

STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION  
320 W 4<sup>th</sup> Street, Suite 200, Los Angeles

**FACT SHEET**  
**WASTE DISCHARGE REQUIREMENTS**  
**for**  
**SIX FLAGS MAGIC MOUNTAIN**  
**(Valencia Amusement Park)**

NPDES Permit No.: CA0003352  
Public Notice No.: 05-028

FACILITY ADDRESS

Six Flags Magic Mountain  
26101 West Magic Mountain Parkway  
Valencia, CA. 91355

FACILITY MAILING ADDRESS

Six Flags Magic Mountain  
P.O. Box 5500  
Valencia, CA 91385  
Contact: Tom Edgar and  
Christina Clark  
Telephone: (661) 255-4182

**I. Public Participation**

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the above-referenced facility. As an initial step in the WDR process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

**A. Written Comments**

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to:

Executive Officer  
California Regional Water Quality Control Board  
Los Angeles Region  
320 West 4<sup>th</sup> Street, Suite 200  
Los Angeles, CA 90013

Written comments regarding this tentative Order must be submitted to the Regional Board staff no later than 5 p.m. on May 12, 2005, in order to be evaluated by Board staff and included in the Board's agenda folder. The Regional Board chair may exclude from the record written materials received after this date. (See Cal. Code Regs., tit. 23, § 648.4.).

## **B. Public Hearing**

The Regional Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: June 2, 2005  
Time: 9:00 A.M.  
Location: Metropolitan Water District of Southern California  
700 North Alameda Street, Board Room  
Los Angeles, California

Interested persons are invited to attend. At the public hearing, the Regional Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is [www.waterboards.ca.gov/losangeles/](http://www.waterboards.ca.gov/losangeles/) where you can access the current agenda for changes in dates and locations.

## **C. Waste Discharge Requirements Appeals**

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board, Office of Chief Counsel  
ATTN: Elizabeth Miller Jennings, Senior Staff Counsel  
1001 I Street, 22<sup>nd</sup> Floor  
Sacramento, CA 95814

## **D. Information and Copying**

The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special conditions, comments received, and other information are on file and may be inspected at 320 West 4<sup>th</sup> Street, Suite 200, Los Angeles, California, 90013, at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Los Angeles Regional Board by calling (213) 576-6600.

## **E. Register of Interested Persons**

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Board, reference this facility, and provide a name, address, and phone number.

## II. Introduction

Six Flags Theme Parks, Inc., Six Flags Magic Mountain (hereinafter Six Flags or Discharger), discharges wastewater (i.e., pond drainage and overflow, midway (walkway throughout the park) wash-down, irrigation runoff, and storm water runoff) to the Santa Clara River, a water of the United States, above the Estuary. Wastes discharged from the facility are regulated by WDRs and an NPDES permit contained in Board Order No. 98-005 (NPDES Permit No. CA0003352). Order No. 98-005 expired on January 10, 2003.

Six Flags filed a Report of Waste Discharge and applied for renewal of its WDRs and a NPDES permit on November 15, 2002. The tentative Order is the reissuance of the WDRs and a NPDES permit for discharges from Six Flags.

A NPDES permit compliance evaluation inspection (CEI) was conducted on March 25, 2004. The CEI also served as a site visit to observe operations, verify conditions, and collect additional data to develop permit limitations and conditions.

### Description of Facility and Waste Discharge

Six Flags operates an amusement park (Facility) located at 26101 West Magic Mountain Parkway, Valencia, California. The amusement park consists of rides, shows and attractions, and occupies approximately 260 acres.

Six Flags discharges up to 1.52 million gallons per day (mgd) of wastewater, and up to 2.5 million gallons of storm water when the rainfall exceeds one inch, through Discharge Serial Nos. 001, 002, and 003 into a storm drain thence to the Santa Clara River, a water of the United States. The wastewater consists of the following:

1. **Discharge Serial No. 001** - (East Side Lakes and Ponds) discharges via a lined tributary to the Santa Clara River at a point located 2,300 feet downstream from the Golden State Freeway (Latitude 34° 25' 41" North, Longitude 118° 35' 27" West):

Six Flags discharges up to 600,000 gallons per day (gpd) of drainage/overflow from the East Side lakes and ponds, up to 100,000 gpd of irrigation run-off, 50,000 gpd of midway (walkway) washdown, and 1,000,000 gallons of storm water runoff when rainfall exceeds one inch, through Discharge Serial No. 001. The water in the lakes and ponds is treated with chlorine, muriatic acid and soda ash. The water is also filtered and settled debris is vacuumed, and the water surfaces are skimmed routinely.

2. **Discharge Serial No. 002** - (Duck Ponds) discharges via an unlined tributary to the Santa Clara River at a point located 3,000 feet downstream from the Golden State Freeway (Latitude 34° 30' 47" North, Longitude 118° 35' 38" West):

Six Flags discharges up to 20,000 gpd of duck pond overflow, and 50,000 gallons of storm water runoff when rainfall exceeds one inch, through Discharge Serial No. 002.

- 3. Discharge Serial No. 003** - (West Side Lakes and Ponds) discharges via a lined tributary to the Santa Clara River at a point located 5,000 feet downstream from the Golden State Freeway (Latitude 34° 25' 58" North, Longitude 118° 35' 52" West):

Six Flags discharges up to 600,000 gallons per day (gpd) of drainage/overflow from the West Side lakes and ponds, up to 100,000 gpd of irrigation run-off, 50,000 gpd of midway (walkway) washdown, and 1,000,000 gallons of storm water runoff when rainfall exceeds one inch, through Discharge Serial No. 003. The water in the lakes and ponds is treated with chlorine, muriatic acid and soda ash. The water is also filtered, and the water surfaces are skimmed routinely, and settled debris is vacuumed.

The discharge of lakes and ponds drainage from Discharge Serial Nos. 001 and 003 does not occur on the same day. The lakes and ponds may be drained for cleaning and repair during the months of January, May, and October, but not concurrently. Sediments and sludge resulting from lake and pond cleaning are hauled to a legal land disposal site.

Six Flags Magic Mountain is in the process of exploring options for reuse of wastewater. Six Flags Magic Mountain will explore and provide a report to the Regional Board within six months of the issuance of the permit on various options that are deemed reasonably feasible.

Sanitary wastes are discharged to the municipal sanitary sewer system of the Los Angeles County Sanitation District.

The water supplied for use in the lakes and duck ponds, midway wash-down and irrigation purposes, is purchased from and treated by the Valencia Water Company with approximately eighty to ninety mg/L of chloride.<sup>1</sup>

Employee and guest parking areas, which encompass 84 acres, may contain oil and grease and may contaminate storm water runoff. Standard Operating Procedures (SOPs) are in place at Six Flags to prevent oil and grease from contaminating storm water runoff; all litter and spills in the guest areas, and employee and guest parking lots, are continuously removed and cleaned. Generally, Six Flags' personnel handpick and remove debris, and at the end of each business day, street sweepers clean the debris from the parking lots. Six Flags does not wash-down any of the parking lots.

As a regular course of operation, all litter and food/beverage related spills in the guest areas are continuously removed/cleaned before the wash-down within the park area occurs. The existing permit states that the quality of the midway wash-down is similar to that of the irrigation runoff.

In maintenance areas, another SOP and the Hazard Communication Plan provide protocols on managing all hazardous and/or non-hazardous material spills. According to these documents, all spills are addressed and resolved immediately to avoid trip and fall hazards.

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<sup>1</sup> Provided by Perez Environmental, via e-mail, on June 8, 2004, on behalf of the Discharger.

The flow in the upper Santa Clara River is primarily comprised of discharges from the County Sanitation Districts of Los Angeles County's Saugus and Valencia Water Reclamation Plants (WRPs). The Valencia WRP's discharge enters between the Six Flags' outfalls and dominates the flow of the receiving water in the vicinity of the discharge from Six Flags.

Order No. 98-005 indicates that the Discharger agreed to investigate alternatives to using chlorine for water treatment because chlorine and its reaction products (including chloride) are toxic to aquatic life. As stated previously, the existing Order stated that chloride effluent limitation exceedances were a result of evaporation of the water in the lakes and ponds. In addition, high concentrations of chlorides as a result of drought in the Santa Clara River were raised as a concern in Resolution 97-02, *Amendment to the Water Quality Control Plan to Incorporate a Policy for Addressing Levels of Chloride in Discharges of Wastewaters*. According to the CEI that was conducted on March 25, 2004, the Discharger investigated other methods for disinfection and determined that using chlorine was the most cost effective treatment option. However, other options are being investigated which include drilling a new water supply well which would provide Six Flags with untreated water. Currently, water with a high chlorine content is purchased from the Valencia Water Company and used throughout the facility. This may be the partial cause of elevated levels of chloride observed in the discharge.

The Regional Board and the United States Environmental Protection Agency (U.S. EPA) have classified the Six Flags Facility as a major discharge.

The Discharger characterized the wastewater from NPDES Discharge Serial Nos. 001, 002, and 003 in the permit renewal application as follows:

Pollutant (units)	001		002		003	
	Reported Maximum Daily Value	Reported Average Value	Reported Maximum Daily Value	Reported Average Value	Reported Maximum Daily Value	Reported Average Value
Biochemical Oxygen Demand (BOD) <sup>1</sup> (mg/L)	<7	NR	<7	NR	<7	NR
BOD (lb/d)	NR	NR	NR	NR	NR	NR
Chemical Oxygen Demand (COD) (mg/L)	32	NR	32	NR	13	NR
COD (lb/d)	NR	NR	NR	NR	NR	NR
Total Organic Carbon (TOC) (mg/L)	4.6	NR	8.4	NR	4.9	NR
TOC (lb/d)	NR	NR	NR	NR	NR	NR
Total Suspended Solids (TSS) (mg/L)	34	14	94	39	56	19
TSS (lb/d)	NR	NR	NR	NR	NR	NR
Ammonia (as N) (mg/L)	0.32	NR	0.93	NR	0.26	NR
Ammonia (as N) (lb/d)	NR	NR	NR	NR	NR	NR
Flow (gpd)	500,000	173,000	15,000	4,000	600,000	243,000
Temperature (winter/summer) (°C)	21°/51°	35°/35°	21°/54°	35°/35°	11°/48°	30°/30°
pH (min./max.) (s.u.)	7.8 – 8.1	8.0 <sup>1</sup>	7.8 – 10.0	8.3 <sup>1</sup>	8.1 – 9.5	8.8 <sup>2</sup>
Total Residual Chlorine	0.1	<0.1	0.1	<0.1	0.1	<0.1

Pollutant (units)	001		002		003	
	Reported Maximum Daily Value	Reported Average Value	Reported Maximum Daily Value	Reported Average Value	Reported Maximum Daily Value	Reported Average Value
(mg/L)						
Oil and Grease (mg/L)	<5	<5	<5	<5	<5	<5
Sulfate (mg/L)	170	138	140	130	200	111

NR = Not Reported

<sup>1</sup> 5-day biochemical oxygen demand at 20°C

<sup>2</sup> Represents reported maximum 30-day values for pH.

In addition, the following data were provided in the permit renewal application:

Pollutant (units)	Reported Maximum Daily Value: 001	Reported Maximum Daily Value: 002	Reported Maximum Daily Value: 003
Boron (mg/L)	0.47	0.48	0.42
Chloride (mg/L)	94	78	110
Nitrate (mg/L)	3.3	3.2	2.0
Total Dissolved Solids (TDS) (mg/L)	730	710	850

All other pollutants listed in Section V, Part B of EPA Form 2C for Discharge Serial Nos. 001, 002 and 003 are marked "believed absent."

Effluent monitoring data from Discharge Serial Nos. 001, 002 and 003 were submitted with quarterly monitoring and annual reports for the period from January 1999 through June 2003. These data and existing effluent limitations are summarized below for each point of discharge:

Pollutant (units)	30-Day Average	Existing Maximum Daily Effluent Limitation (MDEL)	Reported Concentrations 001	Reported Concentrations 002	Reported Concentrations 003
pH (s.u.)	--	--	7.6 – 8.5	7.6 – 8.5	7.3 – 8.7
Temperature (°F)	--	--	47– 77	44 – 73	37 – 80
Oil and Grease (mg/L)	10	15	<1 – 16	<1 – 1.8	<1 – 6.7
TSS (mg/L)	50	150	<10 – 91	<10 – 84	>10 – 300
TDS (mg/L)	--	1,000 <sup>1</sup>	500 – 790	360 – 1,000	590 – 1,100
Settleable Solids (ml/l)	0.1	0.3	<0.1 – 0.5	<0.1 – 0.2	<0.1 – 1.5
Sulfate (mg/L)	--	400 <sup>1</sup>	65 – 280	85 – 230	110 – 260
Chloride (mg/L)	--	175 <sup>1</sup>	62 – 170	49 – 360	110 – 390
Boron (mg/L)	--	1.5 <sup>1</sup>	0.23 – 4.3	0.26 – 0.74	0.3 – 0.6
Nitrate <sup>2</sup> (as N) (mg/L)	--	5 <sup>1</sup>	<0.11 – 3.9	0.46 – 4.4	0.42 – 5.2
Nitrite <sup>2</sup> (as N) (mg/L)	--	5 <sup>1</sup>	<0.15 – 3.1	<0.15 – <0.3	<0.15 – <1.5
Residual Chlorine (mg/L)	--	0.1	<0.1 – 4	<0.1 – 0.3	<0.1 – 0.2

Pollutant (units)	30-Day Average	Existing Maximum Daily Effluent Limitation (MDEL)	Reported Concentrations 001	Reported Concentrations 002	Reported Concentrations 003
Arsenic (µg/L)	--	50	<5 – 6.9	<5 – 6.6	<5 – 6.9
Cadmium (µg/L) <sup>3</sup>	--	5	<5	<5	<5
Chromium III (µg/L) <sup>3</sup>	--	50	<5	<5	<5
Copper (µg/L)	--	1,000	19 – 32	<10 – 18	42 – 240
Lead (µg/L) <sup>3</sup>	--	50	<5 – 85	<5	<5 – 78
Mercury (µg/L)	--	2	<0.2 – 0.2	<0.2 – 0.2	<0.2 – 0.22
Selenium (µg/L) <sup>3</sup>	--	10	<5	<5	<5
Silver (µg/L) <sup>3</sup>	--	50	<10	<10	<10
Acute Toxicity (% Survival)	--	<sup>4</sup>	0% - 100% <sup>5</sup>	100%	100%

"- -" Indicates there are no average monthly effluent limitations contained in Order No. 98-005.

- <sup>1</sup> These effluent limitations were based on the water quality objectives listed in the Basin Plan, page 3-12, between West Pier Highway 99 and Blue Cut Gaging Station. The Basin Plan objective for chloride is 100 mg/L but the effluent limitation was revised in the existing Order to 175 mg/L based on site conditions.
- <sup>2</sup> Permitted limitations are for Nitrate + Nitrite (as N). The Discharger reported values for each pollutant separately.
- <sup>3</sup> A range of values do not exist at each point of discharge for cadmium, chromium, lead, selenium and silver; all results were non-detect and therefore, the method detection limit (MDL) was selected and is denoted by "<." For all other CTR metals, a range of values were provided.
- <sup>4</sup> Average survival in effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test producing less than 70 % survival.
- <sup>5</sup> 0% survival was reported but it is believed that this was a typographical error.

**Compliance History**

A review of the effluent monitoring data for the period between the first Quarter 1999 through fourth Quarter 2004, indicated that the Discharger has had multiple exceedances of the existing effluent limitations for chloride, residual chlorine, lead, total dissolved solids, total suspended solids, and settleable solids. Further, the Discharger also has exceeded the effluent limitations once for oil and grease, boron, nitrogen (Nitrate + Nitrite), and during this monitoring period. The Table below shows exceedances of the effluent limitations:

Date	Monitoring Period	Violation Type	Pollutants	Reported Value	Permit Limitations	Units	Discharge Serial No.
3/1/2001	1 <sup>st</sup> Quarter, 2001	Daily Maximum	Oil and Grease	16	15	mg/L	001
2/28/2003	1 <sup>st</sup> Quarter, 2003	Daily Maximum	Chloride	180	175	mg/L	002
6/26/2003	2 <sup>nd</sup> Quarter, 2003	Daily Maximum	Chloride	360	175	mg/L	002
--	1 <sup>st</sup> Quarter, 1999	Daily Maximum	Chloride	200	175	mg/L	003

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Date	Monitoring Period	Violation Type	Pollutants	Reported Value	Permit Limitations	Units	Discharge Serial No.
--	2 <sup>nd</sup> Quarter, 1999	Daily Maximum	Chloride	210	175	mg/L	003
--	2 <sup>nd</sup> Quarter, 2000	Daily Maximum	Chloride	250	175	mg/L	003
8/30/2000	3 <sup>rd</sup> Quarter, 2000	Daily Maximum	Chloride	290	175	mg/L	003
--	4 <sup>th</sup> Quarter, 2000	Daily Maximum	Chloride	300	175	Mg/L	003
5/31/2001	2 <sup>nd</sup> Quarter, 2001	Daily Maximum	Chloride	200	175	Mg/L	003
--	3 <sup>rd</sup> Quarter, 2001	Daily Maximum	Chloride	390	175	Mg/L	003
--	2 <sup>nd</sup> Quarter, 2002	Daily Maximum	Chloride	330	175	Mg/L	003
8/27/2002	3 <sup>rd</sup> Quarter, 2002	Daily Maximum	Chloride	210	175	Mg/L	003
9/18/2002	3 <sup>rd</sup> Quarter, 2002	Daily Maximum	Chloride	200	175	Mg/L	003
12/11/2002	4 <sup>th</sup> Quarter, 2002	Daily Maximum	Chloride	190	175	Mg/L	003
2/28/2003	1 <sup>st</sup> Quarter, 2003	Daily Maximum	Chloride	190	175	Mg/L	003
5/29/2004	2 <sup>nd</sup> Quarter 2004	Daily Maximum	Chloride	250	175	Mg/L	003
8/26/2004	3 <sup>rd</sup> Quarter 2004	Daily Maximum	Chloride	200	175	Mg/L	002
6/26/2003	2 <sup>nd</sup> Quarter 2003	Daily Maximum	Boron	4.3	1.5	Mg/L	001
--	4 <sup>th</sup> Quarter 2000	Daily Maximum	Nitrate + Nitrite	5.2	5	Mg/L	003
--	4 <sup>th</sup> Quarter 2000	Daily Maximum	Residual Chlorine	0.3	0.1	Mg/L	001
3/22/2002	1 <sup>st</sup> Quarter 2002	Daily Maximum	Residual Chlorine	4	0.1	Mg/L	001
3/22/2002	1 <sup>st</sup> Quarter 2002	Daily Maximum	Residual Chlorine	0.2	0.1	Mg/L	003
6/26/2003	2 <sup>nd</sup> Quarter 2003	Daily Maximum	Residual Chlorine	0.2	0.1	Mg/L	002
6/26/2003	2 <sup>nd</sup> Quarter 2003	Daily Maximum	Residual Chlorine	0.2	0.1	Mg/L	003
7/2003	3 <sup>rd</sup> Quarter 2003	Daily maximum	Residual Chlorine	0.27	0.1	Mg/L	001
7/2003	3 <sup>rd</sup> Quarter 2003	Daily maximum	Residual Chlorine	0.3	0.1	Mg/L	002
9/2/2003	3 <sup>rd</sup> Quarter 2003	Daily maximum	Residual Chlorine	0.2	0.1	Mg/L	003
5/29/2004	2 <sup>nd</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.2	0.1	Mg/L	001
5/29/2004	2 <sup>nd</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.4	0.1	Mg/L	002
6/2004	2 <sup>nd</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.2	0.1	Mg/L	001
6/2004	2 <sup>nd</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.2	0.1	Mg/L	002
6/2004	2 <sup>nd</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.2	0.1	Mg/L	003
7/2004	3 <sup>rd</sup> Quarter 2004	Daily maximum	Residual Chlorine	1.2	0.1	Mg/L	001
7/2004	3 <sup>rd</sup> Quarter 2004	Daily maximum	Residual Chlorine	>5.5	0.1	Mg/L	002
7/2004	3 <sup>rd</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.4	0.1	Mg/L	003
8/26/2004	3 <sup>rd</sup> Quarter 2004	Daily maximum	Residual Chlorine	>6	0.1	Mg/L	002
9/2004	3 <sup>rd</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.5	0.1	Mg/L	001
10/2004	4 <sup>th</sup> Quarter 2004	Daily maximum	Residual Chlorine	1.3	0.1	Mg/L	001
11/23/2004	4 <sup>th</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.3	0.1	Mg/L	001
12/2004	4 <sup>th</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.2	0.1	Mg/L	001
10/2004	4 <sup>th</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.2	0.1	Mg/L	002
11/23/2004	4 <sup>th</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.2	0.1	Mg/L	002
12/2004	4 <sup>th</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.2	0.1	Mg/L	002
10/2004	4 <sup>th</sup> Quarter 2004	Daily maximum	Residual Chlorine	5.5	0.1	Mg/L	003
11/23/2004	4 <sup>th</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.3	0.1	Mg/L	003
12/2004	4 <sup>th</sup> Quarter 2004	Daily maximum	Residual Chlorine	0.4	0.1	Mg/L	003
--	1 <sup>st</sup> Quarter, 1999	Daily Maximum	Lead	85	50	µg/L	001
--	1 <sup>st</sup> Quarter, 1999	Daily Maximum	Lead	78	50	µg/L	003
8/15/2001	3 <sup>rd</sup> Quarter 2001	Daily Maximum	Total Dissolved Solids	1,100	1,000	Mg/L	003
6/12/2002	2 <sup>nd</sup> Quarter 2002	Daily Maximum	Total Dissolved Solids	1,100	1,000	Mg/L	003
6/12/2002	2 <sup>nd</sup> Quarter 2002	Daily Maximum	Total Suspended Solids	300	150	Mg/L	003
8/26/2003	3 <sup>rd</sup> Quarter 2004	Daily maximum	Total Suspended solids	260	150	Mg/L	001
--	3 <sup>rd</sup> Quarter 1999	Daily Maximum	Settleable Solids	0.4	0.3	ml/L	001



Date	Monitoring Period	Violation Type	Pollutants	Reported Value	Permit Limitations	Units	Discharge Serial No.
8/15/2001	3 <sup>rd</sup> Quarter 2001	Daily Maximum	Settleable Solids	0.5	0.3	ml/L	001
6/12/2002	2 <sup>nd</sup> Quarter 2002	Daily Maximum	Settleable Solids	1.5	0.3	ml/L	003
9/2/2003	3 <sup>rd</sup> Quarter 2003	Daily Maximum	Settleable Solids	0.5	0.3	ml/L	001
8/26/2004	3 <sup>rd</sup> Quarter 2004	Daily Maximum	Settleable Solids	1.2	0.3	ml/L	001

On November 25, 2002, the Regional Board issued a Mandatory Administrative Civil Liability (ACL) in the amount of \$33,000 against Six Flags for exceedance of the effluent limitations for total dissolved solids (total dissolved solids), settleable solids, chloride, nitrate + nitrite, residual chlorine, and oil and grease. Six Flags waived its right to a hearing and paid the Regional Board \$33,000 on December 6, 2002, for all identified violations.

The ACL was issued for the violations during the monitoring period of second Quarter 2000 through third Quarter 2001. The subsequent violations are being evaluated for appropriate enforcement action.

The existing Order required the Discharger to also submit receiving water data for two locations; R-1 and R-2. R-1 refers to a sample location on the Santa Clara River, located 300 feet upstream of Discharge Serial No. 001. R-2 refers to a sample location on the Santa Clara River, located 300 feet downstream of Discharge Serial No. 003. The existing Order states that the flow in the Upper Santa Clara River is primarily discharges from the County Sanitation Districts of Los Angeles County's Saugus and Valencia Water Reclamation Plants (WRPs). The Valencia WRP's discharges enter between the Six Flags' outfalls and dominates the discharges from Six Flags. Therefore, the Regional Board determined that sampling at the two locations, R-1 and R-2, was necessary. In response, the Discharger provided quarterly Discharge Monitoring Reports (DMR) for the receiving water from January 1999 through June 2003 for both sampling stations.

**III. Applicable Plans, Policies, and Regulations**

The requirements contained in the proposed Order are based on the requirements and authorities contained in the following:

1. The Federal Clean Water Act (CWA). The Federal Clean Water Act requires that any point source discharges of pollutants to a water of the United States must be done in conformance with an NPDES permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to protect water quality.
2. Code of Regulations, Title 40 (40 CFR) – Protection of Environment, Chapter I, Environmental Protection Agency, Subchapter D, Water Programs, Parts 122-125 and Subchapter N, Effluent Guidelines. These CWA regulations provide effluent limitations for certain dischargers and establish procedures for NPDES permitting, including how to establish effluent limitations for certain pollutants discharged by Six Flags Magic Mountain.
3. On June 13, 1994, the Regional Board adopted a revised *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan). The Basin Plan

contains water quality objectives and beneficial uses for inland surface waters and for the Pacific Ocean. The beneficial uses listed in the Basin Plan for the Santa Clara River, above the Estuary (H.U. 403.51) are:

Existing Uses: Industrial service and process supplies, agricultural supply, groundwater recharge, freshwater replenishment, contact and non-contact water recreation, warm freshwater habitat, wildlife habitat, preservation of rare and endangered species, and wetland habitat.

Potential Uses: Municipal and domestic water supply.

4. Ammonia Basin Plan Amendment. The 1994 Basin Plan provided water quality objectives for ammonia to protect aquatic life, in Tables 3-1 through Tables 3-4. However, those ammonia objectives were revised on April 25, 2002, by the Regional Board with the adoption of Resolution No. 2002-011, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters (Including Enclosed Bays, Estuaries and Wetlands) with Beneficial Use Designations for Protection of Aquatic Life*. The Ammonia Basin Plan Amendment was approved by the State Board, the Office of Administrative Law, and the U.S. EPA on April 30, 2003, June 5, 2003, and June 19, 2003, respectively. Although the revised ammonia water quality objectives may be less stringent than those contained in the 1994 Basin Plan, they are still protective of aquatic life and are consistent with the U.S. EPA's 1999 ammonia criteria update.
5. The State Water Resources Control Board (State Board) adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.
6. On May 18, 2000, the U.S. EPA promulgated numeric criteria for priority pollutants for the State of California [known as the *California Toxics Rule* (CTR) and codified as 40 CFR section 131.38]. In the CTR, the U.S. EPA promulgated criteria that protect the general population at an incremental cancer risk level of one in a million ( $10^{-6}$ ) for all priority toxic pollutants regulated as carcinogens. The CTR also allows for a schedule of compliance not to exceed five years from the date of permit renewal for an existing discharger if the Discharger demonstrates that it is infeasible to promptly comply with effluent limitations derived from the CTR criteria. CTR's Compliance Schedule provisions sunset on May 18, 2005. After this date, the provisions of the SIP allow for Compliance Schedules not to exceed five years from issuance or past May 1, 2011, whichever is sooner.
7. On March 2, 2000, State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through National Toxics Rule (NTR) and to the priority pollutant objectives established by the Regional Boards in their basin plans, with the exception of the provision on alternate test procedures for individual

discharges that have been approved by the U.S. EPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The SIP requires the dischargers' submittal of data sufficient to conduct the determination of priority pollutants requiring water quality-based effluent limits (WQBELs) and to calculate the effluent limitations. The CTR criteria for fresh water or human health for consumption of organisms, whichever is more stringent, are used to develop the effluent limitations in this Order to protect the beneficial uses of the Santa Clara River.

8. 40 CFR section 122.44(d)(1)(vi)(A) requires the establishment of numeric effluent limitations to attain and maintain applicable narrative water quality criteria to protect the designated beneficial uses. Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR section 122.44(d) specifies that WQBELs may be set based on U.S. EPA criteria and supplemented, where necessary, by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.
9. State and Federal anti-backsliding and anti-degradation policies require that Regional Board actions to protect the water quality of a water body and to ensure that the water body will not be further degraded. The anti-backsliding provisions are specified in section 402(o) and 303(d)(4) of the CWA and in 40 CFR section 122.44(l). Those provisions require a reissued permit to be as stringent as the previous permit with some exceptions where effluent limitations may be relaxed.
10. Effluent limitations are established in accordance with Parts 301, 304, 306, and 307 of the Federal CWA, and amendments thereto. These requirements, as they are met, will maintain and protect the beneficial uses of the Santa Clara River.
11. Existing waste discharge requirements are contained in Order No. 98-005, adopted by the Regional Board on January 26, 1998. Some of the permit conditions (e.g., effluent limitations and other special conditions) established in the existing waste discharge requirements have been carried over to the proposed Order.

#### **IV. Regulatory Basis for Effluent Limitations**

The CWA requires point source discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of the discharge of pollutants is established through NPDES permits that contain effluent limitations and standards. The CWA establishes two principal bases for effluent limitations. First, dischargers are required to meet technology-based effluent limitations that reflect the best controls available considering costs and economic impact. Second, they are required to meet WQBELs that are developed to protect applicable designated uses of the receiving water.

The CWA requires that technology-based effluent limitations be established based on several levels of control:

- Best practicable treatment control technology (BPT) is based on the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.
- Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.
- Best conventional pollutant control technology (BCT) is a standard for the control from existing industrial point sources of conventional pollutants including BOD, total suspended solids, total coliform, fecal coliform, enterococcus, pH, and oil and grease. The BCT standard is established after considering the “cost reasonableness” of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.
- New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires U.S. EPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BCT, BAT, and NSPS. Section 402(a)(1) of the CWA and 40 CFR section 125.3 of the NPDES regulations authorize the use of Best Professional Judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern.

If a reasonable potential exists for pollutants in a discharge to exceed water quality standards, WQBELs are also required under 40 CFR section 122.44(d)(1)(i). WQBELs are established after determining that technology-based limitations are not stringent enough to ensure that state water quality standards are met for the receiving water. WQBELs are based on the designated use of the receiving water, water quality criteria necessary to support the designated uses, and the state’s anti-degradation policy. For discharges from this facility to inland surface waters, enclosed bays, and estuaries, the SIP establishes specific implementation procedures for determining reasonable potential and establishing WQBELs for priority pollutant criteria promulgated by U.S. EPA through the CTR and NTR, as well as the Basin Plan.

There are several other specific factors affecting the development of limitations and requirements in the proposed Order. These are discussed as follows:

#### 1. **Pollutants of Concern**

The CWA requires that any pollutant that may be discharged by a point source in quantities of concern must be regulated through an NPDES permit. Further, the NPDES regulations require

regulation of any pollutant that (1) causes; (2) has the reasonable potential to cause; or (3) contributes to the exceedance of a receiving water quality criteria or objective.

The existing Order (No. 98-005) authorizes discharges from drainage and overflow from the East and West Side Lakes and Ponds, midway wash-down, irrigation and storm water runoff. Effluent limitations apply to the three discharge locations Discharge Serial Nos. 001, 002, and 003. Order No. 98-005 established effluent limitations for oil and grease, total suspended solids, settleable solids, total dissolved solids, sulfate, chloride, boron, nitrate + nitrite (as N), residual chlorine, arsenic, cadmium, chromium, copper, lead, mercury, selenium, silver, and acute toxicity.

The proposed Order establishes effluent limitations for discharges through Discharge Serial Nos. 001, 002, and 003 for oil and grease, total suspended solids, settleable solids, phenols, and turbidity because these pollutants have the potential to be present in storm water runoff in general, and from the midway wash-down water related to the rides, and the employee and guest parking areas. In addition, maintenance areas where heavy equipment is stored, such as bucket loaders and backhoes, are also a potential source of contamination. Contaminants may be present in the discharge of storm water because storm water contacts the paved surface surrounding the facility, picking up solids and oil and grease. Drainage/overflow from duck ponds and lakes could also potentially contribute oil and grease, BOD, total coliform, fecal coliform, and enterococcus in the discharges. Therefore, these constituents are pollutants of concern.

Irrigation runoff may add solid materials, comprised of settleable solids, total suspended solids, and total dissolved solids which may include chloride, nitrate, and nitrite and other ions, to the discharge. In addition, chlorine is used as a disinfectant in the wash-down areas. Therefore, these constituents are considered pollutants of concern. Trace metals, such as arsenic, cadmium, chromium, copper, lead, mercury, selenium, and silver may also be present in the discharge because these pollutants have the potential to be present in the runoff from the midway wash-down water from rain water coming into contact with the midway rides. Therefore, metals are considered pollutants of concern.

As stated in the permit renewal application, EPA Form 2C, residual chlorine is added as a disinfectant to Discharge Serial Nos. 001 and 003. Further, the existing permit states that chlorine, muriatic acid, and soda ash are also used as disinfectants for Serial Discharge Nos. 001 and 003. As a result, these constituents may be present in discharge and are pollutants of concern. Treatment is not employed at Discharge Serial No. 002.

Storm water runoff from the facility may affect the pH and temperature of the discharge. Therefore, these parameters are considered pollutants of concern at the theme park.

Intermittent and continuous discharges may also carry pollutants that may contribute to acute and chronic toxicity. Therefore, toxicity is an indicator of pollutants of concern.

## 2. **Technology-Based Effluent Limitations**

The proposed Order requires the Discharger to develop and implement a *Storm Water Pollution Prevention Plan* (SWPPP). A SWPPP outlines site-specific management processes for minimizing contamination from storm water runoff and for preventing contaminated storm water runoff from being discharged into surface waters. Discharges comprised of drainage and overflow from duck ponds and lakes, midway wash-down water, irrigation runoff, and storm water occur at the Magic Mountain theme park. As a result, the proposed Order requires Six Flags to develop and implement a SWPPP and address storm water runoff and minimize pollutants from entering the Santa Clara River. The SWPPP should address specific areas of concern to include, but not limited to, duck ponds and lakes, midways, and irrigated areas, to determine if additional controls are required to meet effluent limitations. In addition, the SWPPP must identify measures that can be implemented at each area of the theme park (e.g., East and West Side Lakes and Ponds and the Duck Ponds) to prevent contaminated storm water from being discharged into the Santa Clara River.

National ELGs have not been developed for discharges from theme parks. Therefore, pursuant to 40 CFR Section 122.44(k), the Regional Board will require the Discharger to develop and implement *Best Management Practices* (BMPs) to be included in the SWPPP. The purpose of the BMPs is to establish site-specific procedures that ensure proper operation of the facility and maintenance of equipment. For instance, proper operation and maintenance procedures may address alternative methods for reducing chloride and residual chlorine levels, including other pollutants of concern in the wastewater, which will assist the facility in complying with effluent limitations for these pollutants. In the absence of established ELGs, the combination of the SWPPP and BMPs will serve as the equivalent of technology-based effluent limitations to carry out the purposes and intent of the CWA.

## 3. **Water Quality-Based Effluent Limitations**

As specified in 40 CFR section 122.44(d)(1)(i), Orders must include WQBELs for toxic pollutants (including toxicity) that are or may be discharged at levels which cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses for the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or the U.S. EPA water quality criteria contained in the CTR and NTR. The procedures for determining reasonable potential for discharges from Six Flags, and if necessary for calculating WQBELs, are contained in the SIP.

The CTR contains both saltwater and freshwater criteria. According to 40 CFR section 131.38(c)(3), freshwater criteria apply at salinities of 1 part per thousand (ppt) and below at locations where this occurs 95% or more of the time; saltwater criteria apply at salinities of 10 ppt and above at locations where this occurs 95% or more of the time; and at salinities between 1 and 10 ppt, the more stringent of the two apply. The CTR criteria for fresh water or human health for consumption of organisms, whichever are more stringent, are used to

prescribe the effluent limitations in the proposed Order to protect the beneficial uses of the Santa Clara River, in the vicinity of the discharges.

Certain CTR water quality criteria for metals are hardness dependent. However, there is insufficient data on CTR priority pollutants for the effluent and the receiving water. As a result, receiving water data from HR Textron, Inc. was used to conduct the RPA. HR Textron, Inc. is located in Santa Clarita, California, and also discharges effluent into the Santa Clara River near Six Flags. HR Textron's receiving water data from November 28, 2001 and May 8, 2002 were used to conduct the RPA. A pH value of 7.21 s.u. and a hardness value of 300 mg/L CaCO<sub>3</sub> were used to determine certain fresh water criteria and to calculate WQBELs for certain metals. The lowest pH and hardness values represent the most conservative approach for establishing criteria and thus, were used in evaluating reasonable potential.

**(a) Reasonable Potential Analysis (RPA)**

In accordance with Section 1.3 of the SIP, the Regional Board conducts a reasonable potential analysis for each priority pollutant with an applicable criterion or objective to determine if a WQBEL is required in the permit. The Regional Board analyzes effluent data to determine if a pollutant in a discharge has a reasonable potential to cause or contribute to an excursion above a state water quality standard. For all parameters that have a reasonable potential, numeric WQBELs are required. The RPA considers water quality objectives outlined in the CTR, NTR, as well as the Basin Plan. To conduct the RPA, the Regional Board must identify the maximum observed effluent concentration (MEC) for each constituent, based on data provided by the Discharger.

Section 1.3 of the SIP provides the procedures for determining reasonable potential to exceed applicable water quality criteria and objectives. The SIP specifies three triggers to complete an RPA:

- 1) Trigger 1 – If the MEC is greater than or equal to the CTR water quality criteria or applicable objective (C), a limit is needed.
- 2) Trigger 2 – If  $MEC < C$  and background water quality  $(B) > C$ , a limit is needed.
- 3) Trigger 3 – If other related information such as CWA 303(d) listing for a pollutant, discharge type, compliance history, etc. indicates that a WQBEL is required.

Sufficient effluent and ambient data are needed to conduct and complete the RPA. If data are not sufficient, the Discharger is required to collect the appropriate data for the Regional Board to conduct the RPA. Upon review of the data, and if the Regional Board determines that WQBELs are needed to protect the beneficial uses, the permit will be reopened for appropriate modification.

RPA was performed for the priority pollutants for which effluent data were available. RPA was conducted using the data the monitoring data collected annually from 1999 through 2004 for Discharge Serial Nos. 001, 002, and 003. Based on the RPA, there is reasonable potential to exceed water quality criteria for copper, lead, and mercury at Discharge Serial Nos. 001 and 003. For Discharge Serial No. 002, mercury demonstrates reasonable potential to exceed water quality criterion. Thus, effluent limitations have been established for these pollutants that showed reasonable potential to exceed state water quality standards. The RPA for Discharge Serial Nos. 001, 002, and 003 are provided as Attachments B, C and D, respectively. The proposed Order also includes comprehensive monitoring requirements to provide the data needed to complete an RPA for all of the priority pollutants.

Certain priority pollutants did not show reasonable potential based on available effluent data, therefore, effluent limitations for arsenic, cadmium, chromium, selenium, and silver, will not be established in the proposed Order. The removal of these effluent limitations is not considered backsliding because the current effluent monitoring data serve as "new information" that was not available at the time of the issuance of the previous permit. The Regional Board determines that the anti-backsliding exception for new information applies where new monitoring data indicate that the discharge of a pollutant does not have reasonable potential to cause or contribute to a water quality standards violation. However, this Order requires the Discharger to continue to monitor for these pollutants, to provide data to evaluate reasonable potential in the future.

This Order requires the Discharger to conduct monitoring for receiving water for priority pollutants annually to provide data for conduction of RPA in the future.

***(b) Calculating WQBELs***

If a reasonable potential exists to exceed applicable water quality criteria or objectives, then a WQBEL must be established in accordance with one of three procedures contained in Section 1.4 of the SIP. These procedures include:

- 1) If applicable and available, use of the wasteload allocation (WLA) established as part of a total maximum daily load (TMDL).
- 2) Use of a steady-state model to derive maximum daily effluent limitations (MDELs) and average monthly effluent limitations (AMELs).
- 3) Where sufficient effluent and receiving water data exist, use of a dynamic model which has been approved by the Regional Board.

***(c) Impaired Water Bodies on the 303 (d) List***

Section 303(d) of the CWA requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based



effluent limitations on point sources. For all 303(d)-listed water bodies and pollutants, the Regional Board plans to develop and adopt TMDLs that will specify WLAs for point sources and load allocations (LAs) for non-point sources, as appropriate.

The U.S. EPA has approved the State's 303(d) list of impaired water bodies on July 25, 2003. Certain receiving waters in Los Angeles County watersheds do not fully support beneficial uses and therefore have been classified as impaired on the 2002 303(d) list and have been scheduled for TMDL development.

The 2002 303(d) list classifies the Santa Clara River as impaired. The Facility discharges within Reach 8 of the Santa Clara River. The pollutants of concern, detected in the water column include: chloride, high coliform count and nitrate + nitrite.

***(d) Whole Effluent Toxicity***

Whole effluent toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "no toxics in toxic amounts" criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over the short term and measures mortality. A chronic toxicity test is conducted over the long term and measures mortality, reproduction, and growth.

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response from aquatic organisms. Detrimental response includes but is not limited to, decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota. The previous Order contained acute toxicity effluent limitations and monitoring requirements.

In accordance with the Basin Plan, acute toxicity limitations dictate that the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test having less than 70% survival. Consistent with Basin Plan requirements and the existing Order, the proposed Order will establish acute toxicity limitations and monitoring requirements.

In addition to the Basin Plan requirements, Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters. However, the circumstances warranting a numeric chronic toxicity effluent limitation when there is reasonable potential were under review by the State Water Resources Control Board (State Board) in SWRCB/OCC Files A-1496 & A-1496(a) [Los Coyotes/Long Beach Petitions]. On September 16, 2003, at a public hearing, the State Board adopted Order No. 2003-0012 deferring the issue of numeric chronic toxicity effluent limitations

until Phase II of the SIP is adopted. In the mean time, the State Board replaced the numeric chronic toxicity limit with a narrative effluent limitation and a 1 TU<sub>c</sub> trigger, in the Long Beach and Los Coyotes WRP NPDES permits. This permit contains a similar chronic toxicity effluent limitation. This Order also contains a reopener to allow the Regional Board to modify the permit, if necessary, consistent with any new policy, law, or regulation.

Discharges from Six Flags may contribute to long term toxic effects. However, no chronic toxicity data are available for the discharges. Therefore, in accordance with Section 4 of the SIP, the Discharger will be required to conduct chronic toxicity testing at Discharge Serial Nos. 001, 002, and 003. In addition, the Order includes a chronic testing trigger hereby defined as an exceedance of 1.0 toxic units chronic (TU<sub>c</sub>) in a critical life stage test for 100% effluent. (The monthly median for chronic toxicity of 100% effluent shall not exceed 1.0 TU<sub>c</sub> in a critical life stage test.) If the chronic toxicity of the effluent exceeds 1.0 TU<sub>c</sub>, the Discharger will be required to immediately implement accelerated chronic toxicity testing according to *MRP*, Section IV.D.1. If the results of two of the six accelerated tests exceed 1.0 TU<sub>c</sub>, the Discharger shall initiate a toxicity identification evaluation (TIE).

#### 4. **Specific Rationale for Each Numerical Effluent Limitation**

Section 402(o) of the Clean Water Act and 40 section CFR 122.44(l) require that effluent limitations or conditions in reissued Orders be at least as stringent as those in the existing Orders based on the submitted sampling data. The Regional Board determined that, based on the RPA, reasonable potential exists for certain CTR metals. Therefore, the proposed Order establishes WQBEL-based limitations for certain CTR metals (e.g., copper, lead and mercury).

The requirements in the proposed Order for oil and grease, total suspended solids, settleable solids, total dissolved solids, sulfate, boron, nitrate + nitrite, residual chlorine, and acute toxicity for discharges (shown in the Table below) are primarily based on limitations specified in Six Flags' existing Order (No. 98-005). The effluent limitation for total suspended solids has been revised based on similar Orders for storm water and pond overflow discharges that have been recently adopted by the Regional Board. The effluent limitations for pH and temperature are based on the Basin Plan and Thermal Plan, respectively, and have been added to the proposed Order. The effluent limitation for total coliform, fecal coliform, and enterococcus are based on the Basin Plan. In addition, BOD, phenols, and turbidity have been added to the proposed Order based on BPJ and recently approved Orders for similar facilities. Because the conventional pollutant BOD is an indicator of the potential for a receiving water body to become depleted in oxygen, limits are included in NPDES permits. Water with high BOD and no means for rapidly replenishing the oxygen becomes depleted in oxygen and may become anaerobic and will not support aquatic life. Generally, a BOD of 5 mg/L in a slow-moving stream may be enough to produce anaerobic conditions, while a rapid mountain stream might be able to assimilate a BOD of 50 mg/L without appreciable oxygen depletion. Therefore a middle range of 20 mg/L as a monthly

average limit, and 30 as a daily maximum limit, are considered to be protective of receiving waters based upon BPJ. BPJ is the method used by permit writers to develop technology-based NPDES permit conditions on a case-by-case basis using all reasonably available and relevant data. BPJ limits are established in cases where effluent limitation guidelines are not available for a particular pollutant of concern. Authorization for BPJ limits is found under section 401(a)(1) of the Clean Water Act and under 40 CFR 125.3. The effluent limitation for total coliform, fecal coliform, and enterococcus are based on the Basin Plan.

The existing effluent limitation for chloride is set at 175 mg/L. The current Basin Plan water quality objective for chloride is 100 mg/L. This Order prescribed 100 mg/L and will stay in effect until the Chloride TMDL for the Santa Clara River, Resolution No. 04-004 (adopted on May 6, 2004, amending Resolution No. R03-008 adopted on July 10, 2003; amending Resolution No. 02-018 adopted on October 24, 2002), *Amendment to the Water Quality Control Plan for the Los Angeles Region to Include a TMDL for Chloride in the Santa Clara River (Chloride TMDL)*, is approved by U.S.EPA (i.e., the effective date of the TMDL). If U.S. EPA does not approve the *Chloride TMDL*, this effluent limitation will remain in effect until revised by the Regional Board. (See Table below for details).

**Chloride Limitations for Discharge Serial Nos. 001, 002, and 003:**

Constituent	Units	Discharge Limitations	
		Monthly Average <sup>1/</sup>	Daily Maximum
Chloride	mg/L	100 <sup>2/</sup>	--
	mg/L	--	100 <sup>3/</sup>

<sup>1/</sup> The monthly average concentration shall be the arithmetic average of all the values of daily concentrations calculated using the results of analyses of all samples collected during the month. If only one sample is taken in that month, compliance shall be based on this sample result.

<sup>2/</sup> This is the water quality objective for chloride in the current Basin Plan. This effluent limitation applies immediately and will stay in effect until the Chloride TMDL for the Santa Clara River, Resolution No. 04-004 (adopted on May 6, 2004, amending Resolution No. R03-008 adopted on July 10, 2003; amending Resolution No. 02-018 adopted on October 24, 2002), *Amendment to the Water Quality Control Plan for the Los Angeles Region to Include a TMDL for Chloride in the Santa Clara River (Chloride TMDL)*, is approved by USEPA (i.e., the effective date of the TMDL). At that time, the effluent limitation accompanying table footnote [3] will be effective. If U.S. EPA does not approve the *Chloride TMDL*, this effluent limitation will remain in effect until revised by the Regional Board.

The following Table presents the effluent limitations and the specific rationales for pollutants that are expected to be present in the discharge.

- a) Effluent limitations established in the proposed Order are applicable for discharges from NPDES **Discharge Serial No. 001** (Latitude 34° 25' 41" North; Longitude 118° 35' 27" West) and **Discharge Serial No. 003** (Latitude 34° 25' 58" North; Longitude 118° 35' 52" West).

Pollutant (units)	Average Monthly Effluent Limitations <sup>1</sup>	Maximum Daily Effluent Limitations	Rationale <sup>2</sup>
PH (s.u.)	Between 6.5 – 8.5 <sup>3</sup>		BP
Temperature (°F)	86 <sup>3</sup>		TP
Biochemical Oxygen Demand (BOD) (mg/L)	20	30	BPJ
Total Suspended Solids (mg/L)	50	75	E, BPJ
Settleable Solids (ml/L)	0.1	0.3	E
Turbidity (NTU)	50	75	BPJ
Oil and Grease (mg/L)	10	15	E
Total coliform (MPN/100ml)	1000	10,000	BP
Fecal Colifom (MPN/100ml)	200	400	BP
Enterococcus (MPN/100ml)	35	104	BP
Phenols (mg/L)	---	1.0	BPJ
Sulfate (mg/L)	--	400	BP, E
Total Dissolved Solids (mg/L)	--	1,000	BP, E
Boron (mg/L)	--	1.5	BP, E
Nitrate + Nitrite (as N) (mg/L)	--	5.0	BP, E
Residual Chlorine (mg/L)	--	0.1	E
Copper (µg/L) <sup>4</sup>	19.5	39.2	CTR, SIP
Lead (µg/L) <sup>4</sup>	10.5	21.2	CTR, SIP
Mercury (µg/L)	0.051	0.102	CTR, SIP
Acute Toxicity (% Survival)	<sup>5</sup>		BP
Chronic Toxicity (TU <sub>c</sub> )	<sup>6</sup>		BP,SIP

<sup>1</sup> The monthly average concentration shall be the arithmetic average of all the values of daily concentrations calculated using the results of analyses of all samples collected during the month. If only one sample is taken within that month, compliance shall be based on this sample result.

<sup>2</sup> BP = Basin Plan; E = Existing Permit (Order No. 98-005); BPJ = Best Professional Judgment is the method used by permit writers to develop technology-based NPDES permit conditions on a case-by-case basis using all reasonably available and relevant data. BPJ limitations are established in cases in which effluent limitation guidelines are not available for a particular pollutant of concern. Authorization for using BPJ limitations is found under section 401(a)(1) of the Clean Water Act and under 40 CFR section 125.3; CTR = California Toxic Rule; SIP = State Implementation Policy; TMDL = Total Maximum Daily Load; and TP = Thermal Plan.

<sup>3</sup> The pH shall remain in this range at all times.

For Temperature:

TP = Thermal Plan

The new temperature effluent limit is reflective of new information available which indicates that the 100°F temperature is not protective of aquatic organisms. A survey was completed for several kinds of fish and the 86°F temperature was found to be protective. The Basin Plan lists temperature requirements for the receiving waters. Temperature: This value represents an instantaneous maximum value, not to be exceeded at any time.

- <sup>4</sup> Discharge for these metals are expressed as total recoverable.
- <sup>5</sup> Average survival in effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test producing less than 70 % survival.
- <sup>6</sup> This Order includes a chronic testing trigger defined as the monthly median for chronic toxicity of 100% effluent shall not exceed 1 TUc in a critical life stage test (more information can be found in Section I.B.3.b. of the proposed Order).

(b) Effluent limitations established in the proposed Order are applicable for discharges from NPDES **Discharge Serial No. 002** (Latitude 34° 30' 47" West; Longitude 118° 35' 38" North):

Pollutant (units)	Average Monthly Effluent Limitations <sup>1</sup>	Maximum Daily Effluent Limitations	Rationale <sup>2</sup>
PH (s.u.)	Between 6.5 – 8.5 <sup>3</sup>		BP
Temperature (°F)	86 <sup>3</sup>		TP
Biochemical Oxygen Demand (BOD) (mg/L)	20	30	BPJ
Total Suspended Solids (mg/L)	50	75	E, BPJ
Settleable Solids (ml/L)	0.1	0.3	E
Turbidity (NTU)	50	75	BPJ
Oil and Grease (mg/L)	10	15	E
Total coliform (MPN/100ml)	1000	10,000	BP
Fecal Colifom (MPN/100ml)	200	400	BP
Enterococcus (MPN/100ml)	35	104	BP
Phenols (mg/L)	---	1.0	BPJ
Sulfate (mg/L)	--	400	BP, E
Total Dissolved Solids (mg/L)	--	1,000	BP, E
Boron (mg/L)	--	1.5	BP, E
Nitrate + Nitrite (as N) (mg/L)	--	5.0	BP, E
Residual Chlorine (mg/L)	--	0.1	E
Copper (µg/L) <sup>4</sup>	19.5	39.2	CTR, SIP
Mercury (µg/L)	0.051	0.102	CTR, SIP
Acute Toxicity (% Survival)	<sup>5</sup>		BP
Chronic Toxicity (TU <sub>c</sub> )	<sup>6</sup>		BP,SIP

For footnotes, see above footnotes.

**(c) *Interim Effluent Limitations and Compliance Schedule for Discharge Serial Nos. 001, 002, and 003***

Based on effluent monitoring data submitted by the Discharger, a comparison between the MEC and calculated WQBELs indicates that the Discharger will not be able to achieve immediate compliance with the final effluent limitations established in the proposed Order for copper, lead, and mercury at Discharge Serial Nos. 001 and 003, and for mercury at Discharge Serial No. 002.

40 CFR section 131.38(e) provides conditions under which interim effluent limitations and compliance schedules may be issued. The CTR allows for a schedule of compliance not to exceed five years from the date of permit issuance for a point source discharge if the Discharger demonstrates that it is infeasible to promptly comply with effluent limitations derived from the CTR criteria. However, CTR's Compliance Schedule provisions sunset on May 18, 2005. After this date, the provisions of the SIP allow for Compliance Schedules not to exceed five years from issuance or past May 1, 2011, whichever is sooner. Interim effluent limitations have been included in the proposed Order for the following pollutants: (a) copper, lead, and mercury at Discharge Serial Nos. 001 and 003, and (b) mercury at Discharge Serial No. 002. The interim limits are based on the Facility's current treatment performance. During the compliance period, the Discharger shall comply with the interim effluent limits for the following pollutants: (a) copper, lead and mercury for Outfall 001 and 003; and (b) mercury for Outfall 002. The interim limits are applicable from the date of adoption of the Order through June 2, 2010, after which, the Discharger shall demonstrate compliance with the final effluent limitations.

The Discharger may not be able to immediately comply with the final effluent limit for chloride. However, because the limit is a non-CTR-based limit, and because the TMDL does not provide an interim limit or waste load allocation (WLA) for this Discharger, an interim limit must be included in a corresponding Time Schedule Order (TSO).

The Order requires the Discharger to develop a pollutant minimization plan and/or source control measures, and participate in the activities necessary to achieve the final effluent limitations.

The Discharger is required to submit annual progress reports to describe the progress of studies and or actions undertaken to reduce copper, lead, and mercury in the effluent, and to achieve compliance with the limitations in this Order by the deadline specified in provision I.B.5. The first annual progress report shall be received by the Regional Board at the same time the annual summary report is due, as required in section I.B of *MRP*.

From the effective date of this Order until June 2, 2010, the discharge from Discharge Serial Nos. 001, 002, and 003 in excess of the following interim effluent limitations is prohibited:

Pollutant (units)	Interim Maximum Daily Effluent Limitations (MDELs)			Rationale <sup>1</sup>
	Discharge Serial No. 001	Discharge Serial No. 002	Discharge Serial No. 003	
Copper <sup>2</sup> (µg/L)	32	--	240	MEC
Lead <sup>2</sup> (µg/L)	85	--	78	MEC
Mercury (µg/L)	0.21	0.25	0.22	MEC

<sup>1</sup> MEC = Maximum Effluent Concentration

<sup>2</sup> Discharge limitations for these metals are expressed as total recoverable.

## 5. Monitoring Requirements

The existing *MRP* requires monthly monitoring for total waste flow, temperature, pH, and residual chlorine. The *MRP* requires quarterly monitoring for oil and grease, settleable solids, total suspended solids, BOD, total dissolved solids, chloride, sulfate, nitrate + nitrite, and boron. In addition, the *MRP* requires annual monitoring for arsenic, cadmium, chromium, copper, lead, mercury, selenium, silver, and acute toxicity. The existing *MRP* also requires the Discharger to monitor receiving water for certain conventional and non-conventional pollutants at Station No. R-1, located 300 feet upstream of the Discharge Serial No. 001 and at Station R-2, located 300 feet downstream of the Discharge Serial No. 003. The two sampling stations were established because the Valencia WRP's discharges enter between the Six Flags' outfalls and dominate the discharges from Six Flags. Therefore, the Regional Board determined that sampling at the two locations, R-1 and R-2, was necessary to more accurately characterize the impact on receiving waters from Six Flags.

### (a) *Effluent Monitoring*

To demonstrate compliance with effluent limitations established in the permit for discharges through Discharge Serial Nos. 001, 002, and 003, the proposed Order carries over the requirement for monthly monitoring for total waste flow, temperature, and pH. Rainfall must also be monitored monthly. Quarterly monitoring requirements are carried over to the proposed Order for oil and grease, settleable solids, total suspended solids, BOD, total dissolved solids, sulfate, nitrate + nitrite, and boron. In addition, quarterly monitoring requirements are added to the proposed Order for turbidity, phenols, total coliform, fecal coliform, and enterococcus.

Monthly monitoring is established for chloride and residual chlorine in the proposed Order as a result of multiple non-compliance with effluent limitations (e.g., chloride = 16 exceedances and residual chlorine = 27 exceedances). Further, monthly monitoring is also required for lead, copper, and mercury because these pollutants showed reasonable potential to exceed water quality criterion based on the RPA.

Semiannual monitoring requirements are established in this Order for dissolved oxygen, arsenic, cadmium, chromium III, chromium VI, selenium, silver, and zinc to determine their presence in the effluent and to collect information to conduct the RPA in the future.

The proposed Order requires annual monitoring for acute and chronic toxicity to determine compliance with the acute toxicity effluent limitations and the chronic toxicity trigger.

The Discharger is required to collect samples for the remaining priority pollutants annually to determine the presence of these pollutants in the discharges and in the receiving water.

Monitoring for 2,3,7,8 – TCDD and 16 congeners is required and is described in more detail in Section V (d).

Effluent monitoring shall be conducted at the three effluent discharge points, Discharge Serial Nos. 001, 002, and 003.

**(b) Receiving Water Monitoring**

The existing *MRP* No. 6045, establishes receiving water sampling stations. These sampling locations will be carried over to the proposed Order. In addition, analyses are required via grab samples for pH, temperature, dissolved oxygen, residual chlorine, chloride, total dissolved solids, turbidity and fecal coliform. These monitoring requirements for R-1 and R-2 will also be carried over to the proposed Order and are as follows:

Pollutant	Units	Type of Sample	Minimum Frequency
PH	s.u.	Grab	Quarterly
Hardness (as CaCO <sub>3</sub> )	mg/L	Grab	Quarterly
Salinity	g/L	Grab	Quarterly
Temperature	°F	Grab	Quarterly
Dissolved Oxygen	mg/L	Grab	Quarterly
Residual Chlorine	mg/L	Grab	Quarterly
Chloride	mg/L	Grab	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly
Turbidity	NTU	Grab	Quarterly
Total Coliform	MPN/100ml	Grab	Quarterly
Fecal Coliform	MPN/100ml	Grab	Quarterly
Enterococcus	MPN/100ml	Grab	Quarterly
Priority Pollutants	µg/L	Grab	Annually

For the receiving water monitoring for the priority pollutant, the Discharger may elect to enter into a collaborative receiving water sampling program with other Dischargers if the point of discharge into the receiving water is shared by the Dischargers. By entering into a collaborative sampling program, the Discharger is still required to submit receiving



water data for pH, hardness, salinity, and all CTR priority pollutants to the Regional Board.

#### Receiving Water Observations

The receiving water monitoring program shall consist of periodic surveys of receiving water and shall include studies of those physical-chemical characteristics of the receiving water that may be impacted by the discharge. General observations of the receiving water shall be made at each discharge point on a monthly basis and shall be reported in the quarterly monitoring report. If no discharge occurred during the observation period, this shall be reported. Observations shall be descriptive where applicable, such that colors, approximate amounts, or types of materials are apparent. The following observations shall be made:

- a. Tidal stage, time, and date of monitoring
- b. Weather conditions
- c. Color of water
- d. Appearance of oil films or grease, or floatable materials
- e. Extent of visible turbidity or color patches
- f. Direction of tidal flow
- g. Description of odor, if any, of the receiving water
- h. Presence and activity of California Least Tern and California Brown Pelican.

#### **(c) Effluent and Receiving Water Monitoring for TCDD Equivalents**

The Discharger is also required to conduct effluent and receiving water monitoring for the presence of the 2,3,7,8-TCDD (or Dioxin) and the 16 congeners. The monitoring shall be grab samples from Discharge Serial Nos. 001, 002, and 003 and from the receiving water locations, as described in Section VI of the *MRP*, conducted semiannually during the first year of the permit.