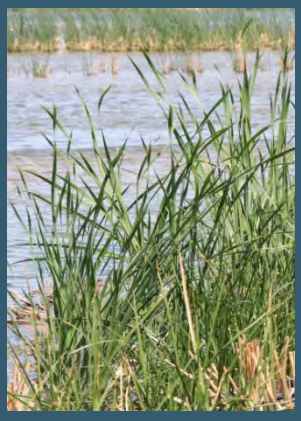

las vegas wash coordination committee

lvwash.org

Nature Preserve and In-Lieu Fee Mitigation Ponds Water Quality Monitoring Plan

October 2011

SOUTHERN NEVADA WATER AUTHORITY

Las Vegas Wash Coordination Committee

Nature Preserve and In-Lieu Fee Mitigation Ponds
Water Quality Monitoring Plan

SOUTHERN NEVADA WATER AUTHORITY
Las Vegas Wash Project Coordination Team

Prepared for:

Las Vegas Wash Coordination Committee

Prepared by:

Carol Lane
Southern Nevada Water Authority
Las Vegas Wash Project Coordination Team
100 City Parkway, Suite 700
Las Vegas, Nevada 89106

September 2011

ABSTRACT

Water quality samples will be collected at eight sites monthly within the Clark County Nature Preserve and In-Lieu Fee Mitigation ponds. An additional four sites may be sampled as needed. Water samples will be analyzed for selenium, nutrients, cation/anions, metals, and fecal coliform. In addition, flow measurements will be collected at up to seven sites to aid in calculating gains and losses to the wetland system. These data will be used to calculate removal efficiencies for nutrients, metals and other potential pollutants and characterize water quality changes over time. Data from this project will be used to meet the monitoring and reporting requirement of Clark County Parks and Recreations National Pollutant Discharge Elimination System permit for re-use water.

Nature Preserve and In-Lieu Fee Mitigation Ponds
Water Quality Monitoring Plan

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1.0 INTRODUCTION

1.1 Purpose and Need

The Las Vegas Wash Coordination Committee (LVWCC) is a 30-member stakeholder group composed of local state and federal entities, the University of Nevada, Las Vegas, environmental groups, businesses, and citizen members who are responsible for stabilizing and enhancing the Las Vegas Wash (Wash). The LVWCC was formed in 1998 and by 2000, the Comprehensive Adaptive Management Plan (CAMP), a document which provides a road map for stabilizing and enhancing the Wash, was created. The CAMP identified strategies to help improve the water quality in the Wash and Lake Mead. Among those items, the CAMP includes goals for evaluating off channel wetlands as one potential mechanism to help improve water quality. The Nature Preserve is a 130-acre interpretive park that highlights wetlands within the Las Vegas Valley and provides a setting to help further evaluate the effectiveness of wetlands in improving water quality. This monitoring plan was developed to further meet the goals of the CAMP by quantifying water quality improvements within the Nature Preserve and In-Lieu Fee Mitigation Ponds (Mitigation Ponds; formerly referred to as Ducks Unlimited Mitigation Ponds).

Clark County is a key participant of the LVWCC and several action items in the CAMP are intended to help Clark County meet the goals of developing the Clark County Wetlands Park. Clark County was issued a National Pollutant Discharge Elimination System (NPDES) permit for re-use water supplied to the Nature Preserve for wetland enhancements and is required to monitor and report on water quality trends (Appendix A). The primary source of water for the system is reclaimed re-use water provided by the Clark County Water Reclamation District (CCWRD) and flows entering through the Tropicana Floodway Channel. Clark County has previously funded the Harry Reid Center (HRC) to conduct water quality monitoring, research, and outreach projects in the park to meet permit requirements and biological monitoring needs but the most recent contract expired in February 2010. Consequently, the Southern Nevada Water Authority (SNWA) acquired grant funds from the Bureau of Reclamation to continue existing wetland monitoring studies supporting Clark County and to meet the goals of the CAMP. The goal of this project is to cooperatively meet goals set forth in the CAMP and assist Clark County Parks and Recreation in meeting their water quality monitoring requirements.

1.2 Previous Studies

Previous studies conducted by HRC have included water quality characterization studies within the Nature Preserve. HRCs analyses were limited by analytical methodologies and, for some analytes, insufficient detection limits that prevented extensive characterization. Particularly noted is the absence of extended monitoring for metals, with the exception of selenium, within the Nature Preserve. More recent water quality monitoring has focused solely on the monitoring requirements found in Clark County's NPDES permit for re-use water which requires monitoring and reporting at five stations within the Nature Preserve and Mitigation Ponds for chloride, sulfate, nitrate as N, total dissolved solids (TDS), and fecal coliform. Water quality trends within the Nature Preserve for the past five years have shown slightly increasing concentrations of nitrate as N, sulfate, chloride, and TDS but data describing trends for non-permit compliance analytes are absent.

While the Nature Preserve has been studied for the last eight years, the Mitigation Ponds have only been monitored for two complete years (July 2009 – January 2010 by HRC and February

2010 to current by SNWA). Water quality monitoring at the Mitigation Ponds will help characterize system changes and long-term water quality improvements. Selenium is of particular interest due to its potential impacts to wildlife and to the water quality in the Mitigation Ponds. The Mitigation Ponds are adjacent to Duck Creek and the lowest pond (Cell 7) occasionally receives overflow from Duck Creek during rain events (Figure 1). Duck Creek is known to have high concentrations of total selenium. Additionally, initial data suggests groundwater may be infiltrating the lowest pond creating potential concern over the effects that increased TDS and selenium have on wildlife habitat and vegetation establishment. Water quality monitoring and mass balance calculations will aid in determining potential hydrological impacts on water quality in the system.

1.3 Goals

The primary goal of this study is to calculate wetland removal efficiencies for nutrients and other potential pollutants, particularly metals, entering the system by combining water chemistry and flow measurement data. Quantitative changes in concentration and mass loading will be assessed. The Mitigation Ponds allow for increased retention time and interaction between plants and soil and it provides an environment for removal and transformation of nutrients and metals. The sequential nature of the ponds allow for incremental changes in water quality to be measured at each pond and collectively as an entire system. The data gathered from this study will help measure the effectiveness of wetlands in improving water quality from combined wastewater and urban runoff sources and characterize water quality changes within the Mitigation Ponds. A secondary goal of this study is to meet the sampling requirements for Clark County's NPDES permit (Appendix A). The final goal is to characterize selenium's fate and transport in the Mitigation Ponds.

2.0 METHODS

2.1 Water Quality Monitoring

Eight permanent water quality monitoring sites are located within the Nature Preserve and Mitigation Ponds. The sites were selected to provide data at strategic points along flow paths within the Nature Preserve and Mitigation Ponds. Five locations are sited within the Nature Preserve and three are located within the Mitigation Ponds. Sample locations were selected to provide comparable data at strategic locations within the system that will help characterize water quality after inflows or retention in the pond system. Five sample locations (NP_2_I, NP_4, NP_6, NP_8, and IFLM_8 [refered to as DU_1 in the permit]) correspond with water quality monitoring stations required in Clark County's NPDES re-use water permit. Substantial data has been gathered at sites NP_4 and NP_6, which suggests that these two sampling points are unnecessary and uninformative. Additionally, CCWRD provides water quality and flow data for inclusion in the quarterly discharge monitoring reports required by the NPDES permit. These data may also be used to characterize water quality at the inflow and NP_2_I. Clark County is in the process of modifying their permit with the Nevada Division of Environmental Protection (NDEP) to exclude these sites. When the permit is reissued, NP_2_I, NP_4, and NP_6 will no longer be sampled. Table 1 provides site descriptions and analyte lists and Figure 1 displays the project area, including sampling locations.

Figure 1. Water quality sampling locations.

Sampling will occur monthly at all locations at eight stations and as needed at four stations where outflow can be intermittent. The Mitigation Pond system was designed so that pond elevations and flow could be manipulated to benefit wildlife. As such, flow can be maneuvered around pond cells through a series of control structures. When flowing, these locations may be sampled to provide truncated water quality data focusing on selenium. Water samples at the eight permanent sites will be analyzed for metals (including selenium), cations-anions, nutrients, and bacteria. SNWAs agreement with Weck Laboratories Inc., makes a full suite of analysis more cost effective than selecting specific analytes for analysis, i.e., permit required analytes or metals listed on the NDEPs 303(d) list. The analyte list for Weck Laboratories is found in

Appendix B. Field parameters: dissolved oxygen, temperature, electrical conductance, and pH will be measured using a multi-probe water quality instrument at each location. Weck Laboratories, Inc. will analyze samples for metals, cations-anions, and nutrients. Selenium analysis will be conducted by South Dakota State University. SNWA will provide bacteria analysis. Reductions in analytes and sample frequency may be reduced once sufficient data has been collected for analysis and specific concerns are identified and ameliorated.

Data collected from this project will be stored both internally and externally. An internal spreadsheet will be maintained assembling the data from laboratory analyses and field measurements for sample locations at the Nature Preserve and Mitigation Ponds. Additionally, all data will be uploaded into a database available to local agencies and partners through www.lvwash.org.

Site Name	Site Description	Analytes	Frequency	Flow
CCWRD	Access point to CCWRD pipeline	Nutrients, metals, cation/anion, bacteria	Bi-weekly	Continuous
NP_2_I	Characterizes water quality of effluent entering the Nature Preserve	Nutrients, metals, cation/anion, bacteria and selenium	Monthly	Monthly at NP_1
NP_4	Located at the middle ponds in the Nature Preserve and helps characterize water quality midway through pond series	Nutrients, metals, cation/anion, bacteria and selenium	Monthly	Monthly
NP_6	This site is midway in stream between the upper pond and lower pond in the Nature Preserve. Offers a chance to compare water quality characteristics of flows outside of pond series	Nutrients, metals, cation/anion, bacteria and selenium	Monthly	Monthly
NP_8	Located at the outlet of the Nature Preserve. Characterizes water quality of the Nature Preserve before flows enter the ILFM ponds	Nutrients, metals, cation/anion, bacteria and selenium	Monthly	Monthly and continuous
NP_11	This site helps characterize water quality of urban runoff entering the lower pond in the Nature Preserve	Nutrients, metals, cation/anion, and selenium	Monthly	Monthly
ILFM_5_I	Characterizes water quality of flow after passing through initial ponds	Nutrients, metals, cation/anion, and selenium	Monthly	Monthly
ILFM_5	Characterizes water quality after passing through cell 5 in the ILFM ponds	Nutrients, metals, cation/anion, and selenium	Monthly	Monthly
ILFM_5W	Flow control structure on west side of cell 5	Nutrients, metals, cation/anion, and selenium	As needed	As needed
ILFM_6W	Flow control structure on west side of cell 6	Nutrients, metals, cation/anion, and selenium	As needed	As needed
ILFM_7W	Flow control structure on west side of cell 7	Nutrients, metals, cation/anion, and selenium	As needed	As needed
ILFM_7E	Flow control structure on east side of cell 6	Nutrients, metals, cation/anion, and selenium	As needed	As needed
ILFM_8	Characterizes water quality at the outlet of the ILFM pond system	Nutrients, metals, cation/anion, bacteria and selenium	Monthly	Monthly

Table 1. Site description and analyte list.

2.2 Water Balance

Flow measurements at four permanent sites (NP_1, NP_8, NP_11, and ILFM_8) are needed to calculate mass loading and develop a water budget within the Nature Preserve and Mitigation Ponds (Figure 2). Monthly flow measurement data will be used with the continuously collected flow data from the CCWRD effluent delivery pipeline and at NP_8 (outlet of the Nature Preserve). Monthly flow measurements taken at permanent sites will be used to calculate the mass balance of the Nature Preserve and Mitigation Ponds. If Clark County's NPDES permit is modified to exclude NP_2_I, flow measurements at NP_1 will no longer be necessary. NP_1 was used as an alternative location for stream flow measurements since it provides a better channel configuration for obtaining accurate flow readings. NP_1 is located upstream and is considered to approximate flow conditions at NP_2_I. Four additional sites (ILFM_5W, ILFM_6W, ILFM_7W, and ILFM_7E) will be collected as needed. These sites are mostly located at overflow box structures, which flow intermittently. They are needed to complete the water budget within the entire system and include locations that provide surface water gains and losses. Pond elevations will be measured monthly to assist in calculating storage in the Mitigation Ponds. Gains or losses from groundwater will be calculated by closing the water balance. While no specific attempts to collect groundwater data from the area are included in this plan, if there are substantial disparities in surface water data indicating measurable groundwater influences into the system, additional efforts will be needed to complete a water balance. In addition, vegetation cover will be mapped and meteorological data (precipitation, wind, humidity) from nearby weather stations will be used to calculate evapotranspiration rates of the system.

Figure 2. Flow measurement locations.

Appendix A
Clark County Wetlands Park Permit NEV2003504

Permit No. NEV2003504

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

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

[1] This data to be provided by the Clark County Water Reclamation Facility and given to the permittee.

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

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

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^{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.

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 B
Weck Laboratory, Inc Analytical List

Weck Labortories, Inc

Method	Analyte
EPA 200.7	Boron, Total
EPA 200.7	Calcium, Total
EPA 200.7	Iron, Total
EPA 200.7	Potassium, Total
EPA 200.7	Lithium, Total
EPA 200.7	Magnesium, Total
EPA 200.7	Sodium, Total
EPA 200.7	Silica as SiO2, Total
EPA 200.8	Molybdenum, Total
EPA 200.8	Vanadium, Total
EPA 200.8	Aluminum, Total
EPA 200.8	Antimony, Total
EPA 200.8	Arsenic, Total
EPA 200.8	Barium, Total
EPA 200.8	Beryllium, Total
EPA 200.8	Cadmium, Total
EPA 200.8	Chromium, Total
EPA 200.8	Copper, Total
EPA 200.8	Lead, Total
EPA 200.8	Manganese, Total
EPA 200.8	Nickel, Total
EPA 200.8	Selenium, Total
EPA 200.8	Silver, Total
EPA 200.8	Thallium, Total
EPA 200.8	Zinc, Total
EPA 300.0	Chloride, Total
EPA 300.0	Sulfate as SO4
EPA 300.1	Dichloroacetate

Method	Analyte
EPA 300.1	Bromide
EPA 300.1	Chlorate
SM 2320B	Hydroxide Alkalinity as CaCO3
EPA 350.1	Ammonia as N
EPA 245.1	Mercury, Total
EPA 353.2	NO2+NO3 as N
EPA 365.3	Phosphorus as P, Total
SM2540C	Total Dissolved Solids
SM2540D	Total Suspended Solids
SM 2320B	Carbonate Alkalinity as CaCO3
SM 2320B	Bicarbonate Alkalinity as HCO3
SM 2320B	Alkalinity as CaCO3
EPA 353.2	Nitrate as N
EPA 353.2	Nitrite as N
EPA 365.3	o-Phosphate as P
EPA 351.2	TKN
SM5310C	Total Organic Carbon (TOC)
EPA 200.7	Hardness as CaCO3, Total
Various	Organic Nitrogen