Dear Mr. Cooney:

The Lake Arrowhead Community Services District (LACSD or District) has prepared this letter to summarize the current status of the District's management of infiltration and inflow (I&I) as well as to provide additional background information on the status of the District's Wastewater Facilities Master Plan Capital Improvement Program (CIP) and Requirement 4 of Cease and Desist Order No. 6-93-44 which states that LACSD shall submit progress reports summarizing accomplishments toward obtaining compliance with Waste Discharge Requirements (WDRs), the Basin Plan and the California Water Code (CWC) on September 1, 1993, again on January 1, 1994, and semi-annually thereafter until such time that compliance with WDRs, the Basin Plan and the CWC is achieved.

In order to comply with the collection system requirements of its WDRs the District has Maintenance pool of fifteen personnel for the system's maintenance program. The crew consists of an Operations Field Manager, Maintenance Supervisor, Maintenance Foreman, three Senior Maintenance workers, a Field Service Representative and eight Maintenance Workers. The crew experience averages from over twenty years of service to three years. The crew's average service experience is just over seven years. The crew members are all certified in both collection system maintenance and water distribution operations and routinely rotate duties inside the Department until each member is fully trained in all of the Department's functions. During emergency situations the Department has the ability to staff all fifteen employees to meet the needs of the District.

The equipment that the Maintenance work crew utilizes includes two high velocity cleaner (jet) units, a power rodder, a television (TV) inspection van for pipeline inspections, a medium duty service truck, one backhoe, one dump truck, and four light support pickup trucks. The District's five year CIP budget includes \$6,350,000 for collection system improvements to help reduce I&I as well as stoppages.

Water / Wastewater Systems  
P.O. Box 700  
Lake Arrowhead, CA 92352  
(909) 336-7100  
(909) 336-5875 Fax

RB-47

In order to assist with managing the District's preventative maintenance and pipeline rehabilitation program the District utilizes asset management software called "Hansen". Hansen is a computerized software database for preventative maintenance and it has been in use since the late 1990's. The system's database has been loaded with most of the District's collection system information. The program has the following capabilities:

- Inventory of sewer main pipeline segments and their specifications.
- Preventive maintenance scheduling on sewer main pipelines by individual pipelines or by geographical area.
- History of maintenance activities performed on sewer main pipelines, service lines and geographical areas.
- Recording and tracking sewer main pipeline stoppages by date, pipeline segment or service line ID.
- Recording and retrieval of information obtained from TV inspection history reports.
- Cross references of service lines by street address, main line segment or service line ID.
- Reports on scheduled, unscheduled and projected work orders, plus service line, area and main line stoppages, and TV inspection histories of sewer pipelines.
- Work orders generated for preventive and unscheduled maintenance activities.
- Hot spot program with different intervals of scheduled cleaning frequencies.

#### MANAGEMENT OF INFILTRATION AND INFLOW (I&I)

#### USEPA STANDARDS, REGIONAL BOARD WASTE DISCHARGE REQUIREMENTS (WDR's) THE DISTRICT'S REGULATORY COMPLIANCE AND CONTINUING INVESTMENT TO MINIMIZE I&I

The United States Environmental Protection Agency (USEPA) has established two separate standards for defining excessive levels of I&I. It uses the two standards in determining eligibility for USEPA construction grants for sewage treatment facilities. The District's current Regional Board Order No. R6V-2009-0037 incorporates these two standards as limits on the amount of I&I allowed in the District's collection system. The limits according to the USEPA standards are 120 gallons per capita per day (gpcd) for infiltration and 275 gpcd for inflow.

Under all but the most extreme wet weather conditions, the District's collection system meets and exceeds USEPA and Regional Board standards. However, under extreme wet weather conditions I&I in the District's collection system does not always meet these standards. More specifically, emergency discharges from the District's Grass Valley Wastewater Treatment Plant (GVWWTP) to Grass Valley Creek occurred during extreme wet weather conditions in 2010, 2008, 2005 and prior to that in 1998. Because these emergency discharges have only occurred during extreme and prolonged wet weather conditions, it is the District's understanding that the potential adverse impacts to the environment are limited. More importantly, on-going monitoring, data collection and analysis of potential impacts to the environment are being performed under the guidance and direction of Regional Board staff to be incorporated into a NPDES Emergency Discharge Permit.

In addition to the environmental data collection, monitoring and analysis described above, the District has made and is continuing to make a substantial investment in the upgrade and replacement of its wastewater collection system. Since 1993, the District has completed a series of projects that include manhole replacement, collection line slip-lining and collection line replacement. The District completes the rehabilitation of an average of 100 manholes per year.

The total number of manholes rehabilitated to date is 1,139. The District has also slip-lined or replaced or rehabilitated approximately 50,000 linear feet of sewer pipeline since 1993. The District plans to continue completion of similar projects on an on-going basis as budget allows. In 2005, despite a state take away of approximately \$1.2 million dollars in property tax revenue the District spent approximately \$400,000 to rehabilitate 62 manholes and 4,200 feet of sewer pipeline. On August 14, 2007 the District Board of Director's awarded a contract for \$942,845 to rehabilitate approximately one mile of twelve inch sewer pipeline and 50 manholes. This work was completed in May 2008. Additional contracts were awarded in 2009 & 2010 totaling \$2,744,460 for slip lining. The next sewer rehabilitation project is currently in design and expected to be complete by the end of 2011.

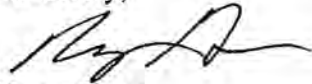
#### WASTEWATER FACILITIES MASTER PLAN UPDATE

The District completed its Wastewater Facilities Master Plan in March 2008. The scope of work included updating previous Wastewater Facilities Master Plan Reports prepared in 1983, 1991 & 1997 to reflect current issues, trends, regulations, environmental issues, analysis and recommendations for facilities and improvements pertaining to the District's wastewater system needs through the next 20 years.

The Wastewater Facilities Master Plan update provides for a systematic, comprehensive analysis of a variety of wastewater management alternatives and conditions so that an environmentally sound, publicly acceptable, and cost-effective plan can be developed for the 20-year planning period. Short-term improvements have been identified where possible to respond to existing critical needs and introduce planning tools to assist the District in tracking its progress, scheduling and financing required improvements, and anticipating future needs. A copy of the March 2008 Wastewater Facilities Master Plan was provided in both hard copy and electronic format earlier this year to Regional Board staff.

In conclusion, we hope that you can see from the information provided in this letter that the District is fully committed to making strides towards improving its current waste discharge requirements and improving water quality. The District has and is continuing make substantial investments in its wastewater collection system to reduce I&I and implement its SSMP program. If you have any questions I can be reached at 909.336.7102.

Sincerely,



Ryan Gross  
District Engineer  
Lake Arrowhead CSD

# EXHIBIT NO. 8



Attachment 2 - Annual Collection System Rehabilitation and Assessment Activities

Gravity sewers rehabilitated via slip-lining to address I&I																
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011		
Locations	Tract 55 & 58				Point Hamlair	Point Hamlair		South Shore Interceptor from Dam to Emerald Bay, portion of Lake Arrowhead Village & Orchard Bay			South Shore Interceptor from Emerald Bay to Palisades Point	South Shore Interceptor from Palisades Point to Orchard Bay, portion of Village Cove and portion of Evergreen easement	Rocky Point from Burnt Mill to Blue Jay Bay, Smithport to Tavern Bay, Peninsula & North Shore Tunnels, Portion of Calgary Access Road	Marina to Winter Harbor		
Age of pipeline (years)	58				40	43 to 63		65			67	69	50-70	57-71		
Number of feet of pipeline by size	1,800' of 12"				400' of 8"	4,500' of 8"		3,859' of 12" 535' of 8"			5,440' of 12"	5,182' of 12" 1,483' of 8" 260' of 6"	1,765' of 24" 510' of 21" 2,275' of 18" 825' of 15" 6,168' of 12" 2,900' of 10"	3,807' of 18" 587' of 15" 634' of 12" 22' of 8"		
Total feet of pipeline	1,800				400	4,500		4,394			5,440	6,925	14,443	5,050		
Costs	\$200,000				\$50,000	\$400,000		\$278,200			\$525,410	\$678,379	\$1,753,449	\$919,678		
Gravity sewers rehabilitated via grouting to address I&I																
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011		
Locations	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Age of pipeline (years)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Number of feet of pipeline by size	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total feet of pipeline	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Gravity sewers rehabilitated using other rehabilitation methods (identify rehabilitation method) to address I&I																
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011		
Locations	Unknown	Unknown	unknown	Tract 58	-	-	-	-	-	-	-	South Shore Interceptor	unknown	unknown		
Age of pipeline (years)	Unknown	Unknown	unknown	61	-	-	-	-	-	-	-	69	unknown	unknown		
Number of feet of pipeline by size	845' + 19 pipe repairs	4,200' + 27 pipe repairs	32 pipe patches/repairs	2,900' + 39 pipe repairs	-	-	-	-	-	-	-	various 12" pipe repairs	289 pipe patches/repairs	63 pipe patches/repairs		
Total feet of pipeline	845'	4,200'	-	2,900'	-	-	-	-	-	-	-	-	-	-		
Costs	Unknown	Unknown	unknown	Unknown	-	-	-	-	-	-	-	\$2,900	unknown	unknown		
Gravity sewer replacement for the purposes of addressing I&I																
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011		
Locations	Tract 55 & 58					Tract 1215										
Age of pipeline (years)	58					50										
Number of feet of pipeline by size	1,094' of 8" & 361' of 6"					300' of 6"										
Total feet of pipeline	1455					300'										
Percent of 2011 total system length by size	0.15%					0.13%										
Costs	\$300,000					Unknown										
Manholes rehabilitated to address I&I (identify/describe rehabilitation methodologies)																
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011		
Locations	District-wide + Tract 55 & 58			District-wide	District-wide	District-wide	District-wide	District-wide	-	South Shore Interceptor			South Shore Interceptor	Rocky Point/Smithport	Dam to Tunnel Phase I	
Age of manhole (years)	58			unknown	unknown	unknown	unknown	unknown	-	67			69	50-70	57-71	
Total number for each year	95			23	64	21	90	58	31	21			89	92	178	
Percent of 2011 total system number of manholes	1.53%			0.37%	1.03%	0.34%	1.45%	0.94%	0.50%	-	0.34%			1.44%	1.88%	2.87%
Total number since June 1, 1998	95			118	182	203	293	351	382	-	403			492	762	
Costs	\$6,000			unknown	unknown	unknown	unknown	unknown	unknown	-	\$138,390			\$159,020	\$160,952	\$185,670
Manholes replaced to address I&I																
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011		
Locations	Tract 55 & 58									South Shore Interceptor			South Shore Interceptor	Rocky Point/Smithport	Dam to Tunnel Phase I	
Age of manhole (years)	N/A									67			69	50-70	57-71	
Total number for each year	34									8			3	7	4	
Percent of 2011 total system number of manholes	0.50%									0.34%			0.05%	0.11%	0.06%	
Total number since June 1, 1998	34									42			45	52	56	
Costs	\$94,000									\$66,960			\$30,000	\$52,500	\$15,000	
Other I&I reduction activities such as disconnecting unauthorized roof/foundation/surface drains																
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011		
Locations	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Type of unauthorized connection	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Number of unauthorized connections disconnected	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
System assessment activities such as smoke testing, manhole inspection, flow monitoring, closed circuit television or video inspection, etc.																
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011		
Locations	Various unknown	Various unknown	Various unknown	Various unknown	Various unknown	Various unknown	Various unknown	Various unknown	Various unknown	Various unknown	Various unknown	Various unknown	Various unknown	Various unknown		
Type and extent of assessment activities (e.g. feet of pipeline smoke tested, number of manholes inspected)	417,299' of line cleaning 5,918' of CCTV 1,800' smoke testing 1,153 MHS inspected & sealed 64 dye tests	417,299' of line cleaning 7,453' of CCTV 762 MHS inspected & sealed 38 dye tests	299,179' of line cleaning 4,007' of CCTV 1,800' smoke testing 176 MHS inspected & sealed 24 dye tests	417,167' of line cleaning 11,531' of CCTV 200' smoke testing 831 MHS inspected & sealed 23 dye tests	670,406' of line cleaning 14,807' of CCTV 200' smoke testing	523,629' of line cleaning 11,319' of CCTV 2,100' smoke testing 1,673 MHS inspected & sealed	349,016' of line cleaning 39,266' of CCTV 4,000' smoke testing 790 MHS inspected & sealed	520,275' of line cleaning 30,606' of CCTV 323,091' smoke testing 1,738 MHS inspected & sealed	532,514' of line cleaning 25,918' of CCTV 139,295' smoke testing 513 MHS inspected & sealed	510,296' of line cleaning 16,112' of CCTV 36,130' smoke testing 778 MHS inspected & sealed	529,384' of line cleaning 49,682' of CCTV 22,000' smoke testing 1,503 MHS inspected & sealed	504,104' of line cleaning 112,636' of CCTV 12,150' smoke testing 544 MHS inspected & sealed	472,989' of line cleaning 196,141' of CCTV 4,238' grease inhibitor 6,929' root foam inhibitor 1,270 MHS inspected & sealed	466,712' of line cleaning 136,775' of CCTV 2,738' grease inhibitor 2,470' root foam inhibitor 1,354 MHS inspected & sealed		
Costs for each activity	in-house	in-house	in-house	in-house	in-house	in-house	in-house	in-house	in-house	in-house	in-house	in-house	in-house	in-house		

RBS1

EXHIBIT NO. 9



and East Shore interceptors convey wastewater into the Willow Creek (WC) Interceptor which flows to the Willow Creek WWTP. Areas in the Grass Valley drainage flow to the Grass Valley Interceptor, which begins in the Twin Peaks area and flows northerly to the downstream Grass Valley WWTP. A 12-inch pipe in a 5-foot tunnel is available to divert flows from the Grass Valley Interceptor to the West Shore Interceptor. The existing system has approximately 196 miles of gravity sewers. Pipe size distribution is shown in Table 3-1. The system gravity mains are predominantly 6 and 8-inches. The smaller gravity mains flow into the larger ones and eventually to the outfall structures that lead to the wastewater treatment plants.

**TABLE 3-1**  
Existing Gravity Sewer Pipe Size Distribution Wastewater Master Plan Update  
Wastewater Facilities Master Plan, Lake Arrowhead Community Services District

Diameter (inches)	Length (feet)	Percent of Total
4	2,842	0.3%
6	217,852	21.1%
8	715,898	69.2%
10	4,107	0.4%
12	32,513	3.1%
15	19,347	1.9%
18	21,771	2.1%
21	11,748	1.1%
24 <sup>a</sup>	6,495	0.6%
42 <sup>b</sup>	532	0.1%
<b>Total</b>	<b>1,034,201 ft (196 mi)</b>	<b>100.0%</b>

<sup>a</sup> Inter-tie line connecting the wastewater treatment plants is not included in the collection system pipelines. The Inter-tie line is a 24" 10,800-ft pipeline.

<sup>b</sup> Acts as additional wet well capacity for Blue Jay lift station.

### 3.2.1.2 Existing Lift Stations and Force Mains

The District operates 21 lift stations and associated force mains, which are listed in Table 3.2. The force mains carry water from lower elevation areas to higher elevation areas; the force mains are generally located immediately after the lift stations. The force mains are generally under pressure, whereas the gravity pipes are designed to operate as open channels. There are force mains after each lift station. The majority of these lift stations are within the local collection systems and are relatively small. There are four larger interceptor pump stations, four of which are located in the Lake Arrowhead drainage and one in the Grass Valley drainage. Each lift station has an associated wet well to operate the lift stations efficiently, that is, instead of the lift stations pumping flows constantly into the downstream stretches, the wet wells on the suction side of the lift stations collect the low flows and the lift stations will start pumping when the wet wells are at near full or filling at a rapid rate, this results in efficient operation of the lift station facilities.

EXHIBIT NO. 10



**Lahontan Regional Water Quality Control Board**

March 7, 2012

WDID No. 6B3601090001 <sup>7</sup>

John Hoagland, General Manager  
Lake Arrowhead Community Services District  
P.O. Box 700  
Lake Arrowhead, CA 92352

**INVESTIGATIVE ORDER NO. R6V-2011-0083, LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT, 2008 WASTEWATER FACILITIES MASTER PLAN STATUS REPORT, SAN BERNARDINO COUNTY**

California Regional Water Quality Control Board, Lahontan Region (Water Board) staff has completed its review of the 2008 Wastewater Facilities Master Plan Status Report (Status Report). The Status Report, submitted on February 1, 2012, was requested under Investigative Order No. R6V-2011-0083 (Investigative Order).

**Infiltration / Inflow Reduction Steps**

In the 2008 Wastewater Facilities Master Plan (2008 Plan) and the Status Report, you specify a four step iterative process for Infiltration and Inflow (I/I) reduction and elimination. In step 1, you identify high I/I areas through sub-basin sewer flow and rainfall monitoring. Step 2 is field evaluation including TV inspections, manhole inspections, and smoke testing. In step 3, the collected step 1 and step 2 data are combined to calibrate a computer flow model, which is then used to determine cost effective corrections. Step 4 uses step 3 to layout I/I correction activity scope, cost, and schedule. Steps 1 through 3 are the I/I evaluation phase and Step 4 is the I/I correction phase. A flow chart of the steps is presented in Enclosure 1, describing the 2008 Plan and Status Report I/I reduction steps.

Water Board staff analyzed the differences between the planned costs in the 2008 Plan and the actual costs in the Status Report. The period of comparison is from fiscal year 2008-09 to fiscal year 2010-11. The planned and actual costs are presented in Tables 1 and 2, respectively, of Enclosure 2. Overall, the total actual costs are nearly the same as the total planned costs. There are, however, differences in the distribution of costs. Three funding shifts are noted. First, the District did not implement the sub-basin flow measurement task of step 1. As stated above, the purpose of these measurements were to isolate the high I/I contributor areas. Second, the District performs repairs during field evaluations, which includes TV of sewers, manhole inspections, and smoke testing. Third, the District is performing I/I correction activities that have not originated from the step 1 to step 3 evaluation process.

**Comments**

**1. Explanation of Implemented Differences**

Water Board recognizes that agencies cannot rigidly follow a master plan. However, plan changes need explanation. In this case, the District has apparently developed a different method for evaluating, locating, and scheduling I/I correction activities. Therefore, Water Board staff

requests the District to: 1) describe the different method, and 2) explain how the different method is an improvement from the 2008 Plan evaluation method.

## 2. Unfunded Projects

On page 2, full paragraph no. 3, you indicate that some future activities are unfunded. Investigative Order requirement 1.d requires the District to provide a detailed description of how and when the District will fund the I/I activities that are currently unfunded or partially funded, and to identify funding sources and schedule to fully fund specific activities. Please provide the requested detailed information consistent with the Investigative Order requirement.


## 3. Environmental Impacts

On page 3, full paragraph no. 3, you state that wet weather facility events have limited potential adverse environmental impacts based on extensive monitoring, data collection, and analysis of potential environmental impacts. Please note that any wet weather facility overflow event is an unauthorized discharge and a violation of the basin plan regional-wide prohibitions. In particular, the basin plan prohibits partially treated discharges. Engineered wastewater treatment facilities have a rated design capacity, and any discharge in excess of the design capacity may correspond to partially treated wastewater. Therefore, please provide a re-analysis of potential environmental impacts and include the extensive monitoring results and the collected data.

By **April 2, 2012**, please submit a fill revised report that includes the requested information in this letter. This will ensure that all related information is provided in the same document.

If you have any questions, please contact me at 760-241-7353 (mcoony@waterboards.ca.gov or Jehiel Cass, P.E., Senior Engineer at 760-241-2434 (jcass@waterboards.ca.gov).

Sincerely,



Mike Coony  
Water Resources Control Engineer

Enclosures: 1. 2008 Master Plan I/I Assessment Plan  
2. 2008 Master Plan and 2011 Actual I/I Control Cost and Schedule

cc: Jody Noiron, Forest Supervisor, USFS - San Bernardino National Forest  
Omero Torres, Deputy District Ranger, USFS - San Bernardino National Forest, Mountaintop  
Ranger District  
Richard Thornburgh, USFS - San Bernardino National Forest,  
Lands & Special Use  
John Rutledge, General Manager, Arrowhead Lake Association

cc via e-mail: Cris Carrigan, State Water Resources Control Board,  
Office of Enforcement  
Harold J. Singer, Executive Officer, Lahontan RWQCB  
Scott Ferguson, Chief, Enforcement Unit, Lahontan RWQCB

MC\rc\Ltr40967InvestOrderStatusRpt.docx

**2008 Master Plan and 2012 Status Report, I/I Assessment Plan**

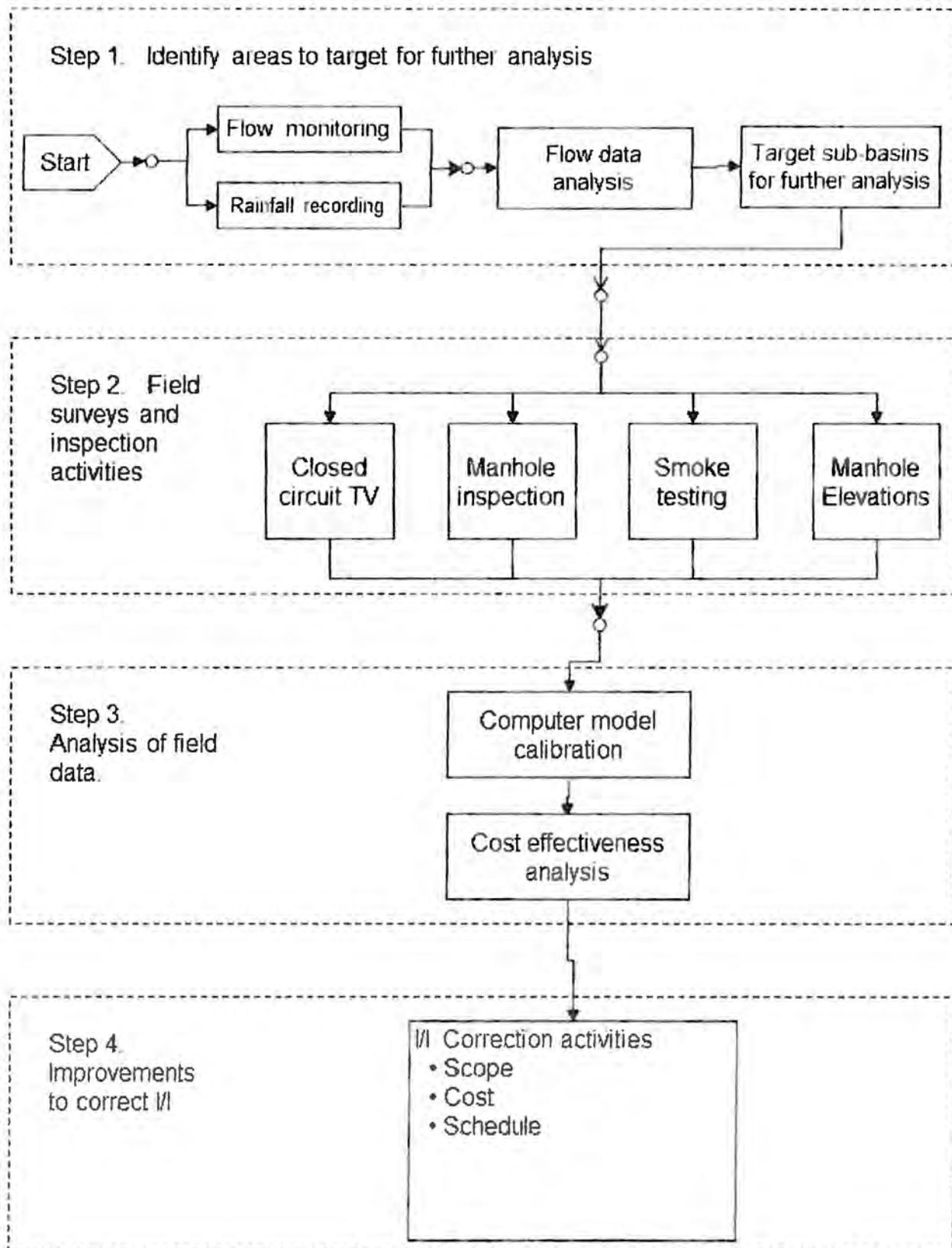




Table 1. 2008 Master Plan I/I Control Cost and Schedule

Task	2009	2010	2011	Total
Step 1 Target areas	\$230,000			
Step 2 Field evaluation <sup>1</sup>				
TV	\$500,000	\$500,000	\$200,000	
Manhole	\$170,000	\$82,500	\$40,000	
Smoke	\$0	\$120,000	\$25,000	
Invert Elev	\$0	\$90,000	\$60,000	
Step 3 Modeling	\$0	\$0	\$150,000	
Step 4 I/I corrections	\$0	\$0	\$1,100,000	
Other improvements <sup>2</sup>	\$575,000	\$600,000	\$1,200,000	
Evaluation	\$900,000	\$792,500	\$475,000	\$2,167,500
Corrections	\$575,000	\$600,000	\$2,300,000	\$3,475,000
Total	\$1,475,000	\$1,392,500	\$2,775,000	\$5,642,500

<sup>1</sup>Does not include I/I corrections during field evaluations.

<sup>2</sup>Assumed I/I improvements.

Table 2. 2011 Actual I/I Control Cost and Schedule<sup>1</sup>

Task	2009	2010	2011	Total
Step 1 Target areas	\$51,000	\$15,000	\$15,000	\$81,000
Step 2 Field evaluation <sup>2</sup>	\$1,250,000	\$1,250,000	\$1,250,000	\$3,750,000
Step 3 Modeling	\$0	\$0	\$0	\$0
Step 4 I/I corrections	\$0	\$2,000,000	\$0	\$2,000,000
Total <sup>3</sup>	\$1,301,000	\$3,265,000	\$1,265,000	\$5,831,000

<sup>1</sup>Does not include work in progress

<sup>2</sup>District performs I/I corrections during field evaluation

<sup>3</sup>Because field work includes I/I corrections, a cost breakout by evaluations and corrections is not possible

EXHIBIT NO. 11

Lahontan Regional Water Quality Control Board

August 21, 2012

File: WDID No. 6B360107001

Mark Veysey, Acting General Manager  
Lake Arrowhead Community Services District  
P.O. Box 700  
Lake Arrowhead, CA 92352

**INCOMPLETE TECHNICAL REPORTS – RESPONSE TO INVESTIGATIVE ORDER  
NO. R6V-2011-0083, LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT,  
LAKE ARROWHEAD, SAN BERNARDINO COUNTY**

The Lake Arrowhead Community Services District (District) submitted the following technical reports requested under the California Regional Water Quality Control Board's (Water Board's) Investigative Order No. R6V-2011-0083 (Investigative Order), issued on December 7, 2011.

- 2008 Wastewater Facilities Master Plan (Master Plan) Status Report dated February 1, 2012, revised report dated April 20, 2012
- Past Inflow/Infiltration (I/I) Activities Report dated April 20, 2012

Water Board staff finds that the reports do not comply with the Investigative Order. Specifically, the District did not provide:

1. Revised implementation schedule for I/I related activities of the District's 2008 Master Plan (see item 1.c. of the Order). The District has fallen behind schedule and offered no revised schedule.
2. Description of how and when the District will fund I/I activities discussed in the 2008 Master Plan (item 1.d). The District's Plan is vague as to how resources will be applied to I/I reduction activities.

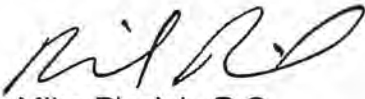
The intent of the requested technical reports was for the District to describe how it is actively implementing the I/I reduction program as proposed in the 2008 Wastewater Facilities Master Plan. Not only is the District three years behind schedule, it anticipates future delays given its anticipated revenue challenges. As such, Water Board staff has little confidence in the District's ability to reduce I/I overflow conditions in the near term.

It is our understanding that the District has undergone a change in leadership and consequently re-evaluated its 2008 Master Plan. While some elements of this Plan remain in effect, there are other activities planned that are not recognized in the Plan that may be more effective in addressing I/I overflow.

After meeting with you on July 27, 2012, Water Board staff was encouraged by the District's intent to submit an Addendum to these technical reports describing the District's short and long-term approach to reduce I/I overflow. Please provide this report by **October 1, 2012**.

If you have any questions please call Jehiel Cass, P.E., Senior Water Resources Control Engineer at (760) 241-2434 or me at (760) 241-7325.

Sincerely,



Mike Plaziak, P.G.  
Supervising Engineering Geologist

MC/rp Final/LakeArrowhead\_IncompleteTechRpt

EXHIBIT NO. 12

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: MAY

YEAR: 2009

WASTEWATER TREATMENT

HILL SIDE  
PONDS

DATE	WILLOW CREEK*		DAILYQ EFF M.G.	GRASS VALLEY		FARM SITE		DAILY Q M.G.
	DAILY Q INF. M.G.	PEAK Q INF. M.G.D.		DAILY Q INF. M.G.	PEAK Q INF. M.G.D.	SPRAY LINES M.G.	PERC. PONDS M.G.	
1	0.681	0.850		1.088	1.440		1.490	
2	0.785	0.900		1.085	1.584		1.480	
3	0.753	0.900		1.161	2.088		1.700	
4	0.657	0.850		1.048	1.584		1.530	
5	0.665	0.850		1.031	1.512		1.470	
6	0.664	0.850		1.038	1.512		1.500	
7	0.679	0.850		1.055	1.656		1.530	
8	0.676	0.850		1.112	1.728		1.530	
9	0.687	0.850		1.147	2.016		1.590	
10	0.679	0.850		1.208	1.728		1.780	
11	0.685	0.800		1.013	1.584		1.410	
12	0.671	0.800		1.106	1.656		1.430	
13	0.676	0.800		1.034	1.656		1.440	
14	0.660	0.850		1.133	1.656		1.560	
15	0.670	0.850		1.118	1.656		1.151	
16	0.677	0.850		1.231	2.016		1.640	
17	0.622	0.850		1.129	1.512		1.630	
18	0.690	0.800		1.077	1.800		1.470	
19	0.668	0.800		1.139	2.016		1.540	
20	0.655	0.800		1.045	1.728		1.380	
21	0.660	0.850		1.045	1.512		1.290	
22	0.682	1.000		1.262	1.872		1.800	
23	0.812	1.300		1.408	2.738		1.900	
24	0.797	0.900		1.304	2.520		1.290	
25	0.729	0.950		1.245	2.232		**	
26	0.653	0.850		1.017	1.584			
27	0.665	0.850		0.894	1.728			
28	0.663	0.800		1.328	2.592			
29	0.682	0.850		1.111	1.584			
30	0.675	0.800		1.145	1.728			
31	0.635	0.800		1.212	1.656			
<b>MEAN</b>	0.686			1.128			1.522	
<b>LIMIT</b>	1.700	3.350		2.500	3.900			
<b>TOTAL</b>	21.2534		0	34.969		0	36.531	0

\* NO DISCHARGE TO FARM

\*\* METER OUT



LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: JUNE  
YEAR: 2009

WASTEWATER TREATMENT

DATE	WILLOW CREEK*			GRASS VALLEY		FARM SITE	HILLSIDE PONDS	
	DAILY Q	PEAK Q	DAILYQ	DAILY Q	PEAK Q	SPRAY	PERC.	
	INF.	INF.	EFF	INF.	INF.	LINES	PONDS	
	M.G.	M.G.D.	M.G.	M.G.	M.G.D.	M.G.	M.G.	
1	0.665	0.800		1.192	1.656		**	
2	0.638	0.750		1.110	1.584		1.390	
3	0.630	0.750		1.062	1.296		1.350	
4	0.647	0.700		1.069	1.440		1.430	
5	0.656	0.850		1.044	1.440		1.390	
6	0.628	0.750		1.082	1.440		1.470	
7	0.660	0.850		1.196	1.512		1.700	
8	0.600	0.800		1.153	1.440		1.540	
9	0.674	0.750		1.072	1.440		1.510	
10	0.643	1.100		0.964	1.440		1.470	
11	0.739	0.950		1.051	1.440		1.420	
12	0.672	0.850		1.138	1.656		1.660	
13	0.703	0.850		1.227	2.016		1.870	
14	0.832	1.000		1.043	1.584		2.370	
15	0.638	0.900		1.098	1.512		0.820	
16	0.741	0.950		1.107	1.584		1.490	
17	0.768	0.900		1.072	1.440		1.470	
18	0.723	0.900		1.210	1.440		1.790	
19	0.725	0.900		1.216	1.728		1.710	
20	0.635	0.850		1.205	1.728		1.850	
21	0.598	0.800		1.248	1.944		1.970	
22	0.652	0.850		1.163	1.656		1.640	
23	0.652	0.850		1.083	1.512		**	
24	0.700	0.900		1.034	1.440		**	
25	0.699	0.900		1.200	1.584		1.740	
26	0.762	0.900		1.212	1.728		1.920	
27	0.460	0.500		1.333	2.304		2.270	
28	0.652	0.500		1.181	2.160		1.750	
29	0.685	0.900		1.101	1.584		1.450	
30	0.689	0.900		1.015	1.656		1.550	
<b>MEAN</b>	0.6722			1.129			1.629	
<b>LIMIT</b>	1.700	3.350		2.500	3.900			
<b>TOTAL</b>	20.166		0	33.881		0	43.990	0

\* NO DISCHARGE TO FARM

\*\* METER OUT

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: JULY

YEAR: 2009

WASTEWATER TREATMENT

DATE	WILLOW CREEK*		DAILYQ EFF M.G.	GRASS VALLEY		FARM SITE		HILLSIDE PONDS
	DAILY Q INF. M.G.	PEAK Q INF. M.G.D.		DAILY Q INF. M.G.	PEAK Q INF. M.G.D.	SPRAY LINES M.G.	PERC. PONDS M.G.	DAILY Q M.G.
	1	0.518		0.900		1.237	2.160	
2	0.594	0.950		1.212	2.304		1.830	
3	0.933	1.100		1.310	2.232		2.020	
4	1.092	1.300		1.495	2.448		1.780	
5	1.030	1.300		1.494	2.592		2.030	
6	0.898	1.100		1.089	1.944		1.320	
7	0.900	1.100		1.237	1.872		1.560	
8	0.836	1.000		1.249	2.304		1.580	
9	0.872	1.000		1.160	1.584		1.460	
10	0.897	1.000		1.206	1.656		1.550	
11	0.700	1.000		1.216	1.872		0.990	
12	0.926	1.000		1.240	1.584		2.130	
13	0.816	0.950		0.985	1.656		1.280	
14	0.695	0.950		0.963	1.584		1.080	
15	0.563	0.900		1.220	2.160		1.660	
16	0.613	0.850		1.062	1.656		1.740	
17	0.753	0.900		0.997	1.584		1.450	
18	0.669	0.950		1.174	1.584		1.800	
19	0.818	0.950		1.392	2.520		2.200	
20	0.671	0.900		1.175	1.584		1.620	
21	0.667	0.900		1.105	1.584		1.530	
22	0.679	0.900		1.016	1.512		1.410	
23	0.625	0.950		1.159	1.728		1.650	
24	0.655	0.850		1.176	1.728		1.700	
25	0.678	0.850		1.313	1.872		1.820	
26	0.638	0.900		1.358	2.304		2.130	
27	0.668	0.950		1.218	1.656		1.620	
28	0.639	0.850		1.075	1.512		1.470	
29	0.656	0.850		1.086	1.584		1.680	
30	0.681	0.850		1.149	1.728		1.500	
31	0.612	0.850		1.205	1.656		1.400	
MEAN	0.742			1.193			1.641	
LIMIT	1.700	3.350		2.500	3.900			
TOTAL	22.992		0	36.973		0	50.880	0

\* NO DISCHARGE TO FARM

WASTEWATER TREATMENT

DATE	WILLOW CREEK*			GRASS VALLEY		FARM SITE	HILLSIDE PONDS
	DAILY Q	PEAK Q	DAILYQ	DAILY Q	PEAK Q	SPRAY	PERC.
	INF.	INF.	EFF	INF.	INF.	LINES	PONDS
	M.G.	M.G.D.	M.G.	M.G.	M.G.D.	M.G.	M.G.
1	0.688	0.900		1.199	1.278		1.580
2	0.659	0.900		1.303	1.800		1.930
3	0.666	0.900		1.121	1.565		1.580
4	0.645	0.850		1.056	1.440		1.560
5	0.695	0.900		1.104	1.656		1.560
6	0.661	0.850		1.209	1.728		1.700
7	0.474	0.850		1.371	1.872		2.060
8	0.691	0.900		1.207	1.872		1.580
9	0.706	0.900		1.281	1.872		1.830
10	0.598	0.850		1.157	1.728		1.650
11	0.619	0.780		1.139	1.728		1.620
12	0.673	0.850		1.049	1.800		1.400
13	0.636	0.880		1.143	1.800		1.650
14	0.675	0.850		1.251	2.232		1.760
15	0.660	0.900		1.293	2.160		1.900
16	0.710	0.950		1.330	2.160		2.080
17	0.683	0.900		1.155	1.728		1.550
18	0.682	0.850		1.135	1.656		1.530
19	0.649	0.850		1.208	1.800		1.680
20	0.619	0.850		1.145	1.728		1.540
21	0.735	0.800		1.178	1.800		1.530
22	0.793	0.900		1.276	1.872		1.590
23	0.774	0.900		1.290	1.728		1.910
24	0.689	0.900		1.151	1.728		1.500
25	0.665	0.900		1.164	1.728		1.530
26	0.695	0.750		1.151	1.728		1.620
27	0.708	0.900		1.115	1.656		1.530
28	0.681	0.900		1.216	1.656		1.640
29	0.640	0.900		1.266	2.232		1.760
30	0.747	0.800		1.324	1.728		1.860
31	0.730	0.900		0.963	1.728		1.540
MEAN	0.676			1.192			1.669
LIMIT	1.700	3.350		2.500	3.900		
TOTAL	20.946		0	36.95		0	51.750

\* NO DISCHARGE TO FARM

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: SEPTEMBER

YEAR: 2009

WASTEWATER TREATMENT

DATE	WILLOW CREEK*			GRASS VALLEY		FARM SITE		HILLSIDE PONDS
	DAILY Q	PEAK Q	DAILYQ	DAILY Q	PEAK Q	SPRAY	PERC.	DAILY Q
	INF.	INF.	EFF	INF.	INF.	LINES	PONDS	
	M.G.	M.G.D.	M.G.	M.G.	M.G.D.	M.G.	M.G.	M.G.
1	0.656	0.900		1.038	1.584		1.450	
2	0.501	0.900		1.186	1.512		1.630	
3	0.674	0.900		1.078	1.656		1.470	
4	0.642	0.900		1.134	1.728		1.550	
5	1.092	1.300		1.161	1.656		1.560	
6	1.122	1.400		1.296	2.160		1.950	
7	1.009	1.350		1.462	2.808		2.260	
8	0.547	1.200		1.145	2.448		1.700	
9	0.697	1.000		0.998	1.440		1.380	
10	0.465	0.750		1.079	1.728		1.540	
11	0.749	1.000		1.058	1.584		1.360	
12	0.840	1.000		1.150	1.584		1.430	
13	0.852	1.000		1.095	1.728		1.660	
14	0.816	0.950		0.928	1.584		1.400	
15	0.719	0.950		0.962	1.512		1.390	
16	0.697	0.900		1.009	1.584		1.470	
17	0.596	0.920		1.035	1.800		1.400	
18	0.665	0.900		1.099	1.512		1.540	
19	0.657	0.900		1.155	1.728		1.520	
20	0.629	0.800		1.258	1.728		1.800	
21	0.614	0.850		1.071	1.584		1.650	
22	0.629	0.850		1.006	1.872		1.420	
23	0.677	0.750		0.975	1.584		1.610	
24	0.677	0.950		1.032	1.584		1.180	
25	0.738	1.000		1.013	1.440		1.500	
26	0.789	1.000		1.225	1.728		1.710	
27	0.801	0.950		1.058	1.728		1.420	
28	0.705	0.900		1.023	1.440		1.390	
29	0.698	0.900		0.966	1.512		1.520	
30	0.618	0.900		0.945	1.512		1.500	
MEAN	0.719			1.088			1.545	
LIMIT	1.700	3.350		2.500	3.900			
TOTAL	21.571		0	32.64		0	46.360	0

\* NO DISCHARGE TO FARM

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: MAY  
YEAR: 2010

WASTEWATER TREATMENT

DATE	WILLOW CREEK*			GRASS VALLEY		FARM SITE		HILLSIDE PONDS
	DAILY Q	PEAK Q	DAILYQ	DAILY Q	PEAK Q	SPRAY	PERC.	DAILY Q
	INF.	INF.	EFF	INF.	INF.	LINES	PONDS	
	M.G.	M.G.D.	M.G.	M.G.	M.G.D.	M.G.	M.G.	M.G.
1	1.011	1.000		1.453	1.800		1.319	
2	0.836	1.000		1.388	2.016		1.514	
3	0.720	0.950		1.373	3.456		1.223	
4	0.755	0.950		1.423	3.312		1.187	
5	0.644	0.850		1.318	2.736		1.187	
6	0.573	1.200		1.394	2.880		1.278	
7	0.689	0.820		1.259	1.728		1.278	
8	0.695	0.800		1.356	1.872		1.067	
9	0.681	0.850		1.363	2.736		1.216	
10	0.693	0.850		1.316	2.304		1.388	
11	0.488	0.820		1.374	1.728		1.116	
12	0.567	1.000		1.244	2.736		1.200	
13	0.517	0.750		1.274	1.656		1.016	
14	0.533	0.800		1.278	1.728		1.181	
15	0.374	0.750		1.396	2.304		1.150	
16	0.674	0.800		1.448	2.160		1.304	
17	0.638	0.800		1.249	2.016		1.475	
18	0.453	0.800		1.291	1.728		0.672	
19	0.710	1.150		1.229	1.584		1.405	
20	1.253	1.500		0.751	1.584		1.226	
21	1.115	1.300		1.333	1.800		0.534	
22	0.787	1.350		1.597	2.736		1.327	
23	0.844	0.900		1.495	2.304		1.550	
24	0.738	0.900		1.485	2.304		1.463	
25	0.838	0.900		1.329	1.728		1.401	
26	0.787	1.350		1.402	3.096		1.113	
27	0.550	0.850		1.303	1.728		1.260	
28	0.863	0.920		1.282	2.016		1.212	
29	0.853	1.000		1.682	2.592		1.113	
30	0.991	1.085		1.707	2.736		1.542	
31	0.984	1.100		1.635	3.456		1.502	
MEAN	0.737		0	1.369		0.000	1.473	
LIMIT	1.700	3.350		2.500	3.900			
TOTAL	21.87		0	42.427		0	38.419	0

\* NO DISCHARGE TO FARM

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: JUNE

YEAR: 2010

WASTEWATER TREATMENT

DATE	WILLOW CREEK*		DAILYQ EFF M.G.	GRASS VALLEY		FARM SITE		HILLSIDE PONDS
	DAILY Q	PEAK Q		DAILY Q	PEAK Q	SPRAY	PERC.	DAILY Q
	INF. M.G.	INF. M.G.D.		INF. M.G.	INF. M.G.D.	LINES M.G.	PONDS M.G.	M.G.
1	0.806	0.650		1.156	1.728		0.859	
2	0.691	0.550		1.418	2.736		1.187	
3	0.971	0.650		1.435	2.520		1.184	
4	0.939	0.650		1.402	2.232		1.335	
5	0.682	0.650		1.418	2.304		1.277	
6	0.994	0.600		1.461	1.584		1.486	
7	0.926	0.580		1.230	1.584		0.686	
8	0.869	0.550		1.588	3.240		1.321	
9	0.966	0.650		1.277	1.728		1.108	
10	0.937	0.580		1.321	1.800		1.139	
11	0.944	0.600		1.248	1.728		1.041	
12	0.932	0.600		1.335	2.016		1.347	
13	0.978	0.650		1.430	2.088		1.160	
14	0.880	0.550		1.327	1.656		1.093	
15	0.795	0.550		1.278	1.800		1.041	
16	0.887	0.550		1.278	1.728		1.073	
17	0.739	0.580		1.283	1.656		1.256	
18	0.693	0.650		1.274	1.728		1.046	
19	0.846	0.250		1.344	2.808		1.076	
20	0.897	0.600		1.414	2.016		1.354	
21	0.852	0.550		1.180	1.872		1.010	
22	0.774	0.550		1.257	1.584		0.968	
23	0.748	0.500		1.376	2.448		1.112	
24	0.771	0.550		1.131	2.880		0.805	
25	0.462	0.450		1.361	1.368		1.160	
26	0.849	0.650		1.300	1.656		1.105	
27	0.804	0.600		1.515	2.880		1.265	
28	0.716	0.550		1.259	1.728		1.067	
29	0.701	0.600		1.464	2.808		1.360	
30	0.868	0.550		1.112	1.584		0.569	
MEAN	0.831		0	1.329		0.000	1.116	
LIMIT	1.700	3.350		2.500	3.900			
TOTAL	24.917		0	39.872		0	33.490	0

\* NO DISCHARGE TO FARM



LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: JULY

YEAR: 2010

WASTEWATER TREATMENT

DATE	WILLOW CREEK*			GRASS VALLEY		FARM SITE	HILLSIDE PONDS	
	DAILY Q	PEAK Q	DAILYQ	DAILY Q	PEAK Q	SPRAY	PERC.	
	INF.	INF.	EFF	INF.	INF.	LINES	PONDS	
	M.G.	M.G.D.	M.G.	M.G.	M.G.D.	M.G.	M.G.	
1	0.690	0.880		1.269	2.304		0.513	
2	0.846	0.900		1.737	3.168		1.430	
3	0.969	0.950		1.828	3.024		1.609	
4	0.780	0.950		2.247	3.456		2.062	
5	0.878	1.000		1.689	3.312		1.403	
6	0.946	0.950		1.249	1.728		0.929	
7	0.890	0.850		1.338	1.728		0.832	
8	0.876	0.950		1.522	2.952		0.811	
9	0.895	0.950		1.216	1.728		1.008	
10	0.883	0.950		1.441	2.448		0.736	
11	0.865	0.950		1.422	2.304		0.673	
12	0.799	0.950		1.284	1.872		0.387	
13	0.753	0.900		1.242	1.512		0.542	
14	0.834	0.900		1.288	1.584		0.452	
15	0.774	0.900		1.243	1.584		0.325	
16	0.734	0.900		1.400	2.520		0.527	
17	0.846	0.950		1.447	2.448		0.653	
18	0.950	0.950		1.225	1.872		0.913	
19	0.919	0.950		1.225	1.728		0.707	
20	0.868	0.950		1.261	1.944		0.520	
21	0.835	0.900		1.429	2.304		0.703	
22	0.856	0.900		1.228	1.584		0.469	
23	0.678	0.900		1.367	2.160		0.428	
24	0.915	0.950		1.449	2.304		0.524	
25	0.868	0.950		1.350	1.944		0.489	
26	0.897	0.950		1.218	1.728		0.339	
27	0.596	0.950		1.272	3.744		0.562	
28	0.920	0.950		1.242	2.304		0.631	
29	0.907	0.950		1.183	1.800		0.499	
30	0.765	0.950		1.758	2.880		0.986	
31	0.706	0.850		1.167	1.584		0.481	
<b>MEAN</b>	0.837			1.395			0.747	
<b>LIMIT</b>	1.700	3.350		2.500	3.900			
<b>TOTAL</b>	25.938		0	43.236		0	23.143	0

\* NO DISCHARGE TO FARM

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: AUGUST

YEAR: 2010

WASTEWATER TREATMENT

DATE	WILLOW CREEK*			GRASS VALLEY		FARM SITE		HILLSIDE PONDS
	DAILY Q	PEAK Q	DAILYQ	DAILY Q	PEAK Q	SPRAY	PERC.	DAILY Q
	INF.	INF.	EFF	INF.	INF.	LINES	PONDS	
	M.G.	M.G.D.	M.G.	M.G.	M.G.D.	M.G.	M.G.	M.G.
1	0.838	1.050		1.510	2.808		0.934	
2	0.765	0.900		1.156	1.800		0.633	
3	0.610	0.850		1.251	1.872		0.416	
4	0.815	0.980		1.114	1.728		0.354	
5	0.825	0.950		1.196	1.656		0.313	
6	0.939	0.990		1.377	2.232		0.725	
7	0.755	0.950		1.456	2.448		0.668	
8	0.700	0.850		1.381	2.304		0.822	
9	0.896	0.900		1.225	1.728		0.584	
10	0.737	0.900		1.240	2.016		0.386	
11	0.710	0.930		1.231	1.728		0.456	
12	0.888	1.350		0.989	1.584		0.348	
13	0.492	0.900		1.398	2.592		0.575	
14	0.790	1.050		1.287	2.160		0.495	
15	0.764	0.900		1.432	2.448		0.694	
16	0.712	0.900		1.100	1.728		0.571	
17	0.671	0.850		1.167	2.016		0.519	
18	0.665	0.850		1.334	1.728		0.586	
19	0.612	0.850		1.265	1.728		0.475	
20	0.676	0.850		1.155	1.584		0.469	
21	0.688	0.850		1.576	2.808		0.918	
22	0.696	0.900		1.385	2.232		0.802	
23	0.678	0.850		1.378	2.592		0.748	
24	0.677	0.850		0.918	1.584		0.379	
25	0.673	0.850		1.046	1.512		0.226	
26	0.720	0.800		1.496	2.376		0.615	
27	0.660	0.900		1.267	1.728		0.749	
28	0.715	0.900		1.130	1.584		0.556	
29	0.731	0.900		1.526	3.312		1.191	
30	0.716	0.900		0.951	1.728		0.388	
31	0.668	0.650		1.247	2.664		0.522	
<b>MEAN</b>	0.725		0	1.264			0.584	
<b>LIMIT</b>	1.700	3.350		2.500	3.900			
<b>TOTAL</b>	22.482		0	39.184		0	18.117	0

\* NO DISCHARGE TO FARM

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: September  
YEAR: 2010

WASTEWATER TREATMENT

DATE	WILLOW CREEK*			GRASS VALLEY		FARM SITE		HILLSIDE PONDS
	DAILY Q	PEAK Q	DAILYQ	DAILY Q	PEAK Q	SPRAY	PERC.	DAILY Q
	INF.	INF.	EFF	INF.	INF.	LINES	PONDS	
	M.G.	M.G.D.	M.G.	M.G.	M.G.D.	M.G.	M.G.	M.G.
1	0.745	0.900		1.231	1.656		0.411	
2	0.735	0.900		1.098	1.728		0.345	
3	0.820	0.950		1.360	2.160		0.699	
4	0.854	0.950		1.506	2.448		0.885	
5	0.880	0.950		1.530	2.880		0.990	
6	1.091	0.950		1.585	3.456		0.911	
7	0.523	0.900		1.204	1.728		0.610	
8	0.696	0.750		1.206	1.584		0.306	
9	0.306	0.750		1.127	1.584		0.879	
10	0.864	0.750		1.178	1.656		0.348	
11	0.988	0.950		1.240	1.584		0.370	
12	**			0.970	1.584		0.378	
13				1.515	2.592		1.032	
14				1.224	1.584		0.613	
15				1.045	1.440		0.609	
16				1.073	1.656		0.447	
17				1.108	1.728		0.680	
18				1.161	1.944		0.672	
19				1.163	3.024		0.666	
20				1.066	1.872		0.624	
21				1.024	1.512		0.459	
22				1.057	2.376		0.359	
23				1.051	1.728		0.541	
24				1.097	1.800		0.365	
25				1.102	1.584		0.409	
26				1.109	1.728		0.425	
27				1.131	1.584		0.406	
28				1.054	1.440		0.472	
29				1.080	1.440		0.798	
30				1.090	1.584		0.734	
MEAN	0.773			1.180			0.581	
LIMIT	1.700	3.350		2.500	3.900			
TOTAL	8.502		0	35.385		0	17.443	0

\* NO DISCHARGE TO FARM

\*\* ALL FLOW STOPPED INTO PLANT

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: May

YEAR: 2011

WASTEWATER TREATMENT

DATE	WILLOW CREEK*			GRASS VALLEY		FARM SITE		HILLSIDE PONDS
	DAILY Q	PEAK Q	DAILYQ	DAILY Q	PEAK Q	SPRAY	PERC.	DAILY Q
	INF.	INF.	EFF	INF.	INF.	LINES	PONDS	
	M.G.	M.G.D.	M.G.	M.G.	M.G.D.	M.G.	M.G.	M.G.
1				1.510	2.448		1.499	
2				1.510	2.376		1.167	
3				1.469	2.448		2.009	
4				1.415	1.728		1.557	
5				1.417	1.800		1.509	
6				1.495	2.016		1.654	
7				1.485	1.872		1.368	
8				1.406	2.160		1.125	
9				1.467	3.456		0.994	
10				1.385	1.728		1.316	
11				1.384	1.944		1.248	
12				1.357	1.944		1.380	
13				1.364	1.944		1.509	
14				1.433	1.944		1.364	
15				1.656	2.664		1.222	
16				1.445	2.160		0.494	
17				1.405	2.016		1.366	
18				1.547	2.016		1.796	
19				1.599	2.520		1.595	
20				1.447	1.872		1.401	
21				1.396	2.016		1.436	
22				1.420	2.304		1.537	
23				1.413	1.728		1.474	
24				1.309	1.656		1.478	
25				1.333	1.872		1.322	
26				1.320	1.728		1.194	
27				1.433	1.872		1.477	
28				1.689	2.448		1.767	
29				2.018	3.024		2.023	
30				1.875	3.312		1.922	
31				1.384	2.160		1.364	
<b>MEAN</b>	Off line			1.477			1.438	
<b>LIMIT</b>	1.700	3.350		2.700	3.750			
<b>TOTAL</b>	0		0	45.786		0	44.567	0

\* NO DISCHARGE TO FARM

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: JUNE  
YEAR: 2011

WASTEWATER TREATMENT

DATE	WILLOW CREEK*			GRASS VALLEY		FARM SITE	HILLSIDE PONDS	
	DAILY Q	PEAK Q	DAILYQ	DAILY Q	PEAK Q	SPRAY	PERC.	DAILY Q
	INF.	INF.	EFF	INF.	INF.	LINES	PONDS	
	M.G.	M.G.D.	M.G.	M.G.	M.G.D.	M.G.	M.G.	M.G.
1				1.336	2.088		1.393	
2				1.324	1.872		1.313	
3				1.379	1.872		1.267	
4				1.381	2.160		1.360	
5				1.407	2.232		1.643	
6				1.328	2.016		1.262	
7				1.289	1.728		1.327	
8				1.291	1.656		1.238	
9				1.274	1.728		1.445	
10				1.357	1.800		1.480	
11				1.381	2.304		1.530	
12				1.391	2.304		1.544	
13				1.353	1.728		1.503	
14				0.953	1.440		0.499	
15				1.283	1.584		1.123	
16				1.349	2.448		1.347	
17				1.380	2.016		1.370	
18				1.393	2.232		1.407	
19				1.363	2.088		1.363	
20				1.282	2.232		1.313	
21				1.239	2.160		0.749	
22				1.274	1.584		0.555	
23				1.326	1.872		0.754	
24				1.334	1.944		0.823	
25				1.474	2.160		0.790	
26				1.360	2.232		0.938	
27				1.348	2.520		0.656	
28				1.314	2.016		0.930	
29				1.231	1.656		0.819	
30				1.334	1.872		0.949	
<b>MEAN</b>	Off line			1.324			1.156	
<b>LIMIT</b>	1.700	3.350		2.700	3.750			
<b>TOTAL</b>	0		0	39.728		0	34.690	0

\* NO DISCHARGE TO FARM

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: JULY

YEAR: 2011

WASTEWATER TREATMENT

DATE	GRASS VALLEY		FARM SITE		HILLSIDE PONDS	
	DAILY Q	PEAK Q	SPRAY	PERC.	DAILY Q	RAIN
	INF.	INF.	LINES	PONDS	M.G.	IN/DAY
	M.G.	M.G.D.	M.G.	M.G.		
1	1.116	2.016		0.415		
2	2.285	3.456		1.555		
3	2.074	2.880		1.675		
4	1.827	3.600		1.979		
5	0.923	1.728		0.388		
6	1.458	2.664		0.969		
7	1.361	1.728		1.267		
8	1.411	2.376		1.261		
9	1.461	2.592		1.168		
10	1.418	2.448		1.077		
11	1.291	2.232		1.008		
12	1.249	2.016		0.822		
13	1.081	2.016		0.605		
14	1.128	2.160		0.555		
15	1.206	1.584		0.567		
16	1.324	1.944		0.924		
17	1.305	2.016		0.946		
18	1.248	1.728		0.742		
19	1.362	1.944		1.873		
20	1.352	2.088		0.111		
21	1.090	1.656		0.628		
22	1.118	1.584		0.690		
23	1.197	1.728		0.890		
24	1.206	2.376		0.938		
25	1.243	1.584		0.599		
26	1.206	1.872		0.646		
27	0.952	1.512		0.297		
28	1.080	1.584		0.369		
29	1.155	1.440		0.486		
30	1.169	1.872		0.662		
31	1.348	1.728		0.567		1.25
<b>MEAN</b>	1.311			0.861		
<b>LIMIT</b>	2.700	3.750				
<b>TOTAL</b>	40.644		0	26.679	0	1.25



WASTEWATER TREATMENT

DATE	GRASS VALLEY		FARM SITE		HILLSIDE PONDS	
	DAILY Q INF. M.G.	PEAK Q INF. M.G.D.	SPRAY LINES M.G.	PERC. PONDS M.G.	DAILY Q M.G.	RAIN IN/DAY
1	1.357	1.944		1.468		
2	1.409	1.728		1.470		
3	1.168	1.728		1.153		
4	0.846	1.728		0.704		
5	1.564	1.944		0.733		
6	1.270	1.620		0.860		
7	1.237	1.800		0.759		
8	1.339	1.656		0.870		
9	1.114	1.584		0.788		
10	1.294	1.728		0.775		
11	1.321	3.024		0.741		
12	1.206	1.656		0.726		
13	1.292	1.728		0.770		
14	1.189	1.728		0.699		
15	1.199	1.656		0.664		
16	1.239	1.584		0.676		
17	1.094	1.584		0.788		
18	1.215	1.728		0.744		
19	1.285	1.728		0.829		
20	1.285	1.872		0.900		
21	1.235	1.872		0.850		
22	1.133	1.512		0.528		
23	1.151	1.440		0.534		
24	1.056	2.592		0.564		
25	1.009	1.584		0.447		
26	1.011	1.584		0.495		
27	1.010	1.512		0.536		
28	0.994	1.584		0.581		
29	1.574	2.736		1.750		
30	1.229	1.872		0.933		
31	1.059	2.160		0.547		
MEAN	1.206			0.803		
LIMIT	2.700	3.750				
TOTAL	37.384		0	24.882	0	0

WASTEWATER TREATMENT

DATE	GRASS VALLEY		FARM SITE		HILLSIDE PONDS	
	DAILY Q	PEAK Q	SPRAY	PERC.	DAILY Q	RAIN
	INF.	INF.	LINES	PONDS	M.G.	IN/DAY
	M.G.	M.G.D.	M.G.	M.G.		
1	1.139	3.384		0.616		
2	1.377	1.800		1.003		
3	1.290	1.800		0.903		
4	1.558	2.448		1.308		
5	1.472	2.592		1.628		
6	1.179	2.016		1.074		
7	1.128	1.584		0.780		
8	1.090	1.512		0.636		
9	1.121	1.512		0.833		
10	1.189	1.800		0.790		
11	1.160	1.584		0.725		
12	1.150	1.584		0.676		
13	1.129	1.728		0.840		
14	1.147	1.584		0.805		
15	1.095	1.548		0.996		
16	1.168	2.808		1.163		
17	1.201	1.584		0.827		
18	1.210	1.584		0.674		
19	1.169	1.512		0.684		
20	1.138	1.440		0.649		
21	1.137	1.440		0.659		
22	1.117	1.584		0.579		
23	1.173	1.584		0.650		
24	1.159	1.512		1.098		
25	1.157	1.476		0.815		
26	1.103	1.476		0.558		
27	1.212	1.584		0.625		
28	0.931	1.440		1.065		
29	1.011	1.764		0.708		
30	1.147	1.728		0.820		
<b>MEAN</b>	1.175			0.840		
<b>LIMIT</b>	2.700	3.750				
<b>TOTAL</b>	35.257		0	25.187	0	

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: MAY  
YEAR: 2012

WASTEWATER TREATMENT

DATE	GRASS VALLEY		FARM SITE		HILLSIDE PONDS	
	DAILY Q	PEAK Q	SPRAY	PERC.	DAILY Q	RAIN
	INF.	INF.	LINES	PONDS		
	M.G.	M.G.D.	M.G.	M.G.	M.G.	IN/DAY
1	1.108	1.332		0.678		
2	1.089	1.296		0.981		
3	1.136	1.440		0.820		
4	1.072	1.368		0.968		
5	1.239	1.584		1.280		
6	1.202	1.584		1.256		
7	1.387	1.584		1.044		
8	1.088	2.556		1.002		
9	1.200	1.476		0.893		
10	1.144	2.664		0.805		
11	1.232	1.476		1.156		
12	1.224	1.440		0.873		
13	1.222	1.440		1.056		
14	1.169	1.512		0.501		
15	1.120	1.440		0.530		
16	1.225	1.440		0.429		
17	1.089	1.440		0.404		
18	1.108	1.440		0.513		
19	1.208	1.440		0.686		
20	1.170	1.440		0.716		
21	1.140	1.440		0.553		
22	1.070	1.404		0.317		
23	1.098	1.548		0.533		
24	1.137	1.440		0.452		
25	1.068	1.512		0.438		0.010
26	1.272	1.584		1.054		
27	1.275	2.088		1.258		
28	1.359	2.700		0.933		
29	1.193	1.620		0.503		
30	1.064	1.476		0.594		
31	1.044	1.404		0.487		
MEAN	1.166			0.765		
LIMIT	2.700	3.750				
TOTAL	36.1524		0	23.713	0	0.01

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: JUNE

YEAR: 2012

WASTEWATER TREATMENT

DATE	GRASS VALLEY		FARM SITE		HILLSIDE PONDS	
	DAILY Q INF. M.G.	PEAK Q INF. M.G.D.	SPRAY LINES M.G.	PERC. PONDS M.G.	DAILY Q M.G.	RAIN IN/DAY
1	1.092	1.584		0.293		
2	1.170	1.440		0.381		
3	1.163	1.584		0.480		
4	1.131	1.584		0.378		
5	1.035	1.426		0.510		
6	1.026	1.440		0.619		
7	1.046	1.440		0.318		
8	1.227	1.512		0.324		
9	1.273	1.584		0.618		
10	1.205	1.584		0.587		
11	1.163	1.440		0.593		
12	1.160	1.656		0.518		
13	1.184	1.584		0.573		
14	1.178	1.728		0.555		
15	1.097	1.620		0.532		
16	1.168	1.728		0.624		
17	1.069	1.872		0.567		
18	1.027	1.584		0.473		
19	1.055	1.728		0.419		
20	1.031	1.584		0.502		
21	0.800	1.584		0.167		
22	1.272	1.728		0.462		
23	1.226	1.440		0.659		
24	1.195	1.728		0.916		
25	1.185	1.728		0.856		
26	1.192	1.548		0.600		
27	1.115	1.620		0.502		
28	1.143	1.476		0.464		
29	1.129	1.368		0.466		
30	1.171	1.368		0.503		
31						
<b>MEAN</b>	1.131			0.515		
<b>LIMIT</b>	2.700	3.750				
<b>TOTAL</b>	33.928		0	15.459	0	

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: July  
YEAR: 2012

WASTEWATER TREATMENT

DATE	GRASS VALLEY		FARM SITE		HILLSIDE PONDS	
	DAILY Q INF. M.G.	PEAK Q INF. M.G.D.	SPRAY LINES M.G.	PERC. PONDS M.G.	DAILY Q M.G.	RAIN IN/DAY
1	1.173	1.584		0.610		
2	1.190	1.296		0.504		
3	1.234	1.584		1.206		
4	1.351	2.088		0.877		
5	1.406	2.160		1.148		
6	1.326	1.620		0.939		
7	1.298	1.872		0.978		
8	1.253	1.800		0.767		
9	1.136	1.368		0.369		
10	1.126	1.404		0.219		
11	1.089	1.440		0.661		
12	1.089	1.368		0.633		
13	1.234	1.368		0.829		0.33
14	1.237	1.584		1.410		
15	1.183	1.728		1.246		
16	1.111	1.584		0.793		
17	1.126	1.368		0.383		
18	1.100	1.440		0.379		
19	1.073	1.404		0.236		
20	1.175	1.368		0.377		
21	1.145	1.584		0.580		
22	1.257	2.016		0.778		
23	1.194	1.728		0.547		
24	1.106	1.440		0.220		
25	1.050	1.440		0.326		
26	1.054	1.440		0.165		
27	1.174	1.368		0.348		
28	1.139	1.584		0.444		
29	1.193	1.872		0.508		
30	1.146	1.584		0.369		
31	1.085	1.296		0.491		
MEAN	1.176			0.624		
LIMIT	2.700	3.750				
TOTAL	36.453		0	19.340	0	0.33

LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: AUGUST

YEAR: 2012

WASTEWATER TREATMENT

DATE	GRASS VALLEY		FARM SITE		HILLSIDE	RAIN
	DAILY Q INF. M.G.	PEAK Q INF. M.G.D.	SPRAY LINES M.G.	PERC. PONDS M.G.	PONDS DAILY Q M.G.	
1	0.967	1.296		0.561		
2	1.069	1.476		0.581		
3	1.137	1.476		0.416		
4	1.234	1.584		0.776		
5	1.146	1.728		0.619		
6	1.137	1.620		0.511		
7	1.115	1.512		0.398		
8	1.105	1.440		0.610		
9	1.108	1.440		0.792		
10	1.187	1.476		0.704		
11	1.137	1.584		0.623		
12	1.200	1.728		0.725		
13	1.157	1.440		0.421		
14	1.091	1.440		0.515		
15	1.024	1.404		0.328		
16	1.141	1.620		0.324		
17	0.532	1.440		0.394		
18	1.782	1.512		0.856		
19	1.279	1.656		0.924		
20	1.160	1.620		0.728		
21	1.067	1.584		0.587		
22	1.099	1.368		0.351		
23	1.057	1.368		0.561		
24	1.091	1.296		0.545		
25	1.138	1.728		0.650		
26	1.157	1.620		0.633		
27	1.124	1.440		0.483		
28	1.078	1.440		0.385		
29	1.026	1.404		0.331		
30	1.092	1.440		0.391		
31	1.191	1.440		0.660		
MEAN	1.123			0.561		
LIMIT	2.700	3.750		2.700		
TOTAL	34.828		0	17.383	0	



LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT

MONTH: SEPTEMBER

YEAR: 2012

WASTEWATER TREATMENT

DATE	GRASS VALLEY		FARM SITE		HILLSIDE PONDS	
	DAILY Q INF. M.G.	PEAK Q INF. M.G.D.	SPRAY LINES M.G.	PERC. PONDS M.G.	DAILY Q M.G.	RAIN IN/DAY
1	1.226	1.728		0.832		
2	1.628	2.592		1.373		
3	1.333	1.584		1.056		
4	0.767	2.736		0.229		
5	0.862	3.000		0.175		
6	1.119	1.404		0.385		
7	1.238	1.584		0.676		
8	1.155	1.658		1.017		0.23
9	1.112	1.332		0.973		
10	1.057	1.440		0.729		
11	1.016	1.368		0.474		
12	0.993	1.512		0.611		
13	0.918	1.440		0.476		
14	0.968	1.440		0.421		
15	1.053	1.440		0.375		
16	1.108	1.584		0.644		
17	0.978	1.440		0.582		
18	1.059	1.512		0.606		
19	1.055	1.584		0.466		
20	1.071	1.548		0.403		
21	0.959	1.332		0.411		
22	1.085	1.440		0.572		
23	1.061	1.584		0.620		
24	1.022	1.512		0.645		
25	0.805	1.440		0.283		
26	0.897	1.440		0.357		
27	0.916	1.512		0.317		
28	0.924	1.476		0.394		
29	0.947	1.440		0.493		
30	1.046	1.440		0.570		
MEAN	1.046			0.572		
LIMIT	2.700	3.750				
TOTAL	31.378		0	17.165	0	0.23