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## Las Vegas Wash Surface Water Quality Monitoring and Assessment Plan



May 2011



SOUTHERN NEVADA  
WATER AUTHORITY

Las Vegas Wash  
Coordination  
Committee



**Las Vegas Wash  
Surface Water Quality  
Monitoring and Assessment Plan**

**Prepared for:**

Las Vegas Wash Coordination Committee  
Research and Environmental Monitoring Study Team

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## ABSTRACT

Surface water quality has been regularly monitored in the Las Vegas Valley watershed by local, state, or federal entities for more than 20 years. Most recently, the formation of the Las Vegas Wash Coordination Committee (LVWCC) in 1998 has facilitated an unprecedented level of water quality data collection, information exchange, and cooperation among the committee's stakeholders. The LVWCC prepared the Las Vegas Wash Comprehensive Adaptive Management Plan (CAMP) to outline a path for achieving the community's water quality goals and this Surface Water Quality Monitoring and Assessment Plan was developed to meet Action Item 40 in the CAMP. The goal of this plan is to support sound management of the Las Vegas Wash by sustaining an integrated, adaptive, and robust monitoring network that characterizes the water quality of the Las Vegas Wash and its source water inputs. Not only does this plan detail a data collection network, it provides an outline for measuring progress and making plan adaptations. Several important principles were considered in developing this plan, they include: leveraging and integrating resources; assessing whole watersheds; calculating mass/water balances; maintaining historical records; detecting watershed improvements; and addressing future unknowns. Although permit compliance monitoring provides the foundation for the water quality monitoring network, other monitoring is necessary to meet the plan's goals. Moreover, for the plan to be successful, partners must be engaged and committed to regularly sharing information/data.

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## 1.0 INTRODUCTION

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The Southern Nevada community receives approximately 90% of its drinking water from the Colorado River at Lake Mead. Raw river/reservoir water is first treated at two drinking water facilities (i.e. the River Mountains Water Treatment Facility and the Alfred Merritt Smith Water Treatment Facility) before it is pumped into a regional drinking water distribution system. After water is used indoors in the Las Vegas Valley, it is collected then treated at reclaimed water facilities primarily along the lower Las Vegas Wash (Wash). Treated wastewater that is not directly reused is discharged into the Wash where it combines with other base flow components such as urban runoff and shallow groundwater seepage. Because the Wash is the valley's sole drainage to Lake Mead it serves an important function in the valley's water resources infrastructure. The Wash is structurally important because it efficiently conveys base flows and stormwater flows to the lake. In terms of natural capital, the value of the Wash easily exceeds \$850 million, which was the cost of an alternative system for conveying wastewater effluent flows only (wastewater effluent flows are approximately 90% of base flows). The Wash is also important because the flows that are returned to Lake Mead are measured to calculate credits to the community's Colorado River allotment, thereby extending water supply. Because Wash water is discharged into the community's drinking water supply reservoir (the Wash represents approximately 1.5% of the inflows to Lake Mead), maintaining high Wash water quality is important. For more than a decade, the Las Vegas Wash Coordination Committee (LVWCC) has focused efforts on stabilizing and enhancing the Wash and water quality monitoring is one of the committee's primary activities. Various improvements in water quality have been documented due to better wastewater treatment processes and channel stabilization and enhancement activities. Water quality monitoring data are regularly used to answer many of the water resource management questions facing the community today.

### 1.1 Purpose and Scope

The LVWCC completed the Las Vegas Wash Comprehensive Adaptive Management Plan (CAMP), an overarching stabilization and enhancement plan for the Wash, in 2000. Each year, the plan is re-evaluated and adapted to help resolve both near-term and long-term issues. The 40<sup>th</sup> action item listed in the CAMP was to "develop long-term management and monitoring plans" with a specific need to develop a "long-term water quality monitoring plan" (SNWA 2000). Consequently, the Southern Nevada Water Authority (SNWA) has been regularly monitoring Wash water quality and other areas that affect Wash water quality for a decade through various individual programs (e.g., the mainstream program, the tributary program, the extensive selenium program, etc.). Water quality plans were developed for individual programs by SNWA in 2000 and cumulatively they were previously used to fulfill CAMP Action Item 40. The purpose of the Las Vegas Wash Surface Water Quality Monitoring and Assessment Plan is twofold. First, this plan will more fully meet CAMP Action Item 40 by preparing an integrated, yet standalone plan. Second, this plan will unify surface water monitoring work to better achieve the intents and purposes of the CAMP. The anticipated outcome is that financial and human resources will be comprehensively coordinated so that the individual goals of the stakeholders and the cumulative goals of the CAMP are achieved. Upstream water inputs substantially contribute to the characteristics of the Wash; therefore, the scope of this monitoring plan is to monitor the mainstream Wash (above the confluence with Lake Mead) and these other water inputs (Figure 1).



**Figure 1. Las Vegas Wash and other major flows to be monitored.**

## **1.2 Partnerships**

SNWA is one of several entities monitoring surface waters in the Wash and tributaries to the Wash. Other entities that are either monitoring water or have an obligation to monitor water include the wastewater dischargers (City of Henderson, City of Las Vegas, City of North Las Vegas, and Clark County Water Reclamation District [CCWRD]), Clark County Regional Flood Control District (CCRFCD), Clark County (Parks and Recreation Department), Bureau of Reclamation (Reclamation), and the U.S. Geological Survey (USGS). Lane et al. (2010) provided a detailed description of the routine water quality monitoring that occurs (Appendix A). A key principle in developing the monitoring network described in this plan is to leverage partnerships (see Section 4.1.1) so that monitoring activities are not duplicative. Developing and maintaining collaborative partnerships is a foundational component of this plan and the entities described above are considered key partners. The LVWCC and its subcommittees (study teams) provide a forum where partners can periodically discuss and exchange information related to water quality monitoring.

## **1.3 Goal**

The goal of the plan is to support sound management of the Wash by sustaining an integrated, adaptive, and robust monitoring network that characterizes the water quality of the Wash and its source water inputs.

## **2.0 WATER QUALITY CHARACTERISTICS**

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The Clean Water Act aims to “restore the chemical, physical, and biological integrity of the Nation’s waters” (Public Law 92-500). Goal achievement is facilitated by various state and federal regulations and policies regarding the protection of waterways and water quality. In Nevada for example, the Nevada Revised Statutes and Nevada Administrative Code are key mechanisms for achieving Clean Water Act goals. Consequently, the Nevada Division of Environmental Protection (NDEP) develops numeric water quality standards for the different water bodies throughout the state including those in the Las Vegas Valley. For the Wash and its tributaries, criteria have been developed to protect beneficial uses and prevent degradation (antidegradation requirements are met through “requirements to maintain existing higher quality”). Two source water input types affect water quality in the Las Vegas Valley including point sources and non-point sources. Base flows consist mostly of point source discharges whereas flood flows consist mostly of non-point source discharges.

### **2.1 Base Flows**

Base flows in the valley’s tributaries consist mostly of urban runoff and shallow groundwater seepage. Along the lower Wash, treated wastewater effluent is added as a component of base flows and it is the dominant flow component therein. Base flow water quality characteristics reflect the nature of the water’s makeup. For example, selenium and total dissolved solids are an issue in tributaries (Table 1) but the issue is minimized in the lower Wash through dilution by wastewater treatment effluent. Also, two Total Maximum Daily Loads (TMDL) exist for the lower Wash (total phosphorus and total ammonia) and the wastewater discharges have been voluntarily exceeding phosphorus TMDL requirements. In previous years, total suspended solids (TSS) was listed by NDEP on the impaired waters list. Because the LVWCCs

Location	Water Body Name	Parameter				
		Se <sup>1</sup>	TDS <sup>2</sup>	pH	Fe <sup>3</sup>	Mo <sup>4</sup>
Tributary	Flamingo Wash	X	X			
Tributary	Duck Creek	X	X			
Tributary	Las Vegas Creek	X		X		
Tributary	Las Vegas Wash (above treatment plants)	X	X		X	
Mainstream Wash	Las Vegas Wash (Telephone Line Road to Lake Mead)				X	X

<sup>1</sup> selenium, <sup>2</sup> total dissolved solids, <sup>3</sup> iron, <sup>4</sup> molybdenum

**Table 1: Impaired water bodies listed by the Nevada Division of Environmental Protection on Nevada’s final 2006 303(d) impaired waters list.**

stabilization and enhancement efforts have been successful, TSS was delisted. Other pollutants that may be a concern in the tributaries (besides selenium) include but are not limited to gamma-HCH, heptachlor epoxide, and 4,4'-DDE based on findings from on-going bioassessment studies (ACT-I 2011).

## 2.2 Flood Flows

Most storm events result in stormwater runoff into the Wash and its tributaries which are components of the Municipal Separate Storm Sewer System (MS4). Flood flows carry higher sediment loads and bacterial counts than base flows. Consequently, sediment based nutrients, such as phosphorus, are much higher in flood flows.

## 3.0 ON-GOING SURFACE WATER MONITORING

### 3.1 Water Quality

Multiple entities monitor surface water quality in the Las Vegas Valley and these programs were reviewed in detail by Lane et al. (2010; Appendix A). Reasons for monitoring range from complying with permits to measuring the effects of facility improvements. A brief summary of each water quality monitoring program is provided below.

*Bureau of Reclamation* – Reclamation monitors multiple locations quarterly on the Wash under the auspices of the Colorado River Water Quality Improvement Program as authorized by Title II of the Colorado River Basin Salinity Control Act (Appendix B). Reclamation studies began in 1978 as part of a basin-wide effort to control salinity in the Colorado River. Several salinity control strategies were identified, but other than completion of the Pittman Bypass Pipeline in 1985, none were constructed. Reclamation has ceased its efforts for salinity reduction on the Las Vegas Wash Unit, but quarterly monitoring has continued since 1989. In addition to more than 20 years of salinity data, field measurements are taken each quarter, along with samples for determination of TSS, selenium, and perchlorate concentrations. Reclamation also measures these constituents in discharge channels from Clark County, City of Las Vegas, City of Henderson, and BMI (see Reclamation 2010, Reclamation 2009).

*Clark County Parks and Recreation* – The wetlands at the Clark County Nature Preserve receive tertiary treated, filtered, and disinfected effluent directly from CCWRD, which also supplies effluent for irrigation purposes at three sites: Nature Preserve West, Duck Creek Trailhead, and Sunrise Trailhead. Consequently, Clark County Parks and Recreation was issued two NDEP permits (NEV2003504, Appendix C and NEV2003514, Appendix D) which requires them to monitor the supply water and several surface locations in the Nature Preserve and in-lieu fee mitigation ponds. Supply water quality is monitored by CCWRD. SNWA has been conducting monitoring activities on behalf of Clark County. SNWA is monitoring other sites in addition to the permit compliance sites in the in-lieu fee mitigation ponds to evaluate wetland performance.

*Clark County Regional Flood Control District* – CCRFCD along with the City of Henderson, City of Las Vegas, City of North Las Vegas and Clark County are co-permittees on the Las Vegas Valley MS4 permit (NV0021911; Appendix E). CCRFCD has been designated as the lead agency responsible for maintaining dry and wet weather monitoring programs that meet the terms of the permit. Water quality monitoring activities that are conducted by SNWA serve as the dry weather monitoring program for CCRFCD. For the wet weather monitoring program, CCRFCD has contracted with MWH to operate two automated sampling stations. Samples are collected from two Wash sampling sites during three storm events for a full suite of constituents and up to seven storm events for a shorter list of constituents.

*Southern Nevada Water Authority* – As the lead agency for the LVWCC, SNWA has been regularly monitoring the Wash and its tributaries for a decade. Monitoring programs are mostly conducted to evaluate the effects of channel improvements and to assess the overall health of the Wash. Mainstream samples are collected every other month for a suite of conventional and priority pollutants and tributaries are sampled quarterly for a similar suite of pollutants. An extended list of organic pollutants are monitored quarterly in the Wash and tributaries. The Southern Nevada Water System (SNWS), a department within SNWA focused on treating, testing, and delivering drinking water, measures several contaminants of emerging concern on a monthly basis at one site in the Wash. More routine analyses (e.g., turbidity, TSS, and pathogens) are conducted weekly, two times a month, or monthly depending on the parameter. Field measurements are collected during all sampling events and four real-time measurement probes are currently deployed. The term “field measurements” is used herein to describe the common parameters (temperature, dissolved oxygen, pH, and electrical conductance) that are collected with field probes. Other sampling is performed by SNWA in support of dewatering permits associated with capital construction projects on the Wash. These projects are temporary and focus mostly on perchlorate.

*U.S. Geological Survey* – The USGS does not annually monitor water quality in the Wash, however, under the auspices of the National Water-Quality Assessment Program (NAWQA), samples will be collected in the Wash between October 2010 and September 2011 below where the Flamingo Wash enters the channel (USGS station No. 094196783). Eighteen samples will be collected in a 12-month period and will be analyzed for a suite of parameters including nutrients and pesticides (Appendix F). If funding permits, sampling will likely continue every other year (M. Rosen, U.S. Geological Survey, pers. comm.).

*Wastewater Dischargers* – The City of Henderson collects samples along the Wash every other week on behalf of the wastewater dischargers (City of Las Vegas, City of North Las Vegas, and CCWRD). Samples are collected to meet the terms of permits issued to the entities (NV0020133 for City of Las Vegas, Appendix G; NV0021261 for CCWRD, Appendix H; NV0022098 for City of Henderson, Appendix I; and NV0023647 for City of North Las Vegas, Appendix J). Monitoring activities are evaluated annually and a monitoring plan is submitted to NDEP by November of each year (Appendix K).

### **3.2 Flow Measurements**

Flow measurements collected at water quality sampling locations are valuable because these data can be used to calculate mass loading rates and to answer basic questions about the hydrology of the valley. There are two general strategies for measuring flow and they include one-time field measurements (similar to a water quality grab sample) and continuous measurements (similar to a real-time water quality monitoring probe). The entities identified below are regularly measuring flow in the Las Vegas Valley.

*Clark County Parks and Recreation* – Clark County Parks and Recreation is responsible for obtaining base flow measurements through the Nature Preserve and in-lieu fee mitigation ponds because these data are required components of their discharge permits (NEV2002504 and NEV2003514). Inflows are measured continuously by the Harry Reid Center (HRC) but outflows have proven to be difficult to obtain. The current configuration of the outflow has severely limited HRC's ability to obtain reliable field measurements. Modifications have been proposed to remedy outflow monitoring difficulties.

*Clark County Regional Flood Control District* – The most extensive flood flow gauging system in the valley is operated and maintained by CCRFCD. More than 90 sites are measured for flood flows as part of the CCRFCD's Flood Threat Recognition System and many (~50) are measured at detention basin locations. CCRFCD regularly calculates flows from their gauging stations and these data are available upon request.

*Southern Nevada Water Authority* – SNWA measures flow at seven tributary locations on a monthly basis and measurements are obtained to calculate base flow conditions. Four of the seven sites are located near a USGS flood flow gauging station. A fifth site is located near a USGS continuous flow gauging station. Data are collected to compliment flood flow data measured by the USGS.

*U.S. Geological Survey* – USGS operates and maintains 15 permanent flow gages in Las Vegas Valley and 14 of them are relevant for the purposes of this plan (Table 2). The cost (~\$21,000/site/year) to operate and maintain 13 of the 14 sites is split (50/50) between USGS and a local partner (Appendix L) and the USGS pays the full cost for one of the 14 sites. Gages are either flood or continuous types depending on if they measure flood flows (the former) or base flows (the latter). Gages are maintained approximately every 6-8 weeks and base flow is typically field verified at continuous gage sites only. Because flood gages are not intended to measure base flows, the accuracy of base flow data at these sites is severely limited. The installation of low-flow curbing, however, could substantially improve gage accuracy. With

Site Number	Site Name	Gage Type <sup>1</sup>	Task <sup>2</sup>	Local Partner(s) <sup>3</sup>
9419658	Las Vegas Wash near Sahara Avenue near Las Vegas	F	O&M	CCRFC
9419659	Sloan Channel Tributary at Las Vegas Boulevard near North Las Vegas	F	O&M	CCRFC
9419665	Sloan Channel at Charleston Boulevard near Las Vegas	F	O&M	CCRFC
94196781	Flamingo Wash at Nellis Boulevard near Las Vegas	F	O&M	CCRFC
94196783	Las Vegas Wash below Flamingo Wash confluence near Las Vegas	C	O&M	
94196784	Las Vegas Wash at Vegas Valley Drive near Las Vegas	F	O&M	CCRFC
9419679	Las Vegas Wasteway near East Las Vegas	C	O&M+	CCWRD, SNWA
9419696	Duck Creek at Broadbent Boulevard at East Las Vegas	C	O&M	SNWA
9419700	Las Vegas Wash at Pabco Road near Henderson	C	O&M	SNWA
9419740	C-1 Channel near Warm Springs Road at Henderson	F	O&M	CCRFC
9419745	C-1 Channel above mouth near Henderson	F	O&M	CCRFC
9419753	Las Vegas Wash above Three Kids Wash below Henderson	C	O&M+	SNWA
9419756	Las Vegas Wash overflow at Lake Las Vegas Inlet	C	O&M	COH
9419800	Las Vegas Wash below Lake Las Vegas near Boulder City	C	O&M++	COH, SNWA

<sup>1</sup> F = flow, C = continuous

<sup>2</sup> O&M = operations and maintenance, O&M+ = operations and maintenance plus measure, compute, and report provisional streamflow data monthly, O&M++ = operations and maintenance plus measure, compute, and report provisional streamflow data monthly plus provide finalized and approved streamflow records in July and January

<sup>3</sup> CCRFC = Clark County Regional Flood Control District, CCWRD = Clark County Water Reclamation District, SNWA = Southern Nevada Water Authority, COH = City of Henderson

**Table 2. Fourteen relevant stream gages in the Las Vegas Valley that are operated and maintained by the U.S. Geological Survey.**

exception, gage data are provisional until they are finalized at the end of the water year (USGS defines the “water year” as October-September). SNWA contributes additional funding to the USGS to measure, compute, and report provisional streamflow data monthly for three sites and to provide finalized and approved streamflow records in July and January at one site (Table 2).

*Wastewater Dischargers* – Water that is discharged by the wastewater agencies is measured for flow before it enters the Wash. Flow measurements are collected continuously and these data are required monitoring components of discharge permits from NDEP.

## **4.0 MONITORING NETWORK**

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### **4.1 Development Principles**

The goal of this monitoring plan will be achieved by developing a lasting network of monitoring locations that are sampled or measured by a multitude of entities rather than by a single entity. If the network is reliable, this approach can be a more efficient alternative to a single entity sampling approach. Consequently, several principles were used in developing the monitoring network to ensure that it will efficiently meet the goals of this plan.

#### **4.1.1 Leverage and Integrate Partner Resources**

By definition a network is an interconnected or interrelated chain, group, or system. Because of these interconnections, the monitoring network inherently relies upon its participants for its success. The entities identified in Section 3.0 are considered de facto monitoring network partners and are critical to its success. Since many of these partners are required to monitor water because of various permits, the foundation of the monitoring network will rely upon the non-discretionary monitoring activities of the partners. These activities are considered relatively permanent and are an ideal starting point for building the monitoring network. For example, as long as the wastewater dischargers discharge into the Wash, they will be required to implement Wash monitoring activities. Consequently, there is likely a limited need to collect water quality data at locations that are already assessed. Other opportunities that are identified to leverage or integrate partner resources will be incorporated as part of the monitoring network. Leveraged resources should ultimately reduce the overall cost for cumulative monitoring activities.

#### **4.1.2 Base of Watershed Assessment**

The CCRFCD identifies ten major watersheds within the greater Las Vegas Valley watershed. They include the C-1, Central Basin, Duck Creek Wash, Flamingo/Tropicana Washes, Gowan Basin, Lower Las Vegas Wash, Lower Northern, Pittman, Range Wash, and Upper Northern. These watersheds are characterized by different water use, land use, and land form characteristics, all of which can affect the water quality of the receiving water body. Consequently, the monitoring network includes sampling locations that are at several of the perennial channel outlets (i.e., the base) of the important watersheds. Data collected at these locations are useful because they more finely assess the spatial differences in water quality in the valley. Other tributaries that discharge directly into the Wash are also targeted by this assessment approach.

### **4.1.3 Mass/Water Balance**

To understand the most fundamental functions of the Las Vegas Valley watershed, the monitoring network was developed so that mass/water balance calculations could be performed. Both base flow and flood flow conditions were considered since each of these flow types have unique water quality signatures. Although a mass balance is just a simple accounting of physical material flux, the result of these types of calculations provides important perspective on the management of the valley's water resources. The following example highlights the importance of mass balance assessments. In 2008, approximately 440,000 acre-feet (AF) of water was pumped from the Colorado River into the Las Vegas Valley (note that this value exceeds Nevada's 300,000 AF per year allotment due to addition of return flow credits) with a mean selenium concentration of  $2.82 \pm 0.09$  ppb ( $n = 20$ ). During 2008 in the Wash, USGS measured a mean flow of 285 cubic feet per second (~206,000 AF) and SNWA obtained a mean selenium concentration of  $3.05 \pm 0.11$  ppb ( $n = 22$ ). The calculated mass balance indicates that the Las Vegas Valley gained more mass than it lost (~1,600 pounds of selenium). This calculation does not consider stormwater loading. Whether or not this is a single or multiple year trend is still in question; however, the data clearly show that the Las Vegas Valley was functioning in 2008 as a sink for selenium. Assuming that more selenium is detrimental to aquatic environments than less selenium, downstream aquatic resources in the Colorado River were generally improved during 2008 because of water use in Las Vegas Valley.

### **4.1.4 Maintain Historical Record**

Most of the water quality monitoring activities along the Wash have been on-going in their current form or a modified form for about two decades. For example, monitoring has been regularly on-going by Reclamation since 1989, CCRFCD since 1991, USGS since 1993, and the wastewater dischargers since 1994. In relation to the other entities, SNWA began a more frequent monitoring program in 2000 targeting the most extensive list of parameters and sites. Other data have been collected along the Wash prior to 1989 but not always on a regular basis. The monitoring network incorporates some sites and parameters that are important for maintaining a consistent and reliable historical record. These data help with evaluating current issues, however as described in Section 4.1.6, the value of monitoring data increases as new issues are brought forth.

### **4.1.5 Detect Improvements**

The mission of the LVWCC is to stabilize and enhance the Wash; the monitoring network was developed so that the generated data could be used to measure the effectiveness of activities. Currently there is approximately \$90 million worth of facilities along the Wash with a plan to construct another approximately \$90 million worth of facilities. Considering the tremendous cost of the facilities, derived benefits are important attributes to measure. For example, based on data collected along the Wash, in November 2005 the Wash between Telephone Line Road (Pabco Road Weir) and Lake Mead was removed from Nevada's impaired waters list for TSS. The TSS decline (TSS is a portion of the river's sediment load) was directly attributable to the placement of erosion control facilities in the Wash.

### **4.1.6 Unknown Future Needs (Robustness)**

Problem solving and decision making are often improved when information pertinent to the problem or decision is known. However, major difficulties can arise when the available data do

not help solve the problem or make the decision better. Compounded by this fact is that there is no way to predict the future even though there is much to be enamored with about modern day modeling techniques and outputs. The monitoring network was mostly constructed to help solve current problems; however, it is balanced enough to help solve future problems. For example, priority pollutants, pharmaceuticals, and personal care products are all components of the monitoring network. Based on the outcomes of the monitoring data, Section 5.0 describes a process to improve the robustness of the network through adaptation.

## **4.2 Nomenclature**

Nomenclature consistency is one of the most important components of the network, particularly since the network is created and used by many different partners. Since 2005, site naming has followed a few simple rules (Appendix M) that were developed by the Interagency Sampling and Coordination Committee (ISCC; the ISCC consists of staff from the various Lake Mead sampling entities) and these rules are adopted for this plan. In brief, alphanumeric codes are given to sample sites based on the sampled waterbody name and distance along a reference line (river channel). The reference line for the Wash (acronym = LW) begins at the high pool elevation of Lake Mead (elevation 1,221 above mean sea level) and follows the river channel to where it terminates. Consequently, a sampling site at Wash river mile 6.05 would be named LW6.05. Several variations of this format have been used, such as LW 6.05 and LW\_6.05 mostly because of formatting preferences by authors who have cited these data or because spaces in the name cause problems in database and geographic information system applications. Although each variation is acceptable and generally correct, the LW6.05 format is preferred. To distinguish multiple sites that are collected within a short distance of each other, a suffix should be added to the name. An underscore should be used first and then followed by a numeral. For example, three sites that are near LW6.05 become LW6.05\_1, LW6.05\_2, and LW6.05\_3.

An ISCC sub-group recently adopted an update to the past rules to ensure site names change when sampling locations are moved. The wastewater dischargers are exempt from these new rules because it is more important for them to maintain consistent site names in their reporting to the NDEP and the Environmental Protection Agency. Moreover, this exemption is rectified at the data repository stage when a queryable alias name is set up (see Section 4.1 for more detail); the alias name is the correct physical sampling location. The new or updated rules are as follows: (1) a global positioning system measurement will be recorded in Decimal Degrees coordinates and North American Datum 1983 format during each sampling event at the physical location where the sample is collected - coordinates will be uploaded with lab data, (2) the site name will be changed if the site moves ¼ mile above or below the original site, or moves above or below a major inflow, and (3) SNWA and the entity collecting the data will review uploaded coordinate data to check for site location changes.

## **4.3 Sampling/Measurement Locations and Frequency**

Surface water quality will be characterized along the Wash and tributaries using traditional sampling and measurement procedures. Sampling procedures include collecting discrete water samples (in bottles, jars, etc.) from the field and then submitting them for testing to an analytical laboratory. In contrast, measurement procedures gather data instantly in the field through the use of probes and other devices. The monitoring network represents a multi-tiered program that gathers data about the watershed at different spatial and temporal scales and by several

partnering entities. Sites are grouped into “programs” depending on if they are in the mainstream Wash or in an inflow/tributary to the Wash. Monitoring data that are collected within 48 hours from a rain event are not considered to represent base flow conditions.

*Mainstream Las Vegas Wash Program (“Mainstream Program”)* – For the purposes of this plan the mainstream Wash is the segment of the Wash beginning at the Wash/Flamingo Wash confluence and ending at the Wash/Lake Mead confluence. Along this reach, there are ten base flow sampling sites monitored by Reclamation, SNWA, and the wastewater dischargers (Table 3 and Figures 2-10). Each of these sites will be (or are currently) monitored for a series of parameters (Appendix N). Sampling duplication was minimized to the maximum extent practicable through collaboration among the entities. For example, the entities agreed to co-locate several pre-existing sites and to minimize parameter duplication by staggering sampling events. Staggered sampling events provide greater temporal coverage. For example, evenly distributed sampling events are possible on the mainstream Wash because Reclamation will sample the Wash in the middle of March, June, September, and December and SNWA will sample the Wash in the end of January, April, July, and October (i.e, samples are collected once per 6 weeks). Additional coordination among the entities is expected as part of future program evaluations since duplication was not entirely eliminated in the current program configuration.

There is an 11th base flow site that the USGS samples (site 94196783) but it is not treated as part of the mainstream program because data are not collected on an annual basis. USGS data, however, should be used to supplement annual monitoring activities when they are available. Continuous flow data are to be recorded at or near six sites and continuous field measurements are to be recorded at or near two sites. CCRFCD samples up to ten substantial storm events at two sites: Las Vegas Wash at Desert Rose Golf Course (approximately 0.1 miles upstream of LW11.7) and Rainbow Gardens Weir (at site LW3.4). The two sites are sampled for a series of parameters (Appendix O).

*Inflow/Tributary Program (“Tributary Program”)* – There are several major perennial tributaries to the Wash including the Flamingo Wash, Sloan Channel, Monson Channel, and Duck Creek. Pittman Wash, Whitney Drain, Burns Street Channel, and the Nature Preserve/mitigation pond are other perennial tributaries in the watershed which influence water quality in the Wash. Other perennial inflows to the Wash come from the Timet and BMI groundwater treatment facilities and from wastewater treatment plant discharges (i.e., City of Henderson, City of Las Vegas, and CCWRD). These sites (Figures 2-10) are collectively a part of the tributary program and they are to be sampled on a regular basis (Table 4) for a series of parameters (Appendix N). Duplication was minimized to the maximum extent practicable, however, there may be future opportunities to further minimize duplication. For example, all of the wastewater dischargers monitor their outfalls regularly and upload these data to the database (see Section 4.1).

#### **4.4 Data Repository and Sharing Guidelines**

SNWA maintains a Lower Colorado River Regional Water Quality Database (the database) that can be accessed through a password protected website (accessed via [www.lvwash.org](http://www.lvwash.org)). The database contains the most extensive amount of water quality data for the Wash and Lake Mead collected by many partners including CCRFCD, Reclamation, the wastewater dischargers, SNWA, and the USGS. The database is a central component of the monitoring network and the



Site Name	Frequency of Sampling/Measurement Events (number per year)																		
	SC1	SC0	LW12.1	LWC10.6	LWC9.0_1	LWC9.0	FW0	MC1	WD1.1	WD0	PW1	PW0	DC1.9	DC1	DC0	BS1	LWC6.3	LWC6.1_1	LWC6.1_2
<b>Entity<sup>1</sup></b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>	<b>B</b>	<b>B</b>	<b>B</b>
Alkalinity	4		4	4	4	4	4	4						4		4	4	4	4
Bacteria	4		4				4	4						4		4			
Bacteria+	4		4				4	4						4		4			
Field Measurements	12	12	12	4	4	4	12	12	12	12	12	12	12	Cont.	12	12	4	4	4
Flow <sup>2</sup>	Cont. <sup>3</sup>	12	12	Cont. <sup>4</sup>	Cont. <sup>4</sup>	Cont. <sup>4</sup>	Cont. <sup>3</sup>	12	12	12	12	12	12	Cont. <sup>3</sup>	12	12		Cont. <sup>4</sup>	
Ions	4		4	4	4	4	4	4						4		4	4	4	4
Ions+	4		4				4	4						4		4			
Metals (dissolved)	4		4				4	4						4		4			
Metals (total)	4		4				4	4						4		4			
Minerals (dissolved)				4	4	4											4	4	4
Minerals (total)	4		4				4	4						4		4			
Nutrients	4		4	4	4	4	4	4						4		4	4	4	4
Nutrients+	4		4				4	4						4		4			
Perchlorate	4		4	4	4	4	4	4						4		4	4	4	4
PPCP/Steroids	4		4				4	4						4		4			
PPL	4		4				4	4						4		4			
PPL+	4		4				4	4						4		4			
Selenium (dissolved)	4		4	4	4	4	4	4						4		4	4	4	4
Selenium (total)	12	12	12				12	12	12	12	12	12	12	12	12	12			
Selenate/Selenite	12	12	12				12	12	12	12	12	12	12	12	12	12			
Silica	4		4	4	4	4	4	4						4		4	4	4	4
TDS	12	12	12	4	4	4	12	12	12	12	12	12	12	12	12	12	4	4	4
TSS	4		4	4	4	4	4	4						4		4	4	4	4

<sup>1</sup> B = Bureau of Reclamation, S = SNWA

<sup>2</sup> Cont. = continuous

<sup>3</sup> Continuous flow recorded at gages maintained by the USGS. Low flow curbing in the bottom of the channel is needed to make base flow measurements accurate.

<sup>4</sup> Continuous flow recorded by the City of Las Vegas, City of Henderson, and Clark County Water Reclamation District before water is discharged into the Las Vegas Wash.

**Table 4. The annual frequency that parameters are sampled/measured for the Tributary Program.**

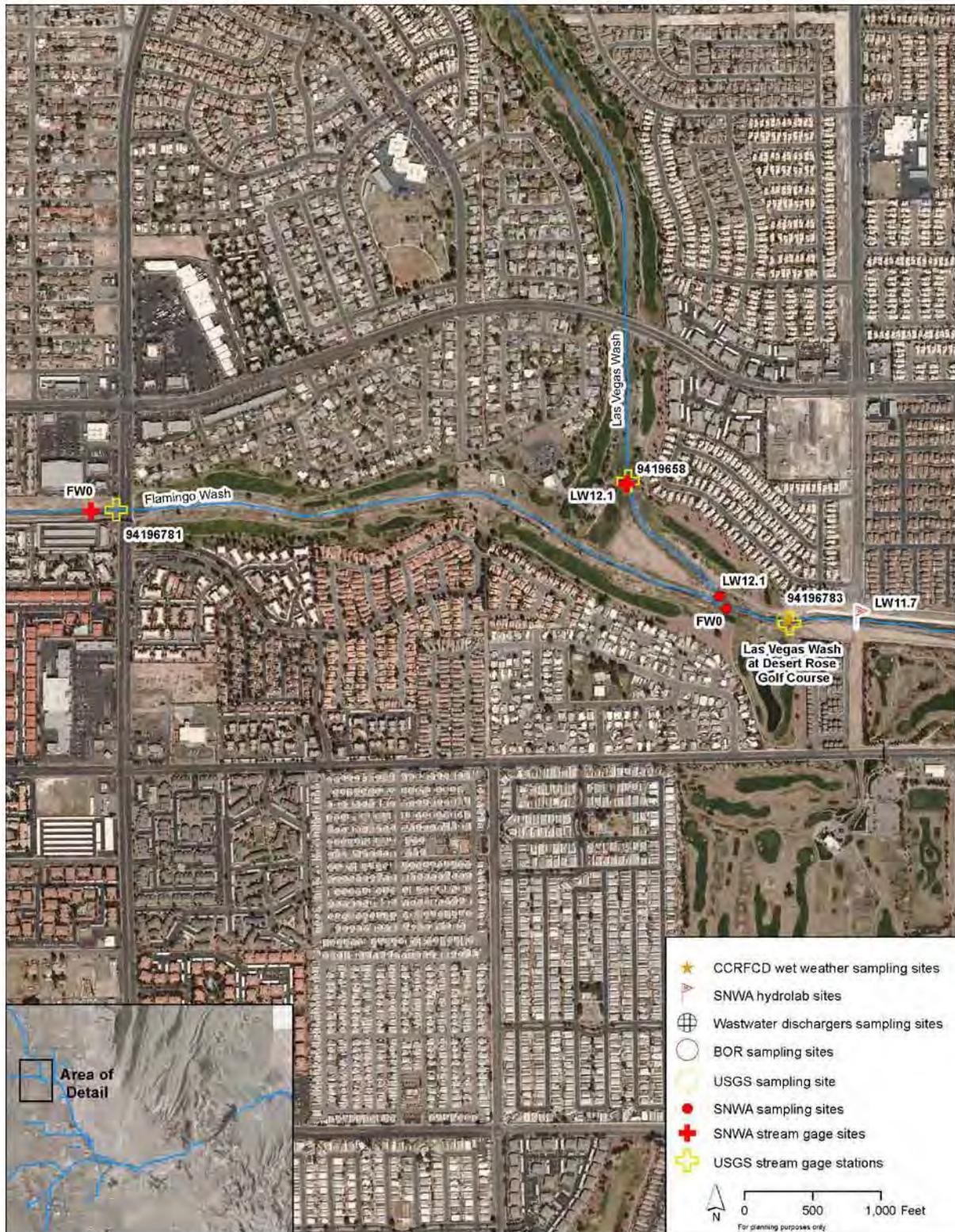


Figure 2. Monitoring sites near the Las Vegas Wash/Flamingo Wash confluence.





**Figure 4. Monitoring sites near the Las Vegas Wash and City of Las Vegas Water Pollution Control Facility discharge.**



**Figure 5. Monitoring sites near the Las Vegas Wash, Monson Channel, and Clark County Water Reclamation District.**



**Figure 6. Monitoring sites in the Nature Preserve/Mitigation Pond Complex, Duck Creek, Burns Street Channel, and associated areas.**



Figure 7. Monitoring sites in the Pittman Wash, Duck Creek, and Whitney Drain.



Figure 8. Monitoring sites near Pabco Road Weir.



Figure 9. Monitoring sites near Rainbow Gardens Weir.



Figure 10. Monitoring sites near Northshore Road.

value of it increases as data are added to it. Data that are appropriate for submission to the database are water quality data collected from the Wash and from inflows to the Wash. To meet the purpose of this plan, the Lake Mead component of the database is not dealt with herein. For example, point source data coming from the wastewater dischargers (flow, nutrient concentrations, etc.) is just as appropriate to upload as data collected during Wash-wide sampling events. To continue to improve the usefulness of the database, data contributors need to regularly share their data (i.e. upload data to the database). Consequently, the following rule was developed: within 30 days of receiving laboratory reports, the sampling entity should upload the data results to the database. The City of Henderson and City of Las Vegas are already using data storage systems that allow this deadline to be regularly met. Since some entities may not be able to meet the 30-day deadline, data uploads should occur as soon as feasibly possible but should take no longer than 60 days after receiving laboratory reports.

Upon request, SNWA provides pre-submission support to contributing entities by formatting their data. If site and parameter names are not consistently labeled then the database may not recognize the input. To remedy this issue, SNWA uses alias names and other links to be sure that the data are input seamlessly. For example, one entity may use “electrical conductance” as a parameter name and another entity may use “electrical conductivity” to describe the same parameter. SNWA must link these names together so that the database recognizes them as the same parameter.

## **5.0 MEASURE PROGRESS AND ADAPT PLAN**

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### **5.1 Analyze Monitoring Data and Share Results**

Monitoring data can be evaluated by the user for any intended purpose, however, to better meet the goal of this plan certain evaluations should be regularly conducted and will be conducted by SNWA. Water quality issues within the valley are generally geographically specific. For example, salinity and selenium are more of an issue in the upstream tributaries than in the lower parts of the Wash. Data assessments should be regularly shared at the quarterly LVWCC and Research and Environmental Monitoring Study Team meetings and periodic reporting should be conducted. Displayed data should be compared to known benchmarks if they are available (e.g., water quality standards, levels of concern, toxicity thresholds, etc.). Descriptive statistics will be used such as reporting the minimum, maximum, mean, and standard error of the mean. More advanced statistics (e.g., hypothesis testing) will be used when appropriate. Although many of the following types of assessments have been performed routinely for many years, a complete list is stated herein for thoroughness.

*Parameter Status and Trends* – The most fundamental goal of this plan will be achieved by simply tracking and reporting base flow water quality status and trends. This activity is a core component of this monitoring plan and should include simple graphical and/or tabular displays of monitoring data organized across time or sampling sites. At minimum, data will be analyzed at each site to show concentration changes over time. Every parameter will be evaluated, however, parameters that pose water quality concerns (e.g., parameters on the impaired waters list) will be investigated more closely. Because several of the sampling sites are located at the base of a watershed, status and trends at these sites will take on special significance.

*Water Balance* – Through the use of flow gages and field measurements collected from the Wash, tributaries, and wastewater discharge pipes, a balance of water that flows into and out of the Wash will be obtained at multiple time steps but at least on an annual basis. There are reliable and readily available data for most major components of the water balance, such as inflows from the wastewater dischargers and outflows to Lake Mead. Other water balance components such as losses (outflows) from evaporation and evapotranspiration are not so readily available. As part of another study aimed at addressing the water quality purification services of the Wash, a system-dynamics model will be developed to characterize the balance of Wash water. Until this more complex model is completed, an interim box model of the water balance will be created. There is an expectation that with the readily available data the water balance will not close (i.e., inflow  $\neq$  out flows). Attempts, however, to quantify the remaining water will be pursued. A water balance for the Las Vegas Valley watershed which incorporates treated raw water inflows from Lake Mead may also need to be developed based on the parameter of interest (see example in Section 4.1.3). Ultimately, the water balance is a necessary step toward constructing a mass balance for key parameters.

*Mass Balance for Key Parameters* – Parameters on the impaired waters list are no doubt key parameters and they will be characterized by mass balance. One of these parameters, phosphorus, is already tracked closely by the wastewater dischargers because of its significance for total maximum daily load reporting requirements. The waste load allocation that the dischargers track and report represents a major component of the phosphorus balance in the Wash. These data and others like it will be obtained to construct mass balances for key parameters.

*Characterize Improvements* – Weirs provide improved water control services by functioning to dissipate erosive flows and stop active headcuts. Other services that are improved through the development of consequential wetland vegetation and hydrology include water purification and biodiversity. Simply put, weirs improve the biogeochemical processes of wetlands in the Wash ecosystem thereby providing conditions for improvements in water quality. Characterizing these improvements is an essential component of this plan and it will be done at multiple spatio-temporal scales. Data that are used to assess status and trends and to construct mass/water balances are important. The extent and timing of weir construction/maintenance and wetland vegetation colonization, growth, and decay are key components to address. Preliminary data have shown that improvements are most easily detected across large spatio-temporal scales. Specific analyses will be conducted to characterize the role of weirs in improving water quality.

*Stormwater Characterization* – CCRFCD has characterized and reported stormwater data in annual reports for the Las Vegas Valley municipal stormwater discharge permit for many years. Reports are due to NDEP on or before October 1 of each year and they are then posted online (<http://www.ccrfcd.org/doclibrary.htm>). Monitoring data that are collected to meet the goal of this plan will be used to compliment data reports from CCRFCD. For example, permanently fixed probes in the Wash and two tributaries collect pH, temperature, dissolved oxygen, and electrical conductance data at 20 minute intervals. Because the probes are not removed during storm events, the data can be assessed to characterize stormwater conditions for these parameters. With conversion factors, electrical conductance data can be used to calculate total

dissolved solid loading into the Wash and Lake Mead. Because salts are rinsed from the landscape during rain events, water quality probes in the Wash will be used to characterize salt loading from these events.

## **5.2 Make Adjustments**

A simple series of adaptive management steps govern this plan: (1) develop plan, (2) implement plan, (3) evaluate plan, (4) make changes, and (5) repeat steps 2-5. At their regularly scheduled meeting each July, the Research and Environmental Monitoring Study Team will begin to formally evaluate this plan and make changes if needed. By the October meeting, potential changes should be adopted by the partnering entities. Other adjustments can and should be made at anytime based on new or better information.

### **5.2.1 Sensitivity Analysis and Sampling Frequency**

Monitoring is a simple tool to keep track of an issue therefore it is often difficult to justify the continuation of discretionary monitoring activities when the results of monitoring show that the issue has not changed. Too often though, monitoring data are irrecoverable when the frequency of data collection is inappropriately reduced because of the lack of institutional support. Moreover, the adage that “the more, the better” does not, nor should it necessarily hold sway when resources are limited. Objective measurements are needed to assess the sensitivity of the proposed monitoring frequency, so between July and October of each year, the monitoring network should be subjected to a sensitivity analysis. Standard hypothesis testing (e.g., t-tests) will be conducted to compare for differences between mean values obtained from the existing sampling frequency (e.g.,  $n = 12$ ) and a hypothesized reduced sampling frequency (e.g.,  $n = 4$ ,  $n = 6$ ,  $n = 8$ ). Data points will be systematically removed from the collected dataset to mimic a hypothesized program. The power of these tests are inherently low because of small sample size ( $n < 30$ ); therefore, other information should be carefully considered before design changes are made.

### **5.2.2 Reassess Locations**

Sampling sites should not be considered immovable locations if the movement of those sites will better meet the goal of the plan. Moreover, if two locations show similar status and trends, site sampling may need to cease at one of the sites. Between July and October of each year, the location of each sampling point will be reassessed to see if changes are needed. This task will be difficult because there already appears to be a conflict between two of the principles that were used to develop this plan (maintain historical record and base of watershed assessment). For example, SC\_0 characterizes the base of the Sloan Channel watershed better than SC\_1 but the data collected from SC\_1 are more impactful because there is a USGS stream gage there and because it has been sampled historically for >10 years. A careful weight of evidence approach will be needed to address sampling location changes in the future.

### **5.2.3 Coordinate with Partners**

Because the monitoring network relies on the efforts of multiple entities, early and frequent communication is needed to ensure that the network functions properly. It is easy to imagine how decisions that may seem innocuous could affect the reliability of the network. For example, a field-based decision to move a site 50 feet upstream because of difficult access issues could have terrible consequence if the site is moved above an inflow or outflow. Partner coordination

is essential to minimize network reliability concerns. Consequently, changes to sampling programs should be shared with the partners early and often and can be formally addressed during regularly scheduled Research and Environmental Monitoring Study Team meetings. During the July meeting, the study team should receive formal information from each entity regarding monitoring program details to be sure that sampling locations, analytes, collection frequencies, reporting limits, and other pertinent items have not changed. The July meeting should be an ideal time to address changes since annual monitoring plans/reports are due in the fall (the wastewater dischargers must submit a monitoring plan by November 1 of each year and the MS4 permit holders must submit an annual report which includes a monitoring plan on or before October 1 of each year).

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**Appendix A**  
Las Vegas Wash Water Quality Monitoring Programs  
Evaluation and Recommendations

# **Las Vegas Wash Water Quality Monitoring Programs Evaluation and Recommendations**

## **Prepared for:**

Las Vegas Wash Coordination Committee  
Research and Environmental Monitoring Study Team

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## **ABSTRACT**

Several surface water quality monitoring programs are being conducted in the Las Vegas Wash and tributaries to the Las Vegas Wash by multiple agencies. The goal for this review is to document where and how frequently sampling occurs and why it is conducted. This report is the first iteration in developing a coordinated water quality monitoring network. The network should provide robust water quality information to meet the needs of the Las Vegas Wash Coordination Committee but the expectation is that other stakeholders in the Las Vegas Valley will benefit. There appears to be opportunities for collaboration that may reduce resource commitments but further discussion needs to be held to identify consensual paths forward. Moreover, important data gaps have been identified which may require resource commitments.

## **ACKNOWLEDGMENTS**

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## **1.0 LAS VEGAS WASH WATER QUALITY REVIEW**

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The surface water quality monitoring programs in the Las Vegas Wash (Wash) and in the tributaries to the Wash are being examined to identify if there are duplicative measures and possible needs for other water quality studies. A substantial portion of water quality monitoring occurs in the Wash; therefore, most of our efforts have been spent examining Wash water quality programs. Tributaries to the Wash and other surface water inputs were also examined for potential gaps in data and overlap because of their influence to the mainstem Wash.

Currently, three different agencies, including City of Henderson (acting on behalf of the three wastewater treatment agencies), Bureau of Reclamation, and Southern Nevada Water Authority, are sampling regularly along the Wash at multiple locations for a variety of reasons. The scope of work for each agency remains relatively similar, which inherently can result in duplications in sampling locations and analyses. A review of these different programs highlights the avenues where data sharing and cooperative sampling plans may reduce the duplications in data collection. Sharing resources may also allow more studies to be implemented in other areas or may free up resources during difficult economic times. By reviewing sample locations, analyses, and scopes of work for these projects, we can prioritize and make suggestions to help maintain and in some cases increase our knowledge of water quality in the Wash.

## **2.0 CURRENT WATER QUALITY MONITORING PROGRAMS**

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### **2.1 Wastewater Dischargers**

The City of Henderson (COH) conducts routine water quality sampling at five locations along the Las Vegas Wash on behalf of themselves, Clark County Water Reclamation District (CCWRD), and the City of Las Vegas (CLV). With the completion of the City of North Las Vegas' (CNLV) wastewater treatment plant, CNLV will likely participate in on-going sampling programs by the other three wastewater agencies (cumulatively these four agencies are referred to as the "dischargers"). Each of the dischargers are required to meet monitoring requirements contained in their National Pollutant Discharge Elimination System (NPDES) permits for discharging treated effluent into the Wash. The dischargers have separate NPDES permits, however, monitoring requirements for each permit are the same. Consequently, the dischargers have divided the monitoring obligations so that: the COH performs water quality monitoring and analysis of samples from the Wash; the CLV conducts water quality monitoring in Lake Mead; and CCWRD conducts the analyses of the Lake Mead samples. Monitoring plans are due from the dischargers to the Nevada Department of Environmental Protection by November 1 of each year.

The most recent monitoring plan calls for sampling at five locations in the Wash (LW10.75, LW8.85, LW6.05, LW3.7, and LW0.55). These locations are designed to capture water quality characteristics of effluent from the three wastewater discharges before and after entering the Wash. Samples are measured, analyzed, or calculated (as appropriate) biweekly for temperature, pH, dissolved oxygen, specific conductance, total phosphorus as phosphorus (TP), dissolved ortho-phosphorus as phosphorus, total kjeldahl nitrogen as nitrogen, (TKN), nitrite as nitrogen (NO<sub>2</sub>-N), nitrate as nitrogen (NO<sub>3</sub>-N), ammonia as nitrogen (NH<sub>3</sub>-N), total inorganic nitrogen as nitrogen (TIN), total dissolved solids (TDS), total suspended solids (TSS), turbidity, *Escherichia*

*coli*, and fecal coliform. Twice a year, the dischargers also sample for an extensive list of priority pollutants and some additional parameters at LW0.55.

Also included in the permits are requirements related to the Colorado River Basin Salinity Control Act. The permits require the dischargers to identify and describe any potential salt sources to the collection system. The dischargers must quantify the salt load and salinity concentration from identified sources and review data annually to calculate net increase in salinity. They are responsible for minimizing salt loads to try to achieve the goal of having outfall TDS concentrations no more than 400 ppm above concentrations found in the Colorado River. TDS data from any water purveyor may be used; however the data source must be identified.

The dischargers are required to monitor and report flow, biological oxygen demand, TSS, pH, fecal coliform, total residual chlorine, TP, total ammonia, TIN, TDS, priority pollutants, temperature, dissolved oxygen, orthophosphorus, nitrate + nitrite, and TKN from their outfall channels. The previous parameters are sampled at various frequencies ranging from daily to weekly. Flow data are logged continuously. Priority pollutants are monitored quarterly. Each wastewater discharger shares the waste load allocations for total phosphorus and total ammonia. The loads are divided amongst discharges and the requirements apply only from March 1 – October 31 for phosphorus and April 1 – September 30 for ammonia. On a voluntary basis the dischargers are removing phosphorus year round. Waste load allocation data are submitted quarterly and contain data from the three treatment plants.

## **2.2 Bureau of Reclamation**

The Bureau of Reclamation (BOR) has been monitoring water quality in the Wash since 1989. The Wash was designated as a salinity control unit under Title II of the Colorado River Basin Salinity Control Act. Several plans were initiated by the BOR to limit salinity inputs from saline alluvium along the Wash. Eventually, plans to reduce salt loads were too expensive, not supported, and were determined to be not feasible. The BOR began water quality monitoring in 1989 primarily to track salinity changes along the Wash, as the Las Vegas Valley population and flows into the Wash increased. Ancillary benefits of the BORs monitoring program include a long established general water quality history documenting water quality changes that have occurred from changes in water treatment, construction of erosion control structures, and changes in hydrology.

BOR monitors 13 locations along or near the Wash. Strategic sample locations were selected to isolate potential sources of salt loading into the Wash. Of the 13 sample locations, seven are located in the Wash. The remaining six locations are located in effluent discharge channels or groundwater seeps. These locations are monitored quarterly. Locations with LWC prefix in their name indicate that locations are off of the mainstem of the Wash channel. These sites are seeps or effluent outfall channels.

## **2.3 Southern Nevada Water Authority**

The Las Vegas Wash Project Coordination Team (Wash Team) conducts extensive water quality monitoring along the Wash. There are several existing programs in place to characterize water quality trends in the Wash and tributaries to the Wash. These studies address water quality issues

as they relate to construction activities and localized contaminant issues in the Wash. Individual water quality programs are discussed below.

### **2.3.1 Mainstream Water Quality Monitoring**

The Las Vegas Wash Coordination Committee developed a Comprehensive Adaptive Management Plan (CAMP) outlining goals and implementation strategies for activities along the Wash. The mainstream water quality monitoring program was a component established in the CAMP used to evaluate the baseline conditions of the Wash, to demonstrate water quality variations over time, to quantify the effects of increased wetland vegetation on water quality, and to provide a long-term data history that can be used to make watershed-based decisions and evaluate the success of these management actions. Monitoring began in 2000 and has provided substantial insight into the changes in water quality.

Currently eight locations are sampled bimonthly. Sample locations and frequency has changed since the inception of the program. Initially, sample locations were monitored monthly; however, the data has been consistently stable allowing abridged sample frequency. Sample analyses have remained mostly the same throughout the years and include metals, anion/cation, nutrients, and others.

### **2.3.2 Total Suspended Solids and Perchlorate Monitoring**

The TSS and perchlorate sampling program was designed to provide background data for TSS and perchlorate concentrations in the Wash. This program began in 2003 and initially included eight sampling locations. The program inherited two additional sampling locations from another ongoing perchlorate study in an effort to consolidate programs. The sample locations are monitored monthly. Sampling sites were initially placed upstream and downstream of constructed erosion control structures to measure their effect on reducing TSS in the Wash. The data from this sampling program was used to de-list the Wash for TSS on the NDEPs 303(d) list.

### **2.3.3 Tributary Water Quality Monitoring**

The tributary water quality monitoring program was established to characterize urban runoff entering the Wash. Data from the program are essential for monitoring and tracking non-point sources of contamination to the Wash. This project is a cooperative program supported by both Southern Nevada Water Authority (SNWA) and Clark County Regional Flood Control District (CCRFCD). The data from this project are used to meet requirements established in the Las Vegas Valley NDPES Municipal Stormwater Discharge Permit No. NV0021911. The permit is jointly issued to CCRFCD, CLV, CNLV, COH, and Clark County and authorizes the permittees to discharge stormwater from the municipal separate storm sewer system (MS4) to waters of the U.S. Under the permit, permittees are required to establish a dry weather monitoring program, which is fulfilled with the tributary water quality monitoring program. The dry weather monitoring is intended to detect illegal and/or illicit discharges and to provide baseline surface water quality data for future comparison. Stormwater sampling is conducted by a contractor to the CCRFCD (see Section 2.4).

Seven tributary locations are monitored quarterly. Sample locations are located upstream of the tributaries' confluence with either the Wash or another tributary of the Wash. The locations capture most major inputs of urban runoff from the Las Vegas Valley to the Wash. Samples are

analyzed for major ions, trace metals, organic compounds, nutrients, selenium, and bacteriological components.

Additionally, LW5.5 (Historic Lateral Weir) water quality is collected with this project and provides organic analysis of the Wash on a quarterly basis. LW5.5 is also collected by the Southern Nevada Water System (SNWS) as part of their monthly monitoring of the inflows to Lake Mead. The purpose of the SNWS program is to assess limnological and water quality factors affecting the domestic water supply of Southern Nevada and to monitor the physical and hydrological conditions of the Wash. The SNWS monitoring program includes sites on the Muddy River, Virgin River, and Colorado River. The sites are monitored monthly by SNWS staff for metals, nutrients, bacteria, and priority pollutants.

#### **2.3.4 Extensive Selenium Monitoring**

SNWAs extensive selenium monitoring program focuses on the Duck Creek drainage area, including Pittman Wash and Whitney Drainage. Through previous investigations, it was determined that Duck Creek contains the highest selenium concentrations in the Las Vegas Valley. Duck Creek sampling efforts have focused on quarterly sampling at half mile intervals beginning from Broadbent Road. This program has been used to establish seasonal variations in selenium concentrations and identify hotspots of selenium. There are numerous sample locations along the tributaries that are only sampled for selenium.

#### **2.4 Clark County Regional Flood Control District**

CCRFCFCD is the lead agency for the Las Vegas Valley MS4 permit as previously discussed. The MS4 permit requires the completion of a Stormwater Management Plan to reduce the amount of pollutants entering the storm drains and to protect water quality. Water quality monitoring requirements are met using the dry weather water quality monitoring conducted by SNWA. However, in addition to the dry weather monitoring, CCRFCFCD completes a wet weather monitoring program. Water quality samples are collected during storm events in the Las Vegas Creek at Desert Rose Golf Course and in the Wash above Lake Las Vegas. Up to a total of ten samples are collected per year; but the number of samples is dependant upon the number of storm events.

CCRFCFCD also conducts water quality monitoring at detention basins throughout the valley during storm events. Water quality samples are collected at the inflows and outflows of the detention basins during three storm events per year. Samples are analyzed for TDS, TSS, total phosphorus, orthophosphate, nitrate, total copper, total lead, total zinc, dissolved copper, dissolved lead, dissolved zinc, turbidity, fecal coliform, and fecal streptococci.

#### **2.5 Clark County Wetlands Park**

The Clark County Wetlands Parks (CCWP) Nature Preserve and in-lieu fee mitigation ponds receive effluent from CCWRD to support the ponds located in the park and to irrigate vegetation at the Sunrise Mountain Trailhead. After flowing through a series of ponds at the Nature Preserve and in-lieu fee mitigation ponds, the water returns to the Wash. Several sites located within the park require water quality monitoring and reporting. The two sites at the Sunrise Mountain Trailhead only require reporting water quality data that is supplied by CCWRD. The sample locations within the Nature Preserve and in-lieu fee mitigation wetlands characterize

water quality of the discharge into the Wash and the effectiveness of the wetland’s purification services. Bacteria, metals, nutrients, cation/anion, and selenium are monitored monthly at eight locations within the Nature Preserve and in lieu fee mitigation ponds. Five of the sample locations are required for CCWPs NPDES permit. The permit requires monthly monitoring for TDS, chlorides, sulfates, nitrate as nitrogen, and fecal coliform. Additional analyses are monitored to measure wetland purification services.

### 3.0 PROGRAM REVIEW

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Several opportunities exist to collaborate on water quality monitoring in the Wash and tributaries to reduce duplications. Many of the sampling locations along the Wash match other agency’s programs. Numerous analyses are the same between agency programs, most notably nutrients, which are analyzed by every agency in some form. Even the intent and purpose of some of the programs are similar and meet multiple agencies’ needs. Comparisons between sampling locations, analyses, and purpose of the programs outlined above show several possibilities to collaborate and reduce redundancy. Table 1 outlines the frequency of visits to each site by the main sampling agencies. Note that there are duplications in a number of common sampling locations but there are also sample locations that are nearby to each other. Table 2 lists the most frequently monitored analytes by BOR, the wastewater dischargers, and SNWA. Some priority pollutants, metals, or other constituents of concern that are monitored less frequently are omitted.

#### 3.1 Sample Locations Comparison

Reviewing the combined sampling locations along the Wash, there is a sampling location almost every 0.2 miles. However, not all sampling locations are sampled for the same analyses or at the same frequency. Monitoring the water quality characteristics of the Wash remains a goal of each of the agencies. Sample locations for the wastewater dischargers reflect the major inflows into the Wash and goes beyond the requirements of the permit to sample three locations. Since the wastewater dischargers have permit requirements to meet, it is sensible to build a water quality plan for the Wash around established and required sites. Both the SNWA and BOR water quality sampling programs share many of the same sites with the wastewater dischargers, potentially allowing the agencies to focus on sites that will capture critical points in the Wash and adding additional monitoring at deliberate locations to monitor presently unknown information.

	BOR	Wastewater Dischargers	SNWA	SNWS
Site	No. of visits per year			
<b>Mainstream</b>				
<b>LW0.55</b>	4	26 and 2	12	
<b>LW0.8</b>			6 and 12	
<b>LW3.1</b>			6 and 12	
<b>LW3.7</b>		26		
<b>LW3.85</b>	4		12	
<b>LW4.1</b>			12	
<b>LW4.3</b>			12	

LW4.95			6	
LW5.3			12	
LW5.5			6	12
LW5.7			12	
LW5.9			6	
LW6.05	4	26		
LW6.7			12	
LW6.85			6	
LW8.85	4	26	6	
LW9.1	4			
LW10.75	4	26	6 and 12	
LWC10.6	4			
LWC6.1_1	4			
LWC6.1_2	4			
LWC6.3	4			
LWC9.0	4			
<b>Tributaries</b>				
LVC_2			4	
LW12.1			4	
FW_1			4	
SC_1			4	
DC_1			4	
MC_1			4	
BS_1			4	

**Table 1. Sample location and frequency for identified monitoring programs (note: more than one entry per cell indicates that different groups of parameters are collected during different visits).**

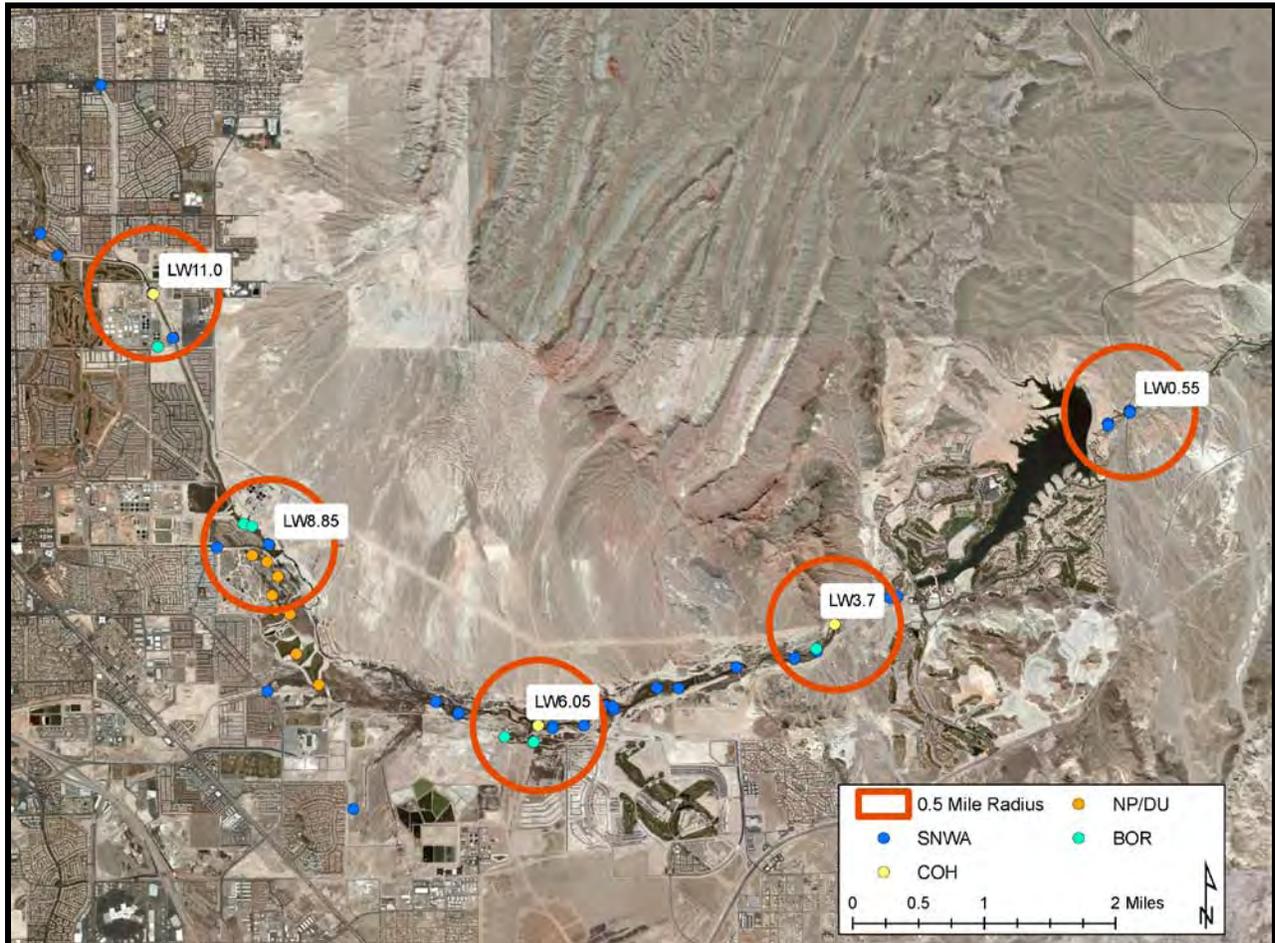
Analysis List by Agency	
<b>Bureau of Reclamation</b>	
Alkalinity Bicarbonate LAB	Nitrogen Nitrite Total
Alkalinity Carbonate LAB	Perchlorate
Alkalinity Total LAB	Phosphorus Orthophosphate Dissolved
Calcium Dissolved	Phosphorus Orthophosphate Total
Chloride	Potassium Dissolved
Fluoride	Selenium Dissolved
Magnesium Dissolved	Silica Total
Nitrogen Ammonia Total	Sodium Dissolved
Nitrogen Nitrate Total	Sulfate
Nitrogen Nitrite Plus Nitrate Total	Total Suspended Solids
Field Measurements	
<b>City of Henderson</b>	
Chloride	Nitrogen Total Kjeldahl
Coliform Fecal	Phosphorus Dissolved
Coliform Total	Phosphorus Total

E. coli	Sulfate
Fluoride	Total Dissolved Solids LAB
Nitrogen Ammonia Total	Total Suspended Solids
Nitrogen Nitrate Dissolved	Turbidity LAB
Nitrogen Nitrite Dissolved	Field Measurements
<b>SNWA</b>	
Alkalinity Bicarbonate	Lead Dissolved
Alkalinity Bicarbonate LAB	Lead Total
Alkalinity Carbonate	Magnesium Dissolved
Alkalinity Hydroxide	Magnesium Total
Aluminum Dissolved	Manganese Dissolved
Aluminum Total	Manganese Total
Anion Sum - Calculated	Mercury Dissolved
Antimony Dissolved	Mercury Total
Antimony Total	Nickel Dissolved
Arsenic Dissolved	Nickel Total
Arsenic Total	Nitrogen Ammonia Total
Barium Dissolved	Nitrogen Nitrate Total
Barium Total	Nitrogen Nitrite Plus Nitrate Total
Beryllium Dissolved	Nitrogen Nitrite Total
Beryllium Total	Nitrogen Organic Total
Bromide	Nitrogen Total Kjeldahl
Cadmium Dissolved	Perchlorate
Cadmium Total	Phosphorus Orthophosphate Dissolved
Calcium Dissolved	Phosphorus Total
Calcium Total	Potassium Dissolved
Chlorate	Potassium Total
Chloride	Selenium Total
Chromium Dissolved	Silica Total
Chromium Total	Silver Dissolved
Coliform Fecal	Silver Total
Coliform Fecal Average	Sodium
Copper Dissolved	Sodium Dissolved
Copper Total	Sodium Total
E. coli	Sulfate
E. Coli Average	Thallium Dissolved
Enterococci	Thallium Total
Fecal Streptococcus	Total Dissolved Solids LAB
Fecal Streptococcus Average	Total Organic Carbon (TOC)
Fluoride	Total Suspended Solids
Hardness, Total	Zinc Dissolved
Iron Dissolved	Zinc Total
Iron Total	Field Measurements

**Table 2. List of analyses sampled for identified monitoring programs.**

There are five general regions where all agencies have sample locations in the Wash (identified by red circles in Figure 1). The location upstream of the CLV effluent discharge describes the

water quality conditions of the Wash, Flamingo Wash, and Sloan Channel (LW10.75/11.1). All agencies have sample locations in this area. The next common sample location is downstream of both the Clark County and CLV effluent discharges (LW8.85.) LW6.05, LW5.7, LW5.5 are all located downstream of the COH effluent discharge and Duck Creek. The Wash reach before the flows are diverted under Lake Las Vegas is also sampled by all agencies (LW3.1, LW3.7, and LW3.85.) LW0.55 or LW0.8 is sampled as the last point before flows enter Lake Mead.



**Figure 1. Water quality sample locations. Red circles indicate where more than one agency is collecting samples (note: because locations overlap, not all the dots are represented visually on the map).**

Identifying crucial stretches in the Wash, where water quality is impacted by changing conditions, inputs from groundwater, or urban runoff will help determine where water quality monitoring locations should potentially occur. Sites should be located in areas where known and unknown contributions need to be monitored. The wastewater dischargers currently monitor effluent flows entering the Wash from wastewater facilities. The sample locations are located upstream and downstream of wastewater discharge points. Samples collected above all the wastewater discharge locations (LW10.75) characterize the water quality of the Wash, Flamingo Wash, Sloan Channel and Las Vegas Creek. The quarterly tributary monitoring program provides additional water quality data for the tributary flow entering the Wash.

### **3.2 Analysis Comparison**

SNWA, BOR, and the wastewater dischargers all collect nutrient data in similar locations along the Wash. SNWA monitors for the most complete suite of metals along the Wash. All of BORs analyses are measured by SNWA with the exception of total orthophosphate. Organic water quality monitoring is limited in the Wash. LW0.8 and LW5.5 are regularly monitored for priority pollutant in the Wash. LW5.5 is sampled monthly by SNWS and LW0.55 is monitored biannually by the wastewater dischargers. A coordinated effort between the agencies that share sample locations would allow the agencies to potentially reduce the number of parameters they analyze in their programs. While certain parameters (as required in discharge permits) are required to be monitored on bi-weekly basis, other constituents may have a reduced sample frequency. Table 3 lists the analyses monitored by each agency. The list does not include priority pollutants monitored by the wastewater dischargers and SNWA.

## **4.0 OPPORTUNITIES FOR COLLABORATION**

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BORs water quality monitoring originates from requirements under the Colorado River Basin Salinity Control Act; monitoring is also required by the wastewater treatment plants. The dischargers are required to monitor and identify salinity sources and its effect on salinity in the Colorado River. Currently, both BOR and the dischargers are collecting water quality data to meet the goals of the Colorado River Basin Salinity Control Act. An opportunity exists to potentially coordinate sampling between these programs. For example, sampling frequency for the dischargers ranges from daily to weekly for most analyses, exceeding the BORs quarterly sampling frequency. In addition, many of the analyses monitored by the BOR are also monitored by either the wastewater dischargers or SNWA at similar sampling locations along the Wash.

Similar or the same sampling locations exist between SNWAs mainstream Wash and TSS/Perchlorate programs. Both TSS and perchlorate are monitored in the mainstream program, although TSS is analyzed by a different laboratory. The projects share only two sites but the remaining sampling locations are within 0.2 miles of each other. While the TSS sample locations are located downstream and upstream of erosion control structures, the Wash could be measured in broader reaches to measure reductions in TSS. A broader reach approach could allow the benefits of multiple erosion control structures to be determined. Alternatively, sample locations could be added to the mainstream Wash program to capture any additional data needed.

The wastewater dischargers currently sample at five locations along the Wash. Of the five locations, SNWAs mainstream Wash programs shares three of the locations. SNWAs program is more comprehensive and includes monitoring for perchlorate and selenium, and metals. However, the wastewater dischargers analyze for dissolved nitrate, dissolved nitrite, and dissolved phosphorus which is not analyzed under the mainstream Wash program. Sample location and identification, however, needs to be clarified. If sample locations are the same or can be altered to meet both SNWAs and the wastewater dischargers' needs, the agencies could potentially share data collected at the sample locations.

SNWAs tributary water quality monitoring program is the only program regularly monitoring runoff from the Las Vegas Valley. The program monitors data quarterly for all tributaries

entering the Las Vegas Wash. Besides assessing the source water inputs to the Wash, this program is necessitated by CCRFCDs NPDES permit. Additional quarterly monitoring in Duck Creek monitors selenium concentrations exclusively. Reducing SNWAs water quality programs in the Wash could free up resources to provide for monitoring in the tributaries or elsewhere. The tributaries could be placed on a rotational monitoring program with sampling locations selected throughout the entire reach with a select set of parameters to be measured. The tributaries are currently only monitored at one location near its confluence with the Wash. Increasing sampling frequency, number of locations and analyses sampled along the tributaries could provide increased knowledge of the tributaries on a greater temporal scale. Placing the tributaries on a rotational schedule would reduce the cost and resource demand of sampling all tributaries at once. Many state water quality monitoring program use a rotational program due to the lack of resources to monitor an entire state all at once.

## **5.0 RECOMMENDATIONS FOR MOVING FORWARD**

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Sample locations for each agency need to be clarified and identified. Discrepancies exist between sample location names and actual locations. A couple of the sites may be collected at the same location as other agencies but labeled differently. Coordinating sampling locations will help each agency provide the data they need for projects and provide adequate description of the water quality in the Wash. The willingness and ability of agencies to make changes to their programs still needs to be determined. The water quality plan devised by the wastewater dischargers establishes a monitoring plan that is submitted to NDEP. They, most likely, cannot be flexible in their monitoring locations or analyses. A water quality plan devised around the regulatory needs of the wastewater discharges may still allow some of the duplication to be eliminated.

Reducing replication of water quality analysis requires that the agencies are willing to share and able to use other agencies' data. Currently, all Wash related water quality monitoring project data can be found on the LVWCC members' website ([www.lvwash.org/members/](http://www.lvwash.org/members/)). Each agency has already identified their individual projects on the website. However, for data sharing to occur, the agencies need to define guidelines for how data sharing will occur in order to meet reporting requirements.

**Appendix B**  
Colorado River Basin Salinity Control Act

Public Law 93-320

AN ACT

June 24, 1974

[sic]  
{H.R.12165}

To authorize the construction, operation, and maintenance of certain works in the Colorado River Basin to control the salinity of water delivered to users in the United States and Mexico.

Colorado River Basin Salinity Control Act.

43 USC 1571 note.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Colorado River Basin Salinity Control Act".*

TITLE I—PROGRAMS DOWNSTREAM FROM IMPERIAL DAM

U.S. and Mexico, water quality improvement.

43 USC 1571.

24 UST 1968.

59 Stat. 1219.

Desalting complexes, construction and maintenance.

SEC. 101. (a) The Secretary of the Interior, hereinafter referred to as the "Secretary", is authorized and directed to proceed with a program of works of improvement for the enhancement and protection of the quality of water available in the Colorado River for use in the United States and the Republic of Mexico, and to enable the United States to comply with its obligations under the agreement with Mexico of August 30, 1973 (Minute No. 242 of the International Boundary and Water Commission, United States and Mexico), concluded pursuant to the Treaty of February 3, 1944 (TS 994), in accordance with the provisions of this Act.

(b)(1) The Secretary is authorized to construct, operate, and maintain a desalting complex, including (1) a desalting plant to reduce the salinity of drain water from the Wellton-Mohawk division of the Gila project, Arizona (hereinafter referred to as the division), including a pretreatment plant for settling, softening, and filtration of the drain water to be desalted; (2) the necessary appurtenant works including the intake pumping plant system, product waterline, power transmission facilities, and permanent operating facilities; (3) the necessary extension in the United States and Mexico of the existing bypass drain to carry the reject stream from the desalting plant and other drainage waters to the Santa Clara Slough in Mexico, with the part in Mexico, subject to arrangements made pursuant to section 101(d); (4) replacement of the metal flume in the existing main outlet drain extension with a concrete siphon; (5) reduction of the quantity of irrigation return flows through acquisition of lands to reduce the size of the division, and irrigation efficiency improvements to minimize return flows; (6) acquire on behalf of the United States such lands or interest in lands in the Painted Rock Reservoir as may be necessary to operate the project in accordance with the obligations of Minute No. 242, and (7) all associated facilities including roads, railroad spur, and transmission lines.

Desalting plants, treatment capacity.

(2) The desalting plant shall be designed to treat approximately one hundred and twenty-nine million gallons a day of drain water using advanced

technology commercially available. The plant shall effect recovery initially of not less than 70 per centum of the drain water as product water, and shall effect reduction of not less than 90 per centum of the dissolved solids in the feed water. The Secretary shall use sources of electric power supply for the desalting complex that will not diminish the supply of power to preference customers from Federal power systems operated by the Secretary. All costs associated with the desalting plant shall be nonreimbursable.

Nonreimbursable costs

(c) Replacement of the reject stream from the desalting plant and of any Wellton-Mohawk drainage water bypassed to the Santa Clara Slough to accomplish essential operation except at such times when there exists surplus water of the Colorado River under the terms of the Mexican Water Treaty of 1944, is recognized as a national obligation as provided in section 202 of the Colorado River Basin Project Act (82 Stat. 895). Studies to identify feasible measures to provide adequate replacement water shall be completed not later than June 30, 1980. Said studies shall be limited to potential sources within the States of Arizona, California, Colorado, New Mexico, and those portions of Nevada, Utah, and Wyoming which are within the natural drainage basin of the Colorado River. Measures found necessary to replace the reject stream from the desalting plant and any Wellton-Mohawk drainage bypassed to the Santa Clara Slough to accomplish essential operations may be undertaken independently of the national obligation set forth in section 202 of the Colorado River Basin Project Act.

Replacement water, studies.  
59 Stat. 1219.  
43 USC 1512.

(d) The Secretary is hereby authorized to advance funds to the United States section, International Boundary and Water Commission (IBWC), for construction, operation, and maintenance by Mexico pursuant to Minute No. 242 of that portion of the bypass drain within Mexico. Such funds shall be transferred to an appropriate Mexican agency, under arrangements to be concluded by the IBWC providing for the construction, operation, and maintenance of such facility by Mexico.

U.S. section, IBWC, advance funds.  
24 UST 1968.

(e) Any desalted water not needed for the purpose of this title may be exchanged at prices and under terms and conditions satisfactory to the Secretary and the proceeds therefrom shall be deposited in the General Fund of the Treasury. The city of Yuma, Arizona, shall have first right of refusal to any such water.

Desalted water exchange.

(f) For the purpose of reducing the return flows from the diversion to one hundred and seventy-five thousand acre-feet or less, annually the Secretary is authorized to:

Return flow reduction.

(1) Accelerate the cooperative program of Irrigation Management Services with the Wellton-Mohawk Irrigation and Drainage District, hereinafter referred to as the district, for the purpose of improving irrigation efficiency. The district shall bear its share of the cost of such program as determined by the Secretary.

(2) Acquire, by purchase or through eminent domain or exchange, or the extent determined by him to be appropriate, lands or interests in lands to reduce the existing seventy-five thousand developed and undeveloped irrigable acres authorized by the Act of July 30, 1947 (61 Stat. 628), known as the Gila Reauthorization Act. The initial reduction in irrigable acreage shall be limited to approximately ten thousand acres. If the Secretary determines that the irrigable acreage of the division must be reduced below sixty-five thousand acres of irrigable lands to carry out the

Irrigable acreage reduction.

43 USC 613. Limitation.

Acquired lands,  
disposal.

System improve-  
ments, installation  
assistance.

Costs, reimburse-  
ment to U.S.

Contract amend-  
ment.

Land acquisition  
for storage

24 UST 1968.

Transfer of funds

Nonreimbursable  
costs.

Canal or canal  
lining, construction  
43 USC 1572

purpose of this section, the Secretary is authorized, with the consent of the district, to acquire additional lands, as may be deemed by him to be appropriate.

(g) The Secretary is authorized to dispose of the acquired lands and interests therein on terms and conditions satisfactory to him and meeting the objective of this Act.

(h) The Secretary is authorized, either in conjunction with or in lieu of land acquisition, to assist water users in the division in installing system improvements, such as ditch lining, change of field layouts, automatic equipment, sprinkler systems and bubbler systems, as a means of increasing irrigation efficiencies: *Provided, however,* That all costs associated with the improvements authorized herein and allocated to the water users on the basis of benefits received, as determined by the Secretary, shall be reimbursed to the United States in amounts and on terms and conditions satisfactory to the Secretary.

(i) The Secretary is authorized to amend the contract between the United States and the district dated March 4, 1952, as amended, to provide that—

(1) the portion of the existing repayment obligation owing to the United States allocable to irrigable acreage eliminated from the division for the purposes of this title, as determined by the Secretary, shall be nonreimbursable; and

(2) if deemed appropriate by the Secretary, the district shall be given credit against its outstanding repayment obligation to offset any increase in operation and maintenance assessments per acre which may result from the district's decreased operation and maintenance base, all as determined by the Secretary.

(j) The Secretary is authorized to acquire through the Corps of Engineers fee title to, or other necessary interests in, additional lands above the Painted Rock Dam in Arizona that are required for the temporary storage capacity needed to permit operation of the dam and reservoir in times of serious flooding in accordance with the obligations of the United States under Minute No. 242. No funds shall be expended for acquisition of land or interests therein until it is finally determined by a Federal court of competent jurisdiction that the Corps of Engineers presently lacks legal authority to use said lands for this purpose. Nothing contained in this title nor any action taken pursuant to it shall be deemed to be a recognition or admission of any obligation to the owners of such land on the part of the United States or a limitation or deficiency in the rights or powers of the United States with respect to such lands or the operation of the reservoir.

(k) To the extent desirable to carry out sections 101(f)(1) and 101(h), the Secretary may transfer funds to the Secretary of Agriculture as may be required for technical assistance to farmers, conduct of research and demonstrations, and such related investigations as are required to achieve higher on-farm irrigation efficiencies.

(1) All cost associated with the desalting complex shall be nonreimbursable except as provided in sections 101(f)(1) and 101(h).

SEC. 102. (a) To assist in meeting salinity control objectives of Minute No. 242 during an interim period, the Secretary is authorized to construct a new concrete-lined canal or, to line the presently unlined portion of the Coachella Canal of the Boulder Canyon project, California, from station 2 plus 26 to the beginning of siphon numbered 7, a length of approximately forty-nine miles. The United States shall be entitled to temporary use of a quantity of water, for

the purpose of meeting the salinity control objectives of Minute No. 242, during an interim period, equal to the quantity of water conserved by constructing or lining the said canal. The interim period shall commence on completion of construction or lining said canal and shall end the first year that the Secretary delivers main stream Colorado River water to California in an amount less than the sum of the quantities requested by (1) the California agencies under contracts made pursuant to section 5 of the Boulder Canyon Project Act (45 Stat. 1057), and (2) Federal establishments to meet their water rights acquired in California in accordance with the Supreme Court decree in Arizona against California (376 U.S. 340).

43 USC 617d.

(b) The charges for total construction shall be repayable without interest in equal annual installments over a period of forty years beginning in the year following completion of construction: *Provided*, That, repayment shall be prorated between the United States and the Coachella Valley County Water District, and the Secretary is authorized to enter into a repayment contract with Coachella Valley County Water District for that purpose. Such contract shall provide that annual repayment installments shall be nonreimbursable during the interim period, defined in section 102(a) of this title and shall provide that after the interim period, said annual repayment installments or portions thereof, shall be paid by Coachella Valley County Water District.

Repayment.

Repayment contract.

(c) The Secretary is authorized to acquire by purchase, eminent domain, or exchange private lands or interests therein, as may be determined by him to be appropriate, within the Imperial Irrigation District on the Imperial East Mesa which receive, or which have been granted rights to receive, water from Imperial Irrigation District's capacity in the Coachella Canal. Costs of such acquisitions shall be nonreimbursable and the Secretary shall return such lands to the public domain. The United States shall not acquire any water rights by reason of this land acquisition.

Private lands, acquisition.

(d) The Secretary is authorized to credit Imperial Irrigation District against its final payments for certain outstanding construction charges payable to the United States on account of capacity to be relinquished in the Coachella Canal as a result of the canal lining program, all as determined by the Secretary: *Provided*, That, relinquishment of capacity shall not affect the established basis for allocating operation and maintenance costs of the main All-American Canal to existing contractors.

Imperial Irrigation District, construction charges, credit.

(e) The Secretary is authorized and directed to cede the following land to the Cocopah Tribe of Indians, subject to rights-of-way for existing levees, to be held in trust by the United States for the Cocopah Tribe of Indians:

Cocopah Tribe of Indians, lands in trust.

Township 9 south, range 25 west of the Gila and Salt River meridian, Arizona;

Section 25: Lots 18, 19, 20, 21, 22, and 23;

Section 26: Lots 1, 12, 13, 14, and 15;

Section 27: Lot 3; and all accretion to the above described lands.

The Secretary is authorized and directed to construct three bridges, one of which shall be capable of accommodating heavy vehicular traffic, over the portion of the bypass drain which crosses the reservation of the Cocopah Tribe of Indians. The transfer of lands to the Cocopah Indian Reservation and the construction of bridges across the bypass drain shall constitute full and complete payment to said tribe for the rights-of-way required for construction of the bypass drain and electrical transmission lines for works authorized by this title.

Bridges construction.

43 USC 1573.  
Well kids, construction and maintenance.  
24 UST 1968.  
59 Stat. 1219.  
Land acquisition.

Land replacement.

43 USC 613.

Nonreimbursable costs.

Project modification.

43 USC 1574.

Contract authority.

43 USC 1575.

Interagency cooperation.

43 USC 1576.

43 USC 1577.  
42 USC 4321  
note.

33 USC 1251  
note.

Appropriation.  
43 USC 1578.

SEC. 103. (a) The Secretary is authorized to:

(1) Construct, operate, and maintain, consistent with Minute No. 242, well fields capable of furnishing approximately one hundred and sixty thousand acre-feet of water per year for use in the United States and for delivery to Mexico in satisfaction of the 1944 Mexican Water Treaty.

(2) Acquire by purchase, eminent domain, or exchange, to the extent determined by him to be appropriate, approximately twenty-three thousand five hundred acres of lands or interests therein within approximately five miles of the Mexican border on the Yuma Mesa: *Provided, however,* That any such lands which are presently owned by the State of Arizona may be acquired or exchanged for Federal lands.

(3) Any lands removed from the jurisdiction of the Yuma Mesa Irrigation and Drainage District pursuant to clause (2) of this subsection which were available for use under the Gila Reauthorization Act (61 Stat. 628) shall be replaced with like lands within or adjacent to the Yuma Mesa division of the project. In the development of these substituted lands or any other lands within the Gila project, the Secretary may provide for full utilization of the Gila Gravity Main Canal in addition to contracted capacities.

(b) The cost of work provided for in this section, including delivery of water to Mexico, shall be nonreimbursable; except to the extent that the waters furnished are used in the United States.

SEC. 104. The Secretary is authorized to provide for modifications of the projects authorized by this title to the extent he determines appropriate for purposes of meeting the international settlement objective of this title at the lowest overall cost to the United States. No funds for any such modification shall be expended until the expiration of sixty days after the proposed modification has been submitted to the appropriate committees of the Congress, unless the Congress approves an earlier date by concurrent resolution. The Secretary shall notify the Governors of the Colorado River Basin States of such modifications.

SEC. 105. The Secretary is hereby authorized to enter into contracts that he deems necessary to carry out the provisions of this title in advance of the appropriation of funds therefor.

SEC. 106. In carrying out the provisions of this title, the Secretary shall consult and cooperate with the Secretary of State, the Administrator of the Environmental Protection Agency, the Secretary of Agriculture, and other affected Federal, State, and local agencies.

SEC. 107. Nothing in this Act shall be deemed to modify the national Environmental Policy Act of 1969, the Federal Water Pollution Control Act, as amended, or, except as expressly stated herein, the provisions of any other Federal law.

SEC. 108. There is hereby authorized to be appropriated the sum of \$121,500,000 for the construction of the works and accomplishment of the purposes authorized in sections 101 and 102, and \$34,000,000 to accomplish the purposes of section 103, based on April 1973 prices, plus or minus such amounts as may be justified by reason of ordinary fluctuations in construction costs involved therein, and such sums as may be required to operate and maintain such works and to provide for such modifications as may be made pursuant to section 104. There is further authorized to be appropriated such sums as may be necessary to pay condemnation awards in

excess of appraised values and to cover costs required in connection with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 90-646).

42 USC 4601  
note.

#### TITLE 11-MEASURES UPSTREAM FROM IMPERIAL DAM

SEC. 201. (a) The Secretary of the Interior shall implement the salinity control policy adopted for the Colorado River in the "Conclusions and Recommendations" published in the Proceedings of the Reconvened Seventh Session of the Conference in the Matter of Pollution of the Interstate Waters of the Colorado River and Its Tributaries in the States of California, Colorado, Utah, Arizona, Nevada, New Mexico, and Wyoming, held in Denver, Colorado, on April 26-27, 1972, under the authority of section 10 of the Federal Water Pollution Control Act (33 U.S.C. 1160), and approved by the Administrator of the Environmental Protection Agency on June 9, 1972.

43 USC 1591.

(b) The Secretary is hereby directed to expedite the investigation, planning, and implementation of the salinity control program generally as described in chapter VI of the Secretary's report entitled "Colorado River Water Quality Improvement Program, February 1972".

(c) In conformity with section 201 (a) of this title and the authority of the Environmental Protection Agency under Federal laws, the Secretary, the Administrator of the Environmental Protection Agency, and the Secretary of Agriculture are directed to cooperate and coordinate their activities effectively to carry out the objective of this title.

Interagency  
cooperation.

SEC. 202. The Secretary is authorized to construct, operate, and maintain the following salinity control units as the initial stage of the Colorado River Basin salinity control program.

Salinity control  
units, construction  
and maintenance.  
43 USC 1592.

(1) The Paradox Valley unit, Montrose County, Colorado, consisting of facilities for collection and disposition of saline ground water of Paradox Valley, including wells, pumps, pipelines, solar evaporation ponds, and all necessary appurtenant and associated works such as roads, fences, dikes, power transmission facilities, and permanent operating facilities.

(2) The Grand Valley unit, Colorado, consisting of measures and all necessary appurtenant and associated works to reduce the seepage of irrigation water from the irrigated lands of Grand Valley into the ground water and thence into the Colorado River. Measures shall include lining of canals and laterals, and the combining of existing canals and laterals into fewer and more efficient facilities. Prior to initiation of construction of the Grand Valley unit the Secretary shall enter into contracts through which the agencies owning, operating, and maintaining the water distribution systems in Grand Valley, singly or in concert, will assume all obligations relating to the continued operation and maintenance of the unit's facilities to the end that the maximum reduction of salinity inflow to the Colorado River will be achieved. The Secretary is also authorized to provide, as an element of the Grand Valley unit, for a technical staff to provide information and assistance to water users on means and measures for limiting excess water applications to irrigated lands: *Provided*, That such assistance shall not exceed a period of five years after funds first become available under this title. The Secretary will enter into agreements with the Secretary of Agriculture to develop a unified control plan for the Grand Valley unit. The Secretary of agriculture is directed to cooperate in the planning and construction of on-farm system measures under programs available to that Department.

(3) The Crystal Geyser unit, Utah, consisting of facilities for collection and disposition of saline geyser discharges; including dikes, pipelines, solar evaporation ponds, and all necessary appurtenant works including operating facilities.

(4) The Las Vegas Wash unit, Nevada, consisting of facilities for collection and disposition of saline ground water of Las Vegas Wash, including infiltration galleries, pumps, desalter, pipelines, solar evaporation facilities, and all appurtenant works including but not limited to roads, fences, power transmission facilities, and operating facilities.

3 USC 1593.  
Planning reports.

SEC. 203. (a) The Secretary is authorized and directed to—

(1) Expedite completion of the planning reports on the following units, described in the Secretary's report, "Colorado River Water Quality Improvement Program, February 1972":

- (i) Irrigation source control:
  - Lower Gunnison
  - Uintah Basin
  - Colorado River Indian Reservation
  - Palo Verde Irrigation District
- (ii) Point source control:
  - LaVerkin Springs
  - Littlefield Springs
  - Glenwood -Dotsero Springs
- (iii) Diffuse source control:
  - Price River
  - San Rafael River
  - Dirty Devil River
  - McElmo Creek
  - Big Sandy River

Reports.

(2) Submit each planning report on the units named in section 203(a) (1) of this title promptly to the Colorado River Basin States and to such other parties as the Secretary deems appropriate for their review and comments. After receipt of comments on a unit and careful consideration thereof, the Secretary shall submit each final report with his recommendations, simultaneously, to the President, or her concerned Federal departments and agencies, the Congress, and the Colorado River Basin States.

Submittal to President and Congress.

(b) The Secretary is directed—

Research and demonstration projects.

(1) in the investigation, planning, construction, and implementation of any salinity control unit involving control of salinity from irrigation sources, to cooperate with the Secretary of Agriculture in carrying out research and demonstration projects and in implementing on-the-farm improvements and farm management practices and programs which will further the objective of this title;

(2) to undertake research on additional methods for accomplishing the objective of this title, utilizing to the fullest extent practicable the capabilities and resources of other Federal departments and agencies, interstate institutions, States, and private organizations.

Colorado River Basin Salinity Control Advisory Council.

Establishment; membership.

43 USC 1594.

Duties.

SEC. 204. (a) There is hereby created the Colorado River Basin Salinity Control Advisory Council composed of no more than three members from each State appointed by the Governor of each of the Colorado River Basin States.

(b) The Council shall be advisory only and shall—

(1) act as liaison between both the Secretaries of Interior and Agriculture and the Administrator of the Environmental Protection Agency and the States in accomplishing the purposes of this title;

(2) receive reports from the Secretary on the progress of the salinity control program and review and comment on said reports; and

(3) recommend to both the Secretary and the Administrator of the Environmental Protection Agency appropriate studies of further projects, techniques, or methods for accomplishing the purposes of this title.

SEC. 205. (a) The Secretary shall allocate the total costs of each unit or separable feature thereof authorized by section 202 of this title, as follows:

Costs, allocation.  
43 USC 1595.

(1) In recognition of Federal responsibility for the Colorado River as an interstate stream and for international comity with Mexico, Federal ownership of the lands of the Colorado River Basin from which most of the dissolved salts originate, and the policy embodied in the Federal Water Pollution Control Act Amendments of 1972 (86 Stat. 816), 75 per centum of the total cost of construction, operation, maintenance, and replacement of each unit or separable feature thereof shall be nonreimbursable.

33 USC 1251  
note.

(2) Twenty-five per centum of the total costs shall be allocated between the Upper Colorado River Basin Fund established by section 5 (a) of the Colorado River Storage Project Act (70 Stat. 107) and the Lower Colorado River Basin Development Fund established by section 403(a) of the Colorado River Basin Project Act (82 Stat. 895), after consultation with, the Advisory Council created in section 204(a) of this title and consideration of the following items:

43 USC 620d.

(i) benefits to be derived in each basin from the use of water of improved quality and the use of works for improved water management;

43 USC 1543.

(ii) causes of salinity; and

(iii) availability of revenues in the Lower Colorado River Basin Development Fund and increased revenues to the Upper Colorado River Basin Fund made available under section 205(d) of this title: *Provided*, That costs allocated to the Upper Colorado River Basin Fund under section 205 (a) (2) of this title shall not exceed 15 per centum of the costs allocated to the Upper Colorado River Basin Fund and the Lower Colorado River Basin Development Fund.

Costs, limitation.

(3) Costs of construction of each unit or separable feature thereof allocated to the upper basin and to the lower basin under section 205 (a) (2) of this title shall be repaid within a fifty-year period without interest from the date such unit or separable feature thereof is determined by the Secretary to be in operation.

Construction  
costs, repayment.

(b)(1) Costs of construction, operation, maintenance, and replacement of each unit or separable feature thereof allocated for repayment by the lower basin under section 205(a)(2) of this title shall be paid in accordance with subsection 205(b) (2) of this title, from the Lower Colorado River Basin Development Fund.

(2) Section 403(g) of the Colorado River Basin Project Act (82 Stat. 896) is hereby amended as follows: strike the word "and" after the word "Act" in line 8; insert after the word "Act," the following "(2) for repayment to the general fund of the Treasury the costs of each salinity control unit or separable feature thereof payable from the Lower Colorado River Basin Development Fund in accordance with sections 205(a)(2), 205(a)(3), and 205(b)(1) of the Colorado River Salinity Control Act and"; change paragraph (2) to paragraph (3).

43 USC 1543.

(c) Costs of construction, operation, maintenance, and replacement of each unit or separable feature thereof allocated for repayment by the upper

basin under section 205(a) (2) of this title shall be paid in accordance with section 205(d) of this title from the Upper Colorado River Basin Fund within the limit of the funds made available under section 205(e) of this title.

43 USC 620d.

(d) Section 5(d) of the Colorado River Storage Project Act (70 Stat. 108) is hereby amended as follows: strike the word "and" at the end of paragraph (3); strike the period after the word "years" at the end of paragraph (4) and insert a semicolon in lieu thereof followed by the word "and"; add a new paragraph (5) reading:

"(5) the costs of each salinity control unit or separable feature thereof payable from the Upper Colorado River Basin Fund in accordance with sections 205(a) (2), 205(a) (3), and 205(c) of the Colorado River Salinity Control Act."

Electrical energy rates, adjustments.

(e) The Secretary is authorized to make upward adjustments in rates charged for electrical energy under all contracts administered by the Secretary under the Colorado River Storage Project Act (70 Stat. 105, 43 U.S.C. 620) as soon as practicable and to the extent necessary to cover the costs of construction, operation, maintenance, and replacement of units allocated under section 205(a)(2) and in conformity with section 205(a)(3) of this title: *Provided*, That revenues derived from said rate adjustments shall be available solely for the construction, operation, maintenance, and replacement of salinity control units in the Colorado River Basin herein authorized.

Report to President, Congress and Advisory Council.  
43 USC 1596.

SEC. 206. Commencing on January 1, 1975, and every two years thereafter, the Secretary shall submit, simultaneously, to the President, the Congress, and the Advisory Council created in section 204(a) of this title, a report on the Colorado River salinity control program authorized by this title covering the progress of investigations, planning, and construction of salinity control units for the previous fiscal year, the effectiveness of such units, anticipated work needed to be accomplished in the future to meet the objectives of this title, with emphasis on the needs during the five years immediately following the date of each report, and any special problems that may be impeding progress in attaining an effective salinity control program. Said report may be included in the biennial report on the quality of water of the Colorado River Basin prepared by the Secretary pursuant to section 15 of the Colorado River Storage Project Act (70 Stat. 111; 43 U.S.C. 602n), section 15 of the Navajo Indian irrigation project, and the initial stage of the San Juan Chama Project Act (76 Stat. 102), and section 6 of the Fryingpan-Arkansas Project Act (76 Stat. 393).

43 USC 615ww

43 USC 616c.

43 USC 1597

SEC. 207. Except as provided in section 205(b) and 205(d) of this title, with respect to the Colorado River Basin Project Act and the Colorado River Storage Project Act, respectively, nothing in this title shall be construed to alter, amend, repeal, modify, interpret, or be in conflict with the provisions of the Colorado River Compact (45 Stat. 1057), the Upper Colorado River Basin Compact (63 Stat. 31), the Water Treaty of 1944 with the United Mexican States (Treaty Series 994; 59 Stat. 1219), the decree entered by the Supreme Court of the United States in Arizona against California and others (376 U.S. 340), the Boulder Canyon Project Act (45 Stat. 1057), Boulder Canyon Project Adjustment Act (54 Stat. 774; 43 U.S.C. 618a), section 15 of the Colorado River Storage Project Act (70 Stat. 111; 43 U.S.C. 620n), the Colorado River Basin Project Act (82 Stat. 885), section 6 of the Fryingpan-Arkansas Project Act (76 Stat. 393), section 15 of the Navajo Indian irrigation project and initial stage of the San Juan-Chama Project Act (76 Stat. 102), the National Environmental Policy Act of 1969, and the Federal Water Pollution Control Act, as amended.

43 USC 1501 note.

42 USC 4321 note.

33 USC 1251 note.

SEC. 208. (a) The Secretary is authorized to provide for modifications of the projects authorized by this title as determined to be appropriate for purposes of meeting the objective of this title. No funds for any such modification shall be expended until the expiration of sixty days after the proposed modification has been submitted to appropriate committees of the Congress, and not then if disapproved by said committees, except that funds may be expended prior to the expiration of such sixty days in any case in which the Congress approves an earlier date by concurrent resolution. The Governors of the Colorado River Basin States shall be notified of these changes.

(b) The Secretary is hereby authorized to enter into contracts that he deems necessary to carry out the provisions of this title, in advance of the appropriation of funds therefor. There is hereby authorized to be appropriated the sum of \$125,100,000 for the construction of the works and for other purposes authorized in section 202 of this title, based on April 1973 prices, plus or minus such amounts as may be justified by reason of ordinary fluctuations in costs involved therein, and such sums as may be required to operate and maintain such works. There is further authorized to be appropriated such sums as may be necessary to pay condemnation awards in excess of appraised values and to cover costs required in connection with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 90-646).

SEC. 209. As used in this title—

(a) all terms that are defined in the Colorado River Compact shall have the meanings therein defined;

(b) "Colorado River Basin States" means the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming.

Approved June 24, 1974.

Public Law 93-321

Project modifications.  
Funds, expenditure.  
43 USC 1598.

Contract authority.

Appropriation

42 USC 4601  
note.  
43 USC 1599.

"Colorado River Basin States."

**Appendix C**

Nevada Division of Environmental Protection Authorization to Discharge (Permit No. NEV2003504) issued to Clark County Parks and Recreation (referred to in the permit as Clark County Parks and Community Services)

**Nevada Division of Environmental Protection**

**AUTHORIZATION TO DISCHARGE**

In compliance with Chapter 445A of the Nevada Revised Statutes,

Clark County Parks and Community Services  
2601 East Sunset Road  
Las Vegas, NV 89120

is authorized to manage and use tertiary treated, filtered and disinfected effluent supplied by the Clark County Water Reclamation Facility (NV0021261) as a supplemental water supply either as sole use or blended with Monson Channel water for wetlands enhancement, and as irrigation of native plant materials at the:

Clark County Wetlands Park Nature Preserve I  
7050 East Tropicana Avenue  
Las Vegas, Clark County, Nevada 89122

Longitude: 115° 03'W, Latitude: 36° 03'N  
Township 21 South, Range 62 East, SW1/4 Section 23 MDB&M

to receiving waters named

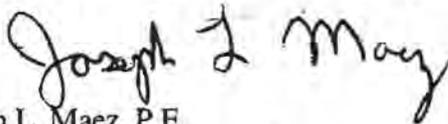
groundwaters of the State via effluent reuse in a flow through wetlands

in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Part I, II and III hereof.

This permit shall become effective on June 16, 2009.

This permit and the authorization to discharge shall expire at midnight, June 16, 2014.

Signed this 15 day of June, 2009.



Joseph L. Maez, P.E.  
Bureau of Water Pollution Control



**PART I**

**Introduction:** The Clark County Wetlands Park Nature Preserve (Preserve) is approximately a 130 acre facility composed of open water ponds, connecting waterways, irrigated wetlands with emergent vegetation, riparian scrub, and wet meadow species and upland areas with woody species/shrubs/trees. The Preserve will be supplied with reuse water delivered via a 24" pipeline from the Clark County Water Reclamation Facility (CCWRF) to the lined riprap mixing basin at the north end of the Preserve where it is blended with channel flows directed into the basin from the Monson storm water channel which borders the Preserve on the North. The Preserve is located at the eastern terminus of E. Tropicana Avenue near the Las Vegas Wash, in Las Vegas, Nevada. Reuse (blended water) irrigation is conducted via spray irrigation on a small grassed area at the Visitor's Center, via drip irrigation on upland species; direct supplemental irrigation may be implemented on an as needed basis is allowed if Monson water quality is temporarily too poor to use due to storm activity. Blended water is also used for wetland enhancement via a gravity flow through system of ponds and channels in the Preserve.

Reclaimed water is supplied by the Clark County Water Reclamation Facility and effluent meets Category B quality (NAC 445A.276); it is partially denitrified.

**I.A. EFFLUENT LIMITATIONS, MONITORING REQUIREMENTS AND CONDITIONS**

- I.A.1. During the period beginning on the effective date of this permit, and lasting until the permit expires, the Permittee is authorized to discharge tertiary treated disinfected wastewater effluent supplied by CCWRF (Permit #NV0021261) which is blended with Monson Channel water for wetlands enhancement and site irrigation of desert native plant species at the Preserve.
- I.A.2. Samples taken in compliance with the monitoring requirements specified below shall be collected 1.) prior to effluent discharge from CCWRF for fecal coliform; 2.) Flow from the inflow meter; and 3.) Samples for other parameters shall be collected at the designated sampling points (NP-1, NP-4, NP-6, NP-8, and DU-1). The quality of the product used by the Permittee may be reported as calculated values based on the blend of treated effluent and Monson Channel water. The irrigation discharge shall be limited and monitored as specified below:

**TABLE I.1: Discharge Limitations**

<b><u>PARAMETERS</u></b>	<b><u>EFFLUENT DISCHARGE LIMITATIONS</u></b>		<b><u>MONITORING REQUIREMENTS</u></b>	
	<b>30 Day Ave.</b>	<b>Daily Max.</b>	<b>Measurement Frequency</b>	<b>Sample Type</b>
Flow:	M & R MGD	5.0 MGD	Continuous	Flow meter
Fecal Coliform <sup>1</sup> :	2.2 CFU or MPN/100 ml	23 CFU or MPN/100 ml	Weekly	Grab

<sup>1</sup> This data to be provided by the Clark County Water Reclamation Facility and given to the permittee.

### Blended Water Quality Sampling

Site	Parameters	Limits	Frequency	Sample Type
NP-1:	TDS, Chlorides, Sulfates, Nitrate as Nitrogen - (mg/l)	M & R	Monthly	Grab
	Fecal Coliform – MPN/CFU			
NP-4:	TDS, Chlorides, Sulfates, Nitrate as Nitrogen - (mg/l)	M & R	Monthly	Grab
	Fecal Coliform – MPN/CFU			
NP-6:	TDS, Chlorides, Sulfates, Nitrate as Nitrogen - (mg/l)	M & R	Monthly	Grab
	Fecal Coliform – MPN/CFU			
NP-8:	TDS, Chlorides, Sulfates, Nitrate as Nitrogen - (mg/l)	M & R	Monthly	Grab
	Fecal Coliform – MPN/CFU			

- I.A.3. Flow shall be measured by the Permittee at the flow meter in the reuse supply pipeline.
- I.A.4. Effluent monitoring requirements shall be satisfied by data collected by the supplier, CCWRF. Blended water quality samples shall be collected and managed by UNLV for the Clark County Wetlands Park Preserve (Preserve) staff and reported with other monitoring data on Discharge Monitoring Reports (DMR's) which shall be submitted by the Permittee. Copies of the backup data or any water quality calculation summaries shall be maintained onsite at the Preserve for inspection by the Division upon request.
- I.A.5. There shall be no discharge of substances that would cause a violation of water quality standards of the State of Nevada.
- I.A.6. The Permittee shall remit an annual review and services fee in accordance with NAC 445A.232 starting **July 1, 2009** and every year thereafter until the permit is terminated.
- I.A.7. The DMRs must be signed by the facility's highest ranking officer, or the person in responsible charge for operating the facility. The first DMR submitted under this permit must include the written designation of the officer (required by Part III A.2) as the authorized representative to sign the DMRs. If the officer in responsible charge changes, a new designation letter must be submitted.

**I.A. 8 Narrative Standards:** Per Nevada Administrative Code (NAC) 445A.121, discharges shall not cause the following standards to be violated in any surface waters of the State. Waters must be free from:

- a. Substances that will settle to form sludge or bottom deposits in amounts sufficient to be unsightly, putrescent, or odorous;
- b. Floating debris, oil, grease, scum, and other floating materials in amounts sufficient to be unsightly;
- c. Materials in amounts sufficient to produce taste or odor in the water, detectable off-flavor in the flesh of fish, or in amounts sufficient to change the existing color, turbidity, or other conditions in the receiving stream to such a degree as to create a public nuisance;
- d. High temperature; biocides; organisms pathogenic to human beings; or toxic, corrosive, or other deleterious substances at levels or combinations sufficient to be toxic to human, animal, plant, or aquatic life;
- e. Radioactive materials resulting in accumulations of radioactivity in plants or animals hazardous or harmful to humans or aquatic life;
- f. Untreated or uncontrolled wastes or effluents that are reasonably amenable to treatment or control; and
- g. Substances or conditions which interfere with the beneficial use of the receiving waters.

Narrative standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of high or low flow. Where effluents are discharged to such waters, the discharges are not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained.

## **I.B. WATER MANAGEMENT**

- I.B.1. The irrigation reuse and blended water distribution facilities shall be operated in accordance with the Water Management and Monitoring Plan (WM&MP). The W&MMP shall contain the information required to comply with this permit. Any changes to this plan shall be provided to NDEP for review and approval.
- I.B.2. The Permittee shall provide a copy of a brief document describing the possible hazards and proper hygiene of working with and around treated wastewater to all Preserve personnel. The document shall be printed in any language appropriate to staff. Copies shall be included in the WM&MP.
- I.B.3. The WM&MP shall detail the procedures for collecting all monitoring samples required by this permit.

- I.B.4. The supplemental reuse irrigation and wetlands enhancement shall not cause objectionable odors at the Preserve.
- I.B.5. The water management and monitoring for the wetlands enhancement and ancillary irrigation shall be conducted in accordance with the WM&MP. **All design changes, water management, or irrigation plans shall be approved by the Division.**
- I.B.6. Spray irrigation shall be conducted in accordance with management practices which minimize aerosol drift of treated effluent (NAC 445A.2754) as practicable.
- I.B.7. The Preserve ponds and waterways shall be posted with conspicuous warning signs clearly stating that the waters contain a mix of reclaimed water and to avoid contact.
- I.B.8. Drinking water fountains shall be covered during any effluent spray irrigation.
- I.B.9. The Permittee shall provide appropriate identification for spray irrigation systems or hand lines dedicated for reuse water. All components shall be properly marked (purple color, signage, tags etc.) and have no potential for cross-connection with any potable sources. This should be described in the W&MMP. This documentation shall be received prior to effluent reuse/irrigation.

#### **I.C. SCHEDULE OF COMPLIANCE**

- I.C.1. The Permittee shall implement and comply with the provisions of the following schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications which the Administrator may make in approving the Schedule of Compliance.
  - a. The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.

#### **I.D. MONITORING AND REPORTING**

- I.D.1. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. Analysis shall be performed by a State of Nevada certified laboratory. Results from this lab must accompany the Discharge Monitoring Report.
- I.D.2. **Reporting**
  - a. Annual Report
    - i. The fourth quarter report shall contain a plot of the date (x-axis) versus concentration (y-axis) for each analyzed constituent. The plot shall include data from the preceding five years, if available.

Any data point from the current year that is greater than the limits in Part I.A. must be explained by a narrative.

ii. The fourth quarter report shall contain any data required to be collected annually.

b. Quarterly Report

Monitoring results obtained during the previous three (3) months shall be summarized for each month and reported quarterly on a Discharge Monitoring Report (DMR) Form received in this office no later than the 28th day of the month following the end of each quarter. The first report is due on July 28, 2009. An original signed copy of these, and all other reports required herein, shall be submitted to the State at the following address:

Division of Environmental Protection  
Bureau of Water Pollution Control  
ATTN: Compliance Coordinator  
901 South Stewart, Suite 4001  
Carson City, Nevada 89701

**LD.3. Definitions**

- a. The "30-day average discharge" means the total discharge during a month divided by the number of samples in the period that the facility was discharging. Where less than daily sampling is required by this permit, the 30-day average discharge shall be determined by the summation of all the measured discharges divided by the number of samples during the period when the measurements were made.
- b. The "daily maximum" is the highest measurement during the monitoring period.
- c. The "30-day average concentration", other than for coliform bacteria, means the arithmetic mean of measurements made during a month. The "30-day average concentration" for coliform bacteria means the geometric mean of measurements made during a month. The geometric mean is the "n<sup>th</sup>" root of the product of "n" numbers. Geometric mean calculations where there are non-detect results for coliform shall use one-half the detection limit as the value for the non-detect results.
- d. A "discrete" sample means any individual sample collected in less than 15 minutes.
- e. For flow-rate measurements a "composite" sample means the arithmetic mean of no fewer than six individual measurements taken at equal time intervals for 24 hours, or for the duration of discharge, whichever is shorter.

For other than flow-rate a "composite" sample means a combination of no fewer than six individual flow-weighted samples obtained at equal time intervals for 24 hours, or for the duration of discharge, whichever is shorter. Flow-weighted sample means that the volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling.

- f. "cfu" means colony forming units.

**I.D.4. Test Procedures**

Test procedures for the analysis of pollutants shall conform to regulations (40 CFR, Part 136) published pursuant to Section 304(h) of the Act, under which such procedures may be required unless other procedures are approved by the Division.

**I.D.5. Recording the Results**

For each measurement or sample taken pursuant to the requirements of this permit, the Permittee shall record and maintain at the facility, the following information:

- a. the exact place, date, and time of sampling;
- b. the dates the analyses were performed;
- c. the person(s) who performed the analyses;
- d. the analytical techniques or methods used; and
- e. the results of all required analyses, including reporting limits.

**I.D.6. Additional Monitoring by Permittee**

If the Permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall also be indicated.

**I.D.7. Records Retention**

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years, or longer if required by the Administrator.

**I.D.8. Modification of Monitoring Frequency and Sample Type**

After considering monitoring data, stream flow, discharge flow and receiving water conditions, the Division, may for just cause, modify the monitoring frequency and/or sample type by issuing an order to the Permittee.

**I.D.9. Laboratory Reporting Limits**

All laboratory analysis conducted in accordance with this discharge permit must have detection at or below the permit limits. Test Procedures: Analyses shall be conducted by a State of Nevada certified laboratory using an approved method of testing, as defined in NAC 445A.0564 and NAC 445A.0562, respectively.

Reporting Limits: Unless otherwise allowed by the Division, the approved method of testing selected for analyses, shall have a reporting limit which is:

- i. Half or less the discharge limit; or, if there is no limit,
- ii. Half or less the applicable water quality criteria; or, if there is no limit or criteria,
- iii. The lowest reasonably obtainable using an approved test method.

**PART II****II.A. MANAGEMENT REQUIREMENTS****II.A.1. Change in Discharge**

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, or treatment modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Any changes to the permitted treatment facility must comply with Nevada Administrative Code NAC 445A.283 to 445A.285. Pursuant to NAC 445A.263, the permit may be modified to specify and limit any pollutants not previously limited.

**II.A.2. Facilities Operation**

The Permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities, collection systems or pump stations installed or used by the Permittee to achieve compliance with the terms and conditions of this permit.

### II.A.3. **Adverse Impact**

The Permittee shall take all reasonable steps to minimize any adverse impact to receiving waters resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

### II.A.4. **Noncompliance, Unauthorized Discharge, Bypassing and Upset**

- a. Any diversion, bypass, spill, overflow or discharge of treated or untreated wastewater from wastewater treatment or conveyance facilities under the control of the Permittee is prohibited except as authorized by this permit. In the event the Permittee has knowledge that a diversion, bypass, spill, overflow or discharge not authorized by this permit is probable, the Permittee shall notify the Division immediately.
- b. The Permittee shall notify the Division within twenty-four (24) hours of any diversion, bypass, spill, upset, overflow or release of treated or untreated discharge other than that which is authorized by the permit. A written report shall be submitted to the Administrator within five (5) days of diversion, bypass, spill, overflow, upset or discharge, detailing the entire incident including:
  - i. time and date of discharge;
  - ii. exact location and estimated amount of discharge;
  - iii. flow path and any bodies of water which the discharge reached;
  - iv. the specific cause of the discharge; and
  - v. the preventive and/or corrective actions taken.
- c. The following shall be included as information which must be reported within 24 hours: any unanticipated bypass which exceeds any effluent limitation in the permit; any upset which exceeds any effluent limitation in the permit; and violation of a limitation for any toxic pollutant or any pollutant identified as the method to control a toxic pollutant.
- d. The Permittee shall report all instances of noncompliance not reported under Part II.A.4.b. at the time monitoring reports are submitted. The reports shall contain the information listed in Part II.A.4.b.
- e. An "upset" means an incident in which there is unintentional and temporary noncompliance with the permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

- f. In selecting the appropriate enforcement option, the Division shall consider whether or not the noncompliance was the result of an upset.
- g. The burden of proof is on the Permittee to establish that an upset occurred. In order to establish that an upset occurred, the Permittee must provide, in addition to the information required under paragraph II.A.4.b. above, properly signed contemporaneous logs or other documentary evidence that:
  - i. The facility was at the time being properly operated as required in paragraph II.A.2. above;
  - ii. All reasonable steps were taken to minimize adverse impacts as required by paragraph II.A.3 above.

#### **II.A.5. Removed Substances**

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of waste waters shall be disposed of in a manner such as to prevent any pollution from such materials from entering any navigable waters.

#### **II.A.6. Safeguards to Electric Power Failure**

In order to maintain compliance with the effluent limitations and prohibitions of this permit the Permittee shall either:

- a. provide at the time of discharge an alternative power source sufficient to operate the wastewater control facilities;
- b. halt or reduce all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

### **II.B. RESPONSIBILITIES**

#### **II.B.1. Right of Entry**

The Permittee shall allow the Administrator and/or his authorized representatives, upon the presentation of credentials:

- a. to enter upon the Permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and

- b. at reasonable times, to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to perform any necessary sampling to determine compliance with this permit or to sample any discharge.

#### **II.B.2. Transfer of Ownership or Control**

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the Permittee shall notify the succeeding owner or controller of the existence of this permit, by letter, a copy of which shall be forwarded to the Administrator.

ALL transfer of permits shall be approved by the Division.

#### **II.B.3. Availability of Reports**

Except for data determined to be confidential under NRS 445A.665, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of the Division. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in NRS 445A.710.

#### **II.B.4. Furnishing False Information and Tampering with Monitoring Devices**

Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained by the provisions of NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, or who falsifies, tampers with or knowingly renders inaccurate any monitoring device or method required to be maintained under the provisions of NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, is guilty of a gross misdemeanor and shall be punished by a fine of not more than \$10,000 or by imprisonment. This penalty is in addition to any other penalties, civil or criminal, provided pursuant to NRS 445A.300 to 445A.730, inclusive.

#### **II.B.5. Penalty for Violation of Permit Conditions**

Nevada Revised Statutes NRS 445A.675 provides that any person who violates a permit condition is subject to administrative and judicial sanctions as outlined in NRS 445A.690 through 445A.705.

**II.B.6. Permit Modification, Suspension or Revocation**

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. violation of any terms or conditions of this permit;
- b. obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
- c. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

**II.B.7. Toxic Pollutants**

Notwithstanding Part II.B.6. above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the Permittee so notified.

**II.B.8. Liability**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable Federal, State or local laws, regulations, or ordinances.

**II.B.9. Property Rights**

The issuance of this permit does not convey any property rights, in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

**II.B.10. Severability**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provisions of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

**PART III****III.A. OTHER REQUIREMENTS****III.A.1. Reapplication**

If the Permittee desires to continue to discharge, he shall reapply not later than 180 days before this permit expires on the application forms then in use. The Permittee shall submit the reapplication fee required by NAC 445A.232 with the application.

**III.A.2. Signatures Required on Application and Reporting Forms.**

- a. Application and reporting forms submitted to the department must be signed by one of the following:
  - i. A principal executive officer of the corporation (of at least the level of Vice President) or his/her authorized representative who is responsible for the overall operation of the facility from which the discharge described in the application or reporting form originates;
  - ii. A general partner of the partnership;
  - iii. The proprietor of the sole proprietorship; or
  - iv. A principal executive officer, ranking elected official or other authorized employee of the municipal, state or other public facility.
- b. Each application must contain a certification by the person signing the application that he is familiar with the information provided, that to the best of his knowledge and belief the information is complete and accurate and that he has the authority to sign and execute the application.
- c. **Changes to Authorization.** If an authorization under this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this section must be submitted to the Division prior to or together with any reports, information, or applications to be signed by an authorized representative.

**Appendix D**

Nevada Division of Environmental Protection Authorization to Discharge (Permit No. NEV2003514) issued to Clark County Parks and Recreation (referred to in the permit as Clark County Parks and Community Services)

**Nevada Division of Environmental Protection**

**AUTHORIZATION TO DISCHARGE**

In compliance with Chapter 445A of the Nevada Revised Statutes,

Clark County Parks and Community Services  
2601 East Sunset Road  
Las Vegas, NV 89120

is authorized to irrigate with tertiary treated, filtered, and disinfected effluent supplied by the Clark County Water Reclamation Facility (NV0021261) at three sites of the Clark County Wetlands Park Nature Preserve II for irrigation of native plant materials and wetland species at the:

Clark County Wetlands Park Nature Preserve II  
7050 Wetlands Park Lane (off of East Tropicana Avenue)  
Las Vegas, Clark County, Nevada 89122

Longitude: 115° 01' 03"W; Latitude: 36° 06' 03"N

**Nature Preserve Park West (001):** W1/2 SW1/4 Section 23  
**Duck Creek Trailhead (002):** SE1/4 NW1/4 Section 26  
**Sunrise Trailhead (003):** SW1/4 NW1/4 Section 24

Township 21 South, Range 62 East MDB&M

to receiving waters named

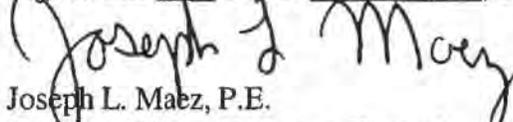
Ground waters of the State via effluent reuse

in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Part I, II and III hereof.

This permit shall become effective on June 16, 2009.

This permit and the authorization to discharge shall expire at midnight, June 16, 2014.

Signed this 15 day of June, 2009.

  
Joseph L. Maez, P.E.  
Bureau of Water Pollution Control



**PART I**

**Introduction:** The Clark County Wetlands Park Nature Preserve (Preserve II) includes the three areas cited on page one which propose to use tertiary treated effluent for irrigation of desert plant species and wetland plant materials. The three irrigated areas cover a total area of about 75 acres. The Preserve II areas will be supplied with treated effluent delivered via the Silver Bowl effluent pipeline and the AWT pipeline from the Clark County Water Reclamation Facility (CCWRF). The Preserve II portion of the Wetland Park facility is located near the eastern terminus of E. Tropicana Avenue in Las Vegas, Nevada. The Nature Preserve West (001) borders the main Wetlands Park Nature Preserve on the west; the Duck Creek Trailhead (002) lies about a half mile southeast of the Nature Preserve West, with access on the east side of Broadbent Blvd. Sunrise Trailhead (003) is about 3000 feet southeast of the Clark County Water Reclamation Facility AWT plant, off of Hollywood Blvd. Reuse irrigation is conducted via drip and minor spray irrigation along the trails and on small grassed common areas.

Reclaimed water is supplied by the Clark County Water Reclamation Facility and effluent meets Category B quality (NAC 445A.276) and is partially denitrified. (15 mg/l Total N).

**I.A. EFFLUENT LIMITATIONS, MONITORING REQUIREMENTS AND CONDITIONS**

I.A.1. During the period beginning on the effective date of this permit, and lasting until the permit expires, the Permittee is authorized to discharge tertiary treated disinfected wastewater effluent supplied by CCWRF (Permit #NV0021261) for wetlands enhancement and irrigation at approved sites at the Preserve II facilities.

I.A.2. Samples taken in compliance with the monitoring requirements specified below shall be collected prior to effluent discharge from CCWRF and flow shall be recorded from the meter vaults of each site. The irrigation discharges shall be limited and monitored as specified below:

**TABLE I.1: Discharge Limitations**

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS</u>		<u>MONITORING REQUIREMENTS</u>		
	<b>Annual Average</b>	<b>Daily Maximum</b>	<b>Sample Location</b>	<b>Measurement Frequency</b>	<b>Sample Type</b>
Flow Rate (MGD)	330 Acre-Ft	0.581 MGD <sup>1</sup>	001	Continuously	Calculate and Meter <sup>1</sup>
	160 Acre-Ft		002		
	160 Acre-Ft		003		
Fecal Coliform	2.2 CFU or MPN/100 ml	23 CFU or MPN/100 ml	CCWRD <sup>2</sup>	Weekly	Discrete

M & R = Monitor & Report; CFU = Colony Forming Unit; MPN = Most Probable Number

<sup>1</sup> Daily flow limit shall be recorded from main flow meter

<sup>2</sup> The sample results from CCWRD can be used for this parameter.

- I.A.3. Flow shall be measured by the Permittee at the flow meter in each meter vault at the connection with the reuse supply pipeline and reported on the quarterly discharge monitoring report (DMR).
- I.A.4. Effluent monitoring requirements shall be satisfied by data collected by the supplier, CCWRF. Reports shall be submitted by the Permittee.
- I.A.5. There shall be no discharge of substances that would cause a violation of water quality standards of the State of Nevada.
- I.A.6 **Narrative Standards:** Per Nevada Administrative Code (NAC) 445A.121, discharges shall not cause the following standards to be violated in any surface waters of the State. Waters must be free from:
- a. Substances that will settle to form sludge or bottom deposits in amounts sufficient to be unsightly, putrescent, or odorous;
  - b. Floating debris, oil, grease, scum, and other floating materials in amounts sufficient to be unsightly;
  - c. Materials in amounts sufficient to produce taste or odor in the water, detectable off-flavor in the flesh of fish, or in amounts sufficient to change the existing color, turbidity, or other conditions in the receiving stream to such a degree as to create a public nuisance;
  - d. High temperature; biocides; organisms pathogenic to human beings; or toxic, corrosive, or other deleterious substances at levels or combinations sufficient to be toxic to human, animal, plant, or aquatic life;
  - e. Radioactive materials resulting in accumulations of radioactivity in plants or animals hazardous or harmful to humans or aquatic life;
  - f. Untreated or uncontrolled wastes or effluents that are reasonably amenable to treatment or control; and
  - g. Substances or conditions which interfere with the beneficial use of the receiving waters.

Narrative standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of high or low flow. Where effluents are discharged to such waters, the discharges are not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained.

- I.A.7. The Permittee shall remit an annual review and services fee in accordance with NAC 445A.232 starting **July 1, 2009** and every year thereafter until the permit is terminated.

I.A.8. The DMRs must be signed by the facility's highest ranking officer, or the person in responsible charge for operating the facility. The first DMR submitted under this permit must include the written designation of the officer (required by Part III A.2) as the authorized representative to sign the DMRs. If the officer in responsible charge changes, a new designation letter must be submitted to the Division.

**I.B. Effluent Reuse**

- I.B.1. The irrigation reuse water distribution facilities shall be operated in accordance with the approved Effluent Management Plan (EMP). The EMP shall contain the information required to comply with this permit. No operational changes on the use of treated effluent or expansion of the reuse area can commence until the plans are approved by NDEP.
- I.B.2. The Permittee shall provide a copy of a brief document describing the possible hazards and proper hygiene of working with and around treated wastewater to all preserve personnel. The document shall be printed in any language appropriate to staff. Copies shall be included in the EMP.
- I.B.3. The EMP shall detail the procedures for collecting all monitoring samples required by this permit.
- I.B.4. The reuse irrigation shall not cause objectionable odors at the Preserve facilities.
- I.B.5. The reuse irrigation shall be conducted in accordance with the EMP. All design changes, water management, or irrigation plans shall be approved by the Division.
- I.B.6. Spray irrigation shall be conducted in accordance with management practices which minimize aerosol drift of treated effluent (NAC 445A.2754) as practicable.
- I.B.7. The Preserve Trails and common areas shall be posted with conspicuous warning signs clearly stating that reuse water is used, and to avoid contact.
- I.B.8. Drinking water fountains shall be covered during any effluent spray irrigation.
- I.B.9. Run-off of effluent from the wetlands area is prohibited (NAC 445A.2754).
- I.B.10. The Permittee shall provide appropriate identification for spray irrigation systems or hand lines dedicated for reuse water. All components shall be properly marked (purple color, signage, tags etc.) and have no potential for cross-connection with any potable sources. This should be described the EMP. This documentation shall be received prior to effluent reuse irrigation.

**I.C. SCHEDULE OF COMPLIANCE**

- I.C.1. The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.
- I.C.2. The Permittee shall implement and comply with the provisions of the following schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications which the Administrator may make in approving the Schedule of Compliance.

**I.D. MONITORING AND REPORTING**

- I.D.1. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. Analysis shall be performed by a State of Nevada certified laboratory. Results from this lab must accompany the Discharge Monitoring Report.
- I.D.2. **Reporting**

a. Annual Report

- i. The fourth quarter DMR report shall contain a plot of the date (x-axis) versus concentration (y axis) for fecal coliform. The plot shall include data from the preceding five years, if available. Any data point from the current year that is greater than the limits in Part I.A. must be explained by a narrative.
- ii. The fourth quarter report shall contain any data required to be collected annually.

b. Quarterly Report

Monitoring results obtained during the previous three (3) months shall be summarized for each month and reported quarterly on a Discharge Monitoring Report (DMR) form received in this office no later than the 28th day of the month following the end of each quarter. The first report is due on July 28, 2009. An original signed copy of these, and all other reports required herein, shall be submitted to the State at the following address:

Division of Environmental Protection  
Bureau of Water Pollution Control  
ATTN: Compliance Coordinator-MS. Diana Silsby  
901 South Stewart Street, Suite 4001  
Carson City, Nevada 89701

### I.D.3. Definitions

- a. The "30-day average discharge" means the total discharge during a month divided by the number of samples in the period that the facility was discharging. Where less than daily sampling is required by this permit, the 30-day average discharge shall be determined by the summation of all the measured discharges divided by the number of samples during the period when the measurements were made.
- b. The "daily maximum" is the highest measurement during the monitoring period.
- c. The "30-day average concentration", other than for coliform bacteria, means the arithmetic mean of measurements made during a month. The "30-day average concentration" for coliform bacteria means the geometric mean of measurements made during a month. The geometric mean is the " $n^{\text{th}}$ " root of the product of " $n$ " numbers. Geometric mean calculations where there are non-detect results for coliform shall use one-half the detection limit as the value for the non-detect results.
- d. A "discrete" sample means any individual sample collected in less than 15 minutes.
- e. For flow-rate measurements a "composite" sample means the arithmetic mean of no fewer than six individual measurements taken at equal time intervals for 24 hours, or for the duration of discharge, whichever is shorter.  
  
For other than flow-rate a "composite" sample means a combination of no fewer than six individual flow-weighted samples obtained at equal time intervals for 24 hours, or for the duration of discharge, whichever is shorter. Flow-weighted sample means that the volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling.
- f. "cfu" means colony forming units.

### I.D.4. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations (40 CFR, Part 136) published pursuant to Section 304(h) of the Act, under which such procedures may be required unless other procedures are approved by the Division.

**I.D.5. Recording the Results**

For each measurement or sample taken pursuant to the requirements of this permit, the Permittee shall record and maintain at the facility, the following information:

- a. the exact place, date, and time of sampling;
- b. the dates the analyses were performed;
- c. the person(s) who performed the analyses;
- d. the analytical techniques or methods used; and
- e. the results of all required analyses, including reporting limits.

**I.D.6. Additional Monitoring by Permittee**

If the Permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall also be indicated.

**I.D.7. Records Retention**

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years, or longer if required by the Administrator.

**I.D.8. Modification of Monitoring Frequency and Sample Type**

After considering monitoring data, stream flow, discharge flow and receiving water conditions, the Division, may for just cause, modify the monitoring frequency and/or sample type by issuing an order to the Permittee.

**I.D.9. Laboratory Reporting Limits**

All laboratory analysis conducted in accordance with this discharge permit must have detection at or below the permit limits. Test Procedures: Analyses shall be conducted by a State of Nevada certified laboratory using an approved method of testing, as defined in NAC 445A.0564 and NAC 445A.0562, respectively.

Reporting Limits: Unless otherwise allowed by the Division, the approved method of testing selected for analyses, shall have a reporting limit which is:

- i. Half or less the discharge limit; or, if there is no limit,
- ii. Half or less the applicable water quality criteria; or, if there is no limit or criteria,
- iii. The lowest reasonably obtainable using an approved test method.

## **PART II**

### **II.A. MANAGEMENT REQUIREMENTS**

#### **II.A.1. Change in Discharge**

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, or treatment modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Any changes to the permitted treatment facility must comply with Nevada Administrative Code NAC 445A.283 to 445A.285. Pursuant to NAC 445A.263, the permit may be modified to specify and limit any pollutants not previously limited.

#### **II.A.2. Facilities Operation**

The Permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities, collection systems or pump stations installed or used by the Permittee to achieve compliance with the terms and conditions of this permit.

#### **II.A.3. Adverse Impact**

The Permittee shall take all reasonable steps to minimize any adverse impact to receiving waters resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

#### **II.A.4. Noncompliance, Unauthorized Discharge, Bypassing and Upset**

- a. Any diversion, bypass, spill, overflow or discharge of treated or untreated wastewater from wastewater treatment or conveyance facilities under the control of the Permittee is prohibited except as authorized by this permit. In the event the Permittee has knowledge that a diversion, bypass, spill, overflow or discharge not authorized by this permit is probable, the Permittee shall notify the Division immediately.

- b. The Permittee shall notify the Division within twenty-four (24) hours of any diversion, bypass, spill, upset, overflow or release of treated or untreated discharge other than that which is authorized by the permit. A written report shall be submitted to the Administrator within five (5) days of diversion, bypass, spill, overflow, upset or discharge, detailing the entire incident including:
- i. time and date of discharge;
  - ii. exact location and estimated amount of discharge;
  - iii. flow path and any bodies of water which the discharge reached;
  - iv. the specific cause of the discharge; and
  - v. the preventive and/or corrective actions taken.
- c. The following shall be included as information which must be reported within 24 hours: any unanticipated bypass which exceeds any effluent limitation in the permit; any upset which exceeds any effluent limitation in the permit; and violation of a limitation for any toxic pollutant or any pollutant identified as the method to control a toxic pollutant.
- d. The Permittee shall report all instances of noncompliance not reported under Part II.A.4.b. at the time monitoring reports are submitted. The reports shall contain the information listed in Part II.A.4.b.
- e. An "upset" means an incident in which there is unintentional and temporary noncompliance with the permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- f. In selecting the appropriate enforcement option, the Division shall consider whether or not the noncompliance was the result of an upset.
- g. The burden of proof is on the Permittee to establish that an upset occurred. In order to establish that an upset occurred, the Permittee must provide, in addition to the information required under paragraph II.A.4.b. above, properly signed contemporaneous logs or other documentary evidence that:
- i. The facility was at the time being properly operated as required in paragraph II.A.2. above;
  - ii. All reasonable steps were taken to minimize adverse impacts as required by paragraph II.A.3. above.

**II.A.5. Removed Substances**

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of waste waters shall be disposed of in a manner such as to prevent any pollution from such materials from entering any navigable waters.

**II.A.6. Safeguards to Electric Power Failure**

In order to maintain compliance with the effluent limitations and prohibitions of this permit the Permittee shall either:

- a. provide at the time of discharge an alternative power source sufficient to operate the wastewater control facilities;
- b. halt or reduce all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

**II.B. RESPONSIBILITIES****II.B.1. Right of Entry**

The Permittee shall allow the Administrator and/or his authorized representatives, upon the presentation of credentials:

- a. to enter upon the Permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and
- b. at reasonable times, to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to perform any necessary sampling to determine compliance with this permit or to sample any discharge.

**II.B.2. Transfer of Ownership or Control**

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the Permittee shall notify the succeeding owner or controller of the existence of this permit, by letter, a copy of which shall be forwarded to the Administrator. ued

ALL transfer of permits shall be approved by the Division.

**II.B.3. Availability of Reports**

Except for data determined to be confidential under NRS 445A.665, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of the Division. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in NRS 445A.710.

**II.B.4. Furnishing False Information and Tampering with Monitoring Devices**

Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained by the provisions of NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, or who falsifies, tampers with or knowingly renders inaccurate any monitoring device or method required to be maintained under the provisions of NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, is guilty of a gross misdemeanor and shall be punished by a fine of not more than \$10,000 or by imprisonment. This penalty is in addition to any other penalties, civil or criminal, provided pursuant to NRS 445A.300 to 445A.730, inclusive.

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After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. violation of any terms or conditions of this permit;
- b. obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
- c. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

**II.B.7. Toxic Pollutants**

Notwithstanding Part II.B.6. above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the Permittee so notified.

**II.B.8. Liability**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable Federal, State or local laws, regulations, or ordinances.

**II.B.9. Property Rights**

The issuance of this permit does not convey any property rights, in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

**II.B.10. Severability**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provisions of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

**PART III****III.A. OTHER REQUIREMENTS****III.A.1. Reapplication**

If the Permittee desires to continue to discharge, he shall reapply not later than 180 days before this permit expires on the application forms then in use. The Permittee shall submit the reapplication fee required by NAC 445A.232 with the application.

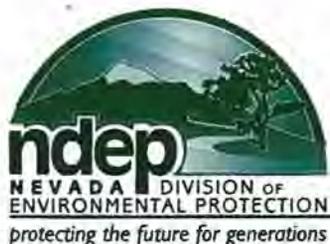
**III.A.2. Signatures Required on Application and Reporting Forms.**

- a. Application and reporting forms submitted to the department must be signed by one of the following:

- i. A principal executive officer of the corporation (of at least the level of Vice President) or his/her authorized representative who is responsible for the overall operation of the facility from which the discharge described in the application or reporting form originates;
  - ii. A general partner of the partnership;
  - iii. The proprietor of the sole proprietorship; or
  - iv. A principal executive officer, ranking elected official or other authorized employee of the municipal, state or other public facility.
- b. Each application must contain a certification by the person signing the application that he is familiar with the information provided, that to the best of his knowledge and belief the information is complete and accurate and that he has the authority to sign and execute the application.
- c. **Changes to Authorization.** If an authorization under this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this section must be submitted to the Division prior to or together with any reports, information, or applications to be signed by an authorized representative.

**Appendix E**

Nevada Division of Environmental Protection Permit (Permit No. NV0021911) for  
Authorization to Discharge from Municipal Separate Storm Sewer Systems to Waters of the  
United States under the National Pollution Discharge Eliminations System issued to the cities of  
Henderson, Las Vegas, and North Las Vegas, Clark County, and Clark County Regional Flood  
Control District



# STATE OF NEVADA

Department of Conservation & Natural Resources

DIVISION OF ENVIRONMENTAL PROTECTION

*Jim Gibbons, Governor*

*Allen Biaggi, Director*

*Leo M. Drozdoff, P.E., Administrator*

## Permit No. NV0021911

### **Permit for Authorization to Discharge from Municipal Separate Storm Sewer Systems to Waters of the United States under the National Pollutant Discharge Elimination System**

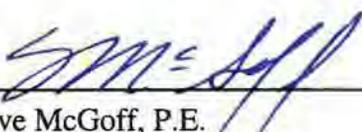
In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et. seq.), and Chapter 445A of the Nevada Revised Statutes, the following Permittees are authorized to discharge municipal stormwater runoff to the Las Vegas Wash, its tributaries, and other waters of the United States in accordance with the conditions and requirements set forth herein:

The City of Henderson, City of Las Vegas, City of North Las Vegas, Clark County and the Clark County Regional Flood Control District.

This permit becomes effective February 9, 2010.

This permit and the authorization to discharge expire at midnight February 8, 2015.

Signed and issued this 9<sup>th</sup> day of February, 2010.

  
\_\_\_\_\_  
Steve McGoff, P.E.  
Staff III Engineer  
Bureau of Water Pollution Control

## **I. Permit Area and Coverage under this Permit**

### **I.A. Permit Area**

I.A.1 This permit authorizes stormwater discharges into receiving waters of the United States within the Cities of Henderson, Las Vegas and North Las Vegas, and Clark County ("Permittees") that are located within the Las Vegas Valley. This permit does not include Boulder City, Laughlin, Mesquite, Nellis Air Force Base or portions of unincorporated Clark County that are located outside the Las Vegas Valley.

### **I.B. Permit Coverage**

I.B.1 This permit authorizes discharges of stormwater from the Permittees' municipal separate storm sewer systems ("MS4s"), as defined in 40 Code of Federal Regulations ("CFR") §122.26. The Permittees are authorized to discharge stormwater in accordance with the terms and conditions of this permit.

I.B.2 The following are types of authorized discharges:

I.B.2.a **Authorized discharges.** This permit authorizes stormwater discharges and the non-stormwater discharges identified in Part I.B.2.b to waters of the United States from the Permittees' MS4s. This permit does not allow discharges listed in Part I.B.3.

I.B.2.a.i This permit authorizes the Permittees to accept from other dischargers, to pass through their MS4s, and to discharge stormwater and non-stormwater currently covered or required to be covered under another National Pollutant Discharge Elimination System ("NPDES") permit. The permittees shall implement on those discharges into their MS4s the measures required by this permit.

I.B.2.a.ii This permit does not authorize any non-Permittees to discharge into the MS4 any stormwater or non-stormwater that requires a separate NPDES permit. Those non-Permittees must obtain their own NPDES permits to cover discharges through the Permittees' MS4s into waters of the United States.

I.B.2.b **Non-stormwater discharges.** The Permittees are authorized to accept from other dischargers without requiring BMPs or other measures, to pass through their MS4s, and to discharge the following non-stormwater sources provided that the Nevada Division of Environmental Protection ("NDEP") has not determined these sources to be substantial contributors of pollutants to the Permittees' MS4:

- I.B.2.b.i Water line flushing;
- I.B.2.b.ii Diverted stream flows;
- I.B.2.b.iii Rising ground waters;
- I.B.2.b.iv Uncontaminated groundwater infiltration (infiltration is defined as water other than wastewater that enters a sewer system, including sewer service connections and foundation drains, from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow.);
- I.B.2.b.v Discharges from potable water sources;
- I.B.2.b.vi Foundation and footing drains;
- I.B.2.b.vii Air conditioning condensate;
- I.B.2.b.viii Irrigation water for lawns and landscaping;
- I.B.2.b.ix Springs;
- I.B.2.b.x Water from crawl space pumps;
- I.B.2.b.xi Individual residential car washing;
- I.B.2.b.xii Flows from riparian habitats and wetlands;
- I.B.2.b.xiii De-chlorinated swimming pool discharges;
- I.B.2.b.xiv Street wash water, if no detergents or chemicals are used;
- I.B.2.b.xv Discharges or flows from fire fighting activities; and
- I.B.2.b.xvi Dewatering activities not requiring separate discharge permits.

**I.B.3 Non-Authorized Discharges**

- I.B.3.a This permit does not authorize the following :
  - I.B.3.a.i Discharges that do not comply with the Nevada’s anti-degradation policy for water quality standards; and
  - I.B.3.a.ii Any discharge that causes or contributes to an in-stream exceedance of water quality standards.

**II. Discharges to Water Quality Impaired Waters**

**II.A. Impaired Waters Listing on 303(d) List**

- II.A.1 Based upon the most current 303(d) list and subsequent updates, the Permittees must evaluate whether stormwater discharges from any part of the MS4 contributes directly or indirectly to the listing of a waterbody on the 303(d) list (i.e., impaired waterbody). Information concerning the most current 303(d) list can be found on the following NDEP website: [Current 303\(d\) List](#). If Permittees have discharges meeting this criterion, the Permittees must comply with Part II.B. Part II does not apply if the Permittees do not have discharges meeting this criterion.

## **II.B. Total Maximum Daily Load**

- II.B.1** If the Permittees' stormwater discharges contribute directly or indirectly to the listing of a waterbody on the 303(d) list as described above, the Permittees must also determine whether a Total Maximum Daily Load ("TMDL") has been developed and approved by NDEP for the listed waterbody. If there is a TMDL, the Permittees must comply with Part II.B.2. If no TMDL has been approved, the Permittees must then comply with Part II.B.3.
- II.B.2** If a TMDL is approved for any waterbody into which the Permittees discharge, the Permittees must:
- II.B.2.a** Determine and report whether the approved TMDL is for a pollutant likely to be found in stormwater discharges from the Permittees' MS4;
  - II.B.2.b** Determine and report whether the TMDL includes a pollutant wasteload allocation ("WLA") or other performance requirements specifically for stormwater discharge from the Permittees' MS4;
  - II.B.2.c** Determine and report whether the TMDL addresses a flow regime likely to occur during periods of stormwater discharge;
  - II.B.2.d** Assess whether the WLAs are being met through implementation of existing stormwater control measures or if additional control measures are necessary;
  - II.B.2.e** Document all control measures currently being implemented or planned to be implemented to be consistent with the WLA. Also include a schedule of implementation for all planned controls. Document the calculations or other evidence that shows that the WLA will be met;
  - II.B.2.f** Describe a monitoring program to determine whether the stormwater controls are adequate to meet the WLA; and,
  - II.B.2.g** If the evaluation shows that additional or modified controls are necessary, describe the type and schedule for the control additions/revisions, and an analysis that demonstrates the overall effectiveness.
- II.B.3** When a TMDL has not been established as described in Part II.B.2, the Permittees must include a section in the annual report describing the condition for which the water has been listed, evaluating possible Best Management Practices ("BMPs") that might practicably be implemented, examining whether these BMPs would have a substantial effect on achieving compliance, and identifying any BMPs that are selected for implementation.

- II.B.4 If appropriate, the updated SWMP shall identify additional BMPs with a schedule for implementation consistent with the WLA for phosphorus and ammonia loadings into Lake Mead and shall be submitted in accordance with Part II.B.2.

### **III. Adequate Legal Authority**

#### **III.A. Ordinance**

- III.A.1 Each of the Permittees shall have an ordinance in place that authorizes or enables each Permittee to:
- III.A.1.a Prohibit illicit discharges and illicit connections to the Permittees' MS4s;
  - III.A.1.b Control the discharge from spills, dumping or disposal of materials other than stormwater to any of the Permittees' MS4s;
  - III.A.1.c Require compliance with any condition contained in ordinances, permits, contracts or orders;
  - III.A.1.d Require structural and non-structural BMPs for erosion and sediment controls at construction sites;
  - III.A.1.e Inspect construction sites disturbing  $\geq$  one (1) acre or  $<$  one (1) acre if part of a common plan of development to ensure compliance with each Permittee's ordinance and take appropriate enforcement action as necessary;
  - III.A.1.f Inspect industrial sites that are part of each jurisdiction's inventory of industrial sites to ensure compliance with each Permittee's ordinance, and take appropriate enforcement action as necessary;
  - III.A.1.g Establish civil, administrative and criminal penalties for violations of the ordinance; and
  - III.A.1.h Carry out all inspection, surveillance, and monitoring procedures necessary to determine compliance and non-compliance with the prohibition of illicit discharges to the Permittees' MS4s.

### **IV. Stormwater Management Program**

#### **IV.A. General Requirements**

- IV.A.1 The Permittees shall continue to implement and enforce their Stormwater Management Program ("SWMP") designed to reduce the discharge of pollutants from the Permittees' MS4 to the maximum extent practicable

("MEP") to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act ("CWA");

- IV.A.2 The Permittees may partner with other MS4s in the region to develop and implement the SWMP. The description of the Permittees' SWMP must clearly describe which Permittee is responsible for implementing each of the minimum control measures ("MCMs").
- IV.A.3 The permittees shall review, revise as necessary and submit an updated SWMP to NDEP for its review and approval within eighteen (18) months of the effective date of this permit and shall implement the revised SWMP no later than two (2) years after receiving NDEP's approval;
  - IV.A.3.a Before the updated SWMP is submitted to NDEP for its review, it shall be made available for public comment at a meeting noticed in accordance with the Nevada open meeting law;
  - IV.A.3.b The Permittees shall compile any comments received as part of the process in IV.A.3.a., describe the actions taken concerning the public comments and include this information in the updated SWMP;
- IV.A.4 The updated SWMP shall present a review of legal authority to ensure adequate authority to implement the requirements of this permit and the updated SWMP. Where necessary, additional ordinances or other regulatory mechanisms shall be submitted to the governing boards and councils for their adoption.
- IV.A.5 The updated SWMP shall identify existing BMPs and any new BMPs that the Permittees or another entity will implement;
- IV.A.6 The updated SWMP shall identify the measurable goals for the new BMPs, as appropriate, including the months and years in which the Permittees will undertake required actions;
- IV.A.7 The updated SWMP shall provide information explaining how and why the Permittees selected each new BMP and measurable goals for the SWMP;
- IV.A.8 Implementation of new and existing BMPs consistent with the provisions of the SWMP as required by this permit and approved by NDEP constitutes compliance with the standard of reducing pollutants to the MEP;
- IV.A.9 The scope and coverage of the updated SWMP shall extend at least to the parts of the Las Vegas Valley which are or could reasonably be urbanized within the time covered by the permit;

- IV.A.10 The updated SWMP shall include a description of the staff and resources available to implement the program elements;
- IV.A.11 A separate updated SWMP, or one or more joint SWMPs, may be submitted by each Permittee;
- IV.A.12 The updated SWMP may impose controls on a system-wide basis, a watershed basis, a jurisdictional basis, or on individual outfalls;
- IV.A.13 The updated SWMP shall describe any new priorities for implementing MCMs and shall be based on Public Outreach and Education; Illicit Discharge and Detection; Industrial Facility Monitoring and Control; Post-Construction BMP Program for New Development and Significant Redevelopment, and a Construction Site BMP Program;
- IV.A.14 The updated SWMP shall incorporate the BMPs identified in this permit; and
- IV.A.15 Pending submittal and approval of the updated SWMP, the Permittees shall continue to implement the current SWMP and any existing BMPs.

#### **IV.B. Source Identification**

- IV.B.1 The updated SWMP shall provide updated maps of the Permittees' MS4s, including the location of any major outfall that discharges to waters of the United States that was not reported in the previous SWMP.

#### **IV.C. Characterization Data**

- IV.C.1 The updated SWMP shall evaluate characterization data previously submitted and include additional data collected in the same manner, and evaluate whether existing data collection programs should be modified to improve characterization of stormwater discharges, effects of BMPs, or ambient water quality. This information shall be submitted for approval as part of the annual monitoring plan required in Part VI.A.

#### **IV.D. Public Outreach and Education**

- IV.D.1 The updated SWMP covering the duration of this permit shall describe public outreach and education to reduce the discharge of pollutants to the MEP;
- IV.D.2 The updated SWMP shall contain information about the different types of educational material distributed during environmental fairs or other public outreach events; and
- IV.D.3 The updated SWMP shall describe educational activities, public information activities, and other appropriate activities;

- IV.D.4 The updated SWMP shall describe how the Permittees will inform developers, contractors, operators, and agency staff about upcoming educational and training workshops on construction site erosion and sediment control and construction materials management sponsored by industry groups, professional organizations and public agencies;
- IV.D.5 The updated SWMP shall describe how the Permittees will inform architects, engineers, municipal development personnel, and local government officials on water quality problems associated with urban runoff and the requirements for meeting NPDES laws and program goals for properly managing the quality of urban runoff.

#### **IV.E. MS4 Maintenance Activities**

- IV.E.1 The updated SWMP shall include a description of structural and source control measures expected to reduce pollutants from stormwater runoff from commercial and residential areas that are discharged into the MS4. This section shall also discuss the basis for the expected reduction of pollutant loads and a proposed schedule for implementing such controls. At a minimum, the description shall include:
- IV.E.1.a A description of maintenance activities and a maintenance schedule to reduce pollutants in discharges from MS4s;
- IV.E.1.b A description of practices for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from the MS4s;
- IV.E.1.c A description of a program to evaluate, monitor and reduce pollutants in runoff from operating or closed municipal landfills or other treatment, storage or disposal facilities for municipal waste;
- IV.E.1.d A description of a program to evaluate and reduce pollutants in discharges from MS4s associated with the application of pesticides, herbicides, and fertilizer.

#### **IV.F. Post-Construction Program For New Development and Significant Redevelopment Projects**

- IV.F.1 The Permittees shall develop a Post-Construction BMP Program for new development and significant redevelopment (“NDSR”) projects that is suited for the unique hydrologic, hydrogeologic and regional conditions of the Las Vegas Valley. The program shall focus on planning procedures consistent with the goals identified in Part IV.F.2.

- IV.F.2 The Post-Construction Program shall have the following goals:
- IV.F.2.a To prevent stormwater discharges from post-construction projects from causing or contributing to downstream violations of water quality standards of selenium to the MEP;
  - IV.F.2.b To promote anti-degradation of ambient water quality by reducing the discharge of pollutants in stormwater causing or contributing to any degradation identified by NDEP's anti-degradation program; and
  - IV.F.2.c To develop BMPs to promote the reuse of stormwater for municipal water supplies.
- IV.F.3 The Post-Construction Program shall address at a minimum the following elements:
- IV.F.3.a Describe how the Permittees will review and enhance the SWMP post-construction program requirements in a manner appropriate for the unique hydrologic, hydrogeologic and regional conditions and needs of the Las Vegas Valley. The review shall address the following elements:
    - IV.F.3.a.i Describe how the Permittees will develop, implement and enforce a program to address post-construction urban runoff from NDSR projects that disturb areas  $\geq 1$  acre, including projects  $< 1$  acre that are part of a larger common plan of development or sale, that discharge into the MS4 by ensuring that NDSR projects are complying to the MEP with the requirements of this program;
    - IV.F.3.a.ii Describe how the Permittees will develop low-impact development ("LID") measures that will remain in effect after construction is complete and are effective and appropriate for the Las Vegas Valley and its environment. The program will outline the selected LID measures found effective and appropriate for the Las Vegas Valley along with a summary and schedule for implementation in the MS4;
    - IV.F.3.a.iii Describe how the Permittees will develop any additional structural and non-structural BMPs that will remain in effect after construction is complete and are effective and appropriate for Las Vegas Valley and its environment. The program will outline the selected BMP measures found effective and appropriate for the Las Vegas Valley along with a summary and schedule for implementation in the MS4;
    - IV.F.3.a.iv Describe procedures to assure that future regional flood management projects assess the impacts on the water quality of receiving water bodies and that existing structural flood control devices have been

- evaluated to determine if retrofitting the device to provide additional pollutant removal from stormwater is feasible and appropriate;
- IV.F.3.a.v Describe how the Permittees will develop and implement an ordinance or other regulatory mechanism to address urban stormwater runoff from NDSR projects;
- IV.F.3.a.vi Describe how the Permittees will provide verification of maintenance provisions for structural BMPs located on private property that are subject to post-construction structural BMP requirements;
- IV.F.3.a.vii Describe how the Permittees will develop and implement an inventory and tracking system for post-construction structural stormwater BMPs. The inventory and tracking system shall use at a minimum the following items: project name, project location, project acreage, BMP type and description, inspection date and summary, and any corrective actions undertaken;
- IV.F.3.a.viii Describe how the Permittees will inspect and enforce the proper installation and long-term maintenance of post-construction structural stormwater BMPs ; and
- IV.F.3.a.ix Describe how the Permittees will update its MS4 maps to show areas of NDSR, including any new stormwater major infrastructure that was constructed to serve these areas.
- IV.F.3.b All NDSR projects submitted to the permitting authority subsequent to program implementation as identified in IV.A.2 that fall into one of the following categories shall be subject to one or more of the SWMP design standards developed in accordance with Part IV.F.4:
- IV.F.3.b.i Residential subdivisions five (5) acres or greater in size;
- IV.F.3.b.ii Single-family residences subject to local ordinances governing hillside development;
- IV.F.3.b.iii 100,000 square foot commercial and industrial developments;
- IV.F.3.b.iv Automotive repair shops (with Standard Industrial Classification (“SIC”) codes 5013, 7532, 7533, 7534, 7537, 7538, and 7539);
- IV.F.3.b.v Retail gasoline outlets disturbing greater than one (1) acre;
- IV.F.3.b.vi Restaurants disturbing greater than one (1) acre;

- IV.F.3.b.vii      Parking lots greater than one (1) acre potentially exposed to urban runoff; and
- IV.F.3.b.viii     Any other NDSR projects the Permittees deem necessary to be included in this part.
  
- IV.F.4      **Design Standards.** The post-construction program shall describe how NDSR projects specified in the previous section will implement the design standards outlined in this section. Subject to Section IV.F.4.e, the design standards program shall address at minimum the following criteria:
  - IV.F.4.a      **Peak-Urban Runoff Discharge Rates.** Describe how the Permittees will develop design standards for peak-urban runoff from NDSR projects that will provide protection against downstream erosion;
  - IV.F.4.b      **Site Design BMPs.** Describe how the Post-Construction Program will develop and implement site design BMPs in the site layout during the design and approval process to meet the goals of this program identified in Part IV.F.2;
  - IV.F.4.c      **Source Control BMPs.** The Post-Construction Program shall describe how source control BMPs will be implemented. The design standards program shall include the following source-control BMPs that are consistent with the goals of this program:
    - IV.F.4.c.i      Slopes and channel design or protection to minimize erosion;
    - IV.F.4.c.ii     Properly designed outdoor material storage areas; and
    - IV.F.4.c.iii    Properly designed trash storage areas.
  - IV.F.4.d      **Treatment Control BMPs.** The post-construction program shall describe how treatment control BMPs will be developed and implemented. “Treatment control BMPs” and “treat” refer to any onsite or offsite process that provides for infiltration or detention of stormwater or that removes pollutants through any physical, chemical, or biological process. The design standards program shall describe in sufficient detail how the Permittees will size treatment control BMPs using accepted hydrologic engineering quantitative methods and the following design criteria:
    - IV.F.4.d.i      **Volumetric Treatment Control BMP design criteria.** The post-construction program shall describe how the Permittees will design volume-based BMPs to treat stormwater discharges from projects listed in Part IV.F.3.b. The Permittees shall use one of the following conditions to develop the volumetric treatment control BMP design criteria :

- IV.F.4.d.i.1 Historical rainfall records for the Las Vegas Valley to determine the maximized capture stormwater volume for the area for the 24-hour event using the formula recommended in Urban Runoff Quality Management, Water Environment Federation Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998); or
- IV.F.4.d.i.2 The volume of annual runoff based on unit basin storage water quality volume, to achieve at least 80% of volume treatment by the method recommended in hydrology manuals, textbooks or similar technical publications; or
- IV.F.4.d.i.3 An alternative treatment design criteria, appropriate for the unique hydrologic, hydrogeologic and regional conditions of the Las Vegas Valley. Any alternative design criteria shall be submitted to NDEP with sufficient technical data to establish the appropriateness of the alternative treatment design criteria.
- IV.F.4.d.ii **Flow-Based BMP design criteria.** The post-construction program shall describe how the Permittees will design flow-based BMPs to treat stormwater discharges from projects listed in Part V.F.3.b. The Permittees shall use one of the following conditions to develop flow-based BMP design criteria:
- IV.F.4.d.ii.1 Historical rainfall data for the Las Vegas Valley to determine the maximum flow rate of runoff from rainfall per hour, for each hour of a storm event; or
- IV.F.4.d.ii.2 The maximum flow rate of runoff produced by the 80th percentile hourly rainfall intensity (for each hour of the storm event), as determined from the local historical rainfall record; or
- IV.F.4.d.ii.3 The maximum flow rate of runoff for each hour of a storm event, as determined from the local historical rainfall record that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 80th percentile hourly rainfall intensity; or
- IV.F.4.d.ii.4 An alternative treatment design criteria, appropriate for the unique hydrologic, hydrogeologic and regional conditions of the Las Vegas Valley. Any alternative design criteria shall be submitted to NDEP with sufficient technical data to establish the appropriateness of the alternative treatment design criteria.
- IV.F.4.e If the Permittees will not use some or all of the design standards described in this section, the Permittees shall provide justification using

documentation and engineering analyses, and propose reasonable alternatives that are appropriate for the unique hydrologic, hydrogeologic and regional conditions in Las Vegas Valley.

**IV.F.5 Effect of the Post-Construction Program on Water Quality Standards and Drinking Water Supply**

IV.F.5.a The Permittees shall provide a written evaluation whether the criteria developed as part of the post-construction program will tend to cause or contribute to elevated levels of selenium in surface waters within Las Vegas Valley, including an exceedance of the water quality standards for selenium in identified washes, and shall submit the evaluation to NDEP as part of the post-construction program; and

IV.F.5.b The Permittees shall provide a written evaluation whether the criteria developed as part of the post-construction program will tend to reduce or degrade the contribution of stormwater to the water supplies provided by the Colorado River.

IV.F.5.c If any criteria developed under the post-construction program in accordance with the provisions of this permit would have a reasonable potential of causing or contributing to any water quality or water quantity impairment, or violates Nevada law, they shall be rescinded, and the Permittees shall determine whether alternate criteria can be implemented without causing water quality or water quantity impairments or violating Nevada law.

**IV.G. Illicit Discharge and Detection**

IV.G.1 The updated SWMP shall include a description of a program, including a schedule, to detect and remove illicit discharges and improper disposal into the MS4. The program shall include:

IV.G.1.a A description of a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent all types of illicit discharges to the MS4. Non-stormwater discharges, as defined in Part I.B.2.b, shall only be addressed where such discharges are identified by the Permittee as substantial contributors of pollutants to the Permittee's MS4;

IV.G.1.b A description of procedures to conduct on-going field screening activities during the life of this permit, including areas or locations that will be evaluated by such field screens;

- IV.G.1.c Field screening protocol to investigate dry weather flows that would indicate when an illicit discharge may be present, and when follow-up investigation will be required;
- IV.G.1.d A description of procedures to be followed to investigate portions of the MS4 that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-stormwater;
- IV.G.1.e A description of procedures to prevent, contain, and respond to spills that may discharge into the MS4;
- IV.G.1.f A description of a program to facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from MS4s;
- IV.G.1.g A description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials; and
- IV.G.1.h An assessment of whether the procedures otherwise implemented in response to this section are sufficient to identify instances of exfiltration from the sanitary sewer to the storm sewers, and if not, a description of additional activities to be undertaken to control exfiltration.

#### **IV.H. Industrial Facility Monitoring and Control**

- IV.H.1 The updated SWMP shall include a description of a program to monitor and control pollutants in stormwater discharges to MS4s from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (“SARA”), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the MS4. The program shall include the following components:
  - IV.H.1.a Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges;
  - IV.H.1.b Each permittee shall develop and maintain an inventory of the facilities identified in part IV.H.1. The inventory shall list the facilities by specific categories (e.g. restaurants, municipal maintenance yards, etc.) and list the minimum inspection frequency for each category of facilities;
  - IV.H.1.c Each Permittee shall provide a list of the inventoried facilities to NDEP by October 1, 2010. Each year thereafter for the life of this permit, each

Permittee shall provide to NDEP by October 1 of that year, an updated list of the facilities inventoried during that year; and

- IV.H.1.d Describe a monitoring program for stormwater discharges associated with the industrial facilities identified in this section, to be implemented during the term of the permit in accordance with the monitoring programs defined in Part V.A.

#### **IV.I. Construction Site BMP Program**

- IV.I.1 The updated SWMP shall include a description of a program to implement and maintain structural and non-structural BMPs to reduce pollutants in stormwater runoff from construction sites to the MS4, which shall include:
  - IV.I.1.a A description of procedures for notifying developers and operators of properties of one (1) acre or more (and less than one acre if part of a larger plan of development) of requirements applicable to stormwater runoff;
  - IV.I.1.b A description of nonstructural and structural BMPs to be utilized for construction sites;
  - IV.I.1.c A description of appropriate educational and training measures for construction site operators; and
  - IV.I.1.d A description of a procedure to check for coverage under NDEP's General Construction Permit for Construction Activity prior to permit issuance.

#### **IV.J. Inspection of Construction Sites**

- IV.J.1 Each permittee shall conduct construction site inspections for compliance with its local ordinances (grading, stormwater, etc.) and permits (construction, grading, etc.);
- IV.J.2 Each permittee shall inspect at least monthly, all construction sites within its jurisdiction meeting the following criteria:
  - IV.J.2.a All sites disturbing 100 acres or more in size at one time;
  - IV.J.2.b All sites disturbing one (1) acre or more that are tributary to a CWA section 303(d) water body segment impaired for sediment or turbidity; and
  - IV.J.2.c Sites determined by the permittees as a significant threat to water quality. In evaluating threat to water quality, the following factors shall be considered:
    - IV.J.2.c.i Soil erosion potential;

- IV.J.2.c.ii Site slope;
- IV.J.2.c.iii Project size and type;
- IV.J.2.c.iv Sensitivity of receiving water bodies;
- IV.J.2.c.v Proximity to receiving water bodies;
- IV.J.2.c.vi Proximity to water bodies 303(d) listed for turbidity and sediment;
- IV.J.2.c.vii Non-storm water discharges;
- IV.J.2.c.viii Past record of non-compliance by the construction site operators; and
- IV.J.2.c.ix Any other relevant factors.

IV.J.2.d All other construction sites of > one (1) acre not listed in Part IV.J.2 shall be inspected at least two (2) times for the duration of ground disturbance activities;

IV.J.3 Based upon site inspection findings, each permittee shall implement all follow-up actions (i.e., re-inspection or enforcement) necessary to comply with this Permit;

IV.J.4 Inspections of construction sites shall include, but not be limited to:

IV.J.4.a Assessment of compliance with Permittee ordinances and permits related to urban runoff, including the implementation and maintenance of designated minimum BMPs;

IV.J.4.b Assessment of BMP effectiveness;

IV.J.4.c Visual observations for non-stormwater discharges and potential illicit connections;

IV.J.4.d Education and outreach on stormwater pollution prevention, as needed; and

IV.J.4.e Creation of a written or electronic inspection report.

IV.J.5 The permittees shall track the number of inspections for the inventoried construction sites throughout the reporting period to verify that the sites are inspected at the minimum frequencies required. This information shall be included in the Annual Report.

#### **IV.K. Sharing Responsibility**

IV.K.1 The Permittees may either share responsibility or assign responsibility to one or more Permittees, and may implement BMPs individually, as a group, or through consultants. The SWMP shall include a description of how responsibility to implement BMPs is being shared or assigned.

#### **IV.L. Reviewing and Updating Stormwater Management Programs**

- IV.L.1 After submittal and approval of the updated SWMP, the Permittees must complete an annual review of the SWMP in conjunction with preparation of the Annual Report required under Part VI.C;
- IV.L.2 The Permittees may change the SWMP during the life of the permit in accordance with the following procedures:
  - IV.L.2.a Changes adding (but not subtracting or replacing) components, controls, or requirements to the SWMP may be made at any time upon written notification to NDEP;
  - IV.L.2.b Requests for changes replacing an ineffective, unfeasible, or inappropriate BMP specifically identified in the SWMP with an alternate BMP may be submitted to NDEP for approval at any time. If the request is denied, NDEP will send the Permittees a written response giving a reason for its decision. The Permittees modification requests must include the following:
    - IV.L.2.b.i An analysis of why the BMP is ineffective, infeasible (including cost prohibitive), or otherwise should be revised or replaced, and
    - IV.L.2.b.ii An analysis of why the replacement BMP is expected to be more effective, feasible, or appropriate than the BMP to be replaced.

#### **IV.M. Responsibility for Stormwater Management Program Implementation**

- IV.M.1 The Permittees must implement the SWMP on all new areas added to the Permittees portion of the MS4 (or for which the Permittees become responsible for implementation of stormwater quality controls) not later than one (1) year from addition of the new areas; and
- IV.M.2 Information on all new annexed areas and any resulting updates required to the SWMP must be included in the Annual Report.

### **V. Monitoring, Recordkeeping, and Annual Report**

#### **V.A. Monitoring**

- V.A.1 The Permittees shall submit to NDEP a stormwater monitoring plan for the following year on or before October 1 each year. In developing the plan, the Permittees must evaluate and update as necessary how monitoring may assist in making decisions about program compliance, the appropriateness of identified BMPs, and progress toward achieving identified measurable goals.

Pending submittal of the annual monitoring plan, the Permittees shall continue to implement the existing monitoring plan.

- V.A.2 When the Permittees conduct monitoring at the Permittees' MS4, the Permittees are required to comply with the following:
  - V.A.2.a Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. This requirement does not prevent Permittees from analyzing or reporting samples that are representative of a limited situation (e.g. concentration at peak flow);
  - V.A.2.b Test procedures for the analysis of pollutants shall conform to regulations (40 CFR, Part 136) published pursuant to Section 304(h) of the Act, unless other procedures are approved by NDEP.
  - V.A.2.c Records of monitoring information shall include:
    - V.A.2.c.i The date, exact place, and time of sampling or measurements;
    - V.A.2.c.ii The names(s) of the individual(s) who performed the sampling or measurements;
    - V.A.2.c.iii The date(s) analyses were performed;
    - V.A.2.c.iv The name(s) of the individual(s) who performed the analyses;
    - V.A.2.c.v The analytical techniques or methods used; and
    - V.A.2.c.vi The results of such analyses.
  - V.A.2.d Analyses shall be performed by a State of Nevada-certified laboratory. Laboratory reports shall be provided if requested by NDEP.
  - V.A.2.e If the Permittees perform stormwater monitoring more frequently than required by the stormwater monitoring plan the results of such monitoring shall be reported in the Annual Report.

## **V.B. Recordkeeping**

- V.B.1 The Permittees must retain records of all monitoring information, including: all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, a copy of the NPDES permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years

from the termination date of this permit. This period may be extended at the direction of NDEP at any time.

V.B.2 The Permittees must submit the records to NDEP only when specifically asked to do so. The Permittees must retain a copy of the SWMP required by this permit (including a copy of the permit language) at a location accessible to NDEP. The Permittees must make the records, including a copy of the SWMP, available to the public if requested to do so in writing.

V.B.3 For public requests of records, the Permittees may impose a reasonable fee for personnel time and copying expenses.

### **V.C. Annual Report**

V.C.1 Permittees shall submit an Annual Reports to NDEP by October 1 of each year of this permit term. Each Annual Report shall cover the period beginning July 1st of the previous year through June 30th of the current year.

V.C.2 Each year, Permittees shall review the SWMP defined under Part IV of this permit, and report to NDEP on the status of the program, whether Permittees have identified any modifications, and the plans for implementing those modifications.

V.C.3 At a minimum the Annual Report shall include:

V.C.3.a Status of the Permittees' compliance with permit conditions;

V.C.3.b An assessment of the appropriateness of the identified BMPs, and any revisions to previous assessments if appropriate;

V.C.3.c Progress towards achieving the statutory goal of reducing the discharge of pollutants to the MEP;

V.C.3.d Status of the achievement of measurable goals;

V.C.3.e Results of information collected and analyzed, if any, during the reporting period, including monitoring data used to assess the success of the program at reducing the discharge of pollutants to the MEP, a description of any identified improvements to or degradation in water quality attributable to the program, and a description of any identified effects on attainment of water quality standards attributable to the program;

V.C.3.f A summary of the stormwater activities the Permittees plan to undertake during the next reporting cycle (including an implementation schedule and a fiscal analysis);

- V.C.3.g Changes to the SWMP, including changes to any BMPs or any identified measurable goals that apply to the program elements;
- V.C.3.h Notice that the Permittees are relying on another government entity to satisfy some of the permit obligations (if applicable);
- V.C.3.i Estimated reductions in loadings of pollutants from discharges of municipal storm sewer constituents from MS4s expected as the result of the municipal stormwater quality management program. The assessment shall also identify known impacts of stormwater controls on groundwater;
- V.C.3.j A summary of inspections performed and enforcement activity taken during the report cycle; and
- V.C.3.k Annual expenditures for the reporting period, with a breakdown for the major elements of the SWMP, and the budget for the year following each Annual Report.
- V.C.4 An original signed copy of all reports and plans required herein shall be submitted to NDEP at the following address:

Stormwater Coordinator  
Bureau of Water Pollution Control  
Nevada Division of Environmental Protection  
901 S. Stewart St., Suite 4001  
Carson City, NV 89701

## **VI. Standard Permit Conditions**

### **VI.A. Duty to Comply**

- VI.A.1 The Permittees must comply with all applicable conditions of this permit. Any permit noncompliance constitutes a violation of CWA and is grounds for enforcement action; permit termination; revocation and reissuance; modification; or for denial of a permit renewal application. Each Permittee is responsible for its own compliance with this permit, but not for any noncompliance of another Permittee. No Permittee shall be held liable for the violation of this permit by another Permittee.

### **VI.B. Annual Fee**

- VI.B.1 The Permittees shall remit an annual review and services fee in accordance with Nevada Administrative Code 445A.232 starting July 1, 2010, and every year thereafter until the permit is terminated.

### **VI.C. Continuation of the Expired Permit**

VI.C.1 If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedures Act and remain in force and effect. Permittees granted permit coverage prior to the expiration date will automatically remain covered by the continued permit until the earlier of:

VI.C.1.a Reissuance or replacement of this permit; or

VI.C.1.b Issuance of another individual permit for the Permittees' discharges.

### **VI.D. Need to Halt or Reduce Activity Not a Defense**

VI.D.1 It shall not be a defense for the Permittees in an enforcement action that it would have been necessary to halt or reduce the permitted activity under the Permittees' control in order to maintain compliance with the conditions of this permit.

### **VI.E. Duty to Mitigate**

VI.E.1 The Permittees must take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

### **VI.F. Duty to Provide Information**

VI.F.1 The Permittees must furnish to NDEP any information that is requested by NDEP and needed to determine compliance with this permit or other information.

### **VI.G. Other Information**

VI.G.1 If the Permittees become aware that the Permittees have failed to submit any relevant facts in the Permittees SWMP or Annual Report or submitted incorrect information in the SWMP or Annual Report or in any other report to NDEP, the Permittees must promptly submit such facts or information.

### **VI.H. Signatory Requirements**

VI.H.1 All applications, reports, certifications, or information submitted to NDEP, or that this permit requires be maintained by the Permittees shall be signed and certified as follows:

VI.H.1.a **Applications.** All applications shall be signed by either a principal executive officer or ranking elected official.

**VI.H.1.b Reports and other information.** All reports required by the permit and other information requested by NDEP or authorized representative of NDEP shall be signed by a person described above from the lead agency (Clark County Regional Flood Control District) or by a duly authorized representative of that person. A person is a duly authorized representative only if:

**VI.H.1.b.i Signed authorization.** The authorization is made in writing by a person described above and submitted to NDEP.

**VI.H.1.b.ii Authorization with specified responsibility.** The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility for environmental matter for the regulated entity.

**VI.H.1.c Changes to authorization.** If an authorization is no longer accurate because a different operator has the responsibility for the overall operation of the MS4, a new authorization satisfying the requirement of Part VI.H.1.b must be submitted to NDEP prior to or together with any reports, information, or applications to be signed by an authorized representative.

## **VI.I. Property Rights**

**VI.I.1** The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

## **VI.J. Proper Operation and Maintenance**

**VI.J.1** The Permittees must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittees to achieve compliance with the conditions of this permit.

## **VI.K. Inspection and Entry**

**VI.K.1** The Permittees shall allow NDEP or an authorized representative (including an authorized contractor acting as a representative of NDEP) upon the presentation of credentials and other documents as may be required by law, to do any of the following:

- VI.K.1.a Enter the Permittees' premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
- VI.K.1.b Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit;
- VI.K.1.c Inspect at reasonable times any facilities or equipment (including monitoring and control equipment) practices, or operations regulated or required under this permit; and
- VI.K.1.d Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

#### **VI.L. Permit Actions**

- VI.L.1 This permit may be modified, revoked and reissued, or terminated for cause. The Permittees filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

#### **VI.M. Deadlines for Reapplication to Continue Permit Coverage**

- VI.M.1 The Permittees shall submit written correspondence to NDEP requesting continued permit coverage not later than 180 days before this permit expires.

#### **VI.N. Permit Transfers**

- VI.N.1 This permit is not transferable to any person except after written notice to NDEP and approval by NDEP. NDEP may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the CWA.

#### **VI.O. Anticipated Noncompliance**

- VI.O.1 The Permittees shall give advance notice to NDEP of any planned changes in the permitted MS4 or activity which may result in non-compliance with this permit.

#### **VI.P. State Environmental Laws**

- VI.P.1 Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittees from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by section 510 of the CWA.

VI.P.2 No condition of this permit releases the Permittees from any responsibility or requirements under other environmental statutes or regulations.

**VI.Q. Severability**

VI.Q.1 The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit due to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

**VI.R. Procedures for Modification or Revocation**

VI.R.1 Permit modification or revocation will be conducted according to 40 CFR §122.62, 122.63, 122.64 and 124.5.

**VI.S. Availability of Reports**

VI.S.1 Except for data determined to be confidential under Nevada Revised Statutes (“NRS”) 445A.665, all reports and plans submitted in accordance with the terms of this permit shall be available for public inspection at NDEP’s office in Carson City. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in NRS 445A.710.

**VI.T. Furnishing False Information and Tampering with Monitoring Devices**

VI.T.1 Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document submitted or required to be maintained by the provisions of NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, or who falsifies, tampers with or knowingly renders inaccurate any monitoring device or method required to be maintained under the provisions of NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, is guilty of a gross misdemeanor and shall be punished by a fine of not more than \$25,000 or by imprisonment. This penalty is in addition to any other penalties, civil or criminal, pursuant to NRS 445A.300 to 445A.730, inclusive.

**VI.U. Penalty for Violation of Permit Conditions**

VI.U.1.a NRS 445A.675 provides that any person who violates a permit condition is subject to administrative and judicial sanctions as outlined in NRS 445A.690 through 445A.710.

## **VI.V. Permit Modification, Suspension or Revocation**

- VI.V.1 After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
- VI.V.1.a Violation of any terms or conditions of this permit;
  - VI.V.1.b Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
  - VI.V.1.c A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
  - VI.V.1.d To impose specific requirements for BMPs or annual reporting requirements in accordance with 40 CFR § 122.62 or §122.63.
- VI.V.2 Any Permittee may request that NDEP reopen and modify this permit.

## **VII. Definitions**

- VII.A.** All applicable definitions contained in Section 502 of the CWA and 40 CFR §122 shall apply to this permit and are incorporated herein by reference. For convenience, simplified explanations of some regulatory/statutory definitions have been provided.
- VII.A.1 Best Management Practices (“BMPs”)** means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
  - VII.A.2 Clean Water Act (“CWA or The Act”)** means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483 and Pub. L. 97-117, 33 U.S.C. 1251 et.seq.
  - VII.A.3 Discharge**, when used without a qualifier, refers to “discharge of a pollutant” as defined at 40 CFR §122.2.
  - VII.A.4 Illicit Connection** means any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

- VII.A.5 **Illicit Discharge** is defined at 40 CFR §122.26(b)(2) and refers to any discharge to a municipal separate storm sewer that is not entirely composed of stormwater, except discharges authorized under an NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from fire fighting activities. For the purposes of this permit, illicit discharges do not include discharges into the MS4 authorized in Part I.B.
- VII.A.6 **Indian Country**, as defined in 18 USC 1151, means (a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation; (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same. This definition includes all land held in trust for an Indian tribe.
- VII.A.7 **Low Impact Development (“LID”)** is an approach to land development or redevelopment that works to manage stormwater close to its source. LID employs principles such as preserving and recreating natural landscape features, and limiting imperviousness to create functional and appealing site drainage and treat stormwater as a resource rather than as a waste product. There are many LID practices that have been used throughout the US to adhere to these principles, such as rain gardens fed by downspouts and discontinuities in impermeable pavement. By implementing LID principles and practices, water can be managed in a way that reduces the impact of built areas and promotes the natural movement of water within an ecosystem or watershed. Applied on a broad scale, LID can support and promote a watershed’s hydrologic and ecological functions.
- VII.A.8 **Maximum Extent Practicable (“MEP”)** the technology-based discharge standard for Municipal Separate Storm Sewer Systems to reduce pollutants in stormwater discharges that was established by CWA §402(p).
- VII.A.9 **Minimum Control Measure** as used in this permit, refers to any BMP or other method used to prevent or reduce the discharge of pollutants to waters of the United States.
- VII.A.10 **Municipal Separate Storm Sewer System (“MS4”)** is used to refer to either a Large, Medium, or Small Municipal Separate Storm Sewer System (e.g. “the Las Vegas Valley MS4”). The term is used to refer to either the system operated by a single entity or a group of systems within an area that are operated by multiple entities (e.g., the Las Vegas Valley MS4 includes MS4s operated by the City of Las Vegas, the City of North Las Vegas, the City of Henderson, the Clark County Regional Flood Control District and Clark County). MS4 is defined at 40 CFR§ 122.26(b)(8) and means a conveyance

or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) Designed or used for collecting or conveying stormwater; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR §122.2.

- VII.A.11 **Permitting Authority** means the Nevada Division of Environmental Protection.
- VII.A.12 **Sites that are tributary** are defined as sites that discharge directly into a CWA section 303(d)-listed water body segment.
- VII.A.13 **Stormwater** is defined at 40 CFR §122.26(b)(13) and means stormwater runoff, snowmelt runoff, and surface runoff and drainage.
- VII.A.14 **Stormwater Management Program (SWMP)** refers to a comprehensive program to manage the quality of stormwater discharged from the MS4.

#### ACRONYMS

BMP	Best Management Practice
CFR	Code of Federal Regulations
CWA	Clean Water Act
LID	Low-Impact Development
MCM	Minimum Control Measure
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection
NDSR	New Development and Significant Redevelopment
NPDES	National Pollutant Discharge Elimination System
NRS	Nevada Revised Statute
SARA	Superfund Amendments and Reauthorization Act
SWMP	Stormwater Management Program
TMDL	Total Maximum Daily Load
USC	United States Code
WLA	Waste Load Allocation

## **Appendix F**

List of Water Quality Parameters Sampled in 2010/2011 by the U.S. Geological Survey at Station No. 094196783 (upstream of LW11.7 by 0.1 miles) as part of the National Water-Quality Assessment Program

<b>Parameter</b>	<b>Filtered/Unfiltered</b>	<b>Units</b>
Dissolved oxygen	unfiltered	mg/L
Dissolved oxygen	unfiltered	% saturation
pH	unfiltered	standard units
Specific conductance	unfiltered	uS/cm at 25 °C
Temperature	n/a	°C
alpha-HCH-d6	filtered	%
Bicarbonate	filtered	mg/L
Sulfate	filtered	mg/L
Nitrate plus nitrite	filtered	mg/L as nitrogen
Orthophosphate	filtered	mg/L as phosphorus
Total nitrogen (nitrate + nitrite + ammonia + organic-N)	unfiltered	mg/L
1-Naphthol	filtered	ug/L
2,6-Diethylaniline	filtered	ug/L
2-Chloro-2', 6'-diethylacetanilide	filtered	ug/L
2-Chloro-4-isopropylamino-6-amino-s-triazine	filtered	ug/L
2-Ethyl-6-methylaniline	filtered	ug/L
3,4-Dichloroaniline	filtered	ug/L
3,5-Dichloroaniline	filtered	ug/L
4-Chloro-2-methylphenol	filtered	ug/L
Acetochlor	filtered	ug/L
Alachlor	filtered	ug/L
alpha-Endosulfan	filtered	ug/L
Aminomethylphosphonic acid	filtered	ug/L
Atrazine	filtered	ug/L
Azinphos-methyl oxygen analog	filtered	ug/L
Azinphos-methyl	filtered	ug/L
Benfluralin	filtered	ug/L
Fonofos	filtered	ug/L
Glufosinate	filtered	ug/L
Hexazinone	filtered	ug/L
Isofenphos	filtered	ug/L
lambda-Cyhalothrin	filtered	ug/L
Metalaxyl	filtered	ug/L
Methidathion	filtered	ug/L
Methyl paraoxon	filtered	ug/L
Oxyfluorfen	filtered	ug/L
Pendimethalin	filtered	ug/L
Phorate	filtered	ug/L
Phosmet oxygen analog	filtered	ug/L
Prometon	filtered	ug/L
Prometryn	filtered	ug/L
Propyzamide	filtered	ug/L
Simazine	filtered	ug/L
Tebuthiuron	filtered	ug/L
Tefluthrin	filtered	ug/L
Terbufos oxygen analog sulfone	filtered	ug/L
Terbufos	filtered	ug/L
Terbuthylazine	filtered	ug/L
Thiobencarb	filtered	ug/L
trans-Propiconazole	filtered	ug/L
Tribuphos	filtered	ug/L
Trifluralin	filtered	ug/L
Suspended sediment	n/a	% < 0.0625 mm
Suspended sediment concentration	n/a	mg/L

**Appendix G**

Nevada Division of Environmental Protection Authorization to Discharge (Permit No. NV0020133) issued to City of Las Vegas

Nevada Division of Environmental Protection

AUTHORIZATION TO DISCHARGE

In compliance with the provisions of the Clean Water Act as amended, (33 U.S.C. 1251 et. seq; the "Act"), and Chapter 445A of the Nevada Revised Statutes,

City of Las Vegas  
6005 East Vegas Valley Drive  
Las Vegas, NV 89142

is authorized to discharge from facilities located at  
6005 East Vegas Valley Drive  
Las Vegas, NV 89142  
Clark County  
(Water Pollution Control Facility)

and

3271 N. Durango Drive  
Las Vegas, NV 89129  
Clark County  
(Durango Hills Water Resource Center)

Outfall 001  
(Water Pollution Control Facility)

Latitude N36° 07' 48", Longitude W115° 02' 15"

Outfall 002 (Durango Hills WRC)

Latitude N36° 13' 20", Longitude W115° 17' 05"

to receiving waters named

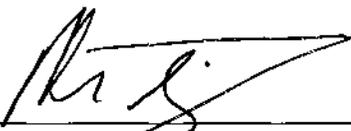
Las Vegas Wash

in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Part I, II, and III hereof.

This permit shall become effective on July 31, 2006.

This permit and the authorization to discharge shall expire at midnight, July 31, 2011.

Signed this 31<sup>st</sup> day of July, 2006.

  
\_\_\_\_\_  
Alan Tinney, P.E., Supervisor  
Permitting Branch  
Bureau of Water Pollution Control



**PART I**

**A. EFFLUENT LIMITATIONS, MONITORING REQUIREMENTS AND CONDITIONS**

1. During the period beginning on the effective date of this permit, and lasting until the permit expires, the Permittee is authorized to discharge treated sanitary wastewater, stormwater, and facility dewatering water from:

- Outfall 001 (Water Pollution Control Facility) via the concrete lined channel to the Las Vegas Wash, and
- Outfall 002 (Durango Hills WRC) via the stormdrain system to the Las Vegas Wash,

Effluent samples taken in compliance with the monitoring requirements specified below shall be taken downstream of the disinfection facilities, but prior to mixing with Las Vegas Wash. Influent samples are to be taken at the headworks and are designated as **INF**. Sampling frequencies for Outfall 002 (Durango Hills WRC) apply after the Permittee has discharged for a week to the stormdrain system. The discharges for Outfall 001 (Water Pollution Control Facility) shall be limited and monitored by the Permittee as specified in Table I.1, for Outfall 002 (Durango Hills WRC) as specified in Table I.2.

**TABLE I.1 (Outfall 001, WATER POLLUTION CONTROL FACILITY)**

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS</u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average <sup>2</sup>	7 Day Average <sup>2</sup>	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
<b>Flow-001</b>	91 MGD	Monitor and Report: MGD	NA	INF, 001	Continuous	Flow meter
<b>BOD<sub>5</sub> (uninhibited)</b>	30 mg/l	45 mg/l	22,768	001	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		
<b>Total Suspended Solids</b>	30 mg/l	45 mg/l	22,768	001	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS</u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average <sup>2</sup>	7 Day Average <sup>2</sup>	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
<b>BOD<sub>5</sub> (uninhibited) &amp; TSS</b>	The Permittee shall demonstrate that the 30-day average percentage removal rate is at least 85%.			NA	Monthly	Calculate
<b>pH</b>	Minimum 6.0 and maximum 9.0 SU, except as allowed in Parts I.A.3 and I.A.19.		NA	001	Daily	Discrete
<b>Fecal Coliform<sup>1</sup></b>	Log mean 200 cfu or mpn/100ml	See footnote 1	NA	001	Daily	Discrete
<b>Total Residual Chlorine</b>	NA	0.1 mg/l-except as allowed in Part I.A.19.	NA	001	Daily	Discrete
<b>Total Phosphorus as P: mg/l</b>	See Part I.A.2			001	Daily	Composite
<b>Total Ammonia as N: mg/l</b>	See Part I.A.2			001	Daily	Composite
<b>Total Inorganic Nitrogen as N: mg/l</b>	See Part I.A.3			001	Weekly	Composite
<b>Total Dissolved Solids: mg/l</b>	See Part I.A.4			001	Weekly	Composite
<b>Priority Pollutants</b>	Monitor and Report, See Attachment A			001	Per Part I.A.18.d.	Discrete or Composite
<b>WET testing</b>	See Part I.A.17.			001	Monthly	Composite
<b>Receiving Water Monitoring</b>	Monitor and Report			See Part I.S.21	See Part I.A.21	Discrete
<b>Temperature: °C</b>	Monitor and Report		NA	001	Weekly	Discrete
<b>Dissolved Oxygen: mg/L</b>	Monitor and Report		NA	001	Weekly	Discrete

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS</u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average <sup>2</sup>	7 Day Average <sup>2</sup>	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
Orthophosphorus as P: mg/l	Monitor and Report			001	Daily	Composite
Nitrate + Nitrite as N: mg/l	Monitor and Report			001	Weekly	Composite
Total Kjeldahl Nitrogen as N: mg/l	Monitor and Report			001	Weekly	Composite

1. The discharge shall not exceed a log mean of 200 cfu or mpn per 100 ml over a 30 day period nor may more than 10 percent of the total samples taken exceed 400 cfu or mpn per 100 ml.
2. For those parameters sampled weekly or less frequently, the Permittee shall report the single value instead of the 7-day or 30 day average.

**TABLE I.2 (Outfall 002, DURANGO HILLS WRC)**

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS</u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average <sup>2</sup>	7 Day Average <sup>2</sup>	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
Flow-002	10 MGD	Monitor and Report: MGD	NA	002	Continuous	Flow Meter
BOD <sub>5</sub> (uninhibited)	30 mg/l	45 mg/l	2,502	002	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS</u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average <sup>2</sup>	7 Day Average <sup>2</sup>	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
<b>Total Suspended Solids</b>	30 mg/l	45 mg/l	2,502	002	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		
<b>BOD<sub>5</sub> (uninhibited) &amp; TSS</b>	The Permittee shall demonstrate that the 30-day average percentage removal rate is at least 85%.			NA	Monthly	Calculate
<b>Fecal Coliform<sup>1</sup></b>	Log mean 200 cfu or mpn/100ml	See footnote 1	NA	002	Daily	Discrete
<b>pH</b>	Minimum 6.0 and maximum 9.0 SU, except as allowed in Parts I.A.3 and I.A.19		NA	002	Daily	Discrete
<b>Total Residual Chlorine</b>	NA	0.1 mg/l Except as allowed in Part I.A.19	NA	002	Daily	Discrete
<b>Total Phosphorus as P: mg/l</b>	See Part I.A.2			002	Daily	Composite
<b>Total Ammonia as N: mg/l</b>	See Part I.A.2			002	Daily	Composite
<b>Total Inorganic Nitrogen as N: mg/l</b>	See Part I.A.3			002	Weekly	Composite
<b>Total Dissolved Solids: mg/l</b>	See Part I.A.4			002	Weekly	Composite
<b>Priority Pollutants</b>	Monitor and Report, See Attachment A			002	Per Part I.A.18.d.	Discrete or Composite
<b>WET testing</b>	See Part I.A.17			002	Quarterly	Composite

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS</u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average <sup>2</sup>	7 Day Average <sup>2</sup>	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
Temperature: °C	Monitor and Report		NA	002	Daily	Discrete
Orthophosphorus as P: mg/l	Monitor and Report			002	Daily	Composite
Nitrate + Nitrite as N: mg/l	Monitor and Report			002	Weekly	Composite
Total Kjeldahl Nitrogen as N: mg/l	Monitor and Report			002	Weekly	Composite

1. The discharge shall not exceed a log mean of 200 cfu or mpn per 100 ml over a 30 day period nor may more than 10 percent of the total samples taken exceed 400 cfu or mpn per 100 ml.
2. For those parameters sampled weekly or less frequently, the Permittee shall report the single value instead of the 7-day or 30 day average.

I.A.2. **Waste Load Allocation (WLA) for Discharges into Las Vegas Wash:** The Permittee is authorized to discharge the waste loads listed in WLA Table for Total Phosphorus as P and Total Ammonia as N to the Las Vegas Wash. The WLA applies to the combined loading from Outfalls 001 and 002. This permit condition constitutes a cooperative agreement between the City of Las Vegas, Clark County Water Reclamation District, and City of Henderson (hereinafter Dischargers) to allow discharge flexibility. Each facility has an **Individual Waste Load Allocation (IWLA)** and there is a **Sum of Individual Waste Load Allocations ( $\Sigma$ IWLA)** defined below for the three facilities. Treatment facilities which are used to attain a waste load allocation are not required to be operated when not needed to meet that allocation.

- a. The Permittee shall be considered in compliance if **either**:
  - i. The Permittee does not exceed the **IWLA** listed below or the **IWLA** in effect due to transfers, **or**
  - ii. The **Sum of the Individual Waste Load Allocations ( $\Sigma$ IWLA)** listed below is not exceeded.

Waste Load Allocation Table

Constituent	City of Las Vegas IWLA	Clark County Water Reclamation District IWLA	City of Henderson IWLA	$\Sigma$ WLA
<b>Total Phosphorus as P</b>	123 lb/day	173 lb/day	38 lb/day	334 lb/day, Note: This WLA only applies March 1 - October 31; no limit applies the rest of the year.
<b>Total Ammonia as N</b>	358 lb/day	502 lb/day	110 lb/day	970 lb/day, Note: This WLA only applies April 1 - September 30; no limit applies the rest of the year.

- b. **Annual Reallocation of IWLA:** On an annual basis, the Permittee may modify the **IWLA** by either transferring or receiving waste load from another discharger. This reallocation shall become effective upon submittal of a notification signed by all three dischargers. The annual reallocation shall be **submitted by May 31st if applicable**. The notification of reallocation shall include the flow, waste load discharged, treatment plant removal efficiency in tabular and graphical format. The reallocation of **IWLA**'s shall be considered a minor modification to the permit as long as the  $\Sigma$ **WLA** are not modified.
- c. **Temporary Trading of IWLA:** The Permittee may temporarily trade **IWLA** upon submittal of a notification signed by all three dischargers describing the amount of **IWLA** transferred, the length of time the transfer is effective and the basis for the transfer. The basis for the transfer shall include the last monthly flows and waste load discharged for each discharger. The waste load transfer shall be effective on the date of the submittal to the Division. This transfer is binding on the parties and cannot be revoked without a notification signed by all three dischargers. The transferred **IWLA** shall revert back to the original Permittee at the end of the time specified on the notification. A copy of the latest **IWLA** agreement and any agreements made during the reporting period shall be **submitted with each quarterly report required by Part I.B.1.**
- d. **Reporting:** The Permittee shall **submit quarterly reports** pursuant to Part I.B.1.b, the **IWLA** and the  $\Sigma$ **WLA** for Total Phosphorus as P and Total Ammonia as N, reported monthly as a 30 day average in lb/day. The data for the  $\Sigma$ **WLA** shall be provided to and obtained from the other dischargers. In the event the Permittee cannot obtain the  $\Sigma$ **WLA** information in time for submittal with the quarterly DMR, then an explanation shall be included with the report along with a schedule for timely submittal.

**I.A.3. Confirmation of Standards Compliance**

- a. The Permittee shall coordinate with the other dischargers identified in Part I.A.2 to determine whether on an annual basis the 95th percentile of the monitoring data for Las Vegas Wash complies with the 20 mg/l total inorganic nitrogen (TIN) water quality standard at the control point, Las Vegas Wash 2 (LVW2, LW6.05).
- b. The Permittee shall coordinate with the other dischargers identified in Part I.A.2 to determine whether the pH at LVW2 (LW6.05) complies with the water quality standard of 6.5-9.0 standard units.
- c. The results of these determinations shall be reported in the annual report identified in Part I.B.1.a.
- d. If the Permittee finds that Las Vegas Wash is not in compliance with the water quality standards identified in Part I.A.3. a. or b., the Permittee shall:
  - i. Consider whether reasonable changes in the Permittee's discharge from any outfall would result in compliance;
  - ii. Coordinate with the other dischargers identified in Part I.A.2 to consider whether coordinated reasonable changes would achieve compliance; and
  - iii. Submit a report to the Division explaining the analytical process and conclusions.

**I.A.4 Salinity Control:** The Permittee shall continue to implement the existing ordinances and public education programs for salinity control and identify and correct all identified infiltration/inflow problems which contribute to exceedance of the goal of more than 400 mg/l TDS increase above the Colorado River water supply. The Permittee shall provide the following information **annually by May 31st:**

- a. Description of the municipal entity and facilities.
- b. Description of significant salt sources of the municipal wastewater collection system, and identification of entities responsible for each source, if available.
- c. Description of the wastewater discharge, covering location, receiving waters, quantity of salt load, and salinity concentration.
- d. Description of alternative plans for minimizing salt contribution to the municipal discharge. Alternative plans should include:
  - i. Description of system salt sources and alternative means of control.
  - ii. Cost of alternative plans in dollars per ton, of salt removed from any new discharges to the municipality.
- e. In order to calculate the net increase in salinity the Permittee shall obtain the concentration of TDS in the water supply at least quarterly. The Permittee may rely on data collected by any water purveyors, and shall identify the source of the data.

- f. An evaluation of the impact of the discharge on the lower stem of the Colorado River system in terms of average annual average tons/day and concentration of TDS discharged.

I.A.5 **Narrative Standards** (*Nevada Administrative Code (NAC) 445A.121*): Discharges shall not cause the following standards to be violated in any surface waters of the state. Waters must be free from:

- a. Substances that will settle to form sludge or bottom deposits in amounts sufficient to be unsightly, putrescent or odorous;
- b. Floating debris, oil, grease, scum, and other floating materials in amounts sufficient to be unsightly;
- c. Materials in amounts sufficient to produce taste or odor in the water or detectable off-flavor in the flesh of fish or in amounts sufficient to change the existing color, turbidity or other conditions in the receiving stream to such a degree as to create a public nuisance;
- d. High temperature, biocides, organisms pathogenic to human beings, toxic, corrosive or other deleterious substances at levels or combinations sufficient to be toxic to human, animal, plant or aquatic life;
- e. Radioactive materials must not result in accumulations of radioactivity in plants or animals that result in a hazard to humans or harm to aquatic life;
- f. Untreated or uncontrolled wastes or effluents that are reasonably amenable to treatment or control; and
- g. Substances or conditions, which interfere with the beneficial use of the receiving waters.

The narrative standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of high or low flow. Where effluents are discharged to such waters, the discharges are not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained.

- I.A.6. The Permittee shall annually review monitoring data, conduct aquatic life studies using water with a hardness representative of the Las Vegas Wash (e.g., 800 mg/l) or conduct other studies to evaluate the existing water quality standards or other data issues, for the following parameters: cadmium, copper, hexavalent chromium, molybdenum, selenium, silver, and sulfide. Results shall be included as part of the annual report required by Part I.B.1.a.i.
- I.A.7. There shall be no objectionable odors from the collection system, treatment facility or disposal area, or biosolids treatment, use, storage or disposal area that the Permittee owns or operates.

- I.A.8. There shall be no discharge of substances that would cause a violation of water quality standards of the State of Nevada as defined by the permit. The permit may be reopened, and additional limits imposed, if it is determined that the discharge is causing a violation of ambient water quality standards of the State of Nevada.
- I.A.9. There shall be no discharge from the collection, treatment and disposal facilities except as authorized by this permit or in accordance with the Division's Spill Reporting Policy.
- I.A.10. The treatment and disposal facility shall be fenced and posted.
- I.A.11. The collection, treatment and disposal facilities shall be constructed in conformance with plans approved by the Administrator, as required by NAC 445A.284, except as provided in the Division's "Plan and Specification Review Policy for Collection and Treatment Systems in Clark County" latest edition.
- I.A.12. The facility shall be operated in accordance with the Operations and Maintenance (O&M) manual, which must be approved by the Administrator.
- I.A.13. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- I.A.14. **Biosolids and Sewage Sludge**
- a. **Disposal:** The Permittee shall comply with all applicable sections of the following regulations for biosolids, which are disposed and inform any biosolids disposer of the requirement that they must comply with the following regulations as applicable.
    - i. 40 CFR 257 and 258: for biosolids disposed in municipal solid waste landfills as approved by the Administrator and the County;
    - ii. 40 CFR 261 for hazardous biosolids or 40 CFR 761 for biosolids with a PCB concentration greater than 50 mg/kg; or
    - iii. 40 CFR 503: placed in surface disposal sites (dedicated land disposal sites or monofills), or incinerated.
  - b. **Reuse:** The Permittee shall comply with any applicable sections of 40 CFR 503 for biosolids generated at the facility including solid waste screening and sewage sludge which is to be used, land applied, stored or treated in compliance with any applicable sections of the following regulations:
    - i. 40 CFR 503: for non-hazardous biosolids that are land applied;
    - ii. The Permittee is responsible for informing any biosolids preparer, applier, or disposer, of all requirements and the applicable regulations listed above.
    - iii. Facilities which are regulated under 40 CFR part 503 shall monitor parameters listed in Part I.A.18., and shall also monitor the pathogen density requirements in 40 CFR 503.32 (a) and (b)(2) through (4) and the vector attraction reduction requirements in 503.33(b)(1) through (8); at the frequencies listed below.

**Dry Biosolids Disposal rate in metric tons/yr.**

>0 - <290  
≥290 - <1500  
≥1500 - <15000  
≥15000

**Frequency**

each year  
once a quarter  
once every 2 months  
once a month

- iv. Biosolids to be land applied shall be tested for organic nitrogen as N, ammonia as N, nitrate as N, and Total Nitrogen as N on the frequency required above.
  - v. Biosolids, which are to be land applied, shall be characterized annually pursuant to 40 CFR 261 to determine if they are hazardous.
- c. If biosolids are stored at any facility owned or operated by the Permittee for over two years from the time they are generated, the Permittee shall notify the Division within 30 days and shall ensure compliance with all the requirements of surface disposal 40 CFR 503 C, or must submit a written notification to the Division and EPA with the information listed at 40 CFR 503.20 (b), demonstrating the need for longer temporary storage.
- d. Biosolids treatment or storage facilities owned or operated by the Permittee shall be designed to divert stormwater run-on for the 100-year storm event, and be designed to prevent erosion, which could cause biosolids to run-off.
- e. The Permittee shall take all appropriate precautions to inform biosolids haulers that all necessary measures to contain the biosolids should be taken before leaving the treatment facility.
- f. The Permittee shall comply with the following notification requirements either directly or through contractual arrangements with a biosolids management contractor:
- i. If biosolids are shipped to another state or to Indian lands, the Permittee shall send notice of the shipment to the state permitting authorities, the EPA Regional Office of the region receiving the biosolids or the Indian authorities.
  - ii. For land application or un-permitted disposal sites, the Permittee shall notify the Division 180 days prior to shipping any biosolids to enable the site to obtain a permit.
- g. **Biosolids Monitoring Report (BMR):** The Permittee shall submit a BMR annually which shall be submitted by **May 31<sup>st</sup>** for the period covering the previous calendar year. The report shall contain all the required biosolids analytical data, the volume of biosolids generated that year, any volume accumulated from previous years, descriptions of pathogen and vector attraction reduction methods and the required certifications as required by 40 CFR 503.17 and 27, the names, mailing and street addresses and telephone numbers of all facilities which received biosolids for storage, disposal, use, treatment, land application or any other use or disposal methods not mentioned and the volume of biosolids taken to each facility.

I.A.15. **Annual Fee:** The Permittee shall remit an annual review and services fee in accordance with NAC 445A.232 starting **July 1, 2007** and every year thereafter until the permit is terminated.

I.A.16. The treatment facility shall be operated by a Nevada Certified Grade IV Wastewater Operator. The first DMR submitted under this permit must include the written designation of the authorized representative as required by Part III.A.2. If the certified operator in responsible charge changes, a new designation letter must be submitted.

I.A.17. **Whole Effluent Toxicity Testing:** Beginning with the effective date of this permit, the Permittee shall conduct monthly toxicity tests on 24-hour composite effluent samples as described below on the discharge from Outfall 001.

- a. **Acute Toxicity Limit:** The effluent shall be deemed acutely toxic when there is a statistically significant difference at the 95th% confidence interval between the survival of the control (0% effluent) test organisms and the survival of the test organisms in the 100% effluent at the following limits:
- i. The survival of test organisms in the undiluted effluent sample is less than 90 percent in six (6) out of eleven (11) consecutive samples; or
  - ii. The survival rate of test organisms in the undiluted effluent sample is less than 70 percent in any two of eleven consecutive samples.

b. **Test Methods**

- i. The acute flow through or static replacement tests shall be conducted in general accordance with the procedures set out in the latest revision of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," EPA/600/4-90/027. The Permittee shall conduct an acute 48-hour flow through or static replacement toxicity test using any Daphnid approved by the Division and an acute 96-hour flow through or static replacement toxicity test using fathead minnows, Pimephales promelas. After each 24-hours of the test period the dilutions shall be replaced with freshly prepared dilutions of the original effluent sample.
  1. If more than 10 percent control mortality occurs, the test shall be repeated until satisfactory control survival is achieved.
  2. The source of the dilution water shall be reported with the test results. The tests shall be run using 4 replicate chambers, with a minimum of 5 organisms per test chamber for the Daphnid and 2 replicate chambers with a minimum of 10 organisms per test chamber for the Pimephales promelas.
- ii. **Alternative Species and Protocols:** The Permittee may undertake an investigation of alternative site specific toxicity test species and alternative site specific toxicity protocols. If alternative, site-specific toxicity test species or protocols are developed as a result of work by the Permittee, such species or protocols may be substituted for those specified in this permit on approval by the Division under 40 CFR Part 136. Alternative protocols must be compared to EPA protocols to demonstrate appropriateness and reliability.

c. **Testing Schedule**

- i. *Routine Schedule:* The Permittee shall conduct an acute toxicity test monthly.
- ii. *Accelerated schedule:* Whenever the effluent has been determined to be acutely toxic per Part I.A.17.a., the Permittee shall increase the frequency of acute toxicity testing to every other week. The accelerated testing shall also be conducted to determine an endpoint of either the LC50 or the No Observed Effects Concentration (NOEC) as defined in the above referenced method. When 4 (four) consecutive tests show greater than 70 percent survival of undiluted effluent, the Permittee may resume its routine test schedule.

d. **Follow-up Responses:** Whenever the acute toxicity effluent limitation as defined under either Part I.A.17.a.i or ii has been exceeded, **and** one or more of the tests conducted under Part I.A.17.c ii. has a survival rate of less than 70% in an undiluted effluent sample, the Permittee shall:

- i. In general accordance with EPA manuals and EPA/600/6-91/003, EPA/600/3-88/035, or any subsequent revisions and/or methods approved by the Division, initiate an identification investigation within 24 hours of the exceedance to identify the cause(s) of the toxicity. After the initiation of the investigation phase pursuant to this condition, the Permittee may suspend the accelerated testing required by Part I.A.17.c.ii. as long as the routine testing required by Part I.A.17.c.i. is resumed.
- ii. In general accordance with EPA manuals and EPA/600/R-92/081, or any subsequent revisions and/or methods approved by the Division, conduct an evaluation of findings where appropriate; and
- iii. Notify the Division within fifteen (15) days of becoming aware of the exceedance and provide the following:
  1. Times and dates when the limitation was exceeded;
  2. The findings of the identification investigation or other investigations to identify the cause(s) of the toxicity or a plan for continuing the identification investigation if it was not conclusive;
  3. The actions the Permittee has taken or will take to mitigate the impact of the discharge, to correct the noncompliance and prevent the recurrence of toxicity; and
  4. Where corrective actions have not been completed, an expeditious schedule under which the corrective actions will be implemented.

e. In no event shall the discharger cause any impairment of the receiving water or of the beneficial uses, nor cause a violation of any other provision of this permit, the Clean Water Act and State or local regulation or law.

f. **Toxicity Testing Reopener:** This permit may be reopened and modified by the Division to include effluent limits, additional testing and/or other appropriate actions to address demonstrated effluent toxicity. This permit may also be reopened and modified by the permitting authority to incorporate alternative permit conditions reflecting State Water Quality Standards revisions related to effluent toxicity.

- g. In addition to the quarterly DMR submittals, the Permittee shall submit an annual summary, **which** provides a review of the survival rates of both the control and the 100% effluent. The summary shall be submitted by **May 31st of each year**.
- h. **Chronic Toxicity:** The Permittee shall conduct chronic toxicity study using Ceriodaphnia dubia to confirm existing nontoxic conditions identified in studies conducted during the previous permit cycle and, if toxicity is found, to identify pollutants that may require additional controls under the pretreatment program, Part I.A.18.
  - i. The Permittee shall submit a study plan and schedule within one hundred eighty (180) days from the date of issuance of this permit for concurrence by the Division.
  - ii. The study will include the following:
    - 1. Chronic toxicity testing to be conducted at least once per quarter over a one year period following concurrence of the study plan by the Division.
    - 2. Samples of wastewater shall be taken at the same location as the effluent compliance samples, unless otherwise approved in writing by the Division.
    - 3. If chronic toxicity is identified, using appropriate statistical procedures or other evaluation methods acceptable to the Division, the Permittee may either increase testing frequency to monthly or conduct a toxicity identification evaluation (TIE). If after two additional months of testing the chronic toxicity has abated, the Permittee may return to quarterly testing. If it has not, the Permittee shall continue accelerated testing, conduct a TIE, or submit an alternate proposal to the Division for approval.
    - 4. Chronic toxicity testing shall be conducted in accordance with procedures specified in 40 CFR Part 136.
    - 5. TIEs shall be conducted in accordance with procedures set forth in *Toxicity Identification Evaluations: Characterization of Chronically Toxic Effluents, Phase I*, EPA/600/6-91/003, USEPA, 1991A; and *Toxicity Reduction Evaluation Protocol for Municipal Wastewater Treatment Plants*, EPA/600/2-88/062, USEPA, 1989A, as appropriate.
  - iii. The Permittee shall take appropriate actions to address any pollutant of concern identified through this study.
  - iv. A report on the study shall be submitted to the Division within the time provided for in the study plan and schedule. The Permittee and the Division will review the information and any subsequent actions taken by the Permittee to assess the results and determine what actions, e.g., additional chronic toxicity testing, are necessary and appropriate.
  - v. The data collected through this study, and through the chronic toxicity testing and TIE procedures, are for informational purposes only and shall not be used to assess compliance or in an enforcement action against the Permittee.

I.A.18. **Pretreatment of Industrial Wastewaters:** The Permittee shall implement and enforce a pretreatment program under 40 CFR Part 403 (hereinafter 403), including any subsequent regulatory revisions to 403 and be responsible for and liable for the performance of all Control Authority pretreatment requirements contained in 403. Where 403 or subsequent revision places mandatory actions upon the Permittee as Control Authority but does not specify a timetable of completion of the

actions, the Permittee shall complete the required actions within 6 months from the issuance date of this permit or the effective date of the 403 revisions, whichever comes later. For violations of pretreatment requirements, the Permittee shall be subject to enforcement actions, penalties, fines, and other remedies by the U.S. EPA or other appropriate parties, as provided in the Act. EPA may initiate enforcement action against a non-domestic user for noncompliance with applicable standards and requirements as provided in the Act and as provided by the Division and EPA in the enforcement agreement.

- a. The Permittee will comply with the Pretreatment Program as submitted to and approved by the Division and EPA. This program shall include written agreements, with all sewage agencies who contribute flows to the treatment facility, that provide the Permittee with the legal authority to enforce the pretreatment program. The Permittee shall comply with all parts of the schedule listed below, Pretreatment of Industrial Wastewaters.
- b. The Permittee shall enforce the requirements promulgated under sections 307(b) through (d) and 402(b) of the Act with timely, appropriate and effective enforcement actions. The Permittee shall cause all non-domestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or in the case of a new non-domestic user, upon commencement of the discharge.
- c. The Permittee shall perform the pretreatment functions as required in 403 including but not limited to:
  - i. Implement the necessary legal authorities as provided in 403.8(f)(1);
  - ii. Enforce the pretreatment requirements under 403.5 and 6;
  - iii. Implement the programmatic functions as provided in 403.8(f)(2); and
  - iv. Provide the requisite funding and personnel to implement the pretreatment program as provided in 403.8(f)(3).
- d. The Permittee shall submit annually a report to the Division and EPA describing its pretreatment activities over the previous year. In the event the Permittee is not in compliance with any conditions or requirements of this permit, then the Permittee shall also include reasons for non-compliance and state how and when the Permittee shall comply with such conditions and requirements. This annual report shall cover operations for the previous calendar year and is due **May 31st** of each year. The report shall contain, but is not limited to, the following information:
  - i. A summary of the analytical results from representative, flow proportioned, 24-hour composite sampling of the Publicly Owned Treatment Works' (POTW's) influent and effluent for those pollutants EPA has identified under section 307(a) of the Act which are known or suspected to be discharged by non-domestic users. This will consist of an annual full priority pollutant scan, with
  - ii. Quarterly samples analyzed only for those pollutants detected in the full scan. Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent. The sludge analyzed shall be a composite sample of a minimum of twelve discrete samples taken at equal time intervals over a 24-hour period or a composite of

discreet samples every two hours when the sludge production period is less than 24 hours. Wastewater and sludge sampling and analysis shall be performed a minimum of once per quarter. The Permittee shall also provide any influent or effluent monitoring data for non-priority pollutants, which the Permittee believes, may be causing or contributing to interference, pass through, or adversely impacting sludge quality. Sampling and analysis shall be performed with the techniques prescribed in 40 CFR 136;

- iii. A discussion of upset, interference, or pass through incidents, if any, at the treatment plant, which the Permittee knows, or suspects were caused by non-domestic users of the POTW system. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of the non-domestic user responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent pass through or interference;
- iv. An update of the Permittee's significant industrial users (SIU's) including their names and addresses, and a list of deletions, additions and SIU name changes keyed to the previously submitted list. The Permittee shall provide a brief explanation for each change. The list shall identify the SIU's subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall also indicate which SIUs are subject to local limitations;
- v. The Permittee shall characterize the compliance status of each SIU by providing a list or table which includes the following information:
  1. Name of the SIU;
  2. Category, if subject to federal categorical standards;
  3. The type of wastewater treatment or control process in place;
  4. The number of samples taken by the POTW during the year;
  5. The number of samples taken by the SIU during the year;
  6. For an SIU subject to discharge requirements for total toxic organics, whether all required certifications were provided;
  7. A list of the standards violated during the year. Identify whether the violations were for categorical standards or local limits;
  8. Whether the facility is in significant noncompliance (SNC) as defined at 403.12(f)(2)(vii) at any time during the year; and
  9. A summary of enforcement or other actions taken during the year to return the SIU to compliance. Describe the type of action, final compliance date, and the amount of fines and penalties collected, if any. Describe any proposed actions for bringing the SIU into compliance;
- vi. A brief description of any programs the POTW implements to reduce pollutants from non-domestic users that are not classified as SIU's;
- vii. A brief description of any significant changes in operating the pretreatment program which differ from the previous year including, but not limited to, changes concerning the program's administrative structure, local limits, monitoring program or monitoring frequencies, legal authority, enforcement policy, funding levels, or staffing levels;
- viii. A summary of the annual pretreatment budget, including the cost of the pretreatment

- program functions and equipment purchases; and
- ix. A summary of activities to involve and inform the public of the program including a copy of the newspaper notice, if any, required under 403.8(f)(2)(vii).
- e. The Permittee shall submit quarterly SIU compliance status reports to EPA, Region 9 and the Division. The reports shall cover the periods of January 1 through March 31, April 1 through June 30, July 1 through September 30, and October 1 through December 31. Each report shall be submitted by the end of the month following the quarter except the report for October 1 through December 31, which may be included in the annual report. The reports, which may be submitted in outline form, shall contain:
    - i. The name and address of all SIU's which violated any discharge or reporting requirements during the quarter;
    - ii. A description of the violations including whether any discharge violations were for categorical standards or local limits;
    - iii. A description of the enforcement or other actions that were taken to remedy the noncompliance; and
    - iv. The status of active enforcement and other actions taken in response to SIU noncompliance identified in previous reports.

**I.A.19. Chlorine Residual and pH Effluent Limitation**

- a. The Permittee may determine compliance with chlorine residual and pH either by grab sampling or by continuous monitoring.
- b. If the Permittee chooses continuous monitoring, the Permittee shall maintain the chlorine residual and pH of such effluent within the range set forth in the applicable effluent limitations guidelines, except excursions from the range are permitted subject to the following limitations:
  - i. The total time during which the chlorine residual and pH values are outside the required range shall not exceed 7 hours and 26 minutes in any calendar month;
  - ii. No individual excursion from the range of chlorine and pH shall exceed 60 minutes; and
  - iii. If the continuous monitoring equipment fails, estimates derived from historical or contemporary data may be used.
- c. The Division may allow the Permittee to discontinue monitoring for chlorine upon approval of a submittal, which demonstrates that there is no reasonable potential for the chlorine concentrations to be toxic.

**I.A.20. Schedule of Compliance:** The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications, which the Administrator may make in approving the schedule of compliance.

- a. The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.
- b. The Permittee shall submit a report in accordance with permit condition Part I.B.1.c. within 14

days of a compliance date detailing compliance or noncompliance with that date.

- c. Within six (6) months of the completion of the plant expansion and/or modification, the Permittee shall submit a revised O&M manual to the Division for review and approval.

I.A.21. **Lake Mead and Las Vegas Wash Monitoring:** By **November 1st** of each year, the Permittee shall jointly submit, with the Clark County Water Reclamation District and the City of Henderson, an annual plan for monitoring ambient water quality in Lake Mead and Las Vegas Wash during the following year. Following approval by the Division, the Permittee shall implement its portion of the plan beginning **January 1st** of each year. The joint monitoring plan shall include, as a minimum, the following:

- a. The identification of at minimum three locations in Las Vegas Wash at which water quality will be routinely monitored.
- b. The identification of at minimum five locations within Lake Mead at which water quality will be routinely monitored, including at least one station near the mouth of Las Vegas Wash.
- c. An identification of the depths at which each station will be sampled.
- d. An explanation of why the station locations and depths were chosen.
- e. A schedule for monitoring water quality at the selected stations, at minimum biweekly in Las Vegas Wash and, during April through September, in Lake Mead.
- f. A list of parameters to be monitored, including at minimum chlorophyll (in epilimnetic samples), total phosphorus, orthophosphorus, nitrate, ammonia, dissolved oxygen, conductivity, temperature, pH, and fecal coliforms or E. coli.
- g. If the Permittee is unable to reach agreement with the other dischargers, the Permittee shall submit an explanation and a proposed individual monitoring plan.

## I.B. MONITORING AND REPORTING

### I.B.1. Reporting

- a. **Annual Reports**
  - i. On or before **May 31st** of each year, the Permittee shall submit a plot of concentration (y-axis) versus date (x-axis) for each analyzed constituent, which has been detected greater than 25% of the time. The plot shall include data from the preceding five years, if available. Any data point from the current year detected at concentrations greater than the limits in Part I.A.1 or the applicable water quality standard must be explained by a narrative.

- ii. The BMR required by Part I.A.14., the pretreatment annual report required by Part I.A.18.d., the Lake Mead and Las Vegas Wash Annual Report required by Part I.A.21, the TIN annual report required by Part I.A.3, the Salinity Control Report required by Part I.A.4 and WET annual reports required by Part I.A.17 are due each **May 31st**.
  
- b. **Quarterly Reporting:** Monitoring results obtained pursuant to Part I.A of the permit for the previous three (3) month period shall be summarized for each month and reported on a Discharge Monitoring Report (DMR) form. The DMR is to be received in this office no later than the 28th day of the month following the completed reporting period. The Permittee shall also submit the data in an electronic format provided by the Division. The first report is due on October 28, 2006. Summaries of laboratory results for analyses conducted by outside laboratories must accompany the DMR, and the full data package provided by the laboratory must be provided if requested in writing by the Division. If at any time the Permittee concludes that submitted data were incorrect, the Permittee shall notify the Division in writing, identify the incorrect data, and replace the incorrect data with corrected data, which shall thereafter be used for determining compliance with this permit.
  
- c. **Compliance Report:** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
  
- d. **Other information:** Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Administrator, it shall promptly submit such facts or information.
  
- e. **Planned changes:** The Permittee shall give notice to the Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition to a permitted facility;
  - i. May meet one of the criteria for determining whether a facility is a new source (40 CFR 122.29(b));
  - ii. Could significantly change the nature or increase the quantity of pollutants discharged; or
  - iii. Results in a significant change to the Permittee's sludge management practice or disposal sites.
  
- f. **Anticipated non-compliance:** The Permittee shall give advance notice to the Administrator of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.
  
- g. An original signed copy of these, and all other reports required herein, shall be submitted to the State at the following address:

Division of Environmental Protection

Bureau of Water Pollution Control  
ATTN: Compliance Coordinator  
901 South Stewart Street, Suite 4001  
Carson City, Nevada 89701

- h. A signed copy of all Discharge Monitoring Reports and any other reports shall be submitted to the Regional Administrator at the following address:

U.S. Environmental Protection Agency, Region IX  
NPDES/DMR WTR-7-1  
75 Hawthorne Street  
San Francisco, CA 94105

#### I.B.2 Monitoring

- a. **Representative Samples:** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.
- b. **Test Procedures:** Monitoring for the analysis of pollutants shall be conducted according to test procedures approved under 40 CFR 136 published pursuant to Section 304(h) of the Act, or SW-846, or in the case of sludge disposal, approved under 40 CFR 503, or other procedures as approved by the Administrator. Analysis shall be performed by a State of Nevada certified laboratory.
- c. **Recording the Results:** For each measurement or sample taken pursuant to the requirements of this permit, the Permittee shall record the following information:
- i. The exact place, date, and time of sampling;
  - ii. The dates the analyses were performed;
  - iii. The person(s) who performed the analyses;
  - iv. The analytical techniques or methods used; and
  - v. The results of all required analyses.
- d. **Additional Monitoring by Permittee:** If the Permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall also be indicated on the DMR. If a Permittee monitors more often than once per day, the Permittee shall compute the 7-day average or 30-day average by first averaging the samples for each day, and then averaging the daily averages or discrete samples representing all sampled days within the period; provided, however, that the Permittee may instead average all samples taken within the period if it notifies the Division that it will use this method.
- e.

- f. **Records Retention:** All records and information resulting from the monitoring activities, permit application, reporting required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation, shall be retained for a minimum of five years, or longer if required by the Administrator. Records of monitoring information required by this permit related to the Permittee's sewage sludge use and/or disposal activities shall be retained for a period of at least 5 years or longer as required by 40 CFR 503.
- g. **Detection Limits:** All laboratory analysis conducted in accordance with this discharge permit must meet the following criteria:
- i. All methods used must be specified or approved in either 40 CFR 136, SW-846 or otherwise approved by the Division. All analytical results must be generated by analytical laboratories certified by the state of Nevada laboratory certification program;
  - ii. The reporting limit for each metal monitored in accordance with this permit shall be less than or equal to the water quality standards for metals which apply to the Las Vegas Wash on the effective date of the permit, except for mercury. This requirement does not apply if a water quality standard is lowered after the issuance of this permit; however, the Permittee shall review methods used and by letter notify the division if the reporting limit will exceed the new criterion, and if so the Division may reopen the permit to impose new monitoring requirements;
  - iii. The Permittee shall determine whether any laboratories certified by the State of Nevada are analyzing mercury using EPA Method 1631 and achieving results within acceptable limits. If so, the Permittee shall provide a sample for analysis using EPA Method 1631 once per year. If not, the Permittee, acting individually or with other Permittees, shall initiate a dialog with its contract laboratories or other laboratories that might be interested in providing service to the Permittee to inform them of the opportunity to provide additional testing services to the Permittee, and to provide information on current sampling and analytical practices and procedures that might assist the laboratories in their determinations about whether to institute the use of the method; and
  - iv. All priority pollutant data reported by contract laboratories shall be submitted to the Division.
- g. **Modification of Monitoring Frequency and Sample Type:** After considering monitoring data, stream flow, discharge flow and receiving water conditions, the Administrator, may for just cause, modify the monitoring frequency and/or sample type by issuing an order to the Permittee.

### I.B.3. Definitions

- a. The "30-day average discharge" means the total discharge during a month divided by the number of samples in the period for that discharge facility. Where less than daily sampling is required by this permit, the 30-day average discharge shall be determined by the summation of all the measured discharges divided by the number of samples during the period when the measurements were made.

- b. The "7-day average" concentration means the arithmetic mean of measurements made during a week. If there are more than one measurement per day, the measurements may be averaged in accordance with Part I.B.2.d.
- b. The "daily maximum" is the highest measurement during the monitoring period.
- c. The "30-day average concentration", other than for fecal coliform bacteria, means the arithmetic mean of measurements made during a month. If there are more than one measurement per day, the measurements may be averaged in accordance with Part I.B.2.d. The "30-day average concentration" for fecal coliform bacteria means the geometric mean of measurements made during a month. The geometric mean is the "n<sup>th</sup>" root of the product of "n" numbers. Geometric mean calculations where there are non-detect results for fecal coliform shall use one half the detection limit as the value for the non-detect results.
- d. A "discrete" sample means any individual sample collected in less than 15 minutes.
- e. For flow-rate measurements a "composite" sample means the arithmetic mean of no fewer than six individual measurements taken at equal time intervals for 24 hours, or for the duration of discharge, whichever is shorter. For other than flow-rate a "composite" sample means a combination of no fewer than six individual flow-weighted samples obtained at equal time intervals for 24 hours, or for the duration of discharge, whichever is shorter. Flow-weighted sample means that the volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling.
- f. "Acute toxicity" is defined in the whole effluent testing procedures presented in this permit in Part I.A.17.
- g. "Biosolids" are non-hazardous sewage sludge or domestic septage as these terms are defined in 40 CFR 503.9.

## **PART II**

### **A. MANAGEMENT REQUIREMENTS**

II.A.1. **Change in Discharge:** All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, or treatment modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Any changes to the permitted treatment facility must comply with Nevada Administrative Code (NAC) 445A.283 to 445A.285. Pursuant to NAC 445A.263, the

permit may be modified to specify and limit any pollutants not previously limited.

**II.A.2. Facilities Operation-Proper Operation and Maintenance:** The Permittee shall at all times maintain in good working order and properly operate all treatment and control facilities, collection systems and pump stations installed or used by the Permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures.

**II.A.3. Adverse Impact-Duty to Mitigate:** The Permittee shall take all reasonable steps to minimize releases to the environment resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge. The Permittee shall carry out such measures, as reasonable, to prevent significant adverse impacts on human health or the environment.

**II.A.4. Noncompliance, Unauthorized Discharge, Bypassing and Upset**

- a. Any diversion, bypass, spill, overflow or discharge of treated or untreated wastewater from wastewater treatment or conveyance facilities under the control of the Permittee to navigable waters is prohibited except as authorized by this permit or in accordance with the Division's Spill Reporting Policy. The Division may take enforcement action for a diversion, bypass, spill, overflow, or discharge of treated or untreated wastewater to waters of the state except as authorized by this permit or in accordance with the Division's Spill Reporting Policy. In the event the Permittee has knowledge that a diversion, bypass, spill, overflow or discharge not authorized by this permit or in accordance with the Division's Spill Reporting Policy is probable, the Permittee shall notify the Administrator immediately.
- b. The Permittee shall notify the Administrator within twenty-four (24) hours of any diversion, bypass, spill, upset, overflow or release of treated or untreated discharge from wastewater treatment or conveyance facilities under the control of the Permittee other than that which is authorized by the permit or in accordance with the Division's Spill Reporting Policy. A written report shall be submitted to the Administrator within five (5) days of diversion, bypass, spill, overflow, upset or discharge, detailing the entire incident including:
  - i. Time and date of discharge;
  - ii. Exact location and estimated amount of discharge;
  - iii. Flow path and any bodies of water which the discharge reached;
  - iv. The specific cause of the discharge; and
  - v. The preventive and/or corrective actions taken.
- c. The following shall be included as information which must be reported within 24 hours:
  - i. Any unanticipated bypass which exceeds any effluent limitation in the permit;
  - ii. Any upset which exceeds any effluent limitation in the permit;
  - iii. Violation of a limitation for any toxic pollutant or any pollutant identified as the method to

control a toxic pollutant.

- d. The Permittee shall report all instances of noncompliance not reported under Part II.A.4.b. at the time monitoring reports are submitted. The reports shall contain the information listed in Part II.A.4.b.
- e. A “**bypass**” means the intentional diversion of waste streams from any portion of a treatment facility.
  - i. **Bypass not exceeding limitations:** The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts II.A.4.a, II.A.4.b, and II.A.4.f.
  - ii. **Anticipated bypass:** If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of bypass.
- f. **Prohibition of Bypass:** Bypass is prohibited, and the Administrator may take enforcement action against a Permittee for bypass, unless:
  - i. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.
  - ii. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
  - iii. The Permittee submitted notices as required under Part II.A.4.e.
- g. The Administrator may approve an anticipated bypass, after considering its adverse effects, if the Administrator determines that it will meet the three conditions listed in Part II.A.4.f.
- h. An “**upset**” means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
  - i. **Effect of an upset:** An upset constitutes an affirmative defense to an action brought for non-compliance with such technology-based permit effluent limitations if the requirements of Part II.A.4.j. are met.
- j. **Conditions necessary for a demonstration of an upset:** A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - i. An upset occurred and that the Permittee can identify the cause(s) of the upset;
  - ii. The permitted facility was at the time being properly operated;

- iii. The Permittee submitted notice of the upset as required under paragraph c of this section;  
and
- iv. The Permittee complied with any remedial measures required under Part II.A.3.

k. In selecting the appropriate enforcement option, the Administrator shall consider whether or not the noncompliance was the result of an upset. The burden of proof is on the Permittee to establish that an upset occurred.

II.A.5. **Removed Substances:** Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of waste waters shall be disposed of in a manner such as to prevent any pollution from such materials from entering any navigable waters.

II.A.6. **Safeguards to Electric Power Failure:** In order to maintain compliance with the effluent limitations and prohibitions of this permit the Permittee shall either:

- a. Provide at the time of discharge an alternative power source sufficient to operate the wastewater control facilities; or
- b. Halt or reduce all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

## II.B. RESPONSIBILITIES

II.B.1. **Right of Entry and Inspection:** The Permittee shall allow the Administrator and/or his authorized representatives, upon the presentation of credentials, to:

- a. Enter at reasonable times upon the Permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. Have access to and copy any records required to be kept under the terms and conditions of this permit at reasonable times;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations required in this permit; and
- d. Perform any necessary sampling or monitoring to determine compliance with this permit at any location for any parameter.

II.B.2. **Transfer of Ownership or Control:** In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the Permittee shall notify the succeeding owner or controller of the existence of this permit, by letter, a copy of which shall be forwarded to the Administrator. The Administrator may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be

necessary. The Administrator shall approve ALL transfer of permits.

**II.B.3. Availability of Reports:** Except for data determined to be confidential under NRS 445A.665, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of the Administrator. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in NRS 445A.710.

**II.B.4. Furnishing False Information and Tampering with Monitoring Devices:** Any person who intentionally or with criminal negligence makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained by the provisions of NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, or who falsifies, tampers with or knowingly renders inaccurate any monitoring device or method required to be maintained under the provisions of NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, is guilty of a gross misdemeanor and shall be punished by a fine of not more than \$10,000 or by imprisonment. This penalty is in addition to any other penalties, civil or criminal, provided pursuant to NRS 445A.300 to 445A.730, inclusive.

**II.B.5. Penalty for Violation of Permit Conditions:** Nevada Revised Statutes (NRS) 445A.675 provides that any person who violates a permit condition is subject to administrative and judicial sanctions as outlined in NRS 445A.690 through 445A.705.

**II.B.6. Permit Modification, Suspension or Revocation**

- a. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
  - i. Violation of any terms or conditions of this permit;
  - ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
  - iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge;
  - iv. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;
  - v. There are material and substantial alterations or additions to the permitted facility or activity;
  - vi. The Administrator has received new information;
  - vii. The standards or regulations have changed; or
  - viii. The Administrator has received notification that the permit will be transferred.
  
- b. **Minor Modifications:** With the consent of the Permittee and without public notice, the Administrator may make minor modifications in a permit to:
  - i. Correct typographical errors;
  - ii. Clarify permit language;
  - iii. Require more frequent monitoring or reporting;

- iv. Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the permit and does not interfere with attainment of the final compliance date;
- v. Allow for change in ownership;
- vi. Change the construction schedule for a new discharger provided that all equipment is installed and operational prior to discharge; or
- vii. Delete an outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits;
- viii. Reallocation of the Waste Load Allocation as long as the sum of the allocations does not change.

II.B.7. **Toxic Pollutants:** Notwithstanding Part II.B.6., if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the Permittee so notified.

II.B.8. **Liability:** Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable Federal, State or local laws, regulations, or ordinances. However, except for any toxic effluent standards and prohibitions imposed under section 307 of the Clean Water Act or toxic water quality standards set forth in NAC 445A.144, compliance with this permit constitutes compliance with Clean Water Act sections 301, 302, 306, 307, 318, 403, 405(a) and (b), and with NRS 445A.300 through 445A.730.

II.B.9. **Property Rights:** The issuance of this permit does not convey any property rights, in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

II.B.10. **Severability:** The provisions of this permit are severable, and if any provision of this permit, or the application of any provisions of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

II.B.11. **Duty to Comply:** The Permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination; revocation and reissuance, or modification; or denial of a permit renewal application.

II.B.12. **Need to Halt or Reduce Activity Not a Defense:** It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this permit.

**II.B.13.Duty to Provide Information:** The Permittee shall furnish to the Administrator, within a reasonable time, any relevant information which the Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this permit. The Permittee shall also furnish to the Administrator, upon request, copies of records required to be kept by this Permit.

### **PART III**

#### **III.A. OTHER REQUIREMENTS**

**III.A.1.Reapplication:** If the Permittee desires to continue to discharge, he shall reapply not later than 180 days before this permit expires on the application forms then in use. POTW's with NPDES permits shall submit the sludge information listed at 40 CFR 501.15(a)(2) with the renewal application. The renewal application shall be accompanied by the fee required by NAC 445A.232.

#### **III.A.2.Signatures, certification required on application and reporting forms**

- a. All applications, reports, or information submitted to the Administrator shall be signed and certified by making the following certification.

**“I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”**

- b. All applications, reports or other information submitted to the Administrator shall be signed by one of the following:
  - i. A principal executive officer of the corporation (of at least the level of vice president) or his authorized representative who is responsible for the overall operation of the facility from which the discharge described in the application or reporting form originates;
  - ii. A general partner of the partnership;
  - iii. The proprietor of the sole proprietorship; or
  - iv. A principal executive officer, ranking elected official or other authorized employee of the municipal, state or other public facility.
- c. **Changes to Authorization:** If an authorization under paragraph b. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph b. of this section must be submitted to the Administrator prior to or together with any reports, information, or

applications to be signed by an authorized representative.

**III.A.3. Holding Pond Conditions:** If any wastewater from the Permittee's facility is placed in ponds owned or operated by the Permittee, such ponds shall be located and constructed so as to:

- a. Contain with no discharge the once-in-the twenty-five year, 24 hour storm at said location;
- b. Withstand with no discharge the once-in-one-hundred year flood of said location; and
- c. Prevent escape of wastewater by leakage other than as authorized by this permit;

unless otherwise approved by the Division.

**III.A.4. Flow Rate Notification:** The Permittee shall notify the Administrator, by letter, not later than ninety (90) days after the 30-day average daily influent flow rate first equals or exceeds 85% of the design treatment capacity of the Permittee's facility given in Part I.A. The letter shall include:

- c. The 30-day average daily influent flow rate;
- d. The maximum 24-hour flow rate during the 30-day period reported above and the date the maximum flow occurred;
- e. The Permittee's estimate of when the 30-day average influent flow rate will equal or exceed the design treatment capacity of the Permittee's facility;
- f. A status report on the treatment works which will outline but not be limited to past performance, remaining capacity of the limiting treatment and disposal units or sites, past operational problems and improvements instituted, modifications to the treatment works which are needed to attain the permitted flow rate due to changing site specific conditions or design criteria; and
- g. The Permittee's schedule of compliance to provide additional treatment capacity before the 30-day average daily influent flow rate equals the present design treatment capacity of the Permittee's facility.

**III.A.5. Publicly Owned Treatment Works [40 CFR 122.42(b)]:** All POTWs must provide adequate notice to the Administrator of the following:

- h. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the Act if it were directly discharging those pollutants; and
- i. Any substantial change in the volume or character of pollutants being introduced into that

POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

- j. For the purposes of this part, adequate notice shall include information on: (1) the quality and quantity of effluent introduced into the POTW and (2) any anticipated impact of the change on the quantity or quality of effluent to be discharge from the POTW.

## ATTACHMENT A PRIORITY POLLUTANTS

<u>BASE NEUTRAL EXTRACTIBLES</u>	<u>VOLATILE ORGANICS</u>	<u>PESTICIDES</u>	<u>ACID EXTRACTIBLES</u>	<u>METALS</u>	<u>DIOXINS</u>
Acenaphthene	Acrolein	Aldrin	2,4,6-Trichlorophenol	Antimony	TCDD
Benzidine	Acrylonitrile	Dieldrin	4-Chloro-3-methylphenol	Arsenic	
1,2,4-Trichlorobenzene	Benzene	Chlordane (Technical)	2-Chlorophenol	Beryllium	
Hexachlorobenzene	Carbon tetrachloride	4,4'-DDT	2,4-Dichlorophenol	Cadmium	<u>OTHER</u>
Hexachloroethane	Chlorobenzene	4,4'-DDE	2,4-Dimethylphenol	Chromium	Cyanide
Bis(2-chloroethyl) ether	1,2-Dichloroethane	4,4'-DDD	2-Nitrophenol	Copper	Asbestos
2-Chloronaphthalene	1,1,1-Trichloroethane	Endosulfan I	4-Nitrophenol	Lead	
1,2-Dichlorobenzene	1,1-Dichloroethane	Endosulfan II	2,4-Dinitrophenol	Mercury	
1,3-Dichlorobenzene	1,1,2-Trichloroethane	Endosulfan sulfate	2-Methyl-4,6-dinitrophenol	Nickel	
1,4-Dichlorobenzene	1,1,2,2-Tetrachloroethane	Endrin	Pentachlorophenol	Selenium	
3,3'-Dichlorobenzidine	Chloroethane	Endrin aldehyde	Phenol	Silver	
2,4-Dinitrotoluene	2-Chloroethylvinylether	Heptachlor		Thallium	
2,6-Dinitrotoluene	Chloroform	Heptachlor epoxide		Zinc	
1,2-Diphenylhydrazine	1,1-Dichloroethene	Alpha-BHC			
Fluoranthene	Trans-1,2-Dichloroethene	Beta-BHC			
4-Chlorophenyl phenyl ether	1,2-Dichloropropane	Gamma-BHC (Lindane)			
4-Bromophenyl phenyl ether	1,3-Dichloropropane	Delta-BHC			
Bis(2-Chloroisopropyl) ether	Ethylbenzene	PCB 1016			
Bis(2-Chloroethoxy) methane	Dichloromethane	PCB 1221			
Hexachlorobutadiene	Chloromethane	PCB 1232			
Hexachlorocyclopentadiene	Bromomethane	PCB 1242			
Isophorone	Bromoform	PCB 1248			
Naphthalene	Bromodichloromethane	PCB 1254			
Nitrobenzene	Dibromochloromethane	PCB 1260			
N-Nitrosodimethylamine	Tetrachloroethene	Toxaphene			
N-Nitrosodiphenylamine	Toluene				
N-Nitrosodi-n-propylamine	Trichloroethene				
Bis(2-ethylhexyl) phthalate	Vinyl chloride				
n-Butyl benzyl phthalate					
Di-n-butyl phthalate					
Di-n-octyl phthalate					
Diethyl phthalate					
Dimethyl phthalate					
Benzo(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Acenaphthylene					
Antracene					
Benzo(g,h,i)perylene					
Fluorene					
Phenanthrene					
Dibenzo(a,h)anthracene					
Indeno(1,2,3-cd)pyrene					
Pyrene					

Note: Priority Pollutants to be analyzed using Environmental Protection Agency (EPA) Methods 200 Series, 353.3, 420.2, 624,625, 608, and/or an appropriate combination of these methods to verify compliance with permit-specified effluent discharge limitations.

**Appendix H**

Nevada Division of Environmental Protection Authorization to Discharge (Permit No. NV0021261) issued to Clark County Water Reclamation District

Nevada Division of Environmental Protection

AUTHORIZATION TO DISCHARGE

In compliance with the provisions of the Clean Water Act as amended, (33 U.S.C. 1251 et. seq; the "Act"), and Chapter 445A of the Nevada Revised Statutes,

Clark County Water Reclamation District  
5857 E. Flamingo Road  
Las Vegas, NV 89122

is authorized to discharge from a facility located at

4300 S Hollywood Blvd.  
Las Vegas, Nevada 89122  
Clark County

AND

5857 E. Flamingo Road  
Las Vegas, Nevada 89122  
Clark County

**Outfall 001 -AWT**  
Latitude N36° 06' 00"  
Longitude W115° 02' 00"

AND

**Outfall 002 – Central Plant**  
Latitude N36° 06' 34"  
Longitude W115° 01' 26"

to receiving waters named Las Vegas Wash

in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Part I, II, and III hereof.

This permit shall become effective on July 31, 2006.

This permit and the authorization to discharge shall expire at midnight, July 31, 2011.

Signed this 31<sup>st</sup> day of July, 2006



Alan Tinney, P.E., Supervisor  
Permitting Branch  
Bureau of Water Pollution Control



**PART 1**

**A. EFFLUENT LIMITATIONS, MONITORING REQUIREMENTS AND CONDITIONS**

1. During the period beginning on the effective date of this permit, and lasting until the permit expires, the Permittee is authorized to discharge treated sanitary wastewater and facility dewatering water from:

- Outfall 001, AWT plant; and
- Outfall 002, effluent from the Central Plant to the Las Vegas Wash.

Effluent samples taken in compliance with the monitoring requirements specified below shall be taken downstream of the disinfection facilities but prior to mixing with Las Vegas Wash. Influent samples are to be taken at the headworks and are designated as INF. The Effluent sites are sampled separately and will be designated by their Outfall numbers 001 and 002. The discharges for Outfall 001 and Outfall 002 shall be limited and monitored by the Permittee as specified in Table I.1.

**TABLE I.1 (Outfalls 001 - AWT, 002- Central Plant)**

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS<sup>4</sup></u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average	7 day Average	30 Day Average lb/day	Sample Location	Measurement Frequency	Sample Type <sup>3</sup>
<b>Flow</b>	150 MGD <sup>4</sup>	Monitor and Report	NA	INF, 001, 002	Continuous	Flow meter
<b>BOD<sub>5</sub> (uninhibited)</b>	30 mg/L	45 mg/L	37,530	001, 002	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		
<b>Total Suspended Solids</b>	30 mg/L	45 mg/L	37,530	001, 002	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		
<b>BOD<sub>5</sub> (uninhibited) &amp;TSS</b>	The Permittee shall demonstrate that the 30 day average percentage removal rate is at least 85%.			NA	Monthly	Calculate

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS<sup>4</sup></u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average	7 day Average	30 Day Average lb/day	Sample Location	Measurement Frequency	Sample Type <sup>3</sup>
<b>pH</b>	Minimum 6.0 and maximum 9.0 SU, except as allowed in Parts I.A.3 and I.A.19		NA	001, 002	Daily	Discrete
<b>Fecal Coliform<sup>1</sup></b>	200 cfu or mprn/100ml	See footnote 1	NA	001, 002	Daily	Discrete
<b>Total Residual Chlorine</b>	NA	0.1 mg/L- except as allowed in Part I.A.19.	NA	001, 002	Daily	Discrete
<b>Total Phosphorus as P: mg/L</b>	See Part I.A.2			001, 002	Daily	Composite
<b>Total Ammonia as N: mg/L</b>	See Part I.A.2			001, 002	Daily	Composite
<b>Total Inorganic Nitrogen as N: mg/L</b>	See Part I.A.3			001, 002	Weekly	Composite
<b>Total Dissolved Solids: mg/L</b>	See Part I.A.4			001, 002	Weekly	Composite
<b>Priority Pollutants</b>	Monitor and Report, See Attachment A			001, 002	Per Part I.A.18.d.	Discrete or Composite
<b>WET testing</b>	See Part I.A.17.			001, 002	Monthly	Composite
<b>Receiving Water</b>	Monitor and Report			Per Part I.A.21	Per Part I.A.21	Discrete
<b>Temperature: °C</b>	Monitor and Report		NA	001, 002	Weekly	Discrete
<b>Dissolved Oxygen:</b>	Monitor and Report		NA	001, 002	Weekly	Discrete

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS<sup>4</sup></u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average	7 day Average	30 Day Average lb/day	Sample Location	Measurement Frequency	Sample Type <sup>3</sup>
mg/L						
Orthophosphorus as P: mg/L	Monitor and Report			001, 002	Daily	Composite
Nitrate + Nitrite as N: mg/L	Monitor and Report			001, 002	Weekly	Composite
Total Kjeldahl Nitrogen as N: mg/L	Monitor and Report			001, 002	Weekly	Composite

1. The discharge shall not exceed a log mean of 200 cfu or mpn per 100 ml over a 30 day period nor may more than 10 percent of the total samples taken exceed 400 cfu or mpn per 100 ml.
2. For monitor and Report parameters, the Permittee shall report the maximum value, consistent with the measurement frequency, instead of the 7 day average.
3. Composite samples may be either physical or mathematical composites.
4. The 150 MGD limit applies to the sum of the Permittee's discharges through Outfalls 001, and 002.

I.A.2. **Waste Load Allocation (WLA) For Discharges Into Las Vegas Wash** The Permittee is authorized to discharge the waste loads listed for Total Phosphorus as P and Total Ammonia as N to the Las Vegas Wash. The WLA applies to the combined loading from Outfalls 001 and 002. This permit condition constitutes a cooperative agreement between the City of Las Vegas, Clark County Water Reclamation District, and City of Henderson (hereinafter Dischargers) to allow discharge flexibility. Each facility has an **Individual Waste Load Allocation (IWLA)** and there is a **Sum of Waste Load Allocations ( $\Sigma$ WLA)** defined below for the three facilities. Treatment facilities which are used to attain a waste load allocation are not required to be operated when not needed to meet that allocation.

- a. The Permittee shall be considered in compliance if **either**:
  - i. The Permittee does not exceed the **IWLA** listed below or the **IWLA** in effect due to transfers, **or**
  - ii. The **Sum of the Waste Load Allocations ( $\Sigma$ WLA)** listed below is not exceeded.

Waste Load Allocation Table

Constituent	City of Las Vegas IWLA	Clark County Water Reclamation District IWLA	City of Henderson IWLA	$\Sigma$ WLA
Total Phosphorus as P	122 lb/day	176 lb/day	36 lb/day	334 lb/day, Note: This WLA only applies March 1 - October 31; no limit applies the rest of the year.
Total Ammonia as N	354 lb/day	511 lb/day	105 lb/day	970 lb/day, Note: This WLA only applies April 1 - September 30; no limit applies the rest of the year.

- b. **Annual Reallocation of IWLA** On an annual basis, the Permittee may modify the **IWLA** by either transferring or receiving waste load from another discharger. This reallocation shall become effective upon submittal of a notification signed by all three dischargers. The annual reallocation shall be **submitted by May 31<sup>st</sup> if applicable**. The notification of reallocation shall include the flow, waste load discharged, treatment plant removal efficiency in tabular and graphical format. The reallocation of **IWLAs** shall be considered a minor modification to the permit as long as the  **$\Sigma$ WLA** is not modified.
- c. **Temporary Trading of IWLA** The Permittee may temporarily trade **IWLA** upon submittal of a notification signed by all three dischargers describing the amount of **IWLA** transferred, the length of time the transfer is effective and the basis for the transfer. The basis for the transfer shall include the last monthly flows and waste load discharged for each discharger. The waste load transfer shall be effective on the date of the submittal to the Division. This transfer is binding on the parties and cannot be revoked without a notification signed by all three dischargers. The transferred **IWLA** shall revert back to the original Permittee at the end of the time specified on the notification. A copy of the latest **IWLA** agreement and any agreements made during the reporting period shall be **submitted with each quarterly report required by Part I.B.1.**
- d. **Reporting** The Permittee shall **submit quarterly reports** pursuant to Part I.B.1, the **IWLA** and the  **$\Sigma$ WLA** for Total Phosphorus as P and Total Ammonia as N, reported monthly as a 30 day average in lb/day. The data for the  **$\Sigma$ WLA** shall be provided to and obtained from the other dischargers. In the event the Permittee cannot obtain the  **$\Sigma$ WLA** information in time for submittal with the quarterly DMR, then an explanation shall be included with the report along with a schedule for timely submittal.

I.A.3. **Confirmation of Standards Compliance**

- a. The Permittee shall coordinate with the other dischargers identified in Part I.A.2 to determine whether on an annual basis the 95th percentile of the monitoring data for Las Vegas Wash complies with the 20 mg/l total inorganic nitrogen (TIN) water quality standard at the control point, Las Vegas Wash 2 (LVW2, LW 6.05).
- b. The Permittee shall coordinate with the other dischargers identified in Part I.A.2 to determine whether the pH at LVW2 (LW6.05) complies with the water quality standard of 6.5-9.0 standard units.
- c. The results of these determinations shall be reported in the annual report identified in Part I.B.1.a.
- d. If the Permittee finds that Las Vegas Wash is not in compliance with the water quality standards identified in Parts I.A.3. a. or b., the Permittee shall:
  - i. Consider whether reasonable changes in the Permittee's discharge from any outfall would result in compliance;
  - ii. Coordinate with the other dischargers identified in Part I.A.2 to consider whether coordinated reasonable changes would achieve compliance; and
  - iii. Submit a report to the Division explaining the analytical process and conclusions.

I.A.4 **Salinity Control:** The Permittee shall continue to implement the existing ordinances and public education programs for salinity control and identify and correct all identified infiltration/inflow problems which contribute to exceedance of the goal of more than 400 mg/l TDS increase above the Colorado River water supply. The Permittee shall provide the following information **annually by May 31st:**

- a. Description of the municipal entity and facilities.
- b. Description of significant salt sources of the municipal wastewater collection system, and identification of entities responsible for each source, if available.
- c. Description of the wastewater discharge, covering location, receiving waters, quantity of salt load, and salinity concentration.
- d. Description of alternative plans for minimizing salt contribution to the municipal discharge. Alternative plans should include:
  - i. Description of system salt sources and alternative means of control.
  - ii. Cost of alternative plans in dollars per ton, of salt removed from any new discharges to the municipality.
- e. In order to calculate the net increase in salinity the Permittee shall obtain the concentration of TDS in the water supply at least quarterly. The Permittee may rely on data collected by any water purveyors,

and shall identify the source of the data.

- f. An evaluation of the impact of the discharge on the lower stem of the Colorado River system in terms of average annual average tons/day and concentration of TDS discharged.

I.A.5 **Narrative Standards Nevada Administrative Code (NAC) 445A.121:** Discharges shall not cause the following standards to be violated in any surface waters of the state. Waters must be free from:

- a. Substances that will settle to form sludge or bottom deposits in amounts sufficient to be unsightly, putrescent or odorous;
- b. Floating debris, oil, grease, scum, and other floating materials in amounts sufficient to be unsightly;
- c. Materials in amounts sufficient to produce taste or odor in the water or detectable off-flavor in the flesh of fish or in amounts sufficient to change the existing color, turbidity or other conditions in the receiving stream to such a degree as to create a public nuisance;
- d. High temperature, biocides, organisms pathogenic to human beings, toxic, corrosive or other deleterious substances at levels or combinations sufficient to be toxic to human, animal, plant or aquatic life;
- e. Radioactive materials must not result in accumulations of radioactivity in plants or animals that result in a hazard to humans or harm aquatic life;
- f. Untreated or uncontrolled wastes or effluents that are reasonably amenable to treatment or control; and
- g. Substances or conditions which interfere with the beneficial use of the receiving waters.

The narrative standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of high or low flow. Where effluents are discharged to such waters, the discharges are not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained.

I.A.6. The Permittee shall annually review monitoring data, conduct aquatic life studies using water with a hardness representative of the Las Vegas Wash (e.g. 800 mg/l) or conduct other studies to evaluate the existing water quality standards or other data issues, for the following parameters: cadmium, copper, hexavalent chromium, molybdenum, selenium, silver, sulfide. Results shall be included as part of the annual report required by Part I.B.1.a.i.

I.A.7. There shall be no objectionable odors from the collection system, treatment facility or disposal area, or biosolids treatment, use, storage or disposal area that the Permittee owns or operates.

- I.A.8. There shall be no discharge of substances that would cause a violation of water quality standards of the State of Nevada as defined by the permit. The permit may be reopened, and additional limits imposed, if it is determined that the discharge is causing a violation of ambient water quality standards of the State of Nevada.
- I.A.9. There shall be no discharge from the collection, treatment and disposal facilities except as authorized by this permit or in accordance with the Division's Spill Reporting Policy.
- I.A.10. The treatment and disposal facility shall be fenced and posted.
- I.A.11. The collection, treatment and disposal facilities shall be constructed in conformance with plans approved by the Administrator, as required by NAC 445A.284, except as provided in the Division's "Plan Specification Review Policy for Collection and Treatment Systems in Clark County", latest edition.
- I.A.12. The facility shall be operated in accordance with the Operations and Maintenance (O&M) manual which must be approved by the Administrator.
- I.A.13. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- I.A.14. **Biosolids and Sewage Sludge**
- a. **Disposal:** The Permittee shall comply with all applicable sections of the following regulations for biosolids which are disposed and inform any biosolids disposer of the requirement that they must comply with the following regulations as applicable.
    - i. 40 CFR 257 and 258; for biosolids disposed in municipal solid waste landfills as approved by the Administrator and the County;
    - ii. 40 CFR 261 for hazardous biosolids or 40 CFR 761 for biosolids with a PCB concentration greater than 50 mg/kg; or
    - iii. 40 CFR 503 placed in surface disposal sites (dedicated land disposal sites or monofills), or incinerated.
  - b. **Reuse:** The Permittee shall comply with any applicable sections of 40 CFR 503 for biosolids generated at the facility including, solid waste screening and sewage sludge which is to be used, land applied, stored or treated in compliance with any applicable sections of the following regulations:
    - i. 40 CFR 503; for non-hazardous biosolids that are land applied.
    - ii. The Permittee is responsible for informing any biosolids preparer, applicator, or disposer, of all requirements and the applicable regulations listed above.
    - iii. Facilities which are regulated under 40 CFR Part 503 shall monitor parameters listed in I.A.18., and shall also monitor the pathogen density requirements in 40 CFR 503.32 (a) and (b)(2) through (4) and the vector attraction reduction requirements in 503.33(b)(1) through (8); at the frequencies listed below.

<u>Dry Biosolids Disposal rate in metric tons/yr.</u>	<u>Frequency</u>
>0 - <290	each year
≥290 - <1500	once a quarter
≥1500 - <15000	once every 2 months
≥15000	once a month

- iv. Biosolids to be land applied shall be tested for organic nitrogen as N, ammonia as N, nitrate as N, and Total Nitrogen as N on the frequency required above.
  - v. Biosolids which are to be land applied shall be characterized annually pursuant to 40 CFR 261 to determine if they are hazardous.
- c. If biosolids are stored at any facility owned or operated by the Permittee for over two years from the time they are generated, the Permittee shall notify the Division within 30 days and shall ensure compliance with all the requirements of surface disposal 40 CFR 503 C, or must submit a written notification to the Division and EPA with the information listed at 40 CFR 503.20 (b), demonstrating the need for longer temporary storage.
  - d. Biosolids treatment or storage facilities owned or operated by the Permittee shall be designed to divert stormwater run-on for the 100-year storm event, and be designed to prevent erosion which could cause biosolids to run-off.
  - e. The Permittee shall take all appropriate precautions to inform biosolids haulers that all necessary measures to contain the biosolids should be taken before leaving the treatment facility.
  - f. The Permittee shall comply with the following notification requirements either directly or through contractual arrangements with a biosolids management contractor:
    - i. If biosolids are shipped to another state or to Indian lands, the Permittee shall send notice of the shipment to the state permitting authorities, the EPA Regional Office of the region receiving the biosolids or the Indian authorities.
    - ii. For land application or unpermitted disposal sites, the Permittee shall notify the Division 180 days prior to shipping any biosolids to enable the site to obtain a permit.
  - g. **Biosolids Monitoring Report (BMR):** The Permittee shall submit a BMR annually which shall be submitted by **May 31<sup>st</sup>** for the period covering the previous calendar year. The report shall contain all the required biosolids analytical data, the volume of biosolids generated that year, any volume accumulated from previous years, descriptions of pathogen and vector attraction reduction methods and the required certifications as required by 40 CFR 503.17 and 27, the names, mailing and street addresses and telephone numbers of all facilities which received biosolids for storage, disposal, use, treatment, land application or any other use or disposal methods not mentioned and the volume of biosolids taken to each facility.

- I.A.15. **Annual Fee:** The Permittee shall remit an annual review and services fee in accordance with NAC 445A.232 starting **July 1, 2007** and every year thereafter until the permit is terminated.
- I.A.16. The treatment facility shall be operated by a Nevada Certified Grade V Wastewater Operator. The first DMR submitted under this permit must include the written designation of the authorized representative as required by Part III.A.2. If the certified operator in responsible charge changes, a new designation letter must be submitted.
- I.A.17. **Whole Effluent Testing:** Beginning with the effective date of this permit, the Permittee shall conduct monthly toxicity tests on 24-hour composite effluent samples of Outfall 001 and 002 as described below:
- a. **Acute Toxicity Limit:** The effluent shall be deemed acutely toxic when there is a statistically significant difference at the 95th% confidence interval between the survival of the control (0% effluent) test organisms and the survival of the test organisms in the 100% effluent at the following limits:
    - i. The survival of test organisms in the undiluted effluent sample is less than 90 percent in six (6) out of eleven (11) consecutive samples; or
    - ii. The survival rate of test organisms in the undiluted effluent sample is less than 70 percent in any two of eleven consecutive samples.
  - b. **Test Methods**
    - i. The acute flow through or static replacement tests shall be conducted in general accordance with the procedures set out in the latest revision of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," EPA/600/4-90/027. The Permittee shall conduct an acute 48-hour flow through or static replacement toxicity test using any Daphnid approved by the Division and an acute 96-hour flow through or static replacement toxicity test using fathead minnows, Pimephales promelas. After each 24-hours of the test period the dilutions shall be replaced with freshly prepared dilutions of the original effluent sample.
      1. If more than 10 percent control mortality occurs, the test shall be repeated until satisfactory control survival is achieved.
      2. The source of the dilution water shall be reported with the test results. The tests shall be run using 4 replicate chambers, with a minimum of 5 organisms per test chamber for the Daphnid and 2 replicate chambers with a minimum of 10 organisms per test chamber for the Pimephales promelas.
    - ii. **Alternative Species and Protocols:** The Permittee may undertake an investigation of alternative site specific toxicity test species and alternative site specific toxicity protocols. If alternative, site-specific toxicity test species or protocols are developed as a result of work by the Permittee, such species or protocols may be substituted for those specified in this permit on approval by the Division under 40 CFR Part 136. Alternative protocols must be compared to EPA protocols to demonstrate appropriateness and reliability.
  - c. **Testing Schedule**
    - i. *Routine Schedule:* The Permittee shall conduct an acute toxicity test monthly.

- ii. *Accelerated schedule:* Whenever the effluent has been determined to be acutely toxic per Part I.A.17.a., the Permittee shall increase the frequency of acute toxicity testing to every other week. The accelerated testing shall also be conducted to determine an endpoint of either the LC50 or the No Observed Effects Concentration (NOEC) as defined in the above referenced method. When 4 (four) consecutive tests show greater than 70 percent survival of undiluted effluent, the Permittee may resume its routine test schedule.
- d. **Follow-up Responses:** Whenever the acute toxicity effluent limitation as defined under either Part I.A.17.a.i or ii has been exceeded, **and** one or more of the tests conducted under Part I.A.17.c.ii. has a survival rate of less than 70% in an undiluted effluent sample, the Permittee shall:
- i. In general accordance with EPA manuals and EPA/600/6-91/003, EPA/600/3-88/035, or any subsequent revisions and/or methods approved by the Division, initiate an identification investigation within 24 hours of the exceedance to identify the cause(s) of the toxicity. After the initiation of the investigation phase pursuant to this condition, the Permittee may suspend the accelerated testing required by Part I.A.17.c.ii. as long as the routine testing required by Part I.A.17.c.i. is resumed.
  - ii. In general accordance with EPA manuals and EPA/600/R-92/081, or any subsequent revisions and/or methods approved by the Division, conduct an evaluation of findings where appropriate; and
  - iii. Notify the Division within fifteen (15) days of becoming aware of the exceedance and provide the following:
    1. Times and dates when the limitation was exceeded;
    2. The findings of the identification investigation or other investigations to identify the cause(s) of the toxicity and a plan for continuing the identification investigation if it was not conclusive;
    3. The actions the Permittee has taken or will take to mitigate the impact of the discharge, to correct the noncompliance and prevent the recurrence of toxicity; and
    4. Where corrective actions have not been completed, an expeditious schedule under which the corrective actions will be implemented.
- e. In no event shall the discharger cause any impairment of the receiving water or of the beneficial uses, nor cause a violation of any other provision of this permit, the Clean Water Act and State or local regulation or law.
- f. **Toxicity Testing Reopener:** This permit may be reopened and modified by the Division to include effluent limits, additional testing and/or other appropriate actions to address demonstrated effluent toxicity. This permit may also be reopened and modified by the permitting authority to incorporate alternative permit conditions reflecting State Water Quality Standards revisions related to effluent toxicity.
- g. In addition to the quarterly DMR submittals, the Permittee shall submit an annual summary **which** provides a review of the survival rates of both the control and the 100% effluent. The summary shall be submitted by **May 31st of each year.**

- h. Chronic Toxicity:** The Permittee shall conduct chronic toxicity study using *Ceriodaphnia dubia* to confirm existing nontoxic conditions identified in studies conducted during the previous permit cycle and, if toxicity is found, to identify pollutants that may require additional controls under the pretreatment program, Part I.A.18.
- i. The Permittee shall submit a study plan and schedule within one hundred eighty (180) days from the date of issuance of this permit for concurrence by the Division.
  - ii. The study will include the following:
    1. Chronic toxicity testing to be conducted at least once per quarter over a one year period following concurrence of the study plan by the Division.
    2. Samples of wastewater shall be taken at the same location as the effluent compliance samples, unless otherwise approved in writing by the Division.
    3. If chronic toxicity is identified, using appropriate statistical procedures or other evaluation methods acceptable to the Division, the Permittee may either increase testing frequency to monthly or conduct a toxicity identification evaluation (TIE). If after two additional months of testing the chronic toxicity has abated, the Permittee may return to quarterly testing. If it has not, the Permittee shall continue accelerated testing, conduct a TIE, or submit an alternate proposal to the Division for approval.
    4. Chronic toxicity testing shall be conducted in accordance with procedures specified in 40 CFR Part 136.
    5. TIEs shall be conducted in accordance with procedures set forth in *Toxicity Identification Evaluations: Characterization of Chronically Toxic Effluents*, Phase I, EPA/600/6-91/003, USEPA, 1991A; and *Toxicity Reduction Evaluation Protocol for Municipal Wastewater Treatment Plants*, EPA/600/2-88/062, USEPA, 1989A, as appropriate.
  - iii. The Permittee shall take appropriate actions to address any pollutant of concern identified through this study.
  - iv. A report on the study shall be submitted to the Division within the time provided for in the study plan and schedule. The Permittee and the Division will review the information and any subsequent actions taken by the Permittee to assess the results and determine what actions, e.g., additional chronic toxicity testing, are necessary and appropriate.
  - v. The data collected through this study, and through the chronic toxicity testing and TIE procedures, are for informational purposes only and shall not be used to assess compliance or in an enforcement action against the Permittee.

**I.A.18. Pretreatment of Industrial Wastewaters:** The Permittee shall implement and enforce a pretreatment program under 40 CFR Part 403 (hereinafter 403), including any subsequent regulatory revisions to 403 and be responsible for and liable for the performance of all Control Authority pretreatment requirements contained in 403. Where 403 or subsequent revision places mandatory actions upon the Permittee as Control Authority but does not specify a timetable of completion of the actions, the Permittee shall complete the required actions within 6 months from the issuance date of this permit or the effective date of the 403 revisions, whichever comes later. For violations of pretreatment requirements, the Permittee shall be subject to enforcement actions, penalties, fines, and other remedies by the U.S. EPA or other appropriate parties, as provided in the Act. EPA may initiate enforcement action against a nondomestic

user for noncompliance with applicable standards and requirements as provided in the Act and as provided by the Division and EPA in the enforcement agreement.

- a. The Permittee will comply with the Pretreatment Program as submitted to and approved by the Division and EPA. This program shall include written agreements, with all sewage agencies who contribute flows to the treatment facility, that provide the Permittee with the legal authority to enforce the pretreatment program. The Permittee shall comply with all parts of the schedule listed below, Pretreatment of Industrial Wastewaters.
- b. The Permittee shall enforce the requirements promulgated under sections 307(b) through (d) and 402(b) of the Act with timely, appropriate and effective enforcement actions. The Permittee shall cause all nondomestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or in the case of a new nondomestic user, upon commencement of the discharge.
- c. The Permittee shall perform the pretreatment functions as required in 403 including but not limited to:
  - i. Implement the necessary legal authorities as provided in 403.8(f)(1);
  - ii. Enforce the pretreatment requirements under 403.5 and 6;
  - iii. Implement the programmatic functions as provided in 403.8(f)(2); and
  - iv. Provide the requisite funding and personnel to implement the pretreatment program as provided in 403.8(f)(3).
- d. The Permittee shall submit annually a report to the Division and EPA describing its pretreatment activities over the previous year. In the event the Permittee is not in compliance with any conditions or requirements of this permit, then the Permittee shall also include reasons for non-compliance and state how and when the Permittee shall comply with such conditions and requirements. This annual report shall cover operations for the previous calendar year and is due May 31st of each year. The report shall contain, but is not limited to, the following information:
  - i. A summary of the analytical results from representative, flow proportioned, 24-hour composite sampling of the Publicly Owned Treatment Works' (POTWs) influent and effluent for those pollutants EPA has identified under section 307(a) of the Act which are known or suspected to be discharged by nondomestic users. This will consist of an annual full priority pollutant scan, with quarterly samples analyzed only for those pollutants detected in the full scan.
  - ii. Sludge shall be sampled during the same 24 hour period and analyzed for the same pollutants as the influent and effluent. The sludge analyzed shall be a composite sample of a minimum of twelve discrete samples taken at equal time intervals over a 24 hour period or a composite of discrete samples taken every two hours when the sludge production period is less than 24 hours. Wastewater and sludge sampling and analysis shall be performed a minimum of once per quarter. The Permittee shall also provide any influent or effluent monitoring data for non-priority pollutants which the Permittee believes may be causing or contributing to interference, pass through or adversely impacting sludge quality. Sampling and analysis shall be performed with

- the techniques prescribed in 40 CFR 136;
- iii. A discussion of upset, interference, or pass through incidents, if any, at the treatment plant which the Permittee knows or suspects were caused by nondomestic users of the POTW system. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of the non-domestic user responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent pass through or interference;
  - iv. An update of the Permittee's significant industrial users (SIUs) including their names and addresses, and a list of deletions, additions and SIU name changes keyed to the previously submitted list. The Permittee shall provide a brief explanation for each change. The list shall identify the SIUs subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall also indicate which SIUs are subject to local limitations;
  - v. The Permittee shall characterize the compliance status of each SIU by providing a list or table which includes the following information:
    - 1. Name of the SIU;
    - 2. Category, if subject to federal categorical standards;
    - 3. The type of wastewater treatment or control process in place;
    - 4. The number of samples taken by the POTW during the year;
    - 5. The number of samples taken by the SIU during the year;
    - 6. For an SIU subject to discharge requirements for total toxic organics, whether all required certifications were provided;
    - 7. A list of the standards violated during the year. Identify whether the violations were for categorical standards or local limits;
    - 8. Whether the facility is in significant noncompliance (SNC) as defined at 403.12(f)(2)(vii) at any time during the year; and
    - 9. A summary of enforcement or other actions taken during the year to return the SIU to compliance. Describe the type of action, final compliance date, and the amount of fines and penalties collected, if any. Describe any proposed actions for bringing the SIU into compliance;
  - vi. A brief description of any programs the POTW implements to reduce pollutants from nondomestic users that are not classified as SIUs;
  - vii. A brief description of any significant changes in operating the pretreatment program which differ from the previous year including, but not limited to, changes concerning the program's administrative structure, local limits, monitoring program or monitoring frequencies, legal authority, enforcement policy, funding levels, or staffing levels;
  - viii. A summary of the annual pretreatment budget, including the cost of the pretreatment program functions and equipment purchases; and
  - ix. A summary of activities to involve and inform the public of the program including a copy of the newspaper notice, if any, required under 403.8(f)(2)(vii).
- e. The Permittee shall submit quarterly SIU compliance status reports to EPA Region 9 and the

Division. The reports shall cover the periods of January 1 through March 31, April 1 through June 30, July 1 through September 30, and October 1 through December 31. Each report shall be submitted by the end of the month following the quarter except the report for October 1 through December 31, which may be included in the annual report. The reports shall contain:

- i. The name and address of all SIUs which violated any discharge or reporting requirements during the quarter;
- ii. A description of the violations including whether any discharge violations were for categorical standards or local limits;
- iii. A description of the enforcement or other actions that were taken to remedy the noncompliance; and
- iv. The status of active enforcement and other actions taken in response to SIU noncompliance identified in previous reports.

**I.A.19. Chlorine Residual and pH Effluent Limitation**

- a. The Permittee may determine compliance with chlorine residual and pH either by grab sampling or by continuous monitoring.
- b. If the Permittee chooses continuous monitoring, the Permittee shall maintain the chlorine residual and pH of such effluent within the range set forth in the applicable effluent limitations guidelines, except excursions from the range are permitted subject to the following limitations:
  - i. The total time during which the chlorine residual and pH values are outside the required range, values shall not exceed 7 hours and 26 minutes in any calendar month;
  - ii. No individual excursion from the range of chlorine and pH shall exceed 60 minutes; and,
  - iii. If the continuous monitoring equipment fails, estimates derived from historical or contemporary data may be used.
- c. The Division may allow the Permittee to discontinue monitoring for chlorine upon approval of a submittal which demonstrates that there is no reasonable potential for the chlorine concentrations to be toxic.

**I.A.20. Schedule of Compliance:** The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications which the Administrator may make in approving the schedule of compliance.

- a. The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.
- b. The Permittee shall submit a report in accordance with Part I.B.1.c. within 14 days of a compliance date detailing compliance or noncompliance with that date.

- c. Within six (6) months of the completion of the plant expansion and/or modification, the Permittee shall submit a revised O&M manual to the Division for review and approval.

1.A.21. **Lake Mead and Las Vegas Wash Monitoring:** By November 1st of each year, the Permittee shall jointly submit, with the Clark County Water Reclamation District and the City of Las Vegas and the City of Henderson, an annual plan for monitoring ambient water quality in Lake Mead and Las Vegas Wash during the following year. Following approval by the Division, the Permittee shall implement its portion of the plan beginning **January 1st** of each year. The joint monitoring plan shall include as a minimum, the following:

- a. The identification of at minimum three locations in Las Vegas Wash at which water quality will be routinely monitored.
  - b. The identification of at minimum five locations within Lake Mead at which water quality will be routinely monitored, including at least one station near the mouth of Las Vegas Wash
  - c. An identification of the depths at which each station will be sampled.
  - d. An explanation of why the station locations and depths were chosen.
  - e. A schedule for monitoring water quality at the selected stations, at minimum biweekly in Las Vegas Wash and, during April through September, in Lake Mead.
  - f. A list of parameters to be monitored, including at minimum chlorophyll (in epilimnetic samples), total phosphorus, orthophosphorus, nitrate, ammonia, dissolved oxygen, conductivity, temperature, pH, and fecal coliforms or E. coli.
- a. If the Permittee is unable to reach agreement with the other dischargers, the Permittee shall submit an explanation and a proposed individual monitoring plan.

## B. MONITORING AND REPORTING

### I.B.1. Reporting

- a. **Annual Reports**
  - i. On or before **May 31st** of each year, the Permittee shall submit a plot of concentration (y-axis) versus date (x-axis) for each analyzed constituent which has been detected greater than 25% of the time. The plot shall include data from the preceding five years, if available. **Any data point from the current year detected at concentrations greater than the limits in Part I.A.1 or the applicable water quality standard must be explained by a narrative.**
  - ii. The BMR required by Part I.A.14, the pretreatment annual report required by Part I.A.18.d., the Lake Mead and Las Vegas Wash Annual Report required by Part I.A.21, the TIN annual report

required by Part I.A.3., the Salinity Control Report required by Part I.A.4. and the WET reports required by Part I.A.17 are due each **May 31st**.

- b. **Quarterly Reporting:** Monitoring results obtained pursuant to Part I.A. of the permit for the previous three (3) month period shall be summarized for each month and reported on a Discharge Monitoring Report (DMR) form. The DMR is to be received in this office no later than the 28th day of the month following the completed reporting period. The Permittee shall also submit the data in an electronic format provided by the Division. The first report is due on October 28, 2006. Summaries of laboratory results for analyses conducted by outside laboratories must accompany the DMR, and the full data package provided by the laboratory must be provided if requested in writing by the Division. If at any time the Permittee concludes that submitted data were incorrect, the Permittee shall notify the Division in writing, identifying the incorrect data, and replace the incorrect data with corrected data, which shall thereafter be used for determining compliance with this permit.
- c. **Compliance Report:** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- d. **Other information:** Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Administrator, it shall promptly submit such facts or information.
- e. **Planned changes:** The Permittee shall give notice to the Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition to a permitted facility;
  - i. May meet one of the criteria for determining whether a facility is a new source (40 CFR 122.29(b));
  - ii. Could significantly change the nature or increase the quantity of pollutants discharged; or
  - iii. Results in a significant change to the Permittee's sludge management practice or disposal sites.
- f. **Anticipated non-compliance:** The Permittee shall give advance notice to the Administrator of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.
- g. An original signed copy of these, and all other reports required herein, shall be submitted to the State at the following address:

Division of Environmental Protection  
Bureau of Water Pollution Control  
ATTN: Compliance Coordinator  
901 South Stewart Street, Suite 4001  
Carson City, Nevada 89701

- h. A signed copy of all Discharge Monitoring Reports and any other reports shall be submitted to the Regional Administrator at the following address:

U.S. Environmental Protection Agency, Region IX  
NPDES/DMR WTR-7-1  
75 Hawthorne Street  
San Francisco, CA 94105

## I.B.2 Monitoring

- a. **Representative Samples:** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.
- b. **Test Procedures:** Monitoring for the analysis of pollutants shall be conducted according to test procedures approved under 40 CFR 136 published pursuant to Section 304(h) of the Act, or SW-846, or in the case of sludge disposal, approved under 40 CFR 503, or other procedures as approved by the Administrator. Analysis shall be performed by a State of Nevada certified laboratory.
- c. **Recording the Results:** For each measurement or sample taken pursuant to the requirements of this permit, the Permittee shall record the following information:
- i. The exact place, date, and time of sampling;
  - ii. The dates the analyses were performed;
  - iii. The person(s) who performed the analyses;
  - iv. The analytical techniques or methods used; and
  - v. The results of all required analyses.
- d. **Additional Monitoring by Permittee:** If the Permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall also be indicated on the DMR. If a Permittee monitors more often than once per day, the Permittee shall compute the 7-day average or 30-day average by first averaging the samples for each day, and then averaging the daily averages or discrete samples representing all sampled days within the period; provided, however, that the Permittee may instead average all samples taken within the period if it notifies the Division that it will use this method.
- e. **Records Retention:** All records and information resulting from the monitoring activities, permit application, reporting required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation, shall be retained for a minimum of five (5) years, or longer if required by the Administrator. Records of monitoring information required by this permit related to the Permittee's sewage sludge use and/or disposal activities shall be retained for a period of at least 5 years or longer as required by 40 CFR 503.

- f. **Detection Limits:** All laboratory analysis conducted in accordance with this discharge permit must meet the following criteria:
- i. All methods used must be specified or approved in either 40 CFR 136, SW-846 or otherwise approved by the Division. All analytical results must be generated by analytical laboratories certified by the Nevada laboratory certification program;
  - ii. The reporting limit for each metal monitored in accordance with this permit shall be less than or equal to the water quality standards for metals which apply to the Las Vegas Wash on the effective date of the permit, except for mercury. This requirement does not apply if a water quality standard is lowered after the issuance of this permit; however, the Permittee shall review methods used and by letter notify the Division if the reporting limit will exceed the new criterion, and if so the Division may reopen the permit to impose new monitoring requirements;
  - iii. The Permittee shall determine whether any laboratories certified by the State of Nevada are analyzing mercury using EPA Method 1631 and achieving results within acceptable limits. If so, the Permittee shall provide a sample for analysis using EPA Method 1631 once per year. If not, the Permittee, acting individually or with other Permittees, shall initiate a dialog with its contract laboratories or other laboratories that might be interested in providing service to the Permittee to inform them of the opportunity to provide additional testing services to the Permittee, and to provide information on current sampling and analytical practices and procedures that might assist the laboratories in their determinations about whether to institute the use of the method; and
  - iv. All priority pollutant data reported by contract laboratories shall be submitted to the Division.
- g. **Modification of Monitoring Frequency and Sample Type:** After considering monitoring data, stream flow, discharge flow and receiving water conditions, the Administrator, may for just cause, modify the monitoring frequency and/or sample type by issuing an order to the Permittee.

### **I.B.3. Definitions**

- a. The "30-day average discharge" means the total discharge during a month divided by the number of samples in the period for that discharge facility. Where less than daily sampling is required by this permit, the 30-day average discharge shall be determined by the summation of all the measured discharges divided by the number of samples during the period when the measurements were made.
- b. The "7- day average" concentration means the arithmetic mean of measurements made during a week. If there are more than one measurement per day, the measurements may be averaged in accordance with Part I.B.2.d.
- c. The "daily maximum" is the highest measurement during the monitoring period.
- d. The "30-day average concentration", other than for fecal coliform bacteria, means the arithmetic mean of measurements made during a month. If there are more than one measurement per day, the measurements may be averaged in accordance with Part I.B.2.d. The "30-day average concentration" for fecal coliform bacteria means the geometric mean of measurements made during a month. The

geometric mean is the " $n^{\text{th}}$ " root of the product of " $n$ " numbers. Geometric mean calculations where there are non-detect results for fecal coliform shall use one half the detection limit as the value for the non-detect results.

- e. A "discrete" sample means any individual sample collected in less than 15 minutes.
- f. For flow-rate measurements a "composite" sample means the arithmetic mean of no fewer than six individual measurements taken at equal time intervals for 24 hours, or for the duration of discharge, whichever is shorter. For other than flow-rate a "composite" sample means a combination of no fewer than six individual flow-weighted samples obtained at equal time intervals for 24 hours, or for the duration of discharge, whichever is shorter. Flow-weighted sample means that the volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling.
- g. "Acute toxicity" is defined in the whole effluent testing procedures presented in this permit in Part I.A.17.
- h. "Biosolids" are non-hazardous sewage sludge or domestic septage as these terms are defined in 40 CFR 503.9.

## **PART II**

### **A. MANAGEMENT REQUIREMENTS**

- II.A.1. **Change in Discharge:** All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, or treatment modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Any changes to the permitted treatment facility must comply with Nevada Administrative Code (NAC) 445A.283 to 445A.285. Pursuant to NAC 445A.263, the permit may be modified to specify and limit any pollutants not previously limited.
- II.A.2. **Facilities Operation-Proper Operation and Maintenance:** The Permittee shall at all times maintain in good working order and properly operate all treatment and control facilities, collection systems and pump stations installed or used by the Permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures.
- II.A.3. **Adverse Impact-Duty to Mitigate:** The Permittee shall take all reasonable steps to minimize releases to the environment resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the

noncomplying discharge. The Permittee shall carry out such measures, as reasonable, to prevent significant adverse impacts on human health or the environment.

#### II.A.4. Noncompliance, Unauthorized Discharge, Bypassing and Upset

- a. Any diversion, bypass, spill, overflow or discharge of treated or untreated wastewater from wastewater treatment or conveyance facilities under the control of the Permittee to navigable waters is prohibited except as authorized by this permit or in accordance with the Division's Spill Reporting Policy, however, the Division may take enforcement action for a diversion, bypass, spill, overflow, or discharge of treated or untreated wastewater to waters of the state except as authorized by this permit or in accordance with the Division's Spill Reporting Policy. In the event the Permittee has knowledge that a diversion, bypass, spill, overflow or discharge not authorized by this permit or in accordance with the Division's Spill Reporting Policy is probable, the Permittee shall notify the Administrator immediately.
- b. The Permittee shall notify the Administrator within twenty-four (24) hours of any diversion, bypass, spill, upset, overflow or release of treated or untreated discharge from wastewater treatment or conveyance facilities under the control of the Permittee other than that which is authorized by the permit or in accordance with the Division's Spill Reporting Policy. A written report shall be submitted to the Administrator within five (5) days of diversion, bypass, spill, overflow, upset or discharge, detailing the entire incident including:
  - i. Time and date of discharge;
  - ii. Exact location and estimated amount of discharge;
  - iii. Flow path and any bodies of water which the discharge reached;
  - iv. The specific cause of the discharge; and
  - v. The preventive and/or corrective actions taken.
- c. The following shall be included as information which must be reported within 24 hours:
  - i. Any unanticipated bypass which exceeds any effluent limitation in the permit;
  - ii. Any upset which exceeds any effluent limitation in the permit;
  - iii. Violation of a limitation for any toxic pollutant or any pollutant identified as the method to control a toxic pollutant.
- d. The Permittee shall report all instances of noncompliance not reported under Part II.A.4.b. at the time monitoring reports are submitted. The reports shall contain the information listed in Part II.A.4.b.
- e. A "**bypass**" means the intentional diversion of waste streams from any portion of a treatment facility.
  - i. **Bypass not exceeding limitations:** The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts II.A.4.a, II.A.4.b, and II.A.4.f.

- ii. **Anticipated bypass:** If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of bypass.
- f. **Prohibition of Bypass:** Bypass is prohibited, and the Administrator may take enforcement action against a Permittee for bypass, unless:
  - i. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.
  - ii. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
  - iii. The Permittee submitted notices as required under Part II.A.4.e.
- g. The Administrator may approve an anticipated bypass, after considering its adverse effects, if the Administrator determines that it will meet the three conditions listed in Part II.A.4. f.
- h. An "**upset**" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
  - i. **Effect of an upset:** An upset constitutes an affirmative defense to an action brought for non-compliance with such technology-based permit effluent limitations if the requirements of Part II.A.4.j of this section are met.
- j. **Conditions necessary for a demonstration of an upset:** A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - i. An upset occurred and that the Permittee can identify the cause(s) of the upset;
  - ii. The permitted facility was at the time being properly operated;
  - iii. The Permittee submitted notice of the upset as required under paragraph c of this section; and
  - iv. The Permittee complied with any remedial measures required under Part II.A.3.
- k. In selecting the appropriate enforcement option, the Administrator shall consider whether or not the noncompliance was the result of an upset. The burden of proof is on the Permittee to establish that an upset occurred.

II.A.5. **Removed Substances:** Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of waste waters shall be disposed of in a manner such as to prevent any pollution from such materials from entering any navigable waters.

**II.A.6. Safeguards to Electric Power Failure:** In order to maintain compliance with the effluent limitations and prohibitions of this permit the Permittee shall either:

- a. Provide at the time of discharge an alternative power source sufficient to operate the wastewater control facilities; or
- b. Halt or reduce all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

## **II.B. RESPONSIBILITIES**

**II.B.1. Right of Entry and Inspection:** The Permittee shall allow the Administrator and/or his authorized representatives, upon the presentation of credentials, to:

- a. Enter at reasonable times upon the Permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. Have access to and copy any records required to be kept under the terms and conditions of this permit at reasonable times;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations required in this permit; and
- d. Perform any necessary sampling or monitoring to determine compliance with this permit at any location for any parameter.

**II.B.2. Transfer of Ownership or Control:** In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the Permittee shall notify the succeeding owner or controller of the existence of this permit, by letter, a copy of which shall be forwarded to the Administrator. The Administrator may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary. The Administrator shall approve ALL transfer of permits.

**II.B.3. Availability of Reports:** Except for data determined to be confidential under NRS 445A.665, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of the Administrator. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in NRS 445A.710.

**II.B.4. Furnishing False Information and Tampering with Monitoring Devices:** Any person who intentionally or with criminal negligence makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained by the provisions of

NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, or who falsifies, tampers with or knowingly renders inaccurate any monitoring device or method required to be maintained under the provisions of NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, is guilty of a gross misdemeanor and shall be punished by a fine of not more than \$10,000 or by imprisonment. This penalty is in addition to any other penalties, civil or criminal, provided pursuant to NRS 445A.300 to 445A.730, inclusive.

**II.B.5. Penalty for Violation of Permit Conditions:** Nevada Revised Statutes (NRS) 445A.675 provides that any person who violates a permit condition is subject to administrative and judicial sanctions as outlined in NRS 445A.690 through 445A.705.

**II.B.6. Permit Modification, Suspension or Revocation**

- a. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
  - i. Violation of any terms or conditions of this permit;
  - ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
  - iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge;
  - iv. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;
  - v. There are material and substantial alterations or additions to the permitted facility or activity;
  - vi. The Administrator has received new information;
  - vii. The standards or regulations have changed; or
  - viii. The Administrator has received notification that the permit will be transferred.
  
- b. **Minor Modifications:** With the consent of the Permittee and without public notice, the Administrator may make minor modifications in a permit to:
  - i. Correct typographical errors;
  - ii. Clarify permit language;
  - iii. Require more frequent monitoring or reporting;
  - iv. Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the permit and does not interfere with attainment of the final compliance date;
  - v. Allow for change in ownership;
  - vi. Change the construction schedule for a new discharger provided that all equipment is installed and operational prior to discharge; or
  - vii. Delete an outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits;
  - viii. Reallocation of the Waste Load Allocation as long as the sum of the allocations does not change.

- II.B.7. **Toxic Pollutants:** Notwithstanding Part II.B.6. if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the Permittee so notified.
- II.B.8. **Liability:** Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable Federal, State or local laws, regulations, or ordinances. However, except for any toxic effluent standards and prohibitions imposed under section 307 of the Clean Water Act or toxic water quality standards set forth in NAC 445A.144, compliance with this permit constitutes compliance with Clean Water Act sections 301, 302, 306, 307, 318, 403, 405(a) and (b), and with NRS 445A.300 through 445A.730.
- II.B.9. **Property Rights:** The issuance of this permit does not convey any property rights, in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.
- II.B.10. **Severability:** The provisions of this permit are severable, and if any provision of this permit, or the application of any provisions of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- II.B.11. **Duty to Comply:** The Permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination; revocation and reissuance, or modification; or denial of a permit renewal application.
- II.B.12. **Need to Halt or Reduce Activity Not a Defense:** It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this permit.
- II.B.13. **Duty to Provide Information:** The Permittee shall furnish to the Administrator, within a reasonable time, any relevant information which the Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this permit. The Permittee shall also furnish to the Administrator, upon request, copies of records required to be kept by this Permit.

### PART III

#### III.A. OTHER REQUIREMENTS

- III.A.1. **Reapplication:** If the Permittee desires to continue to discharge, he shall reapply not later than 180 days before this permit expires on the application forms then in use. POTWs with NPDES permits shall submit the sludge information listed at 40 CFR 501.15(a)(2) with the renewal application. The renewal application shall be accompanied by the fee required by NAC 445A.232.

**III.A.2. Signatures, certification required on application and reporting forms**

- a. All applications, reports, or information submitted to the Administrator shall be signed and certified by making the following certification.

**“I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”**

- b. All applications, reports or other information submitted to the Administrator shall be signed by one of the following:
- i. A principal executive officer of the corporation (least the level of vice president) or his authorized representative who is responsible for the overall operation of the facility from which the discharge described in the application or reporting form originates;
  - ii. A general partner of the partnership;
  - iii. The proprietor of the sole proprietorship; or
  - iv. A principal executive officer, ranking elected official or other authorized employee of the municipal, state or other public facility.
- c. **Changes to Authorization:** If an authorization under paragraph b. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph b. of this section must be submitted to the Administrator prior to or together with any reports, information, or applications to be signed by an authorized representative.

**III.A.3. Holding Pond Conditions:** If any wastewater from the Permittee's facility is placed in ponds owned or operated by the Permittee, such ponds shall be located and constructed so as to:

- a. Contain with no discharge the once-in-the twenty-five year, 24 hour storm at said location;
- b. Withstand with no discharge the once-in-one-hundred year flood of said location; and
- c. Prevent escape of wastewater by leakage other than as authorized by this permit.

unless otherwise approved by the Division.

- III.A.4. **Flow Rate Notification:** The Permittee shall notify the Administrator, by letter, not later than ninety (90) days after the 30-day average daily influent flow rate first equals or exceeds 85% of the design treatment capacity of the Permittee's facility given in Part I.A. The letter shall include:
- a. The 30-day average daily influent flow rate;
  - b. The maximum 24-hour flow rate during the 30-day period reported above and the date the maximum flow occurred;
  - c. The Permittee's estimate of when the 30-day average influent flow rate will equal or exceed the design treatment capacity of the Permittee's facility;
  - d. A status report on the treatment works which will outline but not be limited to past performance, remaining capacity of the limiting treatment and disposal units or sites, past operational problems and improvements instituted, modifications to the treatment works which are needed to attain the permitted flow rate due to changing site specific conditions or design criteria; and
  - e. The Permittee's schedule of compliance to provide additional treatment capacity before the 30-day average daily influent flow rate equals the present design treatment capacity of the Permittee's facility.

- III.A.5. **Publicly Owned Treatment Works** [40 CFR 122.42(b)]: All POTWs must provide adequate notice to the Administrator of the following:

- a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the Act if it were directly discharging those pollutants; and
- b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- c. For the purposes of this part, adequate notice shall include information on: (1) the quality and quantity of effluent introduced into the POTW; and (2) any anticipated impact of the change on the quantity or quality of effluent to be discharge from the POTW.

## ATTACHMENT A PRIORITY POLLUTANTS

<u>BASE NEUTRAL EXTRACTIBLES</u>	<u>VOLATILE ORGANICS</u>	<u>PESTICIDES</u>	<u>ACID EXTRACTIBLES</u>	<u>METALS</u>	<u>DIOXINS</u>
Acenaphthene	Acrolein	Aldrin	2,4,6-Trichlorophenol	Antimony	TCDD
Benzidine	Acrylonitrile	Dieldrin	4-Chloro-3-methylphenol	Arsenic	
1,2,4-Trichlorobenzene	Benzene	Chlordane (Technical)	2-Chlorophenol	Beryllium	
Hexachlorobenzene	Carbon tetrachloride	4,4'-DDT	2,4-Dichlorophenol	Cadmium	<u>OTHER</u>
Hexachloroethane	Chlorobenzene	4,4'-DDE	2,4-Dimethylphenol	Chromium	Cyanide
Bis(2-chloroethyl) ether	1,2-Dichloroethane	4,4'-DDD	2-Nitrophenol	Copper	Asbestos
2-Chloronaphthalene	1,1,1-Trichloroethane	Endosulfan I	4-Nitrophenol	Lead	
1,2-Dichlorobenzene	1,1-Dichloroethane	Endosulfan II	2,4-Dinitrophenol	Mercury	
1,3-Dichlorobenzene	1,1,2-Trichloroethane	Endosulfan sulfate	2-Methyl-4,6-dinitrophenol	Nickel	
1,4-Dichlorobenzene	1,1,2,2-Tetrachloroethane	Endrin	Pentachlorophenol	Selenium	
3,3'-Dichlorobenzidine	Chloroethane	Endrin aldehyde	Phenol	Silver	
2,4-Dinitrotoluene	2-Chloroethylvinylether	Heptachlor		Thallium	
2,6-Dinitrotoluene	Chloroform	Heptachlor epoxide		Zinc	
1,2-Diphenylhydrazine	1,1-Dichloroethene	Alpha-BHC			
Fluoranthene	Trans-1,2-Dichloroethene	Beta-BHC			
4-Chlorophenyl phenyl ether	1,2-Dichloropropane	Gamma-BHC (Lindane)			
4-Bromophenyl phenyl ether	1,3-Dichloropropane	Delta-BHC			
Bis(2-Chloroisopropyl) ether	Ethylbenzene	PCB 1016			
Bis(2-Chloroethoxy) methane	Dichloromethane	PCB 1221			
Hexachlorobutadiene	Chloromethane	PCB 1232			
Hexachlorocyclopentadiene	Bromomethane	PCB 1242			
Isophorone	Bromofom	PCB 1248			
Naphthalene	Bromodichloromethane	PCB 1254			
Nitrobenzene	Dibromochloromethane	PCB 1260			
N-Nitrosodimethylamine	Tetrachloroethene	Toxaphene			
N-Nitrosodiphenylamine	Toluene				
N-Nitrosodi-n-propylamine	Trichloroethene				
Bis(2-ethylhexyl) phthalate	Vinyl chloride				
n-Butyl benzyl phthalate					
Di-n-butyl phthalate					
Di-n-octyl phthalate					
Diethyl phthalate					
Dimethyl phthalate					
Benzo(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Acenaphthylene					
Antracene					
Benzo(g,h,i)perylene					
Fluorene					
Phenanthrene					
Dibenzo(a,h)anthracene					
Indeno(1,2,3-cd)pyrene					
Pyrene					

Note: Priority Pollutants to be analyzed using Environmental Protection Agency (EPA) Methods 200 Series, 353.3, 420.2, 624.625, 608, and/or an appropriate combination of these methods to verify compliance with permit-specified effluent discharge limitations.

**Appendix I**

Nevada Division of Environmental Protection Authorization to Discharge (Permit No. NV0022098) issued to City of Henderson

**Nevada Division of Environmental Protection**

**AUTHORIZATION TO DISCHARGE**

In compliance with the provisions of the Clean Water Act as amended, (33 U.S.C. 1251 et. seq; the "Act"), and Chapter 445A of the Nevada Revised Statutes,

City of Henderson  
240 Water Street  
Henderson, NV 89015

is authorized to discharge from a facility located at

450 East Galleria Drive Henderson, NV 89015 Las Vegas Wash at Pabco Road	and	2610 St. Rose Parkway Henderson, NV 89074 Southwest Water Reclamation Facility
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Outfall 001 (Las Vegas Wash at Pabco Road)  
Latitude N36°12' 26", Longitude W115°15' 26"

Outfall 002 (Southwest Water Reclamation Facility)  
Latitude N36° 01' 32", Longitude W115°06' 10"

to receiving waters named Las Vegas Wash

in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Part I, II, and III hercof.

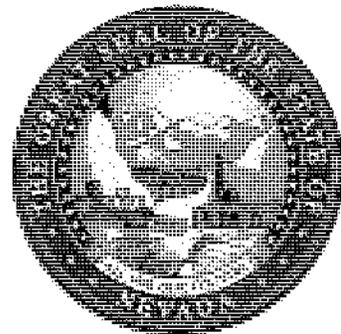
This permit shall become effective on July 31, 2006.

This permit and the authorization to discharge shall expire at midnight, July 31, 2011.

Signed this 31<sup>st</sup> day of July, 2006.



Alan Tinney, P.E., Supervisor  
Permitting Branch  
Bureau of Water Pollution Control



**PART I**

**A. EFFLUENT LIMITATIONS, MONITORING REQUIREMENTS AND CONDITIONS**

1. During the period beginning on the effective date of this permit, and lasting until the permit expires, the Permittee is authorized to discharge treated sanitary wastewater from
  - Outfall 001 (Las Vegas Wash at Pabco Road) and
  - Outfall 002 (Southwest Water Reclamation Facility) via the storm drain system to the Las Vegas Wash

Effluent samples taken in compliance with the monitoring requirements specified below shall be taken downstream of the disinfection facilities, but prior to mixing with the receiving waters. Influent samples are to be taken at the headworks and are designated as **INF**. Sampling frequencies for Outfall 002 (Southwest Water Reclamation Facility) apply after the Permittee has discharged for a week to the storm drain system. The discharges for Outfall 001 (Las Vegas Wash at Pabco Road) shall be limited and monitored by the Permittee as specified in Table I.1 and for Outfall 002 (Southwest Water Reclamation Facility) as specified in Table I.2.

**TABLE I.1 (Outfall 001, Las Vegas Wash at Pabco Road)**

<b><u>PARAMETERS</u></b>	<b><u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS<sup>2</sup></u></b>			<b><u>MONITORING REQUIREMENTS</u></b>		
	<b>30-Day Average</b>	<b>7-Day Average</b>	<b>30-Day Average (lb/day)</b>	<b>Sample Location</b>	<b>Measurement Frequency</b>	<b>Sample Type</b>
<b>Flow-001</b>	40 MGD	Monitor and Report	NA	INF, 001	Continuous	Flow meter
<b>BOD<sub>5</sub> (Uninhibited)</b>	30 mg/L	45 mg/L	10,008	001	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		
<b>Total Suspended Solids</b>	30 mg/L	45 mg/L	10,008	001	Daily	Composite

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS<sup>2</sup></u>			<u>MONITORING REQUIREMENTS</u>		
	30-Day Average	7-Day Average	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
	Monitor and Report	Monitor and Report	NA	INF		
<b>BOD<sub>5</sub> (Uninhibited) &amp;TSS</b>	The Permittee shall demonstrate that the 30- day average percentage removal rate is at least 85%.			NA	Monthly	Calculate
<b>Fecal Coliform<sup>1</sup></b>	Log Mean 200 cfu or mpn/100ml	See footnote 1	NA	001	Daily	Discrete
<b>pH</b>	Minimum 6.0 and maximum 9.0 SU, except as allowed in Parts I.A.3 and I.A.19		NA	001	Daily	Discrete
<b>Total Residual Chlorine</b>	NA	0.1 mg/L except as allowed in Part I.A.19	NA	001	Daily	Discrete
<b>Total Phosphorus as P: mg/L</b>	See Part I.A.2			001	Daily	Composite
<b>Total Ammonia as N: mg/L</b>	See Part I.A.2			001	Daily	Composite
<b>Total Inorganic Nitrogen as N: mg/L</b>	See Part I.A.3			001	Weekly	Composite
<b>Total Dissolved Solids: mg/L</b>	See Part I.A.4			001	Weekly	Composite
<b>Priority Pollutants</b>	Monitor and Report, See Attachment A			001	Per Part I.A.18.d.	Discrete or Composite
<b>WET testing</b>	See Part I.A.17			001	Monthly	Composite
<b>Receiving Water Monitoring</b>	Monitor and Report			See Part I.A.21	See Part I.A.21	Discrete
<b>Temperature: °C</b>	Monitor and Report		NA	001	Weekly	Discrete

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS<sup>2</sup></u>			<u>MONITORING REQUIREMENTS</u>		
	30-Day Average	7-Day Average	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
Dissolved Oxygen: mg/L	Monitor and Report		NA	001	Weekly	Discrete
Orthophosphorus as P: mg/L	Monitor and Report			001	Daily	Composite
Nitrate + Nitrite as N: mg/L	Monitor and Report			001	Weekly	Composite
Total Kjeldahl Nitrogen as N: mg/L	Monitor and Report			001	Weekly	Composite

1. The discharge shall not exceed a log mean of 200 cfu or mpn per 100 ml over a 30-day period nor may more than 10 percent of the total samples taken exceed 400 cfu or mpn per 100 ml.
2. For those parameters sampled weekly or less frequently, the Permittee shall report the single value instead of the 7-day or 30-day average.

TABLE I.2 (Outfall 002, Southwest Water Reclamation Facility)

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS<sup>2</sup></u>			<u>MONITORING REQUIREMENTS</u>		
	30-Day Average	7-Day Average	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
Flow-002	8 MGD	Monitor and Report	NA	002	Continuous	Flow Meter
BOD <sub>5</sub> (Uninhibited)	30 mg/L	45 mg/L	2,002	002	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS<sup>2</sup></u>			<u>MONITORING REQUIREMENTS</u>		
	30-Day Average	7-Day Average	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
Total Suspended Solids	30 mg/L	45 mg/L	2,002	002	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		
BOD <sub>5</sub> (Uninhibited) & TSS	The Permittee shall demonstrate that the 30-day average percentage removal rate is at least 85%.			NA	Monthly	Calculate
Fecal Coliform <sup>1</sup>	Log Mean 200 cfu or mpn/100ml	See footnote 1	NA	002	Daily	Discrete
pH	Minimum 6.0 and maximum 9.0 SU, except as allowed in Parts I.A.3 and I.A.19		NA	002	Daily	Discrete
Total Residual Chlorine	NA	0.1 mg/L except as allowed Part in I.A.19	NA	002	Daily	Discrete
Total Phosphorus as P: mg/L	See Part I.A.2			002	Daily	Composite
Total Ammonia as N: mg/L	See Part I.A.2			002	Daily	Composite
Total Inorganic Nitrogen as N: mg/L	See Part I.A.3			002	Weekly	Composite
Total Dissolved Solids: mg/L	See Part I.A.4			002	Weekly	Composite
Priority Pollutants	Monitor and Report, See Attachment A			002	Per Part I.A.18.d.	Discrete or Composite
WET testing	See Part I.A.17			002	Quarterly	Composite

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS<sup>2</sup></u>			<u>MONITORING REQUIREMENTS</u>		
	30-Day Average	7-Day Average	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
Temperature: °C	Monitor and Report		NA	002	Daily	Discrete
Orthophosphorus as P: mg/L	Monitor and Report			002	Daily	Composite
Nitrate + Nitrite as N: mg/L	Monitor and Report			002	Weekly	Composite
Total Kjeldahl Nitrogen as N: mg/L	Monitor and Report			002	Weekly	Composite

1. The discharge shall not exceed a log mean of 200 cfu or mpn per 100 ml over a 30-day period nor may more than 10 percent of the total samples taken exceed 400 cfu or mpn per 100 ml.
2. For those parameters sampled weekly or less frequently, the Permittee shall report the single value instead of the 7-day or 30-day average.

1.A.2. **Waste Load Allocation (WLA) For Discharges Into Las Vegas Wash.** The Permittee is authorized to discharge the waste loads listed in Waste Load Allocation Table (WLA) for Total Phosphorus as P and Total Ammonia as N, to the Las Vegas Wash. The WLA applies to the combined loading from Outfalls 001 and 002. This permit condition constitutes a cooperative agreement between the City of Las Vegas, Clark County Water Reclamation District, and City of Henderson (hereinafter Dischargers) to allow discharge flexibility. Each facility has an **Individual Waste Load Allocation (IWLA)** and there is a **Sum of Individual Waste Load Allocations ( $\Sigma$ IWLA)** defined below for the three facilities. Treatment facilities which are used to attain a waste load allocation are not required to be operated when not needed to meet that allocation.

- a. The Permittee shall be considered in compliance if **either**:
  - i. The Permittee does not exceed the **IWLA** listed below or the **IWLA** in effect due to transfers, **or**
  - ii. The **Sum of the Individual Waste Load Allocations ( $\Sigma$ WLA)** listed below is not exceeded.

Waste Load Allocation Table

Constituent	City of Las Vegas IWLA	Clark County Water Reclamation District IWLA	City of Henderson IWLA	$\Sigma$ WLA
Total Phosphorus as P	123 lb/day	173 lb/day	38 lb/day	334 lb/day, Note: This WLA only applies March 1 - October 31; no limit applies the rest of the year.
Total Ammonia as N	358 lb/day	502 lb/day	110 lb/day	970 lb/day, Note: This WLA only applies April 1 - September 30; no limit applies the rest of the year.

- b. **Annual Reallocation of IWLA** On an annual basis, the Permittee may modify the **IWLA** by either transferring or receiving waste load from another discharger. This reallocation shall become effective upon submittal of a notification signed by all three dischargers. The annual reallocation shall be **submitted by May 31st if applicable**. The notification of reallocation shall include the flow, waste load discharged, treatment plant removal efficiency in tabular and graphical format. The reallocation of **IWLAs** shall be considered a minor modification to the permit as long as the  $\Sigma$ WLA is not modified.
- c. **Temporary Trading of IWLA:** The Permittee may temporarily trade **IWLA** upon submittal of a notification signed by all three dischargers describing the amount of **IWLA** transferred, the length of time the transfer is effective and the basis for the transfer. The basis for the transfer shall include the last monthly flows and waste load discharged for each discharger. The waste load transfer shall be effective on the date of the submittal to the Division. This transfer is binding on the parties and cannot be revoked without a notification signed by all three dischargers. The transferred **IWLA** shall revert back to the original Permittee at the end of the time specified on the notification. A copy of the latest **IWLA** agreement and any agreements made during the reporting period shall be **submitted with each quarterly report required by Part I.B.1.**
- d. **Reporting:** The Permittee shall **submit quarterly reports** pursuant to Part I.B.1.b, the **IWLA** and the  $\Sigma$ WLA for Total Phosphorus as P and Total Ammonia as N, reported monthly as a 30 day average in lb/day. The data for the  $\Sigma$ WLA shall be

provided to and obtained from the other dischargers. In the event the Permittee cannot obtain the  $\Sigma$ WLA information in time for submittal with the quarterly DMR, then an explanation shall be included with the report along with a schedule for timely submittal.

**I.A.3. Confirmation of Standards Compliance**

- a. The Permittee shall coordinate with the other dischargers identified in Part I.A.2 to determine whether on an annual basis the 95<sup>th</sup> percentile of the monitoring data for Las Vegas Wash complies with the 20 mg/L total inorganic nitrogen (TIN) water quality standard at the control point, Las Vegas Wash 2 (LVW2, LW6.05).
- b. The Permittee shall coordinate with the other dischargers identified in Part I.A.2 to determine whether the pH at LVW2 (LW6.05) complies with the water quality standard of 6.5-9.0 standard units.
- c. The results of these determinations shall be reported in the annual report identified in Part I.B.1.a.
- d. If the Permittee finds that Las Vegas Wash is not in compliance with the water quality standards identified in Part I.A.3. a. or b., the Permittee shall:
  - i. Consider whether reasonable changes in the Permittee's discharge from any outfall would result in compliance;
  - ii. Coordinate with the other dischargers identified in Part I.A.2 to consider whether coordinated reasonable changes would achieve compliance; and
  - iii. Submit a report to the Division explaining the analytical process and conclusions.

**I.A.4. Salinity Control:** The Permittee shall continue to implement the existing ordinances and public education programs for salinity control and identify and correct all identified infiltration/inflow problems which contribute to exceedance of the goal of more than 400 mg/l TDS increase above the Colorado River water supply. The Permittee shall provide the following information annually by May 31st:

- a. Description of the municipal entity and facilities.
- b. Description of significant salt sources of the municipal wastewater collection system, and identification of entities responsible for each source, if available.
- c. Description of the wastewater discharge, covering location, receiving waters, quantity of salt load, and salinity concentration.

- d. Description of alternative plans for minimizing salt contribution to the municipal discharge. Alternative plans should include:
    - i. Description of system salt sources and alternative means of control.
    - ii. Cost of alternative plans in dollars per ton, of salt removed from any new discharges to the municipality.
  - c. In order to calculate the net increase in salinity the Permittee shall obtain the concentration of TDS in the water supply at least quarterly. The Permittee may rely on data collected by any water purveyors, and shall identify the source of the data.
  - f. An evaluation of the impact of the discharge on the lower stem of the Colorado River system in terms of average annual average tons/day and concentration of TDS discharged.
- I.A.5. **Narrative Standards** (*Nevada Administrative Code (NAC) 445A.121*): Discharges shall not cause the following standards to be violated in any surface waters of the state. Waters must be free from:
- a. Substances that will settle to form sludge or bottom deposits in amounts sufficient to be unsightly, putrescent or odorous;
  - b. Floating debris, oil, grease, scum, and other floating materials in amounts sufficient to be unsightly;
  - c. Materials in amounts sufficient to produce taste or odor in the water or detectable off-flavor in the flesh of fish or in amounts sufficient to change the existing color, turbidity or other conditions in the receiving stream to such a degree as to create a public nuisance;
  - d. High temperature, biocides, organisms pathogenic to human beings, toxic, corrosive or other deleterious substances at levels or combinations sufficient to be toxic to human, animal, plant or aquatic life;
  - e. Radioactive materials must not result in accumulations of radioactivity in plants or animals that result in a hazard to humans or harm to aquatic life;
  - f. Untreated or uncontrolled wastes or effluents that are reasonably amenable to treatment or control; and
  - g. Substances or conditions which interfere with the beneficial use of the receiving waters.

The narrative standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of high or low flow. Where effluents are discharged to such waters, the discharges are not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained.

- I.A.6. The Permittee shall annually review monitoring data, conduct aquatic life studies using water with a hardness representative of the Las Vegas Wash (e.g. 800 mg/l) or conduct other studies to evaluate the existing water quality standards or other data issues, for the following parameters: cadmium, copper, hexavalent chromium, molybdenum, selenium, silver, and sulfide. Results shall be included as part of the annual report required by Part I.B.1.a.i.
- I.A.7. There shall be no objectionable odors from the collection system, treatment facility or disposal area, or biosolids treatment, use, storage or disposal area that the Permittee owns or operates.
- I.A.8. There shall be no discharge of substances that would cause a violation of water quality standards of the State of Nevada as defined by the permit. The permit may be reopened, and additional limits imposed, if it is determined that the discharge is causing a violation of ambient water quality standards of the State of Nevada.
- I.A.9. There shall be no discharge from the collection, treatment and disposal facilities except as authorized by this permit or in accordance with the Division's Spill Reporting Policy.
- I.A.10. The treatment and disposal facility shall be fenced and posted.
- I.A.11. The collection, treatment and disposal facilities shall be constructed in conformance with plans approved by the Administrator, as required by NAC 445A.284, except as provided in the Division's "Plan and Specification Review Policy for Collection and Treatment Systems in Clark County" latest edition.
- I.A.12. The facility shall be operated in accordance with the Operations and Maintenance (O&M) manual which must be approved by the Administrator.
- I.A.13. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- I.A.14. **Biosolids and Sewage Sludge**
  - a. **Disposal:** The Permittee shall comply with all applicable sections of the following regulations for biosolids which are disposed and inform any biosolids disposer of the requirement that they must comply with the following regulations as applicable.

- i. 40 CFR 257 and 258: for biosolids disposed in municipal solid waste landfills as approved by the Administrator and the County;
  - ii. 40 CFR 261 for hazardous biosolids or 40 CFR 761 for biosolids with a PCB concentration greater than 50 mg/kg; or
  - iii. 40 CFR 503: placed in surface disposal sites (dedicated land disposal sites or monofills), or incinerated.
- b. **Reuse:** The Permittee shall comply with any applicable sections of 40 CFR 503 for biosolids generated at the facility including solid waste screening and sewage sludge which is to be used, land applied, stored or treated in compliance with any applicable sections of the following regulations:
- i. 40 CFR 503: for non-hazardous biosolids that are land applied;
  - ii. The Permittee is responsible for informing any biosolids preparer, applicer, or disposer, of all requirements and the applicable regulations listed above.
  - iii. Facilities which are regulated under 40 CFR part 503 shall monitor parameters listed in Part I.A.18., and shall also monitor the pathogen density requirements in 40 CFR 503.32 (a) and (b)(2) through (4) and the vector attraction reduction requirements in 503.33(b)(1) through (8); at the frequencies listed below.
- | <u>Dry Biosolids Disposal rate in metric tons/yr.</u> | <u>Frequency</u> |
|---|------------------|
| >0 - <290   | each year        |
| □1290 -<1500  | once a quarter   |
| □1500 -<15000<br>months                               | once every 2     |
| □15000  | once a month     |
- iv. Biosolids to be land applied shall be tested for organic nitrogen as N, ammonia as N, nitrate as N, and Total Nitrogen as N on the frequency required above.
  - v. Biosolids which are to be land applied shall be characterized annually pursuant to 40 CFR 261 to determine if they are hazardous.
- c. If biosolids are stored at any facility owned or operated by the Permittee for over two years from the time they are generated, the Permittee shall notify the Division within 30 days and shall ensure compliance with all the requirements of surface disposal 40 CFR 503 C, or must submit a written notification to the Division and EPA with the information listed at 40 CFR 503.20 (b), demonstrating the need for longer temporary storage.
- d. Biosolids treatment or storage facilities owned or operated by the Permittee shall be designed to divert stormwater run-on for the 100-year storm event, and be designed

to prevent erosion which could cause biosolids to run-off.

- c. The Permittee shall take all appropriate precautions to inform biosolids haulers that all necessary measures to contain the biosolids should be taken before leaving the treatment facility.
  - f. The Permittee shall comply with the following notification requirements either directly or through contractual arrangements with a biosolids management contractor:
    - i. If biosolids are shipped to another state or to Indian lands, the Permittee shall send notice of the shipment to the state permitting authorities, the EPA Regional Office of the region receiving the biosolids or the Indian authorities.
    - ii. For land application or unpermitted disposal sites, the Permittee shall notify the Division 180 days prior to shipping any biosolids to enable the site to obtain a permit.
  - g. **Biosolids Monitoring Report (BMR):** The Permittee shall submit a BMR annually which shall be submitted by **May 31<sup>st</sup>** for the period covering the previous calendar year. The report shall contain all the required biosolids analytical data, the volume of biosolids generated that year, any volume accumulated from previous years, descriptions of pathogen and vector attraction reduction methods and the required certifications as required by 40 CFR 503.17 and 27, the names, mailing and street addresses and telephone numbers of all facilities which received biosolids for storage, disposal, use, treatment, land application or any other use or disposal methods not mentioned and the volume of biosolids taken to each facility.
- I.A.15. **Annual Fee:** The Permittee shall remit an annual review and services fee in accordance with NAC 445A.232 starting **July 1, 2007** and every year thereafter until the permit is terminated.
- I.A.16. The treatment facility shall be operated by a Nevada Certified Grade IV Wastewater Operator. The first DMR submitted under this permit must include the written designation of the authorized representative as required by Part III.A.2. If the certified operator in responsible charge changes, a new designation letter must be submitted.
- I.A.17. **Whole Effluent Toxicity Testing:** Beginning with the effective date of this permit, the Permittee shall conduct monthly toxicity tests on 24-hour composite effluent samples as described below on the discharge from Outfall 001.
- a. **Acute Toxicity Limit:** The effluent shall be deemed acutely toxic when there is a statistically significant difference at the 95th% confidence interval between the survival of the control (0% effluent) test organisms and the survival of the test

organisms in the 100% effluent at the following limits:

- i. The survival of test organisms in the undiluted effluent sample is less than 90 percent in six (6) out of eleven (11) consecutive samples; or
- ii. The survival rate of test organisms in the undiluted effluent sample is less than 70 percent in any two of eleven consecutive samples.

b. **Test Methods**

- i. The acute flow through or static replacement tests shall be conducted in general accordance with the procedures set out in the latest revision of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," EPA/600/4-90/027. The Permittee shall conduct an acute 48-hour flow through or static replacement toxicity test using any Daphnid approved by the Division and an acute 96-hour flow through or static replacement toxicity test using fathead minnows, Pimephales promelas. After each 24-hours of the test period the dilutions shall be replaced with freshly prepared dilutions of the original effluent sample.
  1. If more than 10 percent control mortality occurs, the test shall be repeated until satisfactory control survival is achieved.
  2. The source of the dilution water shall be reported with the test results. The tests shall be run using 4 replicate chambers, with a minimum of 5 organisms per test chamber for the Daphnid and 2 replicate chambers with a minimum of 10 organisms per test chamber for the Pimephales promelas.
- ii. **Alternative Species and Protocols:** The Permittee may undertake an investigation of alternative site specific toxicity test species and alternative site specific toxicity protocols. If alternative, site-specific toxicity test species or protocols are developed as a result of work by the Permittee, such species or protocols may be substituted for those specified in this permit on approval by the Division under 40 CFR Part 136. Alternative protocols must be compared to EPA protocols to demonstrate appropriateness and reliability.

c. **Testing Schedule**

- i. *Routine Schedule:* The Permittee shall conduct an acute toxicity test monthly.
- ii. *Accelerated schedule:* Whenever the effluent has been determined to be acutely toxic per Part I.A.17.a., the Permittee shall increase the frequency of acute toxicity testing to every other week. The accelerated testing shall also be conducted to determine an endpoint of either the LC50 or the No Observed Effects Concentration (NOEC) as defined in the above referenced method. When 4 (four) consecutive tests show greater than 70 percent survival of

undiluted effluent, the Permittee may resume its routine test schedule.

- d. **Follow-up Responses:** Whenever the acute toxicity effluent limitation as defined under either Part I.A.17.a.i or ii has been exceeded, **and** one or more of the tests conducted under Part I.A.17.c ii. has a survival rate of less than 70% in an undiluted effluent sample, the Permittee shall:
- i. In general accordance with EPA manuals and EPA/600/6-91/003, EPA/600/3-88/035, or any subsequent revisions and/or methods approved by the Division, initiate an identification investigation within 24 hours of the exceedance to identify the cause(s) of the toxicity. After the initiation of the investigation phase pursuant to this condition, the Permittee may suspend the accelerated testing required by Part I.A.17.c.ii. as long as the routine testing required by Part I.A.17.c.i. is resumed.
  - ii. In general accordance with EPA manuals and EPA/600/R-92/081, or any subsequent revisions and/or methods approved by the Division, conduct an evaluation of findings where appropriate; and
  - iii. Notify the Division within fifteen (15) days of becoming aware of the exceedance and provide the following:
    1. Times and dates when the limitation was exceeded;
    2. The findings of the identification investigation or other investigations to identify the cause(s) of the toxicity or a plan for continuing the identification investigation if it was not conclusive;
    3. The actions the Permittee has taken or will take to mitigate the impact of the discharge, to correct the noncompliance and prevent the recurrence of toxicity; and
    4. Where corrective actions have not been completed, an expeditious schedule under which the corrective actions will be implemented.
- e. In no event shall the discharger cause any impairment of the receiving water or of the beneficial uses, nor cause a violation of any other provision of this permit, the Clean Water Act and State or local regulation or law.
- f. **Toxicity Testing Reopener:** This permit may be reopened and modified by the Division to include effluent limits, additional testing and/or other appropriate actions to address demonstrated effluent toxicity. This permit may also be reopened and modified by the permitting authority to incorporate alternative permit conditions reflecting State Water Quality Standards revisions related to effluent toxicity.
- g. In addition to the quarterly DMR submittals, the Permittee shall submit an annual summary which provides a review of the survival rates of both the control and the 100% effluent. The summary shall be submitted by **May 31st of each year.**

- h. **Chronic Toxicity:** The Permittee shall conduct chronic toxicity study using *Ceriodaphnia dubia* to confirm existing nontoxic conditions identified in studies conducted during the previous permit cycle and, if toxicity is found, to identify pollutants that may require additional controls under the pretreatment program, Part I.A.18.
- i. The Permittee shall submit a study plan and schedule within one hundred eighty (180) days from the date of issuance of this permit for concurrence by the Division.
  - ii. The study will include the following:
    1. Chronic toxicity testing to be conducted at least once per quarter over a one year period following concurrence of the study plan by the Division.
    2. Samples of wastewater shall be taken at the same location as the effluent compliance samples, unless otherwise approved in writing by the Division.
    3. If chronic toxicity is identified, using appropriate statistical procedures or other evaluation methods acceptable to the Division, the Permittee may either increase testing frequency to monthly or conduct a Toxicity Identification Evaluation (TIE). If after two additional months of testing the chronic toxicity has abated, the Permittee may return to quarterly testing. If it has not, the Permittee shall continue accelerated testing, conduct a TIE, or submit an alternate proposal to the Division for approval.
    4. Chronic toxicity testing shall be conducted in accordance with procedures specified in 40 CFR Part 136.
    5. TIEs shall be conducted in accordance with procedures set forth in *Toxicity Identification Evaluations: Characterization of Chronically Toxic Effluents, Phase I*, EPA/600/6-91/003, USEPA, 1991A; and *Toxicity Reduction Evaluation Protocol for Municipal Wastewater Treatment Plants*, EPA/600/2-88/062, USEPA, 1989A, as appropriate.
  - iii. The Permittee shall take appropriate actions to address any pollutant of concern identified through this study.
  - iv. A report on the study shall be submitted to the Division within the time provided for in the study plan and schedule. The Permittee and the Division will review the information and any subsequent actions taken by the Permittee to assess the results and determine what actions, e.g., additional chronic toxicity testing, are necessary and appropriate.
  - v. The data collected through this study, and through the chronic toxicity testing and TIE procedures, are for informational purposes only and shall not be used to assess compliance or in an enforcement action against the Permittee.

I.A.18. **Pretreatment of Industrial Wastewaters:** The Permittee shall implement and enforce a pretreatment program under 40 CFR Part 403 (hereinafter 403), including any subsequent

regulatory revisions to 403 and be responsible for and liable for the performance of all Control Authority pretreatment requirements contained in 403. Where 403 or subsequent revision places mandatory actions upon the Permittee as Control Authority but does not specify a timetable of completion of the actions, the Permittee shall complete the required actions within 6 months from the issuance date of this permit or the effective date of the 403 revisions, whichever comes later. For violations of pretreatment requirements, the Permittee shall be subject to enforcement actions, penalties, fines, and other remedies by the U.S. EPA or other appropriate parties, as provided in the Act. EPA may initiate enforcement action against a nondomestic user for noncompliance with applicable standards and requirements as provided in the Act and as provided by the Division and EPA in the enforcement agreement.

- a. The Permittee will comply with the Pretreatment Program as submitted to and approved by the Division and EPA. This program shall include written agreements, with all sewage agencies who contribute flows to the treatment facility, that provide the Permittee with the legal authority to enforce the pretreatment program. The Permittee shall comply with all parts of the schedule listed below, Pretreatment of Industrial Wastewaters.
- b. The Permittee shall enforce the requirements promulgated under sections 307(b) through (d) and 402(b) of the Act with timely, appropriate and effective enforcement actions. The Permittee shall cause all nondomestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or in the case of a new nondomestic user, upon commencement of the discharge.
- c. The Permittee shall perform the pretreatment functions as required in 403 including but not limited to:
  - i. Implement the necessary legal authorities as provided in 403.8(f)(1);
  - ii. Enforce the pretreatment requirements under 403.5 and 6;
  - iii. Implement the programmatic functions as provided in 403.8(f)(2); and
  - iv. Provide the requisite funding and personnel to implement the pretreatment program as provided in 403.8(f)(3).
- d. The Permittee shall submit annually a report to the Division and EPA describing its pretreatment activities over the previous year. In the event the Permittee is not in compliance with any conditions or requirements of this permit, then the Permittee shall also include reasons for non-compliance and state how and when the Permittee shall comply with such conditions and requirements. This annual report shall cover operations for the previous calendar year and is due **May 31st** of each year. The report shall contain, but is not limited to, the following information:
  - i. A summary of the analytical results from representative, flow proportioned, 24-hour composite sampling of the Publicly Owned Treatment Works'

- (POTWs) influent and effluent for those pollutants EPA has identified under section 307(a) of the Act which are known or suspected to be discharged by nondomestic users. This will consist of an annual full priority pollutant scan, with quarterly samples analyzed only for those pollutants detected in the full scan.
- ii. Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent. The sludge analyzed shall be a composite sample of a minimum of twelve discrete samples taken at equal time intervals over a 24-hour period or a composite of discrete samples every two hours when the sludge production period is less than 24 hours. Wastewater and sludge sampling and analysis shall be performed a minimum of once per quarter. The Permittee shall also provide any influent or effluent monitoring data for non-priority pollutants which the Permittee believes may be causing or contributing to interference, pass through, or adversely impacting sludge quality. Sampling and analysis shall be performed with the techniques prescribed in 40 CFR 136;
  - iii. A discussion of upset, interference, or pass through incidents, if any, at the treatment plant which the Permittee knows or suspects were caused by nondomestic users of the POTW system. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of the non-domestic user responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent pass through or interference;
  - iv. An update of the Permittee's significant industrial users (SIUs) including their names and addresses, and a list of deletions, additions and SIU name changes keyed to the previously submitted list. The Permittee shall provide a brief explanation for each change. The list shall identify the SIUs subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall also indicate which SIUs are subject to local limitations;
  - v. The Permittee shall characterize the compliance status of each SIU by providing a list or table which includes the following information:
    1. Name of the SIU;
    2. Category, if subject to federal categorical standards;
    3. The type of wastewater treatment or control process in place;
    4. The number of samples taken by the POTW during the year;
    5. The number of samples taken by the SIU during the year;
    6. For an SIU subject to discharge requirements for total toxic organics, whether all required certifications were provided;
    7. A list of the standards violated during the year. Identify whether the violations were for categorical standards or local limits;

8. Whether the facility is in significant noncompliance (SNC) as defined at 403.12(f)(2)(vii) at any time during the year; and
  9. A summary of enforcement or other actions taken during the year to return the SIU to compliance. Describe the type of action, final compliance date, and the amount of fines and penalties collected, if any. Describe any proposed actions for bringing the SIU into compliance;
  - vi. A brief description of any programs the POTW implements to reduce pollutants from nondomestic users that are not classified as SIUs;
  - vii. A brief description of any significant changes in operating the pretreatment program which differ from the previous year including, but not limited to, changes concerning the program's administrative structure, local limits, monitoring program or monitoring frequencies, legal authority, enforcement policy, funding levels, or staffing levels;
  - viii. A summary of the annual pretreatment budget, including the cost of the pretreatment program functions and equipment purchases; and
  - ix. A summary of activities to involve and inform the public of the program including a copy of the newspaper notice, if any, required under 403.8(f)(2)(vii).
- e. The Permittee shall submit quarterly SIU compliance status reports to EPA, Region 9 and the Division. The reports shall cover the periods of January 1 through March 31, April 1 through June 30, July 1 through September 30, and October 1 through December 31. Each report shall be submitted by the end of the month following the quarter except the report for October 1 through December 31, which may be included in the annual report. The reports, which may be submitted in outline form, shall contain:
- i. The name and address of all SIUs which violated any discharge or reporting requirements during the quarter;
  - ii. A description of the violations including whether any discharge violations were for categorical standards or local limits;
  - iii. A description of the enforcement or other actions that were taken to remedy the noncompliance; and
  - iv. The status of active enforcement and other actions taken in response to SIU noncompliance identified in previous reports.

**I.A.19. Chlorine Residual and pH Effluent Limitation**

- a. The Permittee may determine compliance with chlorine residual and pH either by grab sampling or by continuous monitoring.
- b. If the Permittee chooses continuous monitoring, the Permittee shall maintain the

chlorine residual and pH of such effluent within the range set forth in the applicable effluent limitations guidelines, except excursions from the range are permitted subject to the following limitations:

- i. The total time during which the chlorine residual and pH values are outside the required range shall not exceed 7 hours and 26 minutes in any calendar month;
  - ii. No individual excursion from the range of chlorine and pH shall exceed 60 minutes; and
  - iii. If the continuous monitoring equipment fails, estimates derived from historical or contemporary data may be used.
- c. The Division may allow the Permittee to discontinue monitoring for chlorine upon approval of a submittal which demonstrates that there is no reasonable potential for the chlorine concentrations to be toxic.

**I.A.20. Schedule of Compliance:** The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications which the Administrator may make in approving the schedule of compliance.

- a. The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.
- b. The Permittee shall submit a report in accordance with Part I.B.1.c. within 14 days of a compliance date detailing compliance or noncompliance with that date.
- c. Within six (6) months of the completion of the plant expansion and/or modification, the Permittee shall submit a revised O&M manual to the Division for review and approval.

**I.A.21. Lake Mead and Las Vegas Wash Monitoring:** By **November 1st** of each year, the Permittee shall jointly submit, with the Clark County Water Reclamation District and the City of Las Vegas, an annual plan for monitoring ambient water quality in Lake Mead and Las Vegas Wash during the following year. Following approval by the Division, the Permittee shall implement its portion of the plan beginning **January 1st** of each year. The joint monitoring plan shall include, as a minimum, the following:

- a. The identification of at minimum three locations in Las Vegas Wash at which water quality will be routinely monitored.
- b. The identification of at minimum five locations within Lake Mead at which water quality will be routinely monitored, including at least one station near the mouth of Las Vegas Wash.

- c. An identification of the depths at which each station will be sampled.
- d. An explanation of why the station locations and depths were chosen.
- e. A schedule for monitoring water quality at the selected stations, at minimum biweekly in Las Vegas Wash and, during April through September, in Lake Mead.
- f. A list of parameters to be monitored, including at minimum chlorophyll (in epilimnetic samples), total phosphorus, ortho phosphorus, nitrate, ammonia, dissolved oxygen, conductivity, temperature, pH, and fecal coliforms or E. coli.
- g. If the Permittee is unable to reach agreement with the other dischargers, the Permittee shall submit an explanation and a proposed individual monitoring plan.

## **I.B. MONITORING AND REPORTING**

### **I.B.1. Reporting**

- a. **Annual Reports**
  - i. On or before **May 31st** of each year, the Permittee shall submit a plot of concentration (y-axis) versus date (x-axis) for each analyzed constituent which has been detected greater than 25% of the time. The plot shall include data from the preceding five years, if available. Any data point from the current year detected at concentrations greater than the limits in Part I.A.1 or the applicable water quality standard must be explained by a narrative.
  - ii. The BMR required by Part I.A.14., the pretreatment annual report required by Part I.A.18.d., the Lake Mead and Las Vegas Wash Annual Report required by Part I.A.21, the TIN annual report required by Part I.A.3, the Salinity Control Report required by Part I.A.4 and WET annual reports required by Part I.A.17 are due each **May 31st**.
- b. **Quarterly Reporting:** Monitoring results obtained pursuant to Part I.A of the permit for the previous three (3) month period shall be summarized for each month and reported on a Discharge Monitoring Report (DMR) form. The DMR is to be received in this office no later than the 28th day of the month following the completed reporting period. The Permittee shall also submit the data in an electronic format provided by the Division. The first report is due on October 28, 2006. Summaries of laboratory results for analyses conducted by outside laboratories must accompany the DMR, and the full data package provided by the laboratory must be provided if requested in writing by the Division. If at any time the Permittee concludes that submitted data were incorrect, the Permittee shall notify the Division in writing, identify the incorrect data, and replace the incorrect data with corrected

data, which shall thereafter be used for determining compliance with this permit.

- c. **Compliance Report:** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- d. **Other information:** Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Administrator, it shall promptly submit such facts or information.
- e. **Planned changes:** The Permittee shall give notice to the Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition to a permitted facility;
  - i. May meet one of the criteria for determining whether a facility is a new source (40 CFR 122.29(b));
  - ii. Could significantly change the nature or increase the quantity of pollutants discharged; or
  - iii. Results in a significant change to the Permittee's sludge management practice or disposal sites.
- f. **Anticipated non-compliance:** The Permittee shall give advance notice to the Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- g. An original signed copy of these, and all other reports required herein, shall be submitted to the State at the following address:

Division of Environmental Protection  
Bureau of Water Pollution Control  
ATTN: Compliance Coordinator  
901 South Stewart Street, Suite 4001  
Carson City, Nevada 89701

- h. A signed copy of all Discharge Monitoring Reports and any other reports shall be submitted to the Regional Administrator at the following address:

U.S. Environmental Protection Agency, Region IX  
NPDES/DMR WTR-7-1  
75 Hawthorne Street  
San Francisco, CA 94105

I.B.2 **Monitoring**

- a. **Representative Samples:** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.
- b. **Test Procedures:** Monitoring for the analysis of pollutants shall be conducted according to test procedures approved under 40 CFR 136 published pursuant to Section 304(h) of the Act, or SW-846, or in the case of sludge disposal, approved under 40 CFR 503, or other procedures as approved by the Administrator. Analysis shall be performed by a State of Nevada certified laboratory.
- c. **Recording the Results:** For each measurement or sample taken pursuant to the requirements of this permit, the Permittee shall record the following information:
  - i. The exact place, date, and time of sampling;
  - ii. The dates the analyses were performed;
  - iii. The person(s) who performed the analyses;
  - iv. The analytical techniques or methods used; and
  - v. The results of all required analyses.
- d. **Additional Monitoring by Permittee:** If the Permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall also be indicated on the DMR. If a Permittee monitors more often than once per day, the Permittee shall compute the 7-day average or 30-day average by first averaging the samples for each day, and then averaging the daily averages or discrete samples representing all sampled days within the period; provided, however, that the Permittee may instead average all samples taken within the period if it notifies the Division that it will use this method.
- e. **Records Retention:** All records and information resulting from the monitoring activities, permit application, reporting required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation, shall be retained for a minimum of five years, or longer if required by the Administrator. Records of monitoring information required by this permit related to the Permittee's sewage sludge use and/or disposal activities shall be retained for a period of at least 5 years or longer as required by 40 CFR 503.
- f. **Detection Limits:** All laboratory analysis conducted in accordance with this

discharge permit must meet the following criteria:

- i. All methods used must be specified or approved in either 40 CFR 136, SW-846 or otherwise approved by the Division. All analytical results must be generated by analytical laboratories certified by the state of Nevada laboratory certification program;
  - ii. The reporting limit for each metal monitored in accordance with this permit shall be less than or equal to the water quality standards for metals which apply to the Las Vegas Wash on the effective date of the permit, except for mercury. This requirement does not apply if a water quality standard is lowered after the issuance of this permit; however, the Permittee shall review methods used and by letter notify the division if the reporting limit will exceed the new criterion, and if so the Division may reopen the permit to impose new monitoring requirements;
  - iii. The Permittee shall determine whether any laboratories certified by the State of Nevada are analyzing mercury using EPA Method 1631 and achieving results within acceptable limits. If so, the Permittee shall provide a sample for analysis using EPA Method 1631 once per year. If not, the Permittee, acting individually or with other Permittees, shall initiate a dialog with its contract laboratories or other laboratories that might be interested in providing service to the Permittee to inform them of the opportunity to provide additional testing services to the Permittee, and to provide information on current sampling and analytical practices and procedures that might assist the laboratories in their determinations about whether to institute the use of the method; and
  - iv. All priority pollutant data reported by contract laboratories shall be submitted to the Division.
- g. **Modification of Monitoring Frequency and Sample Type:** After considering monitoring data, stream flow, discharge flow and receiving water conditions, the Administrator, may for just cause, modify the monitoring frequency and/or sample type by issuing an order to the Permittee.

### I.B.3. Definitions

- a. The "30-day average discharge" means the total discharge during a month divided by the number of samples in the period for that discharge facility. Where less than daily sampling is required by this permit, the 30-day average discharge shall be determined by the summation of all the measured discharges divided by the number of samples during the period when the measurements were made.
- b. The "7-day average" concentration means the arithmetic mean of measurements made during a week. If there is more than one measurement per day, the measurements may be averaged in accordance with Part I.B.2.d.

- c. The "daily maximum" is the highest measurement during the monitoring period.
- d. The "30-day average concentration", other than for fecal coliform bacteria, means the arithmetic mean of measurements made during a month. If there is more than one measurement per day, the measurements may be averaged in accordance with Part I.B.2.d. The "30-day average concentration" for fecal coliform bacteria means the geometric mean of measurements made during a month. The geometric mean is the "n<sup>th</sup>" root of the product of "n" numbers. Geometric mean calculations where there are non-detect results for fecal coliform shall use one half the detection limit as the value for the non-detect results.
- e. A "discrete" sample means any individual sample collected in less than 15 minutes.
- f. For flow-rate measurements a "composite" sample means the arithmetic mean of no fewer than six individual measurements taken at equal time intervals for 24 hours, or for the duration of discharge, whichever is shorter. For other than flow-rate a "composite" sample means a combination of no fewer than six individual flow-weighted samples obtained at equal time intervals for 24 hours, or for the duration of discharge, whichever is shorter. Flow-weighted sample means that the volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling.
- g. "Acute toxicity" is defined in the whole effluent testing procedures presented in this permit in Part I.A.17.
- h. "Biosolids" are non-hazardous sewage sludge or domestic septage as these terms are defined in 40 CFR 503.9.

## PART II

### **A. MANAGEMENT REQUIREMENTS**

- II.A.1. **Change in Discharge:** All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, or treatment modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Any changes to the permitted treatment facility must comply with Nevada Administrative Code (NAC) 445A.283 to 445A.285. Pursuant to NAC 445A.263, the permit may be modified to specify and limit any pollutants not previously limited.

II.A.2. **Facilities Operation-Proper Operation and Maintenance:** The Permittee shall at all times maintain in good working order and properly operate all treatment and control facilities, collection systems and pump stations installed or used by the Permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures.

II.A.3. **Adverse Impact-Duty to Mitigate:** The Permittee shall take all reasonable steps to minimize releases to the environment resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge. The Permittee shall carry out such measures, as reasonable, to prevent significant adverse impacts on human health or the environment.

II.A.4. **Noncompliance, Unauthorized Discharge, Bypassing and Upset**

- a. Any diversion, bypass, spill, overflow or discharge of treated or untreated wastewater from wastewater treatment or conveyance facilities under the control of the Permittee to navigable waters is prohibited except as authorized by this permit or in accordance with the Division's Spill Reporting Policy. The Division may take enforcement action for a diversion, bypass, spill, overflow, or discharge of treated or untreated wastewater to waters of the state except as authorized by this permit or in accordance with the Division's Spill Reporting Policy. In the event the Permittee has knowledge that a diversion, bypass, spill, overflow or discharge not authorized by this permit or in accordance with the Division's Spill Reporting Policy is probable, the Permittee shall notify the Administrator immediately.
- b. The Permittee shall notify the Administrator within twenty-four (24) hours of any diversion, bypass, spill, upset, overflow or release of treated or untreated discharge from wastewater treatment or conveyance facilities under the control of the Permittee other than that which is authorized by the permit or in accordance with the Division's Spill Reporting Policy. A written report shall be submitted to the Administrator within five (5) days of diversion, bypass, spill, overflow, upset or discharge, detailing the entire incident including:
  - i. Time and date of discharge;
  - ii. Exact location and estimated amount of discharge;
  - iii. Flow path and any bodies of water which the discharge reached;
  - iv. The specific cause of the discharge; and
  - v. The preventive and/or corrective actions taken.

- c. The following shall be included as information which must be reported within 24 hours:
  - i. Any unanticipated bypass which exceeds any effluent limitation in the permit;
  - ii. Any upset which exceeds any effluent limitation in the permit;
  - iii. Violation of a limitation for any toxic pollutant or any pollutant identified as the method to control a toxic pollutant.
  
- d. The Permittee shall report all instances of noncompliance not reported under Part II.A.4.b. at the time monitoring reports are submitted. The reports shall contain the information listed in Part II.A.4.b.
  
- e. A "bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
  - i. **Bypass not exceeding limitations:** The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts II.A.4.a, II.A.4.b, and II.A.4.f.
  - ii. **Anticipated bypass:** If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of bypass.
  
- f. **Prohibition of Bypass:** Bypass is prohibited, and the Administrator may take enforcement action against a Permittee for bypass, unless:
  - i. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.
  - ii. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
  - iii. The Permittee submitted notices as required under Part II.A.4.e.
  
- g. The Administrator may approve an anticipated bypass, after considering its adverse effects, if the Administrator determines that it will meet the three conditions listed in Part II.A.4.f.
  
- h. An "upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include

noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

- i. **Effect of an upset:** An upset constitutes an affirmative defense to an action brought for non-compliance with such technology-based permit effluent limitations if the requirements of Part II.A.4.j are met.
- j. **Conditions necessary for a demonstration of an upset:** A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - i. An upset occurred and that the Permittee can identify the cause(s) of the upset;
  - ii. The permitted facility was at the time being properly operated;
  - iii. The Permittee submitted notice of the upset as required under paragraph c of this section; and
  - iv. The Permittee complied with any remedial measures required under Part II.A.3.
- k. In selecting the appropriate enforcement option, the Administrator shall consider whether or not the noncompliance was the result of an upset. The burden of proof is on the Permittee to establish that an upset occurred.

II.A.5. **Removed Substances:** Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of waste waters shall be disposed of in a manner such as to prevent any pollution from such materials from entering any navigable waters.

II.A.6. **Safeguards to Electric Power Failure:** In order to maintain compliance with the effluent limitations and prohibitions of this permit the Permittee shall either:

- a. Provide at the time of discharge an alternative power source sufficient to operate the wastewater control facilities; or
- b. Halt or reduce all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

## II.B. RESPONSIBILITIES

II.B.1. **Right of Entry and Inspection:** The Permittee shall allow the Administrator and/or his authorized representatives, upon the presentation of credentials, to:

- a. Enter at reasonable times upon the Permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. Have access to and copy any records required to be kept under the terms and conditions of this permit at reasonable times;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations required in this permit; and
- d. Perform any necessary sampling or monitoring to determine compliance with this permit at any location for any parameter.

**II.B.2. Transfer of Ownership or Control:** In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the Permittee shall notify the succeeding owner or controller of the existence of this permit, by letter, a copy of which shall be forwarded to the Administrator. The Administrator may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary. ALL transfer of permits shall be approved by the Administrator.

**II.B.3. Availability of Reports:** Except for data determined to be confidential under NRS 445A.665, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of the Administrator. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in NRS 445A.710.

**II.B.4. Furnishing False Information and Tampering with Monitoring Devices:** Any person who intentionally or with criminal negligence makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained by the provisions of NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, or who falsifies, tampers with or knowingly renders inaccurate any monitoring device or method required to be maintained under the provisions of NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, is guilty of a gross misdemeanor and shall be punished by a fine of not more than \$10,000 or by imprisonment. This penalty is in addition to any other penalties, civil or criminal, provided pursuant to NRS 445A.300 to 445A.730, inclusive.

**II.B.5. Penalty for Violation of Permit Conditions:** Nevada Revised Statutes (NRS) 445A.675 provides that any person who violates a permit condition is subject to administrative and judicial sanctions as outlined in NRS 445A.690 through 445A.705.

**II.B.6. Permit Modification, Suspension or Revocation**

- a. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
  - i. Violation of any terms or conditions of this permit;
  - ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
  - iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge;
  - iv. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;
  - v. There are material and substantial alterations or additions to the permitted facility or activity;
  - vi. The Administrator has received new information;
  - vii. The standards or regulations have changed; or
  - viii. The Administrator has received notification that the permit will be transferred.
  
- b. **Minor Modifications:** With the consent of the Permittee and without public notice, the Administrator may make minor modifications in a permit to:
  - i. Correct typographical errors;
  - ii. Clarify permit language;
  - iii. Require more frequent monitoring or reporting;
  - iv. Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the permit and does not interfere with attainment of the final compliance date;
  - v. Allow for change in ownership;
  - vi. Change the construction schedule for a new discharger provided that all equipment is installed and operational prior to discharge;
  - vii. Delete an outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits; or
  - viii. Reallocation of the waste load allocation as long as the sum of the allocations does not change.

**II.B.7. Toxic Pollutants:** Notwithstanding Part II.B.6, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic

effluent standard or prohibition and the Permittee so notified.

- II.B.8. **Liability:** Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable Federal, State or local laws, regulations, or ordinances. However, except for any toxic effluent standards and prohibitions imposed under section 307 of the Clean Water Act or toxic water quality standards set forth in NAC 445A.144, compliance with this permit constitutes compliance with Clean Water Act sections 301, 302, 306, 307, 318, 403, 405(a) and (b), and with NRS 445A.300 through 445A.730.
- II.B.9. **Property Rights:** The issuance of this permit does not convey any property rights, in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.
- II.B.10. **Severability:** The provisions of this permit are severable, and if any provision of this permit, or the application of any provisions of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- II.B.11. **Duty to Comply:** The Permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination; revocation and reissuance, or modification; or denial of a permit renewal application.
- II.B.12. **Need to Halt or Reduce Activity Not a Defense:** It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this permit.
- II.B.13. **Duty to Provide Information:** The Permittee shall furnish to the Administrator, within a reasonable time, any relevant information which the Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this permit. The Permittee shall also furnish to the Administrator, upon request, copies of records required to be kept by this Permit.

### **PART III**

#### **III.A. OTHER REQUIREMENTS**

- III.A.1. **Recapplication:** If the Permittee desires to continue to discharge, he shall reapply not later than 180 days before this permit expires on the application forms then in use. POTWs

with NPDES permits shall submit the sludge information listed at 40 CFR 501.15(a)(2) with the renewal application. The renewal application shall be accompanied by the fee required by NAC 445A.232.

### III.A.2. Signatures, certification required on application and reporting forms

- a. All applications, reports, or information submitted to the Administrator shall be signed and certified by making the following certification.

**“I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”**

- b. All applications, reports or other information submitted to the Administrator shall be signed by one of the following:
  - i. A principal executive officer of the corporation (of at least the level of vice president) or his authorized representative who is responsible for the overall operation of the facility from which the discharge described in the application or reporting form originates;
  - ii. A general partner of the partnership;
  - iii. The proprietor of the sole proprietorship; or
  - iv. A principal executive officer, ranking elected official or other authorized employee of the municipal, state or other public facility.
- c. **Changes to Authorization:** If an authorization under paragraph b. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph b. of this section must be submitted to the Administrator prior to or together with any reports, information, or applications to be signed by an authorized representative.

### III.A.3. Holding Pond Conditions: If any wastewater from the Permittee's facility is placed in ponds owned or operated by the Permittee, such ponds shall be located and constructed so as to:

- a. Contain with no discharge the once-in-the twenty-five year, 24 hour storm at said

location;

- b. Withstand with no discharge the once-in-one-hundred year flood of said location; and
- c. Prevent escape of wastewater by leakage other than as authorized by this permit;

Unless otherwise approved by the Division.

**III.A.4. Flow Rate Notification:** The Permittee shall notify the Administrator, by letter, not later than ninety (90) days after the 30-day average daily influent flow rate first equals or exceeds 85% of the design treatment capacity of the Permittee's facility given in Part I.A. above. The letter shall include:

- a. The 30-day average daily influent flow rate;
- b. The maximum 24-hour flow rate during the 30-day period reported above and the date the maximum flow occurred;
- c. The Permittee's estimate of when the 30-day average influent flow rate will equal or exceed the design treatment capacity of the Permittee's facility;
- d. A status report on the treatment works which will outline but not be limited to past performance, remaining capacity of the limiting treatment and disposal units or sites, past operational problems and improvements instituted, modifications to the treatment works which are needed to attain the permitted flow rate due to changing site specific conditions or design criteria; and
- c. The Permittee's schedule of compliance to provide additional treatment capacity before the 30-day average daily influent flow rate equals the present design treatment capacity of the Permittee's facility.

**III.A.5. Publicly Owned Treatment Works [40 CFR 122.42(b)]:** All POTWs must provide adequate notice to the Administrator of the following:

- a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the Act if it were directly discharging those pollutants; and
- b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

- c. For the purposes of this part, adequate notice shall include information on: (1) the quality and quantity of effluent introduced into the POTW and (2) any anticipated impact of the change on the quantity or quality of effluent to be discharge from the POTW.

## ATTACHMENT A

### PRIORITY POLLUTANTS

<u>BASE NEUTRAL EXTRACTIBLES</u>	<u>VOLATILE ORGANICS</u>	<u>PESTICIDES</u>	<u>ACID EXTRACTIBLES</u>	<u>METALS</u>	<u>DIOXINS</u>
Acenaphthene	Acroetin	Aldrin	2,4,6-Trichlorophenol	Antimony	TCDD
Benzidine	Acrylonitrile	Dieldrin	4-Chloro-3-methylphenol	Arsenic	
1,2,4-Trichlorobenzene	Benzene	Chlordane (Technical)	2-Chlorophenol	Beryllium	
Hexachlorobenzene	Carbon tetrachloride	4,4'-DDT	2,4-Dichlorophenol	Cadmium	<u>OTHER</u>
Hexachloroethane	Chlorobenzene	4,4'-DDE	2,4-Dimethylphenol	Chromium	
Bis(2-chloroethyl) ether	1,2-Dichloroethane	4,4'-DDD	2-Nitrophenol	Copper	Cyanide
2-Chloronaphthalene	1,1,1-Trichloroethane	Endosulfan I	4-Nitrophenol	Lead	Asbestos
1,2-Dichlorobenzene	1,1-Dichloroethane	Endosulfan II	2,4-Dinitrophenol	Mercury	
1,3-Dichlorobenzene	1,1,2-Trichloroethane	Endosulfan sulfate	2-Methyl-4,6-dinitrophenol	Nickel	
1,4-Dichlorobenzene	1,1,2,2-Tetrachloroethane	Endrin	Pentachlorophenol	Selenium	
3,3'-Dichlorobenzidine	Chloroethane	Endrin aldehyde	Phenol	Silver	
2,4-Dinitrotoluene	2-Chloroethylvinylether	Heptachlor		Thallium	
2,6-Dinitrotoluene	Chloroform	Heptachlor epoxide		Zinc	
1,2-Diphenylhydrazine	1,1-Dichloroethene	Alpha-BHC			
Fluoranthene	Trans-1,2-Dichloroethene	Beta-BHC			
4-Chlorophenyl phenyl ether	1,2-Dichloropropane	Gamma-BHC (Lindane)			
4-Bromophenyl phenyl ether	1,3-Dichloropropane	Delta-BHC			
Bis(2-Chloroisopropyl) ether	Ethylbenzene	PCB 1016			
Bis(2-Chloroethoxy) methane	Dichloromethane	PCB 1221			
Hexachlorobutadiene	Chloromethane	PCB 1232			
Hexachlorocyclopentadiene	Bromomethane	PCB 1242			
Isophorone	Bromoform	PCB 1248			
Naphthalene	Bromodichloromethane	PCB 1254			
Nitrobenzene	Dibromochloromethane	PCB 1260			
N-Nitrosodimethylamine	Tetrachloroethene	Toxaphene			
N-Nitrosodiphenylamine	Toluene				
N-Nitrosodi-n-propylamine	Trichloroethene				
Bis(2-ethylhexyl) phthalate	Vinyl chloride				
n-Butyl benzyl phthalate					
Di-n-butyl phthalate					
Di-n-octyl phthalate					
Diethyl phthalate					
Dimethyl phthalate					
Benzo(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Acenaphthylene					
Anthracene					
Benzo(g,h,i)perylene					
Fluorene					
Phenanthrene					
Dibenzo(a,h)anthracene					
Indeno(1,2,3-cd)pyrene					
Pyrene					

Note: Priority Pollutants to be analyzed using Environmental Protection Agency (EPA) Methods 200 Series, 353.3, 420.2, 624,625, 608, and/or an appropriate combination of these methods to verify compliance with permit-specified effluent discharge limitations.

**Appendix J**

Nevada Division of Environmental Protection Authorization to Discharge (Permit No. NV0023647) issued to City of North Las Vegas

Nevada Division of Environmental Protection

AUTHORIZATION TO DISCHARGE

In compliance with the provisions of the Clean Water Act as amended, (33 U.S.C. 1251 et. seq; the "Act"), and Chapter 445A of the Nevada Revised Statutes,

City of North Las Vegas  
2580 Betty Lane  
Las Vegas, NV 89156

is authorized to discharge from facilities located at  
2580 Betty Lane  
Las Vegas, NV 89156  
Clark County  
(Water Reclamation Facility)

Outfall 001  
(Water Reclamation Facility)                      Latitude N36° 12' 20", Longitude W115° 03' 02"

Outfall 002 (Las Vegas Wash)                      Latitude N36° 07' 48", Longitude W115° 15' 26"

to receiving waters named                      Las Vegas Wash

in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Part I, II, and III hereof.

This permit shall become effective on: **April 12, 2010.**

This permit and the authorization to discharge shall expire at midnight, **April 11, 2015.**

Signed this 12 day of April, 2010.



Alan Tinney, P.E., Supervisor  
Permitting Branch  
Bureau of Water Pollution Control



**PART I**

**A. EFFLUENT LIMITATIONS, MONITORING REQUIREMENTS AND CONDITIONS**

1. During the period beginning on the effective date of this permit, and lasting until the permit expires, the Permittee is authorized to discharge treated sanitary wastewater, stormwater, and facility dewatering water from:

- Outfall 001 (Water Reclamation Facility) via the concrete lined Sloan Channel to the Las Vegas Wash, and
- Outfall 002 (Las Vegas Wash) to Las Vegas Wash,

Effluent samples taken in compliance with the monitoring requirements specified below shall be taken downstream of the disinfection facilities, but prior to mixing with Las Vegas Wash. Influent samples are to be taken at the headworks and are designated as INF.

**TABLE I.1 (Outfall 001, WATER RECLAMATION FACILITY)  
(Outfall 002, LAS VEGAS WASH)**

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS</u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average <sup>2</sup>	7 Day Average <sup>2</sup>	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
<b>Flow-001</b>	25 MGD	Monitor and Report: MGD	NA	INF, 001, 002	Continuous	Flow meter
<b>BOD<sub>5</sub> (uninhibited)</b>	30 mg/l	45 mg/l	6,255	001,002	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		
<b>Total Suspended Solids</b>	30 mg/l	45 mg/l	6,255	001, 002	Daily	Composite
	Monitor and Report	Monitor and Report	NA	INF		

PARAMETERS	EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS			MONITORING REQUIREMENTS		
	30 Day Average <sup>2</sup>	7 Day Average <sup>2</sup>	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
BOD <sub>5</sub> (uninhibited) & TSS	The Permittee shall demonstrate that the 30-day average percentage removal rate is at least 85%.			NA	Monthly	Calculate
pH	Minimum 6.0 and maximum 9.0 SU, except as allowed in Parts I.A.3 and I.A.19.		NA	001, 002	Daily	Discrete
Fecal Coliform <sup>1</sup>	Log mean 200 cfu or mpn/100ml	See footnote 1	NA	001, 002	Daily	Discrete
Total Residual Chlorine	NA	0.1 mg/l-except as allowed in Part I.A.19.	NA	001, 002	Daily	Discrete
Total Phosphorus as P: mg/l	See Part I.A.2			001, 002	Daily	Composite
Total Ammonia as N: mg/l	See Part I.A.2			001, 002	Daily	Composite
Total Inorganic Nitrogen as N: mg/l	See Part I.A.3			001, 002	Weekly	Composite
Total Dissolved Solids: mg/l	See Part I.A.4			001, 002	Weekly	Composite
Priority Pollutants	Monitor and Report, See Attachment A			001, 002	See Part I.A.18.d.	Discrete or Composite
WET testing	See Part I.A.17.			001, 002	See Part I.A.17	Composite
Receiving Water Monitoring	Monitor and Report			See Part I.A.21	See Part I.A.21	Discrete
Temperature: °C	Monitor and Report		NA	001, 002	Weekly	Discrete
Dissolved Oxygen: mg/L	Monitor and Report		NA	001, 002	Weekly	Discrete
Orthophosphorus as P: mg/l	Monitor and Report			001, 002	Daily	Composite
Nitrate + Nitrite as N: mg/l	Monitor and Report			001, 002	Weekly	Composite

<u>PARAMETERS</u>	<u>EFFLUENT DISCHARGE LIMITATIONS or REPORTING REQUIREMENTS</u>			<u>MONITORING REQUIREMENTS</u>		
	30 Day Average <sup>2</sup>	7 Day Average <sup>2</sup>	30-Day Average (lb/day)	Sample Location	Measurement Frequency	Sample Type
Total Kjeldahl Nitrogen as N: mg/l	Monitor and Report			001, 002	Weekly	Composite

1. The discharge shall not exceed a log mean of 200 cfu or mpn per 100 ml over a 30 day period nor may more than 10 percent of the total samples taken exceed 400 cfu or mpn per 100 ml.
2. For those parameters sampled weekly or less frequently, the Permittee shall report the single value instead of the 7-day or 30 day average.
3. The 25 MGD limit applies to the sum of the Permittee's discharges through Outfalls 001 and 002.
4. If one sampling point would characterize discharges from two or more outfalls, then only one sample need be taken. For example, samples taken for Outfall 001 may also be used for Outfall 002.
5. The Permittee is not required to conduct monitoring at an outfall when it is not discharging through that outfall.

I.A.2. **Waste Load Allocation (WLA) for Discharges into Las Vegas Wash:** The Permittee is authorized to discharge the waste loads listed in WLA Table for Total Phosphorus as P and Total Ammonia as N to the Las Vegas Wash. The WLA applies to the combined loading from Outfalls 001 and 002. This permit condition constitutes a cooperative agreement between the City of Las Vegas, Clark County Water Reclamation District, and City of Henderson, and with North Las Vegas, if it commences discharging (hereinafter Dischargers) to allow discharge flexibility. Each facility has an **Individual Waste Load Allocation (IWLA)** and there is a **Sum of Individual Waste Load Allocations ( $\Sigma$ IWLA)** defined below for the facilities. Treatment facilities which are used to attain a waste load allocation are not required to be operated when not needed to meet that allocation.

- a. The Permittee shall be considered in compliance if **either**:
  - i. The Permittee does not exceed the **IWLA** listed below or the **IWLA** in effect due to reallocations, **or**
  - ii. The **Sum of the Individual Waste Load Allocations ( $\Sigma$ IWLA)** listed below is not exceeded.

**Waste Load Allocation Table**  
**(Outfall 001, WATER RECLAMATION FACILITY)**  
**(Outfall 002, LAS VEGAS WASH)**

Constituent	City of Las Vegas IWLA*	Clark County Water Reclamation District IWLA	City of Henderson IWLA	City of North Las Vegas IWLA*	$\Sigma$ IWLA
<b>Total Phosphorus as P</b>	90 lb/day	175 lb/day	38 lb/day	31 lb/day	334 lb/day, Note: This WLA only applies March 1 - October 31; no limit applies the rest of the year.
<b>Total Ammonia as N</b>	261 lb/day	508 lb/day	110 lb/day	91 lb/day	970 lb/day, Note: This WLA only applies April 1 - September 30; no limit applies the rest of the year.

\*City of Las Vegas shall be allocated the sum of its own IWLA plus the IWLA of City of North Las Vegas until City of North Las Vegas begins discharging. Startup plan for initiation of discharge shall be submitted in accordance with special allocation procedure identified in section I.A.2.b or section I.A.2.c.

- b. **Annual Reallocation of IWLA:** On an annual basis, the Dischargers may modify their IWLA's by reallocating loads among themselves. This reallocation shall become effective upon submittal of a notification signed by all Dischargers. The annual reallocation shall be **submitted by May 31st if applicable**. The reallocation of IWLA's shall be considered a minor modification to the permit as long as the  $\Sigma$ IWLA is not modified. In addition to the annual reallocation, the Permittee will modify the IWLA by a special allocation to provide for the orderly initiation of discharge when North Las Vegas commences discharging. This special allocation shall be initiated by a notification signed by all Dischargers, and shall become effective according to the schedule accompanying the notification. This special allocation shall be considered a minor modification as long as the  $\Sigma$ IWLA are not modified.
- c. **Temporary Reallocation of IWLA:** The Permittee may temporarily reallocate IWLA upon submittal of a notification signed by all Dischargers describing the amount of IWLA be reallocated, the length of time the reallocation is effective and the basis for the reallocation. The

basis for the reallocation shall include the last monthly flows and waste load discharged for each Discharger. The waste load reallocation shall be effective on the date of the submittal to the Division. This reallocation is binding on the parties and cannot be revoked without a notification signed by all Dischargers. The temporarily reallocated **IWLA** shall revert back to the original Permittee at the end of the time specified on the notification. A copy of the latest **IWLA** agreement and any agreements made during the reporting period shall be submitted with each quarterly report required by Part I.B.1.

- d. **Reporting:** The Permittee shall submit quarterly reports pursuant to Part I.B.1.b, the **IWLA** and the  $\Sigma$ **IWLA** for Total Phosphorus as P and Total Ammonia as N, reported monthly as a 30 day average in lb/day. The data for the  $\Sigma$ **IWLA** shall be provided to and obtained from the other dischargers. In the event the Permittee cannot obtain the  $\Sigma$ **IWLA** information in time for submittal with the quarterly DMR, then an explanation shall be included with the report along with a schedule for timely submittal.

#### I.A.3. Confirmation of Standards Compliance

- a. The Permittee shall coordinate with the other dischargers identified in Part I.A.2 to determine whether on an annual basis the 95th percentile of the monitoring data for Las Vegas Wash complies with the 20 mg/l total inorganic nitrogen (TIN) water quality standard at the control point, Las Vegas Wash 2 (LVW2, LW6.05).
- b. The Permittee shall coordinate with the other dischargers identified in Part I.A.2 to determine whether the pH at LVW2 (LW6.05) complies with the water quality standard of 6.5-9.0 standard units.
- c. The results of these determinations shall be reported in the annual report identified in Part I.B.1.a.
- d. If the Permittee finds that Las Vegas Wash is not in compliance with the water quality standards identified in Part I.A.3. a. or b., the Permittee shall:
  - i. Consider whether reasonable changes in the Permittee's discharge from any outfall would result in compliance;
  - ii. Coordinate with the other dischargers identified in Part I.A.2 to consider whether coordinated reasonable changes would achieve compliance; and
  - iii. Submit a report to the Division explaining the analytical process and conclusions.

I.A.4 **Salinity Control:** The Permittee shall continue to implement the existing ordinances and public education programs for salinity control and identify and correct all identified infiltration/inflow problems which contribute to exceedance of the goal of more than 400 mg/l TDS increase above the Colorado River water supply. The Permittee shall provide the following information **annually by May 31st:**

- a. Description of the municipal entity and facilities.

- b. Description of significant salt sources of the municipal wastewater collection system, and identification of entities responsible for each source, if available.
- c. Description of the wastewater discharge, covering location, receiving waters, quantity of salt load, and salinity concentration.
- d. Description of alternative plans for minimizing salt contribution to the municipal discharge. Alternative plans should include:
  - i. Description of system salt sources and alternative means of control.
  - ii. Cost of alternative plans in dollars per ton, of salt removed from any new discharges to the municipality.
- e. In order to calculate the net increase in salinity the Permittee shall obtain the concentration of TDS in the water supply at least quarterly. The Permittee may rely on data collected by any water purveyors, and shall identify the source of the data.
- f. An evaluation of the impact of the discharge on the lower stem of the Colorado River system in terms of average annual average tons/day and concentration of TDS discharged.

I.A.5 **Narrative Standards** (*Nevada Administrative Code (NAC) 445A.121*): Discharges shall not cause the following standards to be violated in any surface waters of the state. Waters must be free from:

- a. Substances that will settle to form sludge or bottom deposits in amounts sufficient to be unsightly, putrescent or odorous;
- b. Floating debris, oil, grease, scum, and other floating materials in amounts sufficient to be unsightly;
- c. Materials in amounts sufficient to produce taste or odor in the water or detectable off-flavor in the flesh of fish or in amounts sufficient to change the existing color, turbidity or other conditions in the receiving stream to such a degree as to create a public nuisance;
- d. High temperature, biocides, organisms pathogenic to human beings, toxic, corrosive or other deleterious substances at levels or combinations sufficient to be toxic to human, animal, plant or aquatic life;
- e. Radioactive materials must not result in accumulations of radioactivity in plants or animals that result in a hazard to humans or harm to aquatic life;
- f. Untreated or uncontrolled wastes or effluents that are reasonably amenable to treatment or control; and
- g. Substances or conditions, which interfere with the beneficial use of the receiving waters.

The narrative standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of high or low flow. Where effluents are discharged to such waters, the discharges are not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained.

- I.A.6. The Permittee shall annually review monitoring data, conduct aquatic life studies using water with a hardness representative of the Las Vegas Wash (e.g., 800 mg/l) or conduct other studies to evaluate the existing water quality standards or other data issues, for the following parameters: cadmium, copper, hexavalent chromium, molybdenum, selenium, silver, and sulfide. Results shall be included as part of the annual report required by Part I.B.1.a.i.
- I.A.7. There shall be no objectionable odors from the collection system, treatment facility or disposal area, or biosolids treatment, use, storage or disposal area that the Permittee owns or operates.
- I.A.8. There shall be no discharge of substances that would cause a violation of water quality standards of the State of Nevada as defined by the permit. The permit may be reopened, and additional limits imposed, if it is determined that the discharge is causing a violation of ambient water quality standards of the State of Nevada.
- I.A.9. There shall be no discharge from the collection, treatment and disposal facilities except as authorized by this permit or in accordance with the Division's Spill Reporting Policy.
- I.A.10. The treatment and disposal facility shall be fenced and posted.
- I.A.11. The collection, treatment and disposal facilities shall be constructed in conformance with plans approved by the Administrator, as required by NAC 445A.284, except as provided in the Division's "Plan and Specification Review Policy for Collection and Treatment Systems in Clark County" latest edition.
- I.A.12. The facility shall be operated in accordance with the Operations and Maintenance (O&M) manual, which must be approved by the Administrator.
- I.A.13. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- I.A.14. **Biosolids and Sewage Sludge**
- a. **Disposal:** The Permittee shall comply with all applicable sections of the following regulations for biosolids, which are disposed and inform any biosolids disposer of the requirement that they must comply with the following regulations as applicable.
    - i. 40 CFR 257 and 258: for biosolids disposed in municipal solid waste landfills as approved by the Administrator and the County;
    - ii. 40 CFR 261 for hazardous biosolids or 40 CFR 761 for biosolids with a PCB concentration greater than 50 mg/kg; or

- iii. 40 CFR 503; placed in surface disposal sites (dedicated land disposal sites or monofills), or incinerated.
- b. **Reuse:** The Permittee shall comply with any applicable sections of 40 CFR 503 for biosolids generated at the facility including solid waste screening and sewage sludge which is to be used, land applied, stored or treated in compliance with any applicable sections of the following regulations:
  - i. 40 CFR 503; for non-hazardous biosolids that are land applied;
  - ii. The Permittee is responsible for informing any biosolids preparer, applicer, or disposer, of all requirements and the applicable regulations listed above.
  - iii. Facilities which are regulated under 40 CFR part 503 shall monitor parameters listed in Part I.A.18., and shall also monitor the pathogen density requirements in 40 CFR 503.32 (a) and (b)(2) through (4) and the vector attraction reduction requirements in 503.33(b)(1) through (8); at the frequencies listed below.

<u>Dry Biosolids Disposal rate in metric tons/yr.</u>	<u>Frequency</u>
>0 - <290	each year
≥290 - <1500	once a quarter
≥1500 - <15000	once every 2 months
≥15000	once a month

- iv. Biosolids to be land applied shall be tested for organic nitrogen as N, ammonia as N, nitrate as N, and Total Nitrogen as N on the frequency required above.
- v. Biosolids, which are to be land applied, shall be characterized annually pursuant to 40 CFR 261 to determine if they are hazardous.
- c. If biosolids are stored at any facility owned or operated by the Permittee for over two years from the time they are generated, the Permittee shall notify the Division within 30 days and shall ensure compliance with all the requirements of surface disposal 40 CFR 503 C, or must submit a written notification to the Division and EPA with the information listed at 40 CFR 503.20 (b), demonstrating the need for longer temporary storage.
- d. Biosolids treatment or storage facilities owned or operated by the Permittee shall be designed to divert stormwater run-on for the 100-year storm event, and be designed to prevent erosion, which could cause biosolids to run-off.
- e. The Permittee shall take all appropriate precautions to inform biosolids haulers that all necessary measures to contain the biosolids should be taken before leaving the treatment facility.
- f. The Permittee shall comply with the following notification requirements either directly or through contractual arrangements with a biosolids management contractor:
  - i. If biosolids are shipped to another state or to Indian lands, the Permittee shall send notice of the shipment to the state permitting authorities, the EPA Regional Office of the region

receiving the biosolids or the Indian authorities.

ii. For land application or un-permitted disposal sites, the Permittee shall notify the Division 180 days prior to shipping any biosolids to enable the site to obtain a permit.

g. **Biosolids Monitoring Report (BMR):** The Permittee shall submit a BMR annually which shall be submitted by **May 31<sup>st</sup>** for the period covering the previous calendar year. The report shall contain all the required biosolids analytical data, the volume of biosolids generated that year, any volume accumulated from previous years, descriptions of pathogen and vector attraction reduction methods and the required certifications as required by 40 CFR 503.17 and 27, the names, mailing and street addresses and telephone numbers of all facilities which received biosolids for storage, disposal, use, treatment, land application or any other use or disposal methods not mentioned and the volume of biosolids taken to each facility.

I.A.15. **Annual Fee:** The Permittee shall remit an annual review and services fee in accordance with NAC 445A.232 starting **July 1, 2010** and every year thereafter until the permit is terminated.

I.A.16. The treatment facility shall be operated by a Nevada Certified Grade IV Wastewater Operator. The first DMR submitted under this permit must include the written designation of the authorized representative as required by Part III.A.2. If the certified operator in responsible charge changes, a new designation letter must be submitted.

I.A.17. **Whole Effluent Toxicity Testing:** Beginning with the effective date of this permit, the Permittee shall conduct monthly toxicity tests on 24-hour composite effluent samples as described below on the discharge from Outfall 001/002.

a. **Acute Toxicity Limit:** The effluent shall be deemed acutely toxic when there is a statistically significant difference at the 95th% confidence interval between the survival of the control (0% effluent) test organisms and the survival of the test organisms in the 100% effluent at the following limits:

- i. The survival of test organisms in the undiluted effluent sample is less than 90 percent in six (6) out of eleven (11) consecutive samples; or
- ii. The survival rate of test organisms in the undiluted effluent sample is less than 70 percent in any two of eleven consecutive samples.

b. **Test Methods**

- i. The acute flow through or static replacement tests shall be conducted in general accordance with the procedures set out in the latest revision of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," EPA/600/4-90/027. The Permittee shall conduct an acute 48-hour flow through or static replacement toxicity test using any Daphnid approved by the Division and an acute 96-hour flow through or static replacement toxicity test using fathead minnows, Pimephales promelas. After each 24-hours of the test period the dilutions shall be replaced with freshly

prepared dilutions of the original effluent sample.

1. If more than 10 percent control mortality occurs, the test shall be repeated until satisfactory control survival is achieved.
2. The source of the dilution water shall be reported with the test results. The tests shall be run using 4 replicate chambers, with a minimum of 5 organisms per test chamber for the Daphnid and 2 replicate chambers with a minimum of 10 organisms per test chamber for the Pimephales promelas.

- ii. **Alternative Species and Protocols:** The Permittee may undertake an investigation of alternative site specific toxicity test species and alternative site specific toxicity protocols. If alternative, site-specific toxicity test species or protocols are developed as a result of work by the Permittee, such species or protocols may be substituted for those specified in this permit on approval by the Division under 40 CFR Part 136. Alternative protocols must be compared to EPA protocols to demonstrate appropriateness and reliability.

c. **Testing Schedule**

- i. *Routine Schedule:* The Permittee shall conduct an acute toxicity test monthly.
- ii. *Accelerated schedule:* Whenever the effluent has been determined to be acutely toxic per Part I.A.17.a., the Permittee shall increase the frequency of acute toxicity testing to every other week. The accelerated testing shall also be conducted to determine an endpoint of either the LC50 or the No Observed Effects Concentration (NOEC) as defined in the above referenced method. When 4 (four) consecutive tests show greater than 70 percent survival of undiluted effluent, the Permittee may resume its routine test schedule.

- d. **Follow-up Responses:** Whenever the acute toxicity effluent limitation as defined under either Part I.A.17.a.i or ii has been exceeded, **and** one or more of the tests conducted under Part I.A.17.c ii. has a survival rate of less than 70% in an undiluted effluent sample, the Permittee shall:

- i. In general accordance with EPA manuals and EPA/600/6-91/003, EPA/600/3-88/035, or any subsequent revisions and/or methods approved by the Division, initiate an identification investigation within 24 hours of the exceedance to identify the cause(s) of the toxicity. After the initiation of the investigation phase pursuant to this condition, the Permittee may suspend the accelerated testing required by Part I.A.17.c.ii. as long as the routine testing required by Part I.A.17.c.i. is resumed.
- ii. In general accordance with EPA manuals and EPA/600/R-92/081, or any subsequent revisions and/or methods approved by the Division, conduct an evaluation of findings where appropriate; and
- iii. Notify the Division within fifteen (15) days of becoming aware of the exceedance and provide the following:
  1. Times and dates when the limitation was exceeded;
  2. The findings of the identification investigation or other investigations to identify the cause(s) of the toxicity or a plan for continuing the identification investigation if it was not conclusive;
  3. The actions the Permittee has taken or will take to mitigate the impact of the discharge,

- to correct the noncompliance and prevent the recurrence of toxicity; and
4. Where corrective actions have not been completed, an expeditious schedule under which the corrective actions will be implemented.
- e. In no event shall the discharger cause any impairment of the receiving water or of the beneficial uses, nor cause a violation of any other provision of this permit, the Clean Water Act and State or local regulation or law.
- f. **Toxicity Testing Reopener:** This permit may be reopened and modified by the Division to include effluent limits, additional testing and/or other appropriate actions to address demonstrated effluent toxicity. This permit may also be reopened and modified by the permitting authority to incorporate alternative permit conditions reflecting State Water Quality Standards revisions related to effluent toxicity.
- g. In addition to the quarterly DMR submittals, the Permittee shall submit an annual summary, **which** provides a review of the survival rates of both the control and the 100% effluent. The summary shall be submitted by **May 31st of each year**.
- h. **Chronic Toxicity:** The Permittee shall conduct chronic toxicity study using Ceriodaphnia dubia and fathead minnows (Pimephales promelas) to identify pollutants that may require additional controls under the pretreatment program, Part I.A.18.
- i. The Permittee shall submit a study plan and schedule within one hundred eighty (180) days from the date of issuance of this permit for concurrence by the Division.
  - ii. The study will include the following:
    1. Chronic toxicity testing to be conducted at least once per quarter over a two year period following concurrence of the study plan by the Division.
    2. Samples of wastewater shall be taken at the same location as the effluent compliance samples, unless otherwise approved in writing by the Division.
    3. If chronic toxicity is identified, using appropriate statistical procedures or other evaluation methods acceptable to the Division, the Permittee may either increase testing frequency to monthly or conduct a toxicity identification evaluation (TIE). If after two additional months of testing the chronic toxicity has abated, the Permittee may return to quarterly testing. If it has not, the Permittee shall continue accelerated testing, conduct a TIE, or submit an alternate proposal to the Division for approval.
    4. Chronic toxicity testing shall be conducted in accordance with procedures specified in 40 CFR Part 136.
    5. TIEs shall be conducted in accordance with procedures set forth in *Toxicity Identification Evaluations: Characterization of Chronically Toxic Effluents, Phase I*, EPA/600/6-91/003, USEPA, 1991A; and *Toxicity Reduction Evaluation Protocol for Municipal Wastewater Treatment Plants*, EPA/600/2-88/062, USEPA, 1989A, as appropriate.
  - iii. The Permittee shall take appropriate actions to address any pollutant of concern identified through this study.
  - iv. A report on the study shall be submitted to the Division within the time provided for in the

study plan and schedule. The Permittee and the Division will review the information and any subsequent actions taken by the Permittee to assess the results and determine what actions, e.g., additional chronic toxicity testing, are necessary and appropriate.

- v. The data collected through this study, and through the chronic toxicity testing and TIE procedures, are for informational purposes only and shall not be used to assess compliance or in an enforcement action against the Permittee.

**I.A.18. Pretreatment of Industrial Wastewaters:** The Permittee shall implement and enforce a pretreatment program under 40 CFR Part 403 (hereinafter 403), including any subsequent regulatory revisions to 403 and be responsible for and liable for the performance of all Control Authority pretreatment requirements contained in 403. Where 403 or subsequent revision places mandatory actions upon the Permittee as Control Authority but does not specify a timetable of completion of the actions, the Permittee shall complete the required actions within 6 months from the issuance date of this permit or the effective date of the 403 revisions, whichever comes later. For violations of pretreatment requirements, the Permittee shall be subject to enforcement actions, penalties, fines, and other remedies by the U.S. EPA or other appropriate parties, as provided in the Act. EPA may initiate enforcement action against a non-domestic user for noncompliance with applicable standards and requirements as provided in the Act and as provided by the Division and EPA in the enforcement agreement.

- a. The Permittee will comply with the Pretreatment Program as submitted to and approved by the Division and EPA. This program shall include written agreements, with all sewage agencies who contribute flows to the treatment facility, that provide the Permittee with the legal authority to enforce the pretreatment program. The Permittee shall comply with all parts of the schedule listed below, Pretreatment of Industrial Wastewaters.
- b. The Permittee shall enforce the requirements promulgated under sections 307(b) through (d) and 402(b) of the Act with timely, appropriate and effective enforcement actions. The Permittee shall cause all non-domestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements or in the case of a new non-domestic user, upon commencement of the discharge.
- c. The Permittee shall perform the pretreatment functions as required in 403 including but not limited to:
  - i. Implement the necessary legal authorities as provided in 403.8(f)(1);
  - ii. Enforce the pretreatment requirements under 403.5 and 6;
  - iii. Implement the programmatic functions as provided in 403.8(f)(2); and
  - iv. Provide the requisite funding and personnel to implement the pretreatment program as provided in 403.8(f)(3).
- d. The Permittee shall submit annually a report to the Division and EPA describing its pretreatment activities over the previous year. In the event the Permittee is not in compliance with any

conditions or requirements of this permit, then the Permittee shall also include reasons for non-compliance and state how and when the Permittee shall comply with such conditions and requirements. This annual report shall cover operations for the previous calendar year and is due **May 31st** of each year. The report shall contain, but is not limited to, the following information:

- i. A summary of the analytical results from representative, flow proportioned, 24-hour composite sampling of the Publicly Owned Treatment Works' (POTW's) influent and effluent for those pollutants EPA has identified under section 307(a) of the Act which are known or suspected to be discharged by non-domestic users. This will consist of an annual full priority pollutant scan, with
- ii. Quarterly samples analyzed only for those pollutants detected in the full scan. Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent. The sludge analyzed shall be a composite sample of a minimum of twelve discrete samples taken at equal time intervals over a 24-hour period or a composite of discrete samples every two hours when the sludge production period is less than 24 hours. Wastewater and sludge sampling and analysis shall be performed a minimum of once per quarter. The Permittee shall also provide any influent or effluent monitoring data for non-priority pollutants, which the Permittee believes, may be causing or contributing to interference, pass through, or adversely impacting sludge quality. Sampling and analysis shall be performed with the techniques prescribed in 40 CFR 136;
- iii. A discussion of upset, interference, or pass through incidents, if any, at the treatment plant, which the Permittee knows, or suspects were caused by non-domestic users of the POTW system. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of the non-domestic user responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent pass through or interference;
- iv. An update of the Permittee's significant industrial users (SIU's) including their names and addresses, and a list of deletions, additions and SIU name changes keyed to the previously submitted list. The Permittee shall provide a brief explanation for each change. The list shall identify the SIU's subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall also indicate which SIUs are subject to local limitations;
- v. The Permittee shall characterize the compliance status of each SIU by providing a list or table which includes the following information:
  1. Name of the SIU;
  2. Category, if subject to federal categorical standards;
  3. The type of wastewater treatment or control process in place;
  4. The number of samples taken by the POTW during the year;
  5. The number of samples taken by the SIU during the year;
  6. For an SIU subject to discharge requirements for total toxic organics, whether all required certifications were provided;
  7. A list of the standards violated during the year. Identify whether the violations were for categorical standards or local limits;

8. Whether the facility is in significant noncompliance (SNC) as defined at 403.12(f)(2)(vii) at any time during the year; and
  9. A summary of enforcement or other actions taken during the year to return the SIU to compliance. Describe the type of action, final compliance date, and the amount of fines and penalties collected, if any. Describe any proposed actions for bringing the SIU into compliance;
  - vi. A brief description of any programs the POTW implements to reduce pollutants from non-domestic users that are not classified as SIU's;
  - vii. A brief description of any significant changes in operating the pretreatment program which differ from the previous year including, but not limited to, changes concerning the program's administrative structure, local limits, monitoring program or monitoring frequencies, legal authority, enforcement policy, funding levels, or staffing levels;
  - viii. A summary of the annual pretreatment budget, including the cost of the pretreatment program functions and equipment purchases; and
  - ix. A summary of activities to involve and inform the public of the program including a copy of the newspaper notice, if any, required under 403.8(f)(2)(vii).
- e. The Permittee shall submit quarterly SIU compliance status reports to EPA, Region 9 and the Division. The reports shall cover the periods of January 1 through March 31, April 1 through June 30, July 1 through September 30, and October 1 through December 31. Each report shall be submitted by the end of the month following the quarter except the report for October 1 through December 31, which may be included in the annual report. The reports, which may be submitted in outline form, shall contain:
- i. The name and address of all SIU's which violated any discharge or reporting requirements during the quarter;
  - ii. A description of the violations including whether any discharge violations were for categorical standards or local limits;
  - iii. A description of the enforcement or other actions that were taken to remedy the noncompliance; and
  - iv. The status of active enforcement and other actions taken in response to SIU noncompliance identified in previous reports.

#### **I.A.19. Chlorine Residual and pH Effluent Limitation**

- a. The Permittee may determine compliance with chlorine residual and pH either by grab sampling or by continuous monitoring.
- b. If the Permittee chooses continuous monitoring, the Permittee shall maintain the chlorine residual and pH of such effluent within the range set forth in the applicable effluent limitations guidelines, except excursions from the range are permitted subject to the following limitations:
  - i. The total time during which the chlorine residual and pH values are outside the required range shall not exceed 7 hours and 26 minutes in any calendar month;
  - ii. No individual excursion from the range of chlorine and pH shall exceed 60 minutes; and
  - iii. If the continuous monitoring equipment fails, estimates derived from historical or

contemporary data may be used.

- c. The Division may allow the Permittee to discontinue monitoring for chlorine upon approval of a submittal, which demonstrates that there is no reasonable potential for the chlorine concentrations to be toxic.

I.A.20. **Schedule of Compliance:** The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications, which the Administrator may make in approving the schedule of compliance.

- a. The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.
- b. The Permittee shall submit a report in accordance with permit condition Part I.B.1.c. within 14 days of a compliance date detailing compliance or noncompliance with that date.
- c. Within six (6) months of the completion of the plant expansion and/or modification, the Permittee shall submit a revised O&M manual to the Division for review and approval.
- d. By 180 days of the permit issuance date, the Permittee shall submit a Reasonable Potential Analysis plan, to the Division, describing what parameters, when the appropriate data will be available for each parameter, what analysis will be performed and the date the Reasonable Potential Analysis will be submitted to the Division for review.

I.A.21. **Lake Mead and Las Vegas Wash Monitoring:** By **November 1st** of each year, the Permittee shall jointly submit, with the Clark County Water Reclamation District, the City of Henderson, and the City of Las Vegas, an annual plan for monitoring ambient water quality in Lake Mead and Las Vegas Wash during the following year. Following approval by the Division, the Permittee shall implement its portion of the plan beginning **January 1st** of each year. The joint monitoring plan shall include, as a minimum, the following:

- a. The identification of at minimum three locations in Las Vegas Wash at which water quality will be routinely monitored.
- b. The identification of at minimum five locations within Lake Mead at which water quality will be routinely monitored, including at least one station near the mouth of Las Vegas Wash.
- c. An identification of the depths at which each station will be sampled.
- d. An explanation of why the station locations and depths were chosen.
- e. A schedule for monitoring water quality at the selected stations, at minimum biweekly in Las Vegas Wash and, during April through September, in Lake Mead.
- f. A list of parameters to be monitored, including at minimum chlorophyll (in epilimnetic samples), total phosphorus, orthophosphorus, nitrate, ammonia, dissolved oxygen, conductivity,

temperature, pH, and fecal coliforms or E. coli.

- g. If the Permittee is unable to reach agreement with the other dischargers, the Permittee shall submit an explanation and a proposed individual monitoring plan.

## I.B. MONITORING AND REPORTING

### I.B.1. Reporting

#### a. Annual Reports

- i. On or before **May 31st** of each year, the Permittee shall submit a plot of concentration (y-axis) versus date (x-axis) for each analyzed constituent, which has been detected greater than 25% of the time. The plot shall include data from the preceding five years, if available. Any data point from the current year detected at concentrations greater than the limits in Part I.A.1 or the applicable water quality standard must be explained by a narrative.
- ii. The BMR required by Part I.A.14., the pretreatment annual report required by Part I.A.18.d., the Lake Mead and Las Vegas Wash Annual Report required by Part I.A.21, the TIN annual report required by Part I.A.3, the Salinity Control Report required by Part I.A.4 and WET annual reports required by Part I.A.17 are due each **May 31st**.

- b. **Quarterly Reporting:** Monitoring results obtained pursuant to Part I.A of the permit for the previous three (3) month period shall be summarized for each month and reported on a Discharge Monitoring Report (DMR) form. The DMR is to be received in this office no later than the 28th day of the month following the completed reporting period. The Permittee shall also submit the data in an electronic format provided by the Division. The first report is due on July 28, 2010. Summaries of laboratory results for analyses conducted by outside laboratories must accompany the DMR, and the full data package provided by the laboratory must be provided if requested in writing by the Division. If at any time the Permittee concludes that submitted data were incorrect, the Permittee shall notify the Division in writing, identify the incorrect data, and replace the incorrect data with corrected data, which shall thereafter be used for determining compliance with this permit.

- c. **Compliance Report:** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

- d. **Other information:** Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Administrator, it shall promptly submit such facts or information.

- e. **Planned changes:** The Permittee shall give notice to the Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition to a permitted facility;
  - i. May meet one of the criteria for determining whether a facility is a new source (40 CFR 122.29(b));
  - ii. Could significantly change the nature or increase the quantity of pollutants discharged; or
  - iii. Results in a significant change to the Permittee's sludge management practice or disposal sites.
- f. **Anticipated non-compliance:** The Permittee shall give advance notice to the Administrator of any planned changes in the permitted facility or activity, which may result in noncompliance with permit requirements.
- g. An original signed copy of these, and all other reports required herein, shall be submitted to the State at the following address:

Division of Environmental Protection  
Bureau of Water Pollution Control  
ATTN: Compliance Coordinator  
901 South Stewart Street, Suite 4001  
Carson City, Nevada 89701

- h. A signed copy of all Discharge Monitoring Reports and any other reports shall be submitted to the Regional Administrator at the following address:

U.S. Environmental Protection Agency, Region IX  
NPDES/DMR WTR-7-1  
75 Hawthorne Street  
San Francisco, CA 94105

## I.B.2 Monitoring

- a. **Representative Samples:** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.
- b. **Test Procedures:** Monitoring for the analysis of pollutants shall be conducted according to test procedures approved under 40 CFR 136 published pursuant to Section 304(h) of the Act, or SW-846, or in the case of sludge disposal, approved under 40 CFR 503, or other procedures as approved by the Administrator. Analysis shall be performed by a State of Nevada certified laboratory.
- c. **Recording the Results:** For each measurement or sample taken pursuant to the requirements of this permit, the Permittee shall record the following information:

- i. The exact place, date, and time of sampling;
  - ii. The dates the analyses were performed;
  - iii. The person(s) who performed the analyses;
  - iv. The analytical techniques or methods used; and
  - v. The results of all required analyses.
- d. **Additional Monitoring by Permittee:** If the Permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall also be indicated on the DMR. If a Permittee monitors more often than once per day, the Permittee shall compute the 7-day average or 30-day average by first averaging the samples for each day, and then averaging the daily averages or discrete samples representing all sampled days within the period; provided, however, that the Permittee may instead average all samples taken within the period if it notifies the Division that it will use this method.
- e. **Records Retention:** All records and information resulting from the monitoring activities, permit application, reporting required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation, shall be retained for a minimum of five years, or longer if required by the Administrator. Records of monitoring information required by this permit related to the Permittee's sewage sludge use and/or disposal activities shall be retained for a period of at least 5 years or longer as required by 40 CFR 503.
- f. **Detection Limits:** All laboratory analysis conducted in accordance with this discharge permit must meet the following criteria:
- i. All methods used must be specified or approved in either 40 CFR 136, SW-846 or otherwise approved by the Division. All analytical results must be generated by analytical laboratories certified by the state of Nevada laboratory certification program;
  - ii. The reporting limit for each metal monitored in accordance with this permit shall be less than or equal to the water quality standards for metals which apply to the Las Vegas Wash on the effective date of the permit, except for mercury. This requirement does not apply if a water quality standard is lowered after the issuance of this permit; however, the Permittee shall review methods used and by letter notify the division if the reporting limit will exceed the new criterion, and if so the Division may reopen the permit to impose new monitoring requirements;
  - iii. The Permittee shall determine whether any laboratories certified by the State of Nevada are analyzing mercury using EPA Method 1631 and achieving results within acceptable limits. If so, the Permittee shall provide a sample for analysis using EPA Method 1631 once per year. If not, the Permittee, acting individually or with other Permittees, shall initiate a dialog with its contract laboratories or other laboratories that might be interested in providing service to the Permittee to inform them of the opportunity to provide additional testing services to the Permittee, and to provide information on current sampling and analytical practices and

procedures that might assist the laboratories in their determinations about whether to institute the use of the method; and  
iv. All priority pollutant data reported by contract laboratories shall be submitted to the Division.

- g. **Modification of Monitoring Frequency and Sample Type:** After considering monitoring data, stream flow, discharge flow and receiving water conditions, the Administrator, may for just cause, modify the monitoring frequency and/or sample type by issuing an order to the Permittee.

### I.B.3. Definitions

- a. The "30-day average discharge" means the total discharge during a month divided by the number of samples in the period for that discharge facility. Where less than daily sampling is required by this permit, the 30-day average discharge shall be determined by the summation of all the measured discharges divided by the number of samples during the period when the measurements were made.
- b. The "7-day average" concentration means the arithmetic mean of measurements made during a week. If there are more than one measurement per day, the measurements may be averaged in accordance with Part I.B.2.d.
- b. The "daily maximum" is the highest measurement during the monitoring period.
- c. The "30-day average concentration", other than for fecal coliform bacteria, means the arithmetic mean of measurements made during a month. If there are more than one measurement per day, the measurements may be averaged in accordance with Part I.B.2.d. The "30-day average concentration" for fecal coliform bacteria means the geometric mean of measurements made during a month. The geometric mean is the " $n^{\text{th}}$ " root of the product of " $n$ " numbers. Geometric mean calculations where there are non-detect results for fecal coliform shall use one half the detection limit as the value for the non-detect results.
- d. A "discrete" sample means any individual sample collected in less than 15 minutes.
- e. For flow-rate measurements a "composite" sample means the arithmetic mean of no fewer than six individual measurements taken at equal time intervals for 24 hours, or for the duration of discharge, whichever is shorter. For other than flow-rate a "composite" sample means a combination of no fewer than six individual flow-weighted samples obtained at equal time intervals for 24 hours, or for the duration of discharge, whichever is shorter. Flow-weighted sample means that the volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling.
- f. "Acute toxicity" is defined in the whole effluent testing procedures presented in this permit in Part I.A.17.
- g. "Biosolids" are non-hazardous sewage sludge or domestic septage as these terms are defined in 40 CFR 503.9.

## **PART II**

### **A. MANAGEMENT REQUIREMENTS**

- II.A.1. **Change in Discharge:** All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, or treatment modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Any changes to the permitted treatment facility must comply with Nevada Administrative Code (NAC) 445A.283 to 445A.285. Pursuant to NAC 445A.263, the permit may be modified to specify and limit any pollutants not previously limited.
- II.A.2. **Facilities Operation-Proper Operation and Maintenance:** The Permittee shall at all times maintain in good working order and properly operate all treatment and control facilities, collection systems and pump stations installed or used by the Permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance/quality control procedures.
- II.A.3. **Adverse Impact-Duty to Mitigate:** The Permittee shall take all reasonable steps to minimize releases to the environment resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge. The Permittee shall carry out such measures, as reasonable, to prevent significant adverse impacts on human health or the environment.
- II.A.4. **Noncompliance, Unauthorized Discharge, Bypassing and Upset**
- a. Any diversion, bypass, spill, overflow or discharge of treated or untreated wastewater from wastewater treatment or conveyance facilities under the control of the Permittee to navigable waters is prohibited except as authorized by this permit or in accordance with the Division's Spill Reporting Policy. The Division may take enforcement action for a diversion, bypass, spill, overflow, or discharge of treated or untreated wastewater to waters of the state except as authorized by this permit or in accordance with the Division's Spill Reporting Policy. In the event the Permittee has knowledge that a diversion, bypass, spill, overflow or discharge not authorized by this permit or in accordance with the Division's Spill Reporting Policy is probable, the Permittee shall notify the Administrator immediately.

- b. The Permittee shall notify the Administrator within twenty-four (24) hours of any diversion, bypass, spill, upset, overflow or release of treated or untreated discharge from wastewater treatment or conveyance facilities under the control of the Permittee other than that which is authorized by the permit or in accordance with the Division's Spill Reporting Policy. A written report shall be submitted to the Administrator within five (5) days of diversion, bypass, spill, overflow, upset or discharge, detailing the entire incident including:
  - i. Time and date of discharge;
  - ii. Exact location and estimated amount of discharge;
  - iii. Flow path and any bodies of water which the discharge reached;
  - iv. The specific cause of the discharge; and
  - v. The preventive and/or corrective actions taken.
- c. The following shall be included as information which must be reported within 24 hours:
  - i. Any unanticipated bypass which exceeds any effluent limitation in the permit;
  - ii. Any upset which exceeds any effluent limitation in the permit;
  - iii. Violation of a limitation for any toxic pollutant or any pollutant identified as the method to control a toxic pollutant.
- d. The Permittee shall report all instances of noncompliance not reported under Part II.A.4.b. at the time monitoring reports are submitted. The reports shall contain the information listed in Part II.A.4.b.
- e. A "bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
  - i. **Bypass not exceeding limitations:** The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts II.A.4.a, II.A.4.b, and II.A.4.f.
  - ii. **Anticipated bypass:** If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of bypass.
- f. **Prohibition of Bypass:** Bypass is prohibited, and the Administrator may take enforcement action against a Permittee for bypass, unless:
  - i. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.
  - ii. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
  - iii. The Permittee submitted notices as required under Part II.A.4.e.
- g. The Administrator may approve an anticipated bypass, after considering its adverse effects, if the

Administrator determines that it will meet the three conditions listed in Part II.A.4.f.

- h. An "**upset**" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- i. **Effect of an upset:** An upset constitutes an affirmative defense to an action brought for non-compliance with such technology-based permit effluent limitations if the requirements of Part II.A.4.j. are met.
- j. **Conditions necessary for a demonstration of an upset:** A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - i. An upset occurred and that the Permittee can identify the cause(s) of the upset;
  - ii. The permitted facility was at the time being properly operated;
  - iii. The Permittee submitted notice of the upset as required under paragraph c of this section; and
  - iv. The Permittee complied with any remedial measures required under Part II.A.3.
- k. In selecting the appropriate enforcement option, the Administrator shall consider whether or not the noncompliance was the result of an upset. The burden of proof is on the Permittee to establish that an upset occurred.

II.A.5. **Removed Substances:** Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of waste waters shall be disposed of in a manner such as to prevent any pollution from such materials from entering any navigable waters.

II.A.6. **Safeguards to Electric Power Failure:** In order to maintain compliance with the effluent limitations and prohibitions of this permit the Permittee shall either:

- a. Provide at the time of discharge an alternative power source sufficient to operate the wastewater control facilities; or
- b. Halt or reduce all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

## II.B. RESPONSIBILITIES

II.B.1. **Right of Entry and Inspection:** The Permittee shall allow the Administrator and/or his authorized representatives, upon the presentation of credentials, to:

- a. Enter at reasonable times upon the Permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. Have access to and copy any records required to be kept under the terms and conditions of this permit at reasonable times;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations required in this permit; and
- d. Perform any necessary sampling or monitoring to determine compliance with this permit at any location for any parameter.

**II.B.2. Transfer of Ownership or Control:** In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the Permittee shall notify the succeeding owner or controller of the existence of this permit, by letter, a copy of which shall be forwarded to the Administrator. The Administrator may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary. The Administrator shall approve ALL transfer of permits.

**II.B.3. Availability of Reports:** Except for data determined to be confidential under NRS 445A.665, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of the Administrator. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in NRS 445A.710.

**II.B.4. Furnishing False Information and Tampering with Monitoring Devices:** Any person who intentionally or with criminal negligence makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained by the provisions of NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, or who falsifies, tampers with or knowingly renders inaccurate any monitoring device or method required to be maintained under the provisions of NRS 445A.300 to 445A.730, inclusive, or by any permit, rule, regulation or order issued pursuant thereto, is guilty of a gross misdemeanor and shall be punished by a fine of not more than \$10,000 or by imprisonment. This penalty is in addition to any other penalties, civil or criminal, provided pursuant to NRS 445A.300 to 445A.730, inclusive.

**II.B.5. Penalty for Violation of Permit Conditions:** Nevada Revised Statutes (NRS) 445A.675 provides that any person who violates a permit condition is subject to administrative and judicial sanctions as outlined in NRS 445A.690 through 445A.705.

**II.B.6. Permit Modification, Suspension or Revocation**

- a. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked

in whole or in part during its term for cause including, but not limited to, the following:

- i. Violation of any terms or conditions of this permit;
- ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge;
- iv. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;
- v. There are material and substantial alterations or additions to the permitted facility or activity;
- vi. The Administrator has received new information;
- vii. The standards or regulations have changed; or
- viii. The Administrator has received notification that the permit will be transferred.

b. **Minor Modifications:** With the consent of the Permittee and without public notice, the Administrator may make minor modifications in a permit to:

- i. Correct typographical errors;
- ii. Clarify permit language;
- iii. Require more frequent monitoring or reporting;
- iv. Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the permit and does not interfere with attainment of the final compliance date;
- v. Allow for change in ownership;
- vi. Change the construction schedule for a new discharger provided that all equipment is installed and operational prior to discharge; or
- vii. Delete an outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits;
- viii. Reallocation of the Waste Load Allocation as long as the sum of the allocations does not change.

II.B.7. **Toxic Pollutants:** Notwithstanding Part II.B.6., if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the Permittee so notified.

II.B.8. **Liability:** Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable Federal, State or local laws, regulations, or ordinances. However, except for any toxic effluent standards and prohibitions imposed under section 307 of the Clean Water Act or toxic water quality standards set forth in NAC 445A.144, compliance with this permit constitutes compliance with Clean Water Act sections 301, 302, 306, 307, 318, 403, 405(a) and (b), and with NRS 445A.300 through 445A.730.

- II.B.9. Property Rights:** The issuance of this permit does not convey any property rights, in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.
- II.B.10. Severability:** The provisions of this permit are severable, and if any provision of this permit, or the application of any provisions of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- II.B.11. Duty to Comply:** The Permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination; revocation and reissuance, or modification; or denial of a permit renewal application.
- II.B.12. Need to Halt or Reduce Activity Not a Defense:** It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this permit.
- II.B.13. Duty to Provide Information:** The Permittee shall furnish to the Administrator, within a reasonable time, any relevant information which the Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this permit. The Permittee shall also furnish to the Administrator, upon request, copies of records required to be kept by this Permit.

### **PART III**

#### **III.A. OTHER REQUIREMENTS**

**III.A.1. Reapplication:** If the Permittee desires to continue to discharge, he shall reapply not later than 180 days before this permit expires on the application forms then in use. POTW's with NPDES permits shall submit the sludge information listed at 40 CFR 501.15(a)(2) with the renewal application. The renewal application shall be accompanied by the fee required by NAC 445A.232.

#### **III.A.2. Signatures, certification required on application and reporting forms**

- a. All applications, reports, or information submitted to the Administrator shall be signed and certified by making the following certification.

**"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are**

**significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”**

- b. All applications, reports or other information submitted to the Administrator shall be signed by one of the following:
  - i. A principal executive officer of the corporation (of at least the level of vice president) or his authorized representative who is responsible for the overall operation of the facility from which the discharge described in the application or reporting form originates;
  - ii. A general partner of the partnership;
  - iii. The proprietor of the sole proprietorship; or
  - iv. A principal executive officer, ranking elected official or other authorized employee of the municipal, state or other public facility.
- c. **Changes to Authorization:** If an authorization under paragraph b. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph b. of this section must be submitted to the Administrator prior to or together with any reports, information, or applications to be signed by an authorized representative.

**III.A.3. Holding Pond Conditions:** If any wastewater from the Permittee's facility is placed in ponds owned or operated by the Permittee, such ponds shall be located and constructed so as to:

- a. Contain with no discharge the once-in-the twenty-five year, 24 hour storm at said location;
- b. Withstand with no discharge the once-in-one-hundred year flood of said location; and
- c. Prevent escape of wastewater by leakage other than as authorized by this permit;

unless otherwise approved by the Division.

**III.A.4. Flow Rate Notification:** The Permittee shall notify the Administrator, by letter, not later than ninety (90) days after the 30-day average daily influent flow rate first equals or exceeds 85% of the design treatment capacity of the Permittee's facility given in Part I.A. The letter shall include:

- a. The 30-day average daily influent flow rate;
- b. The maximum 24-hour flow rate during the 30-day period reported above and the date the maximum flow occurred;
- c. The Permittee's estimate of when the 30-day average influent flow rate will equal or exceed the design treatment capacity of the Permittee's facility;
- d. A status report on the treatment works which will outline but not be limited to past performance,

remaining capacity of the limiting treatment and disposal units or sites, past operational problems and improvements instituted, modifications to the treatment works which are needed to attain the permitted flow rate due to changing site specific conditions or design criteria; and

- e. The Permittee's schedule of compliance to provide additional treatment capacity before the 30-day average daily influent flow rate equals the present design treatment capacity of the Permittee's facility.

**III.A.5. Publicly Owned Treatment Works [40 CFR 122.42(b)]:** All POTWs must provide adequate notice to the Administrator of the following:

- a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the Act if it were directly discharging those pollutants; and
- b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- c. For the purposes of this part, adequate notice shall include information on: (1) the quality and quantity of effluent introduced into the POTW and (2) any anticipated impact of the change on the quantity or quality of effluent to be discharge from the POTW.

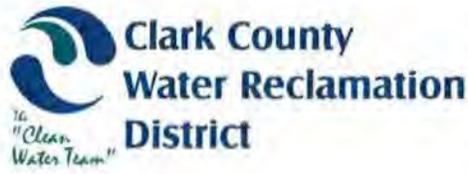
## ATTACHMENT A PRIORITY POLLUTANTS

<u>BASE NEUTRAL EXTRACTIBLES</u>	<u>VOLATILE ORGANICS</u>	<u>PESTICIDES</u>	<u>ACID EXTRACTIBLES</u>	<u>METALS</u>	<u>DIOXINS</u>
Acenaphthene	Acrolein	Aldrin	2,4,6-Trichlorophenol	Antimony	TCDD
Benzidine	Acrylonitrile	Dieldrin	4-Chloro-3-methylphenol	Arsenic	
1,2,4-Trichlorobenzene	Benzene	Chlordane (Technical)	2-Chlorophenol	Beryllium	
Hexachlorobenzene	Carbon tetrachloride	4,4'-DDT	2,4-Dichlorophenol	Cadmium	<u>OTHER</u>
Hexachloroethane	Chlorobenzene	4,4'-DDE	2,4-Dimethylphenol	Chromium	Cyanide
Bis(2-chloroethyl) ether	1,2-Dichloroethane	4,4'-DDD	2-Nitrophenol	Copper	Asbestos
2-Chloronaphthalene	1,1,1-Trichloroethane	Endosulfan I	4-Nitrophenol	Lead	
1,2-Dichlorobenzene	1,1-Dichloroethane	Endosulfan II	2,4-Dinitrophenol	Mercury	
1,3-Dichlorobenzene	1,1,2-Trichloroethane	Endosulfan sulfate	2-Methyl-4,6-dinitrophenol	Nickel	
1,4-Dichlorobenzene	1,1,2,2-Tetrachloroethane	Endrin	Pentachlorophenol	Selenium	
3,3'-Dichlorobenzidine	Chloroethane	Endrin aldehyde	Phenol	Silver	
2,4-Dinitrotoluene	2-Chloroethylvinylether	Heptachlor		Thallium	
2,6-Dinitrotoluene	Chloroform	Heptachlor epoxide		Zinc	
1,2-Diphenylhydrazine	1,1-Dichloroethene	Alpha-BHC			
Fluoranthene	Trans-1,2-Dichloroethene	Beta-BHC			
4-Chlorophenyl phenyl ether	1,2-Dichloropropane	Gamma-BHC (Lindane)			
4-Bromophenyl phenyl ether	1,3-Dichloropropane	Delta-BHC			
Bis(2-Chloroisopropyl) ether	Ethylbenzene	PCB 1016			
Bis(2-Chloroethoxy) methane	Dichloromethane	PCB 1221			
Hexachlorobutadiene	Chloromethane	PCB 1232			
Hexachlorocyclopentadiene	Bromomethane	PCB 1242			
Isophorone	Bromoform	PCB 1248			
Naphthalene	Bromodichloromethane	PCB 1254			
Nitrobenzene	Dibromochloromethane	PCB 1260			
N-Nitrosodimethylamine	Tetrachloroethene	Toxaphene			
N-Nitrosodiphenylamine	Toluene				
N-Nitrosodi-n-propylamine	Trichloroethene				
Bis(2-ethylhexyl) phthalate	Vinyl chloride				
n-Butyl benzyl phthalate					
Di-n-butyl phthalate					
Di-n-octyl phthalate					
Diethyl phthalate					
Dimethyl phthalate					
Benzo(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Acenaphthylene					
Anthracene					
Benzo(g,h,i)perylene					
Fluorene					
Phenanthrene					
Dibenzo(a,h)anthracene					
Indeno(1,2,3-cd)pyrene					
Pyrene					

Note: Priority Pollutants to be analyzed using Environmental Protection Agency (EPA) Methods 200 Series, 353.3, 420.2, 624,625, 608, and/or an appropriate combination of these methods to verify compliance with permit-specified effluent discharge limitations.

**Appendix K**

2011 Plan for Monitoring Ambient Water Quality in Lake Mead and Las Vegas Wash; NPDES Permits NV0020133 City of Las Vegas, NV0021261 Clark County Water Reclamation District, and NV0022098 City of Henderson



Tuesday, November 09, 2010

Diana Silsby, Compliance Coordinator  
Nevada Division of Environmental Protection  
901 South Stewart Street, Suite 4001  
Carson City, Nevada 89701-5249

Subject: 2011 Plan for Monitoring the Ambient Water Quality in Lake Mead and Las Vegas Wash; NPDES Permits NV0020133 City of Las Vegas, NV0021261 Clark County Water Reclamation District, and NV0022098 City of Henderson

Dear Diana:

Section I.A.21 of the above referenced permits requires us to submit a proposed plan for monitoring the ambient water quality of Lake Mead and Las Vegas Wash for each following year. The purpose for this correspondence is to comply with that requirement.

For 2011, we are proposing only one change to the current NPDES Permit monitoring plan for Lake Mead and the Las Vegas Wash. We propose to add a new site on the Las Vegas Wash (LW11.5) just upstream of the expected point where the City of North Las Vegas effluent will enter the Las Vegas Wash. This site will be just upstream of the point the Sloan Channel meets the Las Vegas Wash. No Las Vegas Wash sites will be eliminated.

Since 2007, we have also attached to this submittal a sampling plan to obtain baseline data for Boulder Basin Adaptive Management Plan (BBAMP) associated with the Systems Conveyance and Operations Program (SCOP). The purpose of these sampling plans was to collect baseline data before SCOP became operational. Since the SCOP project has been suspended, we are not submitting a 2011 BBAMP sampling plan here and we are not planning to do any BBAMP sampling in 2011.

Please contact Dan Fischer at (702) 229-2440 or [dfischer@lasvegasnevada.gov](mailto:dfischer@lasvegasnevada.gov) if you wish to discuss this proposal. Section I.A.21 calls for NDEP approval for this, or a revised plan, by January 1, 2011.

Sincerely,

David Bereskin, P.E.  
Director  
Department of Utilities  
City of North Las Vegas

David L. Mendenhall  
Environmental Manager  
Dept. of Public Works  
City of Las Vegas

Doug Drury, Ph.D.  
Assistant General Mgr.  
Clark County Water  
Reclamation District

Adrian Edwards  
Wastewater Operations Mgr.  
Dept. of Utility Services  
City of Henderson

Attached:

Proposed Lake Mead and LV Wash Monitoring, 2011 Monitoring Plan, NPDES Permit Condition I.A.21

cc: Tom Porta, Jon Palm, Kathy Sertic, Val King, Alan Tinney, NDEP  
Larry Bazel, Briscoe Ivester & Bazel LLP



## **Lake Mead and Las Vegas Wash Monitoring 2011 Monitoring Plan NPDES Permit Condition I.A.21**

This monitoring plan will be executed to satisfy Permit Condition I.A.21 of the Nevada Division of Environmental Protection (NDEP) National Pollution Discharge Elimination System (NPDES) Authorization to Discharge Permits for the Las Vegas Valley dischargers to monitor the ambient water quality of Lake Mead and the Las Vegas Wash for the period January 1 through December 31, 2011.

### **Lake Mead**

#### **Sampling Stations**

Note: the following four LWLVB stations are referred to as “movable” since the location of each station changes continuously with the location of a reference point, the confluence of the Las Vegas Wash and Las Vegas Bay of Lake Mead.

LWLVB1.2- This is a “movable” station located in the channel 1.2 mi from the confluence of the Las Vegas Wash and Las Vegas Bay. The purpose of this station is to determine compliance of the ammonia standard and to monitor the effects of the Las Vegas Wash on the Las Vegas Bay. At this station, an epilimnion and hypolimnion sample will be collected. A physical profile will monitor water quality throughout the water column. This station will be sampled weekly, March through October, and monthly, November through February.

LWLVB1.85- This is a “movable” station located in the channel 1.85 mi from the confluence of the Las Vegas Wash and Las Vegas Bay. The purpose of this station is to determine compliance of the chlorophyll-a standard and to monitor the effects of the Las Vegas Wash on the Las Vegas Bay. At this station, an epilimnion, metalimnion, and hypolimnion sample will be collected. A physical profile will monitor water quality throughout the water column. This station will be sampled weekly, March through October, and monthly, November through February.

LWLVB2.7- This is a “movable” station located in the channel 2.7 mi from the confluence of the Las Vegas Wash and Las Vegas Bay. The purpose of this station is to determine compliance of the chlorophyll-a standard and to monitor the effects of the Las Vegas Wash on the Las Vegas Bay. At this station, an epilimnion, metalimnion, and hypolimnion sample will be collected. A physical profile will monitor water quality throughout the water column. This station will be sampled biweekly, March through October, and monthly, November through February.

LWLVB3.5- This is a “movable” station located in the channel 3.5 mi from the confluence of Las Vegas Wash and the Las Vegas Bay. The purpose of this station is to determine compliance of the chlorophyll-a standard and to monitor the effects of the Las Vegas Wash on the Las Vegas Bay and Boulder Basin. At this station, an epilimnion, metalimnion, and hypolimnion sample will be collected. A physical profile will monitor water quality throughout the water column. This station will be sampled biweekly, March through October, and monthly, November through February.

BB3- This is a fixed station located in Boulder Basin on the east side of Saddle Island. The station is upstream from the Southern Nevada Water Authority (SNWA) intake. The purpose of this station is to evaluate the effects of the Las Vegas Wash on Boulder Basin and the SNWA drinking water intake. At this station, an epilimnion, metalimnion, and hypolimnion sample will be collected. A physical profile will monitor water quality throughout the water column. This station will be sampled biweekly, March through October, and monthly, November through February.

Lat/Lon hddd°mm.mm' NAD83      N36 04.29 W114 46.99

CR346.4- This is a fixed station located in Boulder Basin between Sentinel Island and the shoreline of Castle Cove, in line with Promontory Point on the Black Canyon side of the lake. The purpose of this station is to evaluate the effects of the Las Vegas Wash on Boulder Basin. At this station, an epilimnion, metalimnion, and hypolimnion sample will be collected. A physical profile will monitor water quality throughout the water column. This station will be sampled monthly year-round.

Lat/Lon hddd°mm.mm' NAD83      N36 03.70 W114 44.35

CR350.0SE0.55- This is a fixed station located between Battleship Rock and Burro Point. This sample station will evaluate background concentrations in Lake Mead upstream of Las Vegas Bay. At this station an epilimnion, metalimnion, and hypolimnion sample will be collected. A physical profile will monitor water quality throughout the water column. This station will be sampled monthly year-round.

Lat/Lon hddd°mm.mm' NAD83      N36 05.91 W114 43.54

The epilimnion sample will be an integrated 0-5 m sample. The metalimnion sample will be taken at the thermocline when present and halfway between the surface and hypolimnion when no thermocline is present. The hypolimnion sample will be taken at one meter from the bottom or at a maximum of 70 m.

### **Physical Parameters**

Profiles of the listed parameters will be measured at all stations according to the following protocol: (a) at 2 m increments to 30 m and (b) at 5 m increments to the bottom. Readings will also be taken before, at, and after the thermocline.

- Temperature
- pH
- Dissolved Oxygen
- Specific Conductance

Additional physical parameters to be measured at each station:

- Secchi depth
- Light transmittance to 1%
- Air temperature
- Average wind speed and direction
- General cloud cover conditions

### **Nutrients**

The following nutrients will be determined in all samples collected:

- Total Phosphorus, as P
- Dissolved ortho-phosphate phosphorus, as P
- Total Nitrogen
- Nitrite, as N
- Nitrate, as N
- Ammonia, as N
- Total Inorganic Nitrogen, as N (calculated)

### **Chlorophyll-a**

Chlorophyll-a will be determined in all epilimnion samples collected.

### **Chemical and Bacteriological Parameters**

The following parameters will be determined in all samples collected unless noted:

- Total dissolved solids
- Total suspended solids (Quarterly for LWLVB2.7, LWLVB3.5, BB3, CR346.4, and CR350.0SE0.55)
- Turbidity (Quarterly for LWLVB2.7, LWLVB3.5, BB3, CR346.4, and CR350.0SE0.55)
- Color
- Chloride
- Sulfate
- Total Alkalinity
- *Escherichia coli*
- Fecal Coliform
- Total Coliform

### **Zooplankton**

A vertical zooplankton tow will be collected and microscopically analyzed in regulatory samples collected on a monthly basis, except for stations LWLVB1.2 and LWLVB1.85. Those two

stations will be sampled biweekly, March to October, and monthly, November to February. Organisms will be identified to at least the genus level.

## **Las Vegas Wash**

### **Sampling Stations**

LW11.5- Las Vegas Wash at a point just upstream of where Sloan Channel meets Las Vegas Wash. This is upstream of the proposed point where the City of North Las Vegas will enter the Las Vegas Wash. The purpose of this station is to determine the water quality of the Las Vegas Wash prior to discharges from the wastewater treatment plants.

LW10.75- Las Vegas Wash at a point between the confluence of Las Vegas Wash with Flamingo Wash, and the City of Las Vegas Water Pollution Control Facility discharge. This station is downstream of the confluence of the Sloan Channel and the Las Vegas Wash.

LW8.85- Las Vegas Wash downstream of the Clark County Water Reclamation District discharge.

LW6.05- Las Vegas Wash near Telephone Line Road, downstream of the City of Henderson wastewater treatment plant. The purpose of this station is to determine compliance for the upper Las Vegas Wash reach.

LW3.7- Las Vegas Wash before the sedimentation basin for Lake Las Vegas.

LW0.55- Las Vegas Wash at Northshore Road – Egress of pipe under Lake Las Vegas.

Each station will be sampled biweekly at a spot where the waters appear to be well mixed.

### **Physical Parameters**

The following parameters will be measured at all stations.

- Temperature
- pH
- Dissolved Oxygen
- Specific Conductance

### **Nutrients**

The following nutrients will be determined in all samples collected:

- Total Phosphorus, as P
- Dissolved ortho-phosphate phosphorus, as P
- Total Kjeldahl Nitrogen, as N

- Nitrite, as N
- Nitrate, as N
- Ammonia, as N
- Total Inorganic Nitrogen, as N (calculated)

### **Chemical and Bacteriological Parameters**

The following parameters will be determined in all samples collected:

- Total Dissolved Solids
- Total Suspended Solids
- Turbidity
- *Escherichia coli*
- Fecal Coliform

### **Toxic Parameters**

The following parameters will be determined once every six months at in sample from station LW0.55:

- Priority pollutants listed in the Attachment A of the NPDES permit
- Additional parameters listed in the following table:

Arsenic III	Fluoride	Methoxychlor
Barium	Sulfide	Mirex
Boron		Parathion
Chromium III	2-4-D	Silvex
Chromium VI	Demeton	Trihalomethanes
Iron	Guthion	Dichloropropenes
Manganese	Malathion	Monochlorobenzene
Molybdenum		

### **Due Diligence**

The dischargers will exercise reasonable due diligence to collect every sample and obtain a valid analytical result for every field measurement and laboratory determination described in this plan. This plan recognizes that collecting every sample and obtaining a valid analytical result for every field measurement and laboratory determination is practically impossible due to inevitable weather, mechanical, instrumental, and other unforeseen problems. When the dischargers cannot obtain samples because of weather, mechanical, instrumental, and other unforeseen problems, they will resume sampling as soon as reasonably possible.

## **Appendix L**

Joint Funding Agreements between the U.S. Geological Survey and the Southern Nevada Water Authority, Clark County Regional Flood Control District, Clark County Water Reclamation District, and City of Henderson for Maintaining and Operating Stream Gages in the Las Vegas Valley Watershed

**SOUTHERN NEVADA WATER AUTHORITY  
BOARD OF DIRECTORS  
AGENDA ITEM**

October 21, 2010

<b>Subject:</b> Agreement	<b>Director's Backup</b>
<b>Petitioner:</b> Richard B. Holmes, Deputy General Manager, Engineering/Operations	
<b>Recommendations:</b> That the Board of Directors approve a joint funding agreement between the U.S. Geological Survey and the Authority for hydrologic data collection for an amount not to exceed \$285,630.	

**Fiscal Impact:**

The required \$285,630 is available in the Authority's Operating Budget.

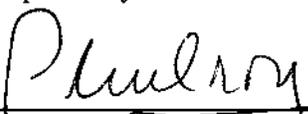
**Background:**

Since 2002, the Authority has participated in a cooperative program with the U.S. Geological Survey (USGS) for the operation and maintenance of stream gages and water quality analysis. This agreement provides for joint funding from the USGS and the Authority for on-going monitoring, operation, and maintenance of 13 stream gages, including gages on the Las Vegas Wash and Virgin and Muddy Rivers. The agreement also provides funding from the Authority for the operation and maintenance, installation, and monitoring of two additional stream gages to support the Authority's water rights on the Virgin and Muddy Rivers. These gages are critical to quantify water resources for the Authority. Water quality sample collection and analyses are also funded under this agreement at three of the stream gage stations.

The total cost of the operation and maintenance of the stream gages and the water quality analyses is \$464,430, of which the Authority will contribute \$285,630, and the remaining \$178,800 will be funded by the USGS.

This agreement is being entered into pursuant to NRS Chapter 277.180. The office of the General Counsel has reviewed and approved the agreement.

Respectfully submitted:



Patricia Mulroy, General Manager  
PM:RBH:JJE:WR:JJ:lmv  
Attachments

AGENDA ITEM #
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5



# United States Department of the Interior

U.S. GEOLOGICAL SURVEY

NEVADA WATER SCIENCE CENTER (NWSC)

2730 N. Deer Run Road

Carson City, Nevada 89701

Phone: 775-887-7600; Fax: 775-887-7629

Website: <http://www.usgs.gov/>



September 10, 2010

Richard Holmes, Deputy General Manager  
Southern Nevada Water Authority  
P.O. Box 99956  
Las Vegas, NV 89193-9956

Dear Mr. Holmes:

This letter is in regards to the surface-water (SW) and water-quality (QW) monitoring programs conducted cooperatively between the Southern Nevada Water Authority (SNWA) and the U.S. Geological Survey (USGS) for Federal fiscal year (FY) 2011 (October 1, 2010 through September 30, 2011).

Total cost for operation and maintenance (O&M) of this monitoring program in FY 2011 is \$464,430. Pending availability of Federal Matching Funds from our Cooperative Water Program, the USGS will provide \$178,800 towards this program. Southern Nevada Water Authority's portion of the cost of this program work will be \$285,630.

Costs include the installation and O&M for two recording stations on the Virgin or Muddy Rivers. Costs for O&M for the two recording stations is for nine months operation as the plan will be to install these stations in December 2010. Costs may be prorated dependent on when actual installation occurs. The surface-water and water-quality O&M costs include maintaining the streamgaging equipment, making streamflow measurements, computing streamflow, real-time monitoring, and data publication costs.

The cost breakdown is provided in the following table:

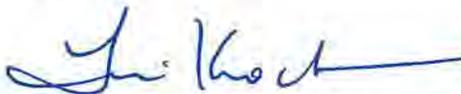
USGS Project No.	Program Element	Funding Structure		Total Funds
		SNWA	USGS*	
NV-00190	Lower Colorado SW (Enclosure 1)	\$247,230	\$140,400	\$387,630
NV-00390	Lower Colorado QW (Enclosure 2)	\$ 38,400	\$ 38,400	\$ 76,800
GRAND TOTAL		\$285,630	\$178,800	\$464,430

\* USGS funds are subject to availability of FY 2011 Federal matching funds.

If you approve this work and the funding required, please sign the two enclosed Joint Funding Agreements (JFAs) and return one signed original to this office so that we may provide your agency with uninterrupted, continuous data and research. Hydrographs and current information can be accessed from the Nevada Water Science Center (NWSC) homepage at: <http://nevada.usgs.gov/>.

If you find that your data needs change or are not being met, please let us know at your earliest convenience. Should you have any questions regarding this work or the agreement, please refer to the contact list at Enclosure 3.

Sincerely,

A handwritten signature in blue ink, appearing to read "Lari Knochenmus".

Lari Knochenmus, Acting Director  
USGS, Nevada Water Science Center

Enclosures

cc: B. Rinne, SNWA, Las Vegas, NV  
J. Johnson, SNWA, Las Vegas, NV  
C. Savard, USGS, NWSC, Henderson, NV  
Chron/File Cys

SNB:lmk

## Enclosure 1

### Summary of Cooperative Surface-Water Program for Fiscal Year 2011

#### Program Elements

##### A. Operation of Surface-Water Gaging Stations at:

<u>Site Name</u>	<u>Type</u>	<u>DCP</u>
1. Muddy Spring at L.D.S. Farm near Moapa, NV	Spring	Yes
2. Pederson Spring near Moapa, NV	Spring	Yes
3. Warm Springs West near Moapa, NV	Stream	Yes
4. Pederson East Spring nr Moapa, NV	Spring	Yes
5. Iverson Flume	Stream	Yes
6. Virgin River at the Narrows, near Littlefield, AZ	River	Yes
7. Beaver Dam Wash near Beaver Dam, AZ	Stream	Yes
8. Muddy River at Lewis Avenue near Moapa, NV	River	Yes
9. Virgin River at Littlefield, AZ	River	Yes
10. Las Vegas Wash at Pabco Rd. near Henderson, NV	Stream	Yes
11. Duck Creek at Broadbent Boulevard at East Las Vegas, NV	Stream	Yes
12. Las Vegas Wash at 3-Kids (Rainbow Structure)	Stream	Yes
13. Mesquite Canal	Irrigation	Yes
14. Virgin or Muddy River site	Stream	Yes
15. Virgin or Muddy River site	Stream	Yes

#### Description of Program Elements

##### A. Operation & Maintenance of Streamflow sites

The current work-plan calls for site operation and maintenance of surface-water gaging stations at three springs, six streams, and three river sites; monitored during FY 2011.

The operation & maintenance (O&M) costs include maintaining the stream-gaging equipment, making scheduled water discharge measurements, reduction and analysis of stage data, verification and development of stage/discharge relationships (ratings), computation of daily streamflow, and data publication costs. Sites are generally visited on a 6-week basis, but may require more frequent visits if problems occur.

Provisional data from sites will be available on NWISWeb at <http://waterdata.usgs.gov/nv/nwis/rt>. All data will be compiled, reviewed, quality-assured, finalized and disseminated annually through an online publication.

Costs include supplemental tasks for five gaging stations to increase the timeliness and accuracy of the streamflow records. For two gages, (1) Las Vegas Wash below Lake Las Vegas and (2) Muddy River near Glendale, at least 12 site visits and streamflow measurements will be made, provisional streamflow record will be computed and reported on a monthly interval, and the streamflow record will be approved and finalized twice per year; in July and January. For two gages, (1) Las Vegas Wash above 3-Kids Wash below Henderson and (2) Las Vegas Wasteway near East Las Vegas, at least 12 site visits and streamflow measurements will be made and provisional streamflow record will be computed and reported on a monthly interval. For one gage, Muddy River at Lewis Avenue at Overton, the streamflow record will be approved and finalized twice per year; in July and in January.

B. Installation, Operation and Maintenance of two new surface-water sites

Installation of two DCP (Data Collection Platform) stream gaging stations on the Virgin or Muddy Rivers will include gage house, outside staff and reference marks; the equipment will include a data logger, DCP, solar panel, antenna, battery, etc. Data will be transmitted to a satellite and will be available on the Web shortly after transmission. Costs for O&M for the two stations are based on a January installation.

Cost Structure

\* *USGS funds are subject to availability of FY 2011 Federal Matching Funds.*

Number	USGS Project No.	Program Element	SNWA Funds	USGS Funds*	Total Funds
<b>Program Element A.</b>					
1	NV00190	Muddy Spring at L.D.S. Farm near Moapa	\$10,800	\$10,800	\$21,600
2	NV00190	Pederson Spring near Moapa	\$10,800	\$10,800	\$21,600
3	NV00190	Warm Springs West near Moapa	\$10,800	\$10,800	\$21,600
4	NV00190	Pederson East Spring near Moapa	\$10,800	\$10,800	\$21,600
5	NV00190	Iverson Flume	\$10,800	\$10,800	\$21,600
6	NV00190	Virgin River at the Narrows	\$10,800	\$10,800	\$21,600
7	NV00190	Beaver Dam Wash near Beaver Dam	\$10,800	\$10,800	\$21,600
8	NV00190	Muddy River near Lewis Avenue	\$10,800	\$10,800	\$21,600
9	NV00190	Virgin River at Littlefield, AZ	\$10,800	\$10,800	\$21,600
10	NV00190	Las Vegas Wash at Pabco Road nr Henderson, NV	\$10,800	\$10,800	\$21,600
11	NV00190	Duck Creek at Broadbent Blvd. at East Las Vegas	\$10,800	\$10,800	\$21,600
12	NV00190	Las Vegas Wash at 3-Kids Wash	\$10,800	\$10,800	\$21,600
13	NV00190	Mesquite Canal nr Mesquite	\$10,800	\$10,800	\$21,600
14	NV00190	Las Vegas Wash blw Lake Las Vegas, NV (supplemental tasks: monthly streamflow measurements and monthly computation and reporting provisional streamflow record, and approval and finalization of streamflow records in July and January)	\$7,780	\$ - 0 -	\$7,780
15	NV00190	Muddy River nr Glendale, NV (supplemental tasks: monthly streamflow measurements and monthly computation and reporting provisional streamflow record, and approval and finalization of streamflow records in July and January)	\$7,780	\$ - 0 -	\$7,780
16	NV00190	Muddy River at Lewis Avenue at Overton, NV and Mesquite Canal nr Mesquite, Nv (supplemental tasks: approval and finalization of streamflow records in July and January)	\$2,000	\$ - 0 -	\$2,000
17	NV00190	Las Vegas Wash above 3-Kids Wash blw Henderson, NV (supplemental tasks: monthly streamflow measurements and monthly computation and reporting of provisional streamflow record)	\$5,835	\$ - 0 -	\$5,835
18	NV00190	Las Vegas Wasteway nr East Las Vegas, NV (supplemental tasks: monthly streamflow measurements and monthly computation and reporting of provisional streamflow record)	\$5,835	\$ - 0 -	\$5,835
<b>Sub-Total</b>			\$169,630	\$140,400	\$310,030
<b>Program Element B.</b>					
1	NV00190	Installation of two gaging stations on the Virgin or Muddy Rivers	\$46,400	\$ - 0 -	\$46,400
2	NV00190	O&M Virgin or Muddy River gaging stations for nine months	\$31,200	\$ - 0 -	\$31,200
<b>Sub-Total</b>			\$77,600	\$ - 0 -	\$77,600
<b>Total</b>			\$247,230	\$140,400	\$387,630

## Enclosure 2

### Summary of Cooperative Water-Quality Program for Fiscal Year 2011

#### Program Elements

##### A. Collection of Water-Quality Parameters from Surface-Water Gaging Stations at:

<u>Site Name</u>	<u>Schedule(s)</u>
1. Virgin River at the Narrows, near Littlefield, AZ	Field parameters
2. Virgin River at Littlefield, AZ	997,1201,2003,2060
3. Colorado River below Hoover Dam, AZ	1201,1010,1050,2003

*Note: a complete description of each schedule can be found below.*

#### Description of Program Elements

##### A1. Water-Quality Sampling at Virgin River at the Narrows, near Littlefield, AZ

Water quality field parameters (temperature, conductance, pH, and dissolved oxygen) will be measured at Virgin River at the Narrows on a quarterly basis throughout the water year.

##### A2. Water-Quality Sampling at Virgin River at Littlefield, AZ

Water-quality data (temperature, specific conductance, sediment-concentration, and chemical analyses) have been collected at the Virgin River at Littlefield from 1948 to 2010 at bi-monthly or more frequent intervals under several different USGS programs. Long-term records of water quality, particularly sediment and chemical constituents contributing to salt-loading problems, are important for this site to establish base-line loadings to Lake Mead over a full range of hydrologic conditions. SNWA funds will be matched with available USGS Nevada Water Science Center cooperative federal matching funds to maintain a water-quality record at this important station for the following constituents and indicators:

- Field values
- Physical properties
- Suspended-sediment concentration
- Nutrients (schedule 997 – attached)
- Common and trace inorganic constituents (schedule 1201 - attached)
- Pesticides (schedules 2003 & 2060 – attached)
- Fecal Bacteria counts
- E-coli Bacteria

Sampling will occur, as close as possible, in the last week of the months November, February, May, and August. For continuity, the NASQAN II sampling techniques will be followed, including the use of the Parts Per Billion (PPB) sampling protocol.

##### A3. Water-Quality Sampling at Colorado River below Hoover Dam, AZ

Water-quality data (temperature, specific conductance, sediment-concentration, and chemical analyses) have been collected at the Colorado River below Hoover Dam, Arizona from 1939 to 2010 at bi-monthly or more frequent intervals under several different USGS programs. The objectives of this sampling station are to:

- A. Provide ongoing characterization of the concentrations and flux of sediment and selected chemicals of the Colorado River system.

- B. Determine the contributions of sub-basin source materials to the Colorado system.
- C. Determine changes and trends of selected chemicals in the Colorado River system.

SNWA funds will be matched with USGS Nevada District cooperative Federal matching funds to maintain a water-quality record at this important station for the following constituents and indicators:

- Field values
- Physical properties
- Suspended-sediment concentration
- Common and trace inorganic constituents (schedule 1201 – attached)
- Nutrients (schedule 1010 – attached)
- Major Ions and Trace Metals (schedule 1050 – attached)
- Pesticides (schedule 2003 –attached)
- Perchlorate (analyzed by EPA and SNWA)

Sampling will occur, as close as possible, in the last week of the months November, February, May, and August. For continuity, the NASQAN II sampling techniques will be followed, including the use of the Parts Per Billion (PPB) sampling protocol.

Cost Structure

\* USGS funds are subject to availability of FY 2010 Federal Matching Funds.

No.	USGS Project No.	Program Element	SNWA Funds	USGS Funds*	Total Funds
Program Element A.					
1	NV00390	Virgin River at the Narrows – Field parameters only	\$ 900	\$ 900	\$ 1,800
2	NV00390	Virgin River at Littlefield, AZ – Water quality	\$18,600	\$18,600	\$37,200
3	NV00390	Colorado River blw Hoover Dam, AZ – Water quality	\$18,900	\$18,900	\$37,800
		<b>Total</b>	<b>\$38,400</b>	<b>\$38,400</b>	<b>\$76,800</b>

Additional Program Elements

Sample Parameters

NWQL Schedule 997 July 28, 2009		NWQL Schedule 1010 July 28, 2009	
Parameter Name	Unit	Parameter Name	Unit
Inorganic carbon	mg/L	Inorganic carbon	mg/L
Total carbon	mg/L	Total carbon	mg/L
Organic carbon	mg/L	Organic carbon	mg/L
Organic carbon	mg/L	Organic carbon	mg/L
nitrogen, ammonia	mg/L	nitrogen, ammonia	mg/L
nitrogen, ammonia + organic nitrogen	mg/L	nitrogen, ammonia + organic nitrogen	mg/L
nitrogen, ammonia + organic nitrogen	mg/L	nitrogen, ammonia + organic nitrogen	mg/L
nitrogen, nitrite	mg/L	nitrogen, nitrite	mg/L
nitrogen, nitrite + nitrate	mg/L	nitrogen, nitrite + nitrate	mg/L
Total nitrogen	mg/L	Total nitrogen	mg/L
Phosphorus	mg/L	Phosphorus	mg/L
phosphorus, phosphate, ortho	mg/L	phosphorus, phosphate, ortho	mg/L
Phosphorus	mg/L	Phosphorus	mg/L
Ultraviolet absorbing organic constituents - 254 nm	u/cm	Ultraviolet absorbing organic constituents - 254 nm	u/cm
Ultraviolet absorbing organic constituents - 280nm	u/cm	Ultraviolet absorbing organic constituents - 280nm	u/cm

NWQL Schedule 1050 July 28, 2009	
Parameter Name	Unit
Aluminum	µg/L
antimony	µg/L
barium	µg/L
beryllium	µg/L
cadmium	µg/L
chromium	µg/L
cobalt	µg/L
copper	µg/L
ICP Mass Spectrometry (ICPMS) setup	Unspcfd
lead	µg/L
manganese	µg/L
molybdenum	µg/L
nickel	µg/L
pH, laboratory	pH
silver	µg/L
specific conductance, laboratory	µS/cm
Uranium, natural	µg/L
zinc	µg/L

Sample Parameters – Cont'd

NWQL Schedule 1201 July 28, 2009		NWQL Schedule 2003 July 28, 2009 Cont.	
Parameter Name	Unit	Parameter Name	Unit
Alkalinity, laboratory	mg/L	Cypermethrin	µg/L
arsenic	µg/L	Dacthal	pct
boron	µg/L	2-Chloro-4-isopropylamino-6-amino-s-triazine {CIAT}	µg/L
calcium	mg/L	Diazinon	µg/L
chloride	mg/L	Diazinon, oxygen analog	µg/L
fluoride	mg/L	Diazinon-d10	pct
ICP Mass Spectrometry (ICPMS) setup	Unspcfd	Dichlorvos	µg/L
Inductively coupled plasma (ICP) setup	Unspcfd	Dicrotophos	µg/L
iron	µg/L	Dieldrin	µg/L
lithium	µg/L	Dimethoate	µg/L
magnesium	mg/L	Ethion	µg/L
pH, laboratory	pH	Ethion monoxon	µg/L
potassium	mg/L	Fenamiphos	µg/L
residue, 180 degrees Celsius	mg/L	Fenamiphos sulfone	µg/L
selenium	µg/L	Fenamiphos sulfoxide	µg/L
silica	mg/L	Desulfinylfipronil amide	µg/L
sodium	mg/L	Fipronil sulfide	µg/L
specific conductance, laboratory	µS/cm	Fipronil sulfone	µg/L
strontium	µg/L	Desulfinylfipronil	µg/L
sulfate	mg/L	Fipronil	µg/L
turbidity	NTRU	Fonofos	µg/L
vanadium	µg/L	alpha-HCH-d6	pct
		Hexazinone	µg/L
		Iprodione	µg/L
		Isofenphos	µg/L
		Malaoxon	µg/L
		Malathion	µg/L
		Metalaxyl	µg/L
		Methidathion	µg/L
		Parathion-methyl	µg/L
		Metolachlor	µg/L
		Metribuzin	µg/L
		Myclobutanil	µg/L
		Paraoxon-methyl	µg/L
		Pendimethalin	µg/L
		Phorate	µg/L
		Phorate oxygen analog	µg/L
		Phosmet	µg/L
		Phosmet oxon	µg/L
		Prometon	µg/L
		Prometryn	µg/L

Sample Parameters – Cont'd

NWQL Schedule 2003		July 28, 2009	
Parameter Name	Unit		
Propyzamide	µg/L		
Sample volume	mL		
Set number	No.		
Simazine	µg/L		
Tebuthiuron	µg/L		
Terbufos	µg/L		
Terbufos oxygen analog sulfone	µg/L		
Terbuthylazine	µg/L		
Tribufos	µg/L		
Trifluralin	µg/L		

NWQL Schedule 2060 July 28, 2009			
Parameter Name	Unit	Parameter Name	Unit
2,4,5-T	pct	Fenuron	ug/L
2,4-D	ug/L	Flumetsulam	ug/L
2,4-D methyl ester	ug/L	Fluometuron	ug/L
2,4-DB	ug/L	Imazaquin	ug/L
2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine {OIET}	ug/L	Imazethapyr	ug/L
3(4-Chlorophenyl)-1-methyl urea	ug/L	Imidacloprid	ug/L
Acifluorfen	ug/L	Linuron	ug/L
Aldicarb	ug/L	MCPA	ug/L
Aldicarb sulfone	ug/L	MCPB	ug/L
Aldicarb sulfoxide	ug/L	Metalaxyl	ug/L
Chloramben, methyl ester	ug/L	Methiocarb	ug/L
Atrazine	ug/L	Methomyl	ug/L
Barban	pct	Metsulfuron methyl	ug/L
Bendiocarb	ug/L	Neburon	ug/L
Benomyl	ug/L	Nicosulfuron	ug/L
Bensulfuron-methyl	ug/L	Norflurazon	ug/L
Bentazon	ug/L	Oryzalin	ug/L
Bromacil	ug/L	Oxamyl	ug/L
Bromoxynil	ug/L	Picloram	ug/L
Caffeine	ug/L	Propham	ug/L
Caffeine-C13	pct	Propiconazole	ug/L
Carbaryl	ug/L	Propoxur	ug/L
Carbofuran	ug/L	Sample volume	mL
3-Hydroxycarbofuran	ug/L	Set number	no.
Chlorimuron-ethyl	ug/L	Siduron	ug/L
Clopyralid	ug/L	Sulfometuron-methyl	ug/L
Cycloate	ug/L	Tebuthiuron	ug/L
Dacthal monoacid	ug/L	Terbacil	ug/L
2-Chloro-4-isopropylamino-6-amino-s-triazine {CIAT}	ug/L	Triclopyr	ug/L
2-Chloro-6-ethylamino-4-amino-s-triazine {CEAT}	ug/L		

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Dicamba	ug/L
Dichlorprop	ug/L
Dinoseb	ug/L
Diphenamid	ug/L
Diuron	ug/L

**Enclosure 3**

**JFA#: 11W4NV01200**

**POINTS of CONTACT:**

<b>USGS Nevada Water Science Center</b>	<b>Southern Nevada Water Authority</b>
2730 N. Deer Run Road Carson City, NV 89701 Phone #: 775-887-7600 FAX #: 775-887-7629 DUNS #: 178930541	PO Box 99956, Las Vegas NV 89193-9956 100 City Pkwy, Ste 700; Las Vegas NV 89106 Phone #: 702-862-3400 FAX # 702-862-3751 TID: 88-6000363, DUNS#: 135965650
<u>Technical Contact/Project Manager:</u> Chuck Savard, Steve Berris Phone #: 702-564-4543, 775-887-7659 <a href="mailto:cssavard@usgs.gov">cssavard@usgs.gov</a> <a href="mailto:snberris@usgs.gov">snberris@usgs.gov</a>	<u>Technical Contact/Project Manager:</u> Jeff Johnson, Division Manager Phone #: 702-862-3748 <a href="mailto:jeff.johnson@snwa.com">jeff.johnson@snwa.com</a>
<u>Executive Contact:</u> Lari Knochenmus, Acting Director 775-887-7613	<u>Executive Contact:</u> Richard Holmes, Deputy General Manager Phone #: 702-862-3707
<u>Billing Contact:</u> Linda M-Kolsky, Financial Specialist Helen Houston, Budget Analyst 2730 N. Deer Run Road Carson City, NV 89701 Phone #: 775-887-7602, -7605 FAX #: 775-887-7629 <a href="mailto:lmkolsky@usgs.gov">lmkolsky@usgs.gov</a> <a href="mailto:hhouston@usgs.gov">hhouston@usgs.gov</a>	<u>Billing Contact:</u> Lisa Von Heeder, Secretary PO Box 99956, Las Vegas NV 89193-9956 100 City Pkwy, Ste 700; Las Vegas NV 89106 Phone #: 702-862-3752 FAX # 702-862-3751 <a href="mailto:lisa.von_heeder@snwa.com">lisa.von_heeder@snwa.com</a>

Form 9-1366  
(Oct. 2005)

**U.S. Department of the Interior  
U.S. Geological Survey  
Joint Funding Agreement**

Customer #: NV046  
Agreement #: 11W4NV01200  
Project #: 9705-00190,00390  
TIN #: 88-6000363, DUNS#: 136966660  
Fixed Cost Agreement  Yes  No

Page 1 of 2

**FOR  
WATER RESOURCES INVESTIGATIONS**

THIS AGREEMENT is entered into as of the 10th day of September, 2010, by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the Southern Nevada Water Authority, party of the second part.

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation to accurately collect and document streamflow and water quality information in south-central Nevada, northwestern Arizona, and southwestern Utah., herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.
2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of \$.

(a) \$178,800 by the party of the first part during the period  
October 1, 2010 to September 30, 2011

(b) \$285,630 by the party of the second part during the period  
October 1, 2010 to September 30, 2011

- (c) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.
- (d) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.
4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.
5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.
6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.
7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

Form 9-1366  
continued

U.S. Department of the Interior  
U.S. Geological Survey  
Joint Funding Agreement

Customer #: NV046  
Agreement #: 11W4NV01200  
Project #: 9705-00190,00390  
TIN #: 88-6000363, DUNS#: 135965660

- 8. The maps, records, or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records, or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at costs, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records, or reports published by either party shall contain a statement of the cooperative relations between the parties.
- 9. USGS will issue billings utilizing Department of the Interior Bill for Collection (form DI-1040). Billing documents are to be rendered quarterly.

U.S. Geological Survey  
United States  
Department of the Interior

SOUTHERN NEVADA WATER AUTHORITY

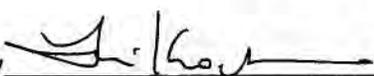
USGS Point of Contact

Name: Chuck Savard  
Address: 160 N. Stephanie St.  
Henderson, NV 89074  
Telephone: 702-564-4543  
Email: cssavard@usgs.gov

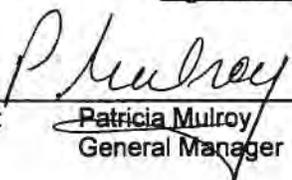
Customer Point of Contact

Name: Jeff Johnson  
Address: P.O. Box 99956  
Las Vegas, NV 89193-9956  
Telephone: 702-862-3748  
Email: jeff.johnson@snwa.com

Signatures

By  Date 9/10/10  
Name: Lari Knochenmus  
Title: Acting Director

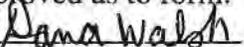
Signatures

By  Date 10-21-10  
Name: Patricia Mulroy  
Title: General Manager

By \_\_\_\_\_ Date \_\_\_\_\_  
Name:  
Title:

Southern Nevada Water Authority

Approved as to form:

By  Date 9-14-10

**CLARK COUNTY  
REGIONAL FLOOD CONTROL DISTRICT**

**AGENDA ITEM**

SUBJECT:

U.S. GEOLOGICAL SURVEY  
JOINT FUNDING AGREEMENT FOR THE COLLECTION OF RAINFALL AND  
STREAMFLOW DATA

**RECOMMENDATION SUMMARY**

STAFF: Approve and authorize the General Manager to sign the agreement.

RFCD AGENDA  
ITEM #09  
DATE: 06/10/10

CLARK COUNTY  
REGIONAL FLOOD CONTROL DISTRICT  
AGENDA ITEM

**SUBJECT:**

JOINT FUNDING AGREEMENT WITH THE U.S. GEOLOGICAL SURVEY FOR THE COLLECTION OF RAINFALL AND STREAMFLOW DATA

**PETITIONER:**

GALE WM. FRASER, II, P.E., GENERAL MANAGER/CHIEF ENGINEER

**RECOMMENDATION OF PETITIONER:**

THAT THE BOARD APPROVE AND AUTHORIZE THE GENERAL MANAGER TO SIGN THE AGREEMENT

**FISCAL IMPACT:** \$80,000

**BACKGROUND:**

The District's Joint Funding Agreement with the U.S. Geological Survey (USGS) for the collection of precipitation and streamflow data in Clark County expires on June 30, 2010. The collection of precipitation and streamflow data is an integral part of the District's flood threat recognition program. The proposed Agreement extends the District's relationship with the USGS through Fiscal Year 2010-11.

This Agreement provides for the operation and maintenance of eight stations. These field stations and equipment are fully compatible with the District's data collection/flood monitoring program. The Joint Funding Agreement provides for a 50/50 cooperative match of funding.

A copy of the Agreement is included in the backup. The budget for FY 2010-11 includes sufficient funds for this program.

Respectfully submitted,

  
\_\_\_\_\_  
Gale Wm. Fraser, II, P.E.  
General Manager/Chief Engineer

RFCD AGENDA  
ITEM # 09  
Date: 06/10/10

Regional Flood Control District  
AGENDA ITEM DEVELOPMENT

<b>Staff Discussion:</b>	Date: 06/01/10
<b>U.S. GEOLOGICAL SURVEY JOINT FUNDING AGREEMENT FOR COLLECTION OF RAINFALL AND STREAMFLOW DATA</b>	
<p>The District's Joint Funding Agreement with the U.S. Geological Survey (USGS) for the collection of precipitation and streamflow data in Clark County expires on June 30, 2010. The collection of precipitation and streamflow data is an integral part of the District's flood threat recognition program. The proposed Agreement extends the District's relationship with the USGS through Fiscal Year 2010-11.</p> <p>This Agreement provides for the operation and maintenance of eight stations. These field stations and equipment are fully compatible with the District's data collection/flood monitoring program. The Joint Funding Agreement provides for a 50/50 cooperative match of funding.</p> <p>A copy of the Agreement is included in the backup. The budget for FY 2010-11 includes sufficient funds for this program.</p>	
<b>Staff Recommendation:</b>	
That the Board approve and authorize the General Manager to sign the Agreement.	
<b>Discussion by Technical Advisory Committee:</b>	AGENDA # Date:
<b>Recommendation:</b>	
<b>Discussion by Citizens Advisory Committee:</b>	AGENDA # Date:
<b>Recommendation:</b>	



# United States Department of the Interior

U.S. GEOLOGICAL SURVEY  
NEVADA WATER SCIENCE CENTER  
2730 N. Deer Run Road  
Carson City, Nevada 89701  
Phone: 775-887-7600; Fax: 775-887-7629  
Website: <http://www.usgs.gov/>



April 29, 2010

Mr. Gale Wm. Fraser II  
General Manager  
Clark County Regional Flood Control District  
600 Grand Central Parkway, Suite 300  
Las Vegas, NV 89106-4511

Dear Mr. Fraser:

This letter is in regards to the ongoing flood-alert network and surface-water monitoring program conducted cooperatively between the U.S. Geological Survey (USGS) and the Clark County Regional Flood Control District (CCRFC) for the period, July 1, 2010 - June 30, 2011. U.S. Geological Survey currently operates 8 sites (including rain gages) as part of the CCRFC flood alert network (Enclosure 1).

Total cost for operation and maintenance (O&M) of this program will be \$160,000. Pending availability of Federal Matching funds from our Cooperative Water Program, the USGS will contribute \$80,000 toward this work. CCRFC's cost for this program work is \$80,000. See breakdown in table below.

Description	CCRFC	USGS
Operation and Maintenance (O&M) of 8 stage, precipitation, and ALERT stations and development of theoretical ratings at 8 sites	\$80,000	\$80,000
<b>Total</b>	<b>\$160,000</b>	

If you approve this work and the funding required, please sign the two enclosed Joint Funding Agreements (JFAs) and return one signed original to our Financial Specialist before June 20, 2010. Funds are not required at this time; a signed agreement is not a bill, only an agreement to pay for the work that will be done.

Should you have any questions regarding this work, agreement, or billing, see the contact list at Enclosure 2.

Sincerely,

Kimball E. Goddard  
Director, USGS, Nevada Water Science Center

Enclosures

cc: C. Savard, USGS, NV WSC, Henderson, NV  
S. Berris, USGS, NV WSC, Carson City NV  
Chron/File Cys

## Enclosure 1

Table 1.-- Surface-water Alert sites operated by the USGS in Cooperation with the Clark County Regional Flood Control District for July 1, 2010 to June 30, 2011.

<u>USGS Site ID</u>	<u>Station Name</u>	<u>Constituent</u>
09416000	Muddy River near Moapa	Precipitation
09419658	Las Vegas Wash near Sahara Avenue	Stage/Precipitation
09419659	Sloan Channel Tributary at Las Vegas Blvd	Stage/Precipitation
09419665	Sloan Channel at Charleston	Stage/Precipitation
094196781	Flamingo Wash at Nellis Blvd.	Stage/Precipitation
094196784	Las Vegas Wash at Vegas Valley Drive	Stage/Precipitation
09419740	C-1 Channel at Warm Springs Road near Henderson	Stage/Precipitation
09419745	C-1 Channel above Mouth near Henderson	Stage/Precipitation

NOTE: Operation and maintenance costs consist of collection and dissemination of data from alert network sites, to include (1) streamflow measurements during runoff events, (2) computing peak discharge from the theoretical rating or from a hydraulic survey, (3) assessment and reduction of field data, (4) computing precipitation totals, and (5) data publication of the data in the annual publication, 'U.S. Geological Survey Water-Resources Data -- Nevada'.

**Enclosure 2**

**JFA# 10W4NV02300**

**POINTS of CONTACT:**

<b>USGS Nevada Water Science Center</b>	<b>Clark County Regional Flood Control District</b>
2730 N. Deer Run Road Carson City, NV 89701 Phone #: 775-887-7600 FAX #: 775-887-7629 DUNS #: 178930541	600 South Grand Central Parkway, Suite 300 Las Vegas, NV 89106-4511 Phone #: (702) 685-0000 FAX # (702) 685-0001 TID: 88-60000028
<u>Technical Contact / Project Manager:</u>  Chuck Savard, Steve Berris Phone #: 702-564-4543, 775-887-7693 <a href="mailto:cssavard@usgs.gov">cssavard@usgs.gov</a> <a href="mailto:snberris@usgs.gov">snberris@usgs.gov</a>	<u>Technical Contact / Project Manager:</u> Timothy E. Sutko, Environmental Mitigation Manager Phone #: (702) 685-0000 <a href="mailto:tsutko@ccrfcd.org">tsutko@ccrfcd.org</a>
<u>Executive Contact:</u> Kimball E. Goddard, Director Phone #: 775-887-7635	<u>Executive Contact:</u> Gale Wm. Fraser II, General Manager Phone #: (702) 685-0000
<u>Billing Contacts:</u> Linda M-Kolsky, Financial Specialist Helen Houston, Budget Analyst; 2730 N. Deer Run Road Carson City, NV 89701 Phone #: 775-887-7602, -7605 FAX #: 775-887-7629 <a href="mailto:lmkolsky@usgs.gov">lmkolsky@usgs.gov</a> <a href="mailto:houston@usgs.gov">houston@usgs.gov</a>	<u>Billing Contact:</u>  Janelle Wade, Accounts Payable 600 So. Grand Central Pkwy, Ste 300 Las Vegas, NV 89106-4511 Phone #: (702) 685-0000 FAX # (702) 685-0001

Form 9-1366  
(Oct. 2005)

**U.S. Department of the Interior  
U.S. Geological Survey  
Joint Funding Agreement**

Customer #: NV030  
Agreement #: 10W4NV02300  
Project #: 9705-00190,00390  
TIN #: 88-6000028  
Fixed Cost Agreement  Yes  No

Page 1 of 2

**FOR  
WATER RESOURCES INVESTIGATIONS**

THIS AGREEMENT is entered into as of the 29th day of April, 2010, by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the Clark County Regional Flood Control District, party of the second part.

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation a flood alert and surface-water monitoring program, herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.
2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of \$.

(a) \$80,000 by the party of the first part during the period  
July 1, 2010 to June 30, 2011

(b) \$80,000 by the party of the second part during the period  
July 1, 2010 to June 30, 2011

(c) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

(d) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.
4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.
5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.
6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.
7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

Form 9-1366  
continued

U.S. Department of the Interior  
U.S. Geological Survey  
Joint Funding Agreement

Customer #: NV030  
Agreement #: 10W4NV02300  
Project #: 9705-00190,00390  
TIN #: 88-6000028

- 8. The maps, records, or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records, or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at costs, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records, or reports published by either party shall contain a statement of the cooperative relations between the parties.
- 9. USGS will issue billings utilizing Department of the Interior Bill for Collection (form DI-1040). Billing documents are to be rendered quarterly. Payments of bills are due within 60 days after the billing date. If not paid by the due date, interest will be charged at the current Treasury rate for each 30 day period, or portion thereof, that the payment is delayed beyond the due date. (31 USC 3717; Comptroller General File B-212222, August 23, 1983).

U.S. Geological Survey  
United States  
Department of the Interior

CLARK COUNTY REGIONAL FLOOD CONTROL  
DISTRICT

USGS Point of Contact

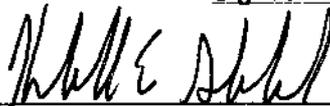
Customer Point of Contact

Name: Chuck Savard  
Address: 160 N. Stephanie St.  
Henderson NV 89074  
Telephone: 702-564-4543  
Email: cssavard@usgs.gov

Name: Timothy E. Sutko  
Address: 600 S. Grand Central Parkway  
Suite 300  
Las Vegas NV 89106-4511  
Telephone: 702-954-4664  
Email: tsutko@ccrfcd.org

Signatures

Signatures

By  Date 4/29/2010  
Name: Kimball E. Goddard  
Title: Director, USGS, NWSC

By \_\_\_\_\_ Date \_\_\_\_\_  
Name: Gale Wm Fraser II  
Title: General Manager

By \_\_\_\_\_ Date \_\_\_\_\_  
Name:  
Title:

Form 9-1366  
(Oct. 2005)

**U.S. Department of the Interior  
U.S. Geological Survey  
Joint Funding Agreement**

Customer #: NV032  
Agreement #: 11W4NV00900  
Project #: 9705-00190  
TIN #: 88-6001074  
Fixed Cost Agreement  Yes  No

Page 1 of 2

**FOR  
WATER RESOURCES INVESTIGATIONS**

THIS AGREEMENT is entered into as of the 12th day of August, 2010, by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the Clark County Water Reclamation District, party of the second part.

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation to accurately collect and document hydrologic information in southern Nevada, herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.
2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of \$.

(a) \$10,400 by the party of the first part during the period  
10/01/2010 to 09/30/2011

(b) \$10,400 by the party of the second part during the period  
10/01/2010 to 09/30/2011

(c) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

(d) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.
4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.
5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.
6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.
7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

Form 9-1366  
continued

U.S. Department of the Interior  
U.S. Geological Survey  
Joint Funding Agreement

Customer #: NV032  
Agreement #: 11W4NV00900  
Project #: 9705-00190  
TIN #: 88-6001074

- 8. The maps, records, or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records, or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at costs, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records, or reports published by either party shall contain a statement of the cooperative relations between the parties.
- 9. USGS will issue billings utilizing Department of the Interior Bill for Collection (form DI-1040). Billing documents are to be rendered **quarterly**. Payments of bills are due within 60 days after the billing date. If not paid by the due date, interest will be charged at the current Treasury rate for each 30 day period, or portion thereof, that the payment is delayed beyond the due date. (31 USC 3717; Comptroller General File B-212222, August 23, 1983).

U.S. Geological Survey  
United States  
Department of the Interior

CLARK COUNTY  
WATER RECLAMATION DISTRICT

USGS Point of Contact

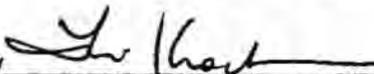
Customer Point of Contact

Name: Chuck Savard  
Address: 160 N. Stephanie St.  
Henderson, NV 89074  
Telephone: 702-564-4543  
Email: cssavard@usgs.gov

Name: Marty Flynn  
Address: 5857 E. Flamingo Rd.  
Las Vegas, NV 89122  
Telephone: 702-434-6600  
Email: mflynn@cleanwaterteam.com

Signatures

Signatures

By  Date 8/12/10  
Name: Lari Knochenmus  
Title: Acting Director

By \_\_\_\_\_ Date \_\_\_\_\_  
Name: Richard Mendez  
Title: General Manager

By \_\_\_\_\_ Date \_\_\_\_\_  
Name:  
Title:

## Enclosure 1

### Summary of Cooperative Surface-Water Program for Fiscal Year 2011

#### Program Elements

##### A. Operation of Surface-Water Gaging Stations at:

<u>Site Name</u>	<u>Type</u>	<u>DCP</u>
1. Las Vegas Wash Overflow at Lake Las, NV Vegas near Henderson	Stream	Yes
2. Las Vegas Wash below Lake Las Vegas near Boulder City, NV	Stream	Yes

#### Description of Program Elements

##### A. Operation of Surface-Water Gaging Stations

The current work-plan calls for site operation and maintenance of surface-water gaging stations at one perennial stream, and one diversion; monitored during FY 2011.

Objectives of this study are to: (1) operate, and maintain hydrologic monitoring networks; (2) maintain a data base of collected hydrologic data; (3) collect long-term hydrologic data on Las Vegas Wash; (4) obtain new or refined hydrologic information that would advance the level of knowledge on how the Las Vegas Wash functions hydrologically; (5) disseminate collected data in a timely manner.

The operation & maintenance costs include maintaining the stream-gaging equipment, making scheduled water discharge measurements, reduction and analysis of stage data, verification and development of stage/discharge relationships (ratings), computation of daily stream-flow, and data publication costs. Sites are generally visited on a 6-week basis, but may require more frequent visits if problems occur.

Provisional data will be available on NWISWeb at <http://waterdata.usgs.gov/nv/nwis/rt>. All data will be compiled, reviewed, quality-assured, finalized and disseminated in the annual on-line publication, "U.S. Geological Survey Water-Resources Data--Nevada."

Hydrographs and current information can be accessed from the NWSC homepage at: <http://nevada.usgs.gov/>.

#### Cost Structure

\* USGS funds are subject to availability of FY 2010 Federal matching funds.

USGS Project No.	Program Element	CoH Funds	USGS Funds*	Total Funds
Project Element A.				
1. NV00190	Las Vegas Wash Overflow at Lake Las Vegas near Henderson, NV	\$10,800	\$10,800	\$21,600
2. NV00190	Las Vegas Wash below Lake Las Vegas near Boulder City, NV	\$10,800	\$10,800	\$21,600
<b>TOTAL</b>		<b>\$21,600</b>	<b>\$21,600</b>	<b>\$43,200</b>

**Enclosure 2**

**JFA#: 11W4NV00700**

**POINTS of CONTACT:**

USGS Nevada Water Science Center	City of Henderson
2730 N. Deer Run Road Carson City, NV 89701 Phone #: 775-887-7600 FAX #: 775-887-7629 DUNS #: 178930541	240 Water Street; or P.O. Box 95050 Henderson, NV 89015-7200 or 89009 Phone #: 702-267-2500 FAX # 702-267-2501 TID: 88-6000720
<u>Technical Contact / Project Manager:</u>  Chuck Savard, Steve Berris Phone #: 702-564-4543, 775-887-7693 <a href="mailto:cssavard@usgs.gov">cssavard@usgs.gov</a> , <a href="mailto:snberris@usgs.gov">snberris@usgs.gov</a>	<u>Technical Contact/Project Manager:</u> Kyle Okamura, P.E., Mgr. of Utility Management Services Phone #: 702-279-0089 <a href="mailto:Kyle.okamura@cityofhenderson.com">Kyle.okamura@cityofhenderson.com</a>
<u>Executive Contact:</u> Lari Knochenmus, Acting Director Phone #: 775-887-7613	<u>Executive Contact:</u> Dennis Porter, P.E., Director, Utility Services Phone #: 702-267-2525 (Admin Assist's #)
<u>Billing Contacts:</u> Linda M-Kolsky, Financial Specialist Helen Houston, Budget Analyst; 2730 N. Deer Run Road Carson City, NV 89701 Phone #: 775-887-7602, -7605 FAX #: 775-887-7629 <a href="mailto:lmkolsky@usgs.gov">lmkolsky@usgs.gov</a> , <a href="mailto:hhouston@usgs.gov">hhouston@usgs.gov</a>	<u>Billing Contact:</u>  Polly A. Walker, Senior Technical Analyst 240 Water Street Henderson, NV 89015 Phone #: 702-267-2517 FAX # 702-267-2501 <a href="mailto:Polly.walker@cityofhenderson.com">Polly.walker@cityofhenderson.com</a>

Form 9-1366  
(Oct. 2005)

**U.S. Department of the Interior  
U.S. Geological Survey  
Joint Funding Agreement**

Customer #: NV040  
Agreement #: 11W4NV00700  
Project #: 9705-00190  
TIN #: 88-8000720  
Fixed Cost Agreement  Yes  No

Page 1 of 2

**FOR  
WATER RESOURCES INVESTIGATIONS**

THIS AGREEMENT is entered into as of the 13th day of September, 2010, by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the City of Henderson, party of the second part.

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation surface-water monitoring in southern Nevada, herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.
2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of \$.

(a) \$21,600 by the party of the first part during the period  
October 1, 2010 to September 30, 2011

(b) \$21,600 by the party of the second part during the period  
October 1, 2010 to September 30, 2011

(c) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

(d) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.
4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.
5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.
6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.
7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

Form 9-1366  
continued

U.S. Department of the Interior  
U.S. Geological Survey  
Joint Funding Agreement

Customer #: NV040  
Agreement #: 11W4NV00700  
Project #: 9706-00190  
TIN #: 88-6000720

- 8. The maps, records, or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records, or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at costs, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records, or reports published by either party shall contain a statement of the cooperative relations between the parties.
- 9. USGS will issue billings utilizing Department of the Interior Bill for Collection (form DI-1040). Billing documents are to be rendered **quarterly**. Payments of bills are due within 60 days after the billing date. If not paid by the due date, interest will be charged at the current Treasury rate for each 30 day period, or portion thereof, that the payment is delayed beyond the due date. (31 USC 3717; Comptroller General File B-212222, August 23, 1983).

U.S. Geological Survey  
United States  
Department of the Interior

CITY OF HENDERSON

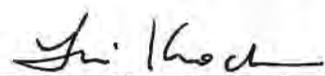
USGS Point of Contact

Name: Chuck Savard  
Address: 160 N. Stephanie St.  
Henderson, NV 89074  
  
Telephone: 702-564-4543  
Email: cssavard@usgs.gov

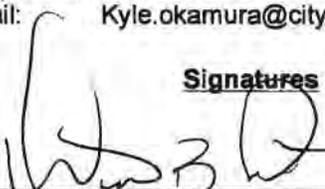
Customer Point of Contact

Name: Kyle Okamura, P.E.,  
Address: Mgr., Utility Mgmt. Services  
240 Water Street  
Henderson, NV 89015-7200  
  
Telephone: 702-267-2504  
Email: Kyle.okamura@cityofhenderson.com

Signatures

By  Date 9/13/10  
Name: Lari Knochenmus  
Title: Acting Director

Signatures

By  Date 12/1/10  
Name: Dennis Porter  
Title: Director of Utility Services

By \_\_\_\_\_ Date \_\_\_\_\_  
Name:  
Title:

**Appendix M**  
Lake Mead and Las Vegas Wash Water Quality Sampling Nomenclature

# **Lake Mead & Las Vegas Wash Water Quality Sampling Nomenclature**

Revised  
July 2005



## Lake Mead & Las Vegas Wash Sampling Nomenclature

### Lake Mead and Colorado River Sampling Prefix:

CR	Colorado River
BB	Boulder Basin
CB	Callville Bay
LVB	Las Vegas Bay
GW	Government Wash
EB	Echo Bay
VB	Virgin Basin
VR	Virgin River
MR	Muddy River

### Interface Sites on Lake Mead

CRLM	Colorado River/Lake Mead
MRLM	Muddy River/Lake Mead
VRM	Virgin River/Lake Mead
LWLVB	Las Vegas Wash/Las Vegas Bay (Lake Mead)

# See GPS coordinates for actual spatial locations as sites vary by lake elevation. Interface sites are determined where flows of tributary mix with reservoir.

### Las Vegas Wash and Tributaries

LW	Las Vegas Wash
LWC	Las Vegas Wash - side inflow, ditch or spring
DC	Duck Creek
C1	C-1 Channel
FW	Flamingo wash
SC	Sloan Channel
WT	Western Tributary of Las Vegas Wash

- ❖ M as the last letter designates sample location is will move as lake elevation changes or sediments change the depth. *(Starting in 2002 as lake levels dropped, the interface sites were created to designate movable sites).*

## Procedures for Establishing New Location Names:

- All currently used sample location prefixes are as stated above, any new prefixes should be based on geographic names and submitted to committee to be established in the current database and listing.
- 2. Colorado River, Virgin Basin, Virgin River, Muddy River all use USGS river mile markers as the mile reference.
- 3. Las Vegas Bay and Las Vegas Wash use a reference based on a point established at the original high pool level of Lake Mead (1221) and confluence of Las Vegas Wash. Locations are measured in miles from this reference point along the Las Vegas Wash and into Las Vegas Bay.
- 4. All other areas (Boulder Basin, Callville Bay, Duck Creek, etc) use a prefix followed by an underscore and random number instead of a mile reference (ex: **BB\_1**). Numbers and letters preceded by an underscore will not reference a distance (ex: **\_A or \_B** indicate sites above or below the site).
- 5. When sampling new locations, GPS coordinates or detailed a location map should be supplied to interagency committee as soon as possible. Location names will be assigned and entered into the Water Quality database. GPS coordinates for any new locations can also be emailed to [art.ehrenberg@lvvwd.com](mailto:art.ehrenberg@lvvwd.com) or in the near future be able to be entered on the members web site.
- 6. All members will be notified of new location names and locations posted to the database within two weeks of notification.
- 7. All location should be located using a GPS at each sample location, unless the location is a permanent feature (i.e. SNWS INTAKE). This is especially true when sampling on the open water. If other equipment such as a Hydro-lab or Digital camera are used; time and date stamps should all be synchronized with the GPS unit at the start and end of each day. This is a minimum requirement.

LVB1.7NW0.15

LVB  
|  
*Prefix*

1.7  
|  
*miles from  
reference  
( note 4 )*

NW  
|  
*Direction*

*Distance in miles  
from center*

0.15

LWLVB1.8

LWLVB  
|  
*Prefix*

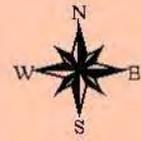
1.8  
|  
*miles below  
Current interface*

Interface site 1.8 miles below current interface.

LWLVB

Current interface site.

- ▲ Established USGS River Mile Markers
- ◆ Mile Markers developed for Wash & Bay



**Appendix N**  
Parameters for the Las Vegas Wash Mainstream and Tributary Program

Parameter or Parameter Group	Parameter
<b>Alkalinity</b>	Total alkalinity (carbonate, bicarbonate, hydroxide)
<b>Bacteria</b>	E. coli Fecal coliform Total coliform
<b>Bacteria+</b>	Enterococci Fecal streptococcus
<b>Field Measurements</b>	DO EC ph Temp
<b>Flow</b>	Flow
<b>Ions</b>	Chloride Flouride Sulfate
<b>Ions+</b>	Bromide (SNWA only) Chlorate (SNWA only) Sulfide
<b>Metals (dissolved)</b>	Aluminum Antimony Arsenic Barium Beryllium Boron (SNWA only) Cadmium Chromium Copper Iron (SNWA only) Lead Manganese Mercury (SNWA only) Molybdenum Nickel Silver Thallium (SNWA only) Vanadium Zinc
<b>Metals (total)</b>	Aluminum Antimony Arsenic Arsenic III (COH only) Barium Beryllium Boron Cadmium Chromium Chromium III

<b>Metals (total)</b>	Chromium VI Copper Iron Lead Manganese Mercury Molybdenum Nickel Silver Thallium Vanadium (SNWA only) Zinc
<b>Minerals (dissolved)</b>	Calcium Magnesium Potassium Sodium
<b>Minerals (total)</b>	Same as "Minerals (dissolved)" group
<b>Nutrients</b>	Amonia-N (except SNWS) Dissolved Orthophosphorus-Phosphorus Nitrate+Nitrate Nitrate-Nitrogen Nitrite-Nitrogen Total Phosphorus
<b>Nutrients+</b>	Total Kjeldahl Nitrogen Total Organic Nitrogen (SNWA only)
<b>Perchlorate</b>	Perchlorate
<b>PPCP/Steroids</b>	Atenolol Atorvastatin Atrazine Benzophenone BHA Bisphenol A Caffeine Carbamazepine DEET Diazepam Diclofenac Dilantin Estradiol Estrone Ethinylestradiol Fluoxetine Gemfibrozil Ibuprofen Iopromide Meprobamate Musk Ketone

**PPCP/Steroids**

Naproxen  
Octylphenol  
Primidone  
Progesterone  
Sulfamethoxazole  
TCEP  
TCPP  
Testosterone  
Triclosan  
Trimethoprim

**PPL**

1,1,1-trichloroethane  
1,1,2,2-tetrachloroethane  
1,1,2-trichloroethane  
1,1-dichloroethane  
1,1-dichloroethylene  
1,2,4-trichlorobenzene  
1,2-dichlorobenzene  
1,2-dichloroethane  
1,2-dichloropropane  
1,2-dichloropropylene  
1,2-diphenylhydrazine  
1,2-trans-dichloroethylene  
1,3-dichlorobenzene  
1,4-dichlorobenzene  
2,3,7,8-TCDD (COH only)  
2,4,6-trichlorophenol  
2,4-dichlorophenol  
2,4-dimethylphenol  
2,4-dinitrophenol  
2,4-dinitrotoluene  
2,6-dinitrotoluene  
2-chloroethyl vinyl ethers  
2-chloronaphthalene  
2-chlorophenol  
2-nitrophenol  
3,3-dichlorobenzidine  
4,4-DDD  
4,4-DDE  
4,4-DDT  
4,6-dinitro-o-cresol  
4-bromophenyl phenyl ether  
4-chlorophenyl phenyl ether  
4-nitrophenol  
Acenaphthene  
Acenaphthylene  
Acrolein  
Acrylonitrile

PPL

Aldrin  
Alpha-BHC  
Alpha-endosulfan  
Anthracene  
Asbestos (COH only)  
Benzene  
Benzidine  
benzo(a) anthracene  
Benzo(a)pyrene  
Benzo(b) fluoranthene  
Benzo(ghi) perylene  
Beta-BHC  
Beta-endosulfan  
Bis(2-chloroethoxy) methane  
Bis(2-chloroethyl) ether  
Bis(2-chloroisopropyl) ether  
Bis(2-ethylhexyl) phthalate  
Bromoform  
Butyl benzyl phthalate  
Carbon tetrachloride  
Chlordane  
Chlorobenzene  
Chlorodibromomethane  
Chloroethane  
Chloroform  
Chrysene  
Cyanide, Total (COH only)  
Delta-BHC  
Demeton  
Dibenzo(h) anthracene  
Dichlorobromomethane  
Dichloropropenes  
Dieldrin  
Diethyl Phthalate  
Dimethyl phthalate  
Di-N-Butyl Phthalate  
Di-n-octyl phthalate  
Endosulfan sulfate  
Endrin  
Endrin aldehyde  
Ethylbenzene  
Fluoranthene  
Fluorene  
Gamma-BHC  
Guthion  
Heptachlor  
Heptachlor epoxide

**PPL**

Hexachlorobenzene  
Hexachlorobutadiene  
Hexachlorocyclopentadiene  
Hexachloroethane  
Indeno (1,2,3-cd) pyrene  
Isophorone  
Malathion  
Methoxychlor  
Methyl bromide  
Methyl chloride  
Methylene chloride  
Mirex  
Monochlorobenzene  
Naphthalene  
Nitrobenzene  
N-nitrosodimethylamine  
N-nitrosodi-n-propylamine  
N-nitrosodiphenylamine  
Parachlorometa cresol  
Parathion  
PCB-1016 (Arochlor 1016)  
PCB-1221 (Arochlor 1221)  
PCB-1232 (Arochlor 1232)  
PCB-1242 (Arochlor 1242)  
PCB-1248 (Arochlor 1248)  
PCB-1254 (Arochlor 1254)  
PCB-1260 (Arochlor 1260)  
Pentachlorophenol  
Phenanthrene  
Phenol  
Pyrene  
Silvex (2,4,5-TP)  
Tetrachloroethylene  
Toluene  
Toxaphene  
Trihalomethanes  
Vinyl chloride

**PPL+**

Acetaldehyde  
Dalapon  
DCPA  
Dichloroacetonitrile  
Formaldehyde  
Glyoxal  
Methyl glyoxal  
M-Glyoxal (Pyruvic Aldehyde)  
Propachlor

**Selenium (dissolved)**

Dissolved Selenium

<b>Selenium (total)</b>	Total Selenium
<b>Selenate/Selenite</b>	Selenate Selenite
<b>Silica</b>	Total Silica
<b>TDS</b>	Total Dissolved Solids
<b>TSS</b>	Total Suspended Solids
<b>Turbidity</b>	Turbidity
<b>Giardia/Cryptosporidium</b>	Giardia/Cryptosporidium
<b>Viruses</b>	Virus PCR
<b>Legionella/Clostridium</b>	Legionella/Clostridium

## **Appendix O**

Parameters for the Clark County Regional Flood Control District's Stormwater Program

<b>Parameter</b>	<b>Method</b>	<b>Parameter</b>	<b>Method</b>
TDS	160.1	Nickel,total	200.8
TSS	160.2	Silver,total	200.8
Alkalinity	310.1	Thallium,total	200.8
Bicarbonate	310.1	Zinc,total	200.8
Carbonate	310.1	Mercury,total	245.1
Nitrate	300	Pesticides	614/619
Nitrite	300	Pesticides	508
Bromide	300	SVOC	625
Chloride	300	VOC	624
Sulfate	300	VOC	524.2
Bromate	300.1	Organics	551.1
Chlorate	300.1	Organics	6252
Chlorite	300.1	Organics	504.1
Calcium	200.7	Organics	525.1
Iron	200.7	Organics	531.1
Magnesium	200.7	Organics	515.1
Potassium	200.7	Diuron	532
Silica	200.7	Endothall	548.1
Sodium	200.7	Fluorine	4500
Selenium	200.9	Glyphosate	547
Arsenic	200.9	Hydroxide	2320
Anion/Cation	1040	Diquat	549.2
pH	150.1	Paraquat	549.2
Specific Conductance	S2510	Fecal Coliform	9221B
Hardness	2340B	Fecal Streptococcus	9230
Total Organic Carbon	5310C	Total Phosphorus	365.4
Surfactants	5540	TKN	351.2
Aluminum,total	200.8	Oil and Grease	413.1
Antimony,total	200.8	Dissolved Copper	200.8
Barium,total	200.8	Dissolved Lead	200.8
Beryllium,total	200.8	Dissolved Zinc	200.8
Cadmium,total	200.8	Boron	200.7
Chromium,total	200.8	Herbicides	615
Copper,total	200.8	Carbon Dioxide	450-CO2-D
Lead,total	200.8	Total Coliform Bacteria	9221B
Manganese,total	200.8	Langelier Index	2330B