

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET

(pursuant to NAC 445A.236)

Permittee: GNLV Corporation
P.O. Box 610
Las Vegas, Nevada 89125

Permit: NV0022993 - Renewal

Location: Golden Nugget Hotel & Casino
129 East Fremont Street
Las Vegas, Clark County, Nevada 89101
Latitude: 36° 10' 14.79" N
Longitude: 115° 08' 40.41" W
Township 20S, Range 61E, Section 34 MDB&M

Bureau of Corrective Actions:

The Golden Nugget Hotel and Casino site is within one mile of eighteen (18) Nevada Division of Environmental Protection (NDEP) Bureau of Corrective Actions (BCA) remediation sites, as listed below. The BCA case officers for the remediation sites have indicated that current remediation monitoring shows that at least one plume of hydrocarbon contaminated groundwater is moving in the direction of the Golden Nugget Hotel and Casino dewatering system, and may be intercepted by the foundation dewatering system.

Project ID #	Site Number	Facility Name	Corrective Action Type (Media/Contaminant)
3738	8-001405	Longley Construction	Soil & Groundwater/Gasoline
3679	H-001337	Former Dry Cleaner (Abandoned)	Soil & Groundwater/Solvents
984	H-000093	Charleston Heights Shopping Center	Groundwater/Solvents
1954	8-000377	Exber Fremont Texaco	Soil & Groundwater/Diesel
3790 5251	8-001512	Haycock Petroleum	Soil & Groundwater/Diesel Soil/Gasoline
2296	H-000557	Union Pacific Railroad Company	Soil & Groundwater/Other
3114 3115	8-001149	7-Eleven 27607	Groundwater/Gasoline Soil & Groundwater/Gasoline
5475	H-000569	City of Las Vegas	Groundwater/Solvents
3830	8-001620	10 th Street Auto (Temple Realty)	Soil & Groundwater/Gasoline
1737	8-000323	Fire Station 1	Soil & Groundwater/Gasoline
1457	H-000287	Doc's Automotive (Former)	Soil & Groundwater/Gasoline
1548	H-000215	Nevada Ready Mix Corporation	Soil/Diesel
4135	H-000242	Western Hotel and Casino	Soil & Groundwater/Gasoline
3985	8-000016	Arco 1718	Soil & Groundwater/Gasoline
1433	8-000278	Las Vegas Laundry & Dry Cleaner	Groundwater/Solvents
2730	8-000749	Unocal Service Station 4616	Soil & Groundwater/Gasoline
8328	H-000778	Cleveland Clinic Las Vegas	Unknown/Other
4136	H-000243	Plaza Hotel and Casino	Soil & Groundwater/Diesel

Well Head and Drinking Water Supply Protection:

The permitted facility is not within a 6000 foot Drinking Water Protection Area (DWPA) around any public water supply well. There is no Well Head Protection Area (WHPA) established for the facility location.

General:

The Permittee has applied for renewal of National Pollutant Discharge Elimination System (NPDES) permit, NV0022993, to continue to discharge groundwater to the Las Vegas Wash via the City of Las Vegas stormdrain system. This permit was originally issued September 9, 1999. The discharge during construction and initial NPDES permitting was authorized under temporary permit TNEV99027. The facility includes a 38,000-square foot casino and 1,907 hotel rooms and suites.

Due to a rise in the local groundwater elevation in the late 1990s, a dewatering system was installed below the floor slab to prevent periodic seepage into the basement. The system consists of two parallel, 4-foot deep gravel-filled trenches with 4-inch diameter drain pipes that discharge to a concrete collection sump. The Permittee has indicated that the collection trenches are located approximately 14-15 feet below ground surface. The 8-foot deep, 4-foot diameter sump has two 1.5 Hp pumps that are activated by float switches. A sanitary wastewater sump is located in the same basement room as the dewatering sump. A bolted steel cover prevents wastewater spills from entering the dewatering sump. The collected groundwater is pumped from the recovery sump to a Las Vegas stormdrain system drop inlet. The untreated groundwater is discharged from the stormdrain to the Las Vegas Wash.

Based on a 1999 analysis of on-site monitoring well water quality, the groundwater had elevated concentrations of aluminum, 19 mg/L; iron, 18 mg/L; lead, 0.036 mg/L; manganese, 0.42 mg/L; and sulfate, 430 mg/L. During initial permitting, these levels were determined to be representative of background concentrations and further monitoring was not required. Chromium, copper, and selenium were detected at concentrations of 0.047 mg/L, 0.013 mg/L, and 0.010 mg/L, respectively. Antimony, arsenic, beryllium, cadmium, mercury, nickel, silver, thallium, and zinc were not detected in the groundwater. In 1999 chloride was present at a concentration of 93 mg/L; nitrate was not detected.

Based on analyses performed during the first five years of permitted discharge, the shallow groundwater in the immediate area of the hotel/casino is not significantly impacted by VOCs. No VOCs were detected in 1999, 2003, and 2004 EPA Method 8260B analyses of the groundwater. In the 4th Quarter 2002, naphthalene was detected at a concentration of 25 µg/L. In the 4th Quarter 2001, chloroform was detected at a concentration of 6.8 µg/L. The discharge was not analyzed for VOCs in 2000. Total petroleum hydrocarbons were detected at a concentration of 1.3 mg/L in an on-site monitoring well in January 1999, but were not detected in the 2002, 2003, and 2004 annual analyses.

Discharge Flow and Characteristics:

During the period of the 2006 permit (from April 2006 through September 2010), the following discharge flow volumes and characteristics were reported:

Parameter	Permit Limit	Average	Maximum	Minimum
Flow, gpm	25	1.26	9.12	NA
Total Inorganic Nitrogen, mg/L	20	2.37	12.43	<0.2
Total Phosphorus, #/day	1.0	0.0004	0.006	NA
pH, Standard Units	6.5-9.0	7.45	8.0	6.2
Total Dissolved Solids, mg/L	M&R	1427.8	1810	890
Sulfate, mg/l	M&R	449	830	36
Total Petroleum Hydrocarbons, mg/l	1.0	0.165	.36	<0.2
Aluminum, mg/l	M&R	<0.5	<2.5	<0.5
Antimony, mg/l	M&R		<0.01	
Arsenic, mg/l	M&R		<0.01	
Beryllium, mg/l	M&R		<0.003	
Cadmium mg/l,	M&R		<0.003	
Chromium mg/l,	M&R		<0.003	
Copper mg/l,	M&R		0.011	
Iron, mg/l,	M&R	1.37	3	<0.5
Lead, mg/l	M&R	<0.01	<0.01	<0.005
Manganese, mg/l	M&R	<0.5	<2.5	<0.5
Nickel, mg/l	M&R		<0.005	
Selenium, mg/l	M&R		<0.01	
Silver, mg/l	M&R		<0.003	
Thallium, mg/l	M&R		<0.015	
Zinc, mg/l	M&R		0.25	
Total Suspended Solids, mg/l	M&R		<10	
Volatile Organic Compounds, µg/l	M&R		See Below	

M&R: Monitor and Report

From April 2006 through November 2009, minimal amounts of volatile organic compounds were detected in three sampling events. The detected compounds are listed below. All compounds were below the toxic materials limits listed in Nevada Administrative Code (NAC) 445A.144 or the BCA Action Level. Trihalomethanes are likely present due to the interaction of chlorinated irrigation water and small amounts of organic compounds in the soil.

Compound	NAC 445A.144 Limit or Action Level	Date	Detected Concentration (µg/l)
Trihalomethanes	100 µg/l (NAC Limit)	November 2006	0.82 (Dibromochloromethane)
		November 2007	1.10 (Bromodichloromethane) 1.30 (Chloroform) 0.88 (Dibromochloromethane)
		November 2007	0.51 (Chloroform)

Trihalomethanes = Sum of Bromodichloromethane, Dibromochloromethane, Bromoform and Chloroform

Receiving Water Characteristics:

The receiving water for the untreated discharge is the Las Vegas Wash, via the Las Vegas stormdrain system. The beneficial uses of the pertinent reach of the Las Vegas Wash as cited at NAC 445A.198 include irrigation, watering of livestock, recreation not involving contact with the water, maintenance of a freshwater marsh, propagation of wildlife, and propagation of aquatic life, excluding fish. The establishment of a fishery is not precluded. Water quality standards for the pertinent reach of the Las Vegas Wash are specified at NAC 445A.199.

Proposed Effluent Limitations:

Samples and measurements taken in compliance with the monitoring requirements specified below shall be taken from:

Flow: the flow meter located on the force main (pump discharge) from the dewatering collection sump; and

All Other Parameters: the sample port on the force main.

The discharge shall be limited and monitored by the Permittee as specified below:

Table 1: Discharge Limitations

PARAMETERS		EFFLUENT DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
		30-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Flow, gpm		25	---	Continuous, Recorded Monthly	Flow meter
Total Discharge per Month, gallons		---	M&R	Monthly	Calculation
Total Inorganic Nitrogen as N, mg/L		---	20	Quarterly	Discrete
Total Phosphorus as P	lb/day	< 1.0 ¹	---	Monthly, Apr-Sept	Calculation Discrete
	mg/l	---	M&R		
Total Ammonia as N	mg/l	---	M&R	1 st and 4 th Quarters	Discrete
	lb/day	< 1.0 ¹	---	Monthly, Apr-Sept	Calculation Discrete
pH, SU			6.5 to 9.0	Quarterly	Discrete
Total Dissolved Solids, mg/L		---	M & R	Quarterly	Discrete
Total Petroleum Hydrocarbons ² , mg/L		---	1.0	Quarterly	Discrete
VOC EPA Method 8260 (report all parameters), µg/L		---	M & R	Annually ³	Discrete
Chromium, Copper, Selenium, µg/L		---	M & R ⁴	Annually ³	Discrete

1: Effluent discharge limitation applies April through September, only.

2: EPA Method 8015B and EPA Method 8260B, extractable and purgable, C6-C40. Summation must meet permit limit.

3: To be analyzed in the fourth quarter and submitted to the Division with the Annual Report. Detection of VOC's in

excess of the BCA action levels or NAC 445A.144 limits will require more frequent sampling and may potentially require treatment prior to discharge. NDEP shall be notified within 14 days of receiving analytical results of a VOC constituent exceeds the BCA action level of NAC 445A.144.

- 4: Report all metals as total recoverable.

mg/L:	Milligram per liter.	µg/L:	Micrograms per liter.
gpd:	Gallons per day.	P:	Phosphorus.
N:	Nitrogen.	VOC:	Volatile organic compound.
SU:	Standard units.	°C:	Degrees Celsius.
CaCO ₃ :	Calcium carbonate.	lb/day:	Pounds per day.
EPA:	US Environmental Protection Agency		

Rationale for Permit Requirements:

Monitoring requirements for the parameters specified in Table 1 above have been established to ensure that the receiving water, the Las Vegas Wash, is not degraded as a result of the Permittee's discharge of untreated groundwater. Monitoring is required to assure that the groundwater will not impact the beneficial uses of Las Vegas Wash.

Flow: The 30-day average flow effluent discharge limitation is based on the value requested by the Permittee. The dewatering system has a design capacity of 25 gpm using either of the two pumps.

Total Inorganic Nitrogen as Nitrogen (TIN): NAC 445A.199 includes a requirement to maintain existing higher quality TIN standard of 95% of the samples ≤ 20.0 mg/L. The quarterly TIN monitoring of the previous permit is proposed to be retained.

Total Phosphorus as Phosphorus (TP): NAC 445A.199 does not include a total phosphorus standard. However, in 1994, a TP total maximum daily load (TMDL) of 434 lbs/day became effective for the Las Vegas Bay/Wash. The waste load allocations (WLAs) are applicable for only April through September and are based on a target concentration of 0.64 mg/L. WLAs have been assigned only to the Cities of Las Vegas, Henderson, and North Las Vegas, and the Clark County Water Reclamation District.

Based on the State's de minimis policy of exempting discharges of less than 1 lb/day TP from the TMDL analysis, a WLA has not been assigned to this Permittee. At the maximum permitted flow of 0.036 MGD, the groundwater TP concentration must exceed 3.33 mg/L to violate the 1 lb/day of the de minimis policy.

The quarterly TP monitoring of the previous permit is proposed to be retained.

Total Ammonia as N: NAC 445A.199 does not include an ammonia standard. However, in 1995, a Total Ammonia total maximum daily load (TMDL) of 970 lbs/day became effective for the Las Vegas Bay/Wash. The waste load allocations (WLAs) are applicable for only April through September, and are based on a target of 1.43 mg/l. WLAs have been assigned only to the Cities of Las Vegas, Henderson and North Las Vegas, and the Clark County Water Reclamation District.

Based on the State's de minimis policy of exempting discharges of less than 1 lb/day Total Ammonia from the TMDL analysis, a WLA has not been assigned to this Permittee. At the maximum permitted flow of 0.036 MGD, the groundwater Total Ammonia concentration must exceed 3.33 mg/L to violate

the 1 lb/day of the de minimis policy.

From the April 2006 through September 2010, ammonia has been detected at an average concentration of 0.63 mg/l. Quarterly Total Ammonia monitoring is proposed for the renewed permit.

pH: NAC 445A.199 includes a single value pH water quality standard for beneficial uses within the range of 6.5 to 9.0 SU. The frequency of pH monitoring is proposed to be retained at the quarterly frequency of the previous permit.

Total Dissolved Solids (TDS): NAC 445A.199 includes a single value TDS standard for beneficial uses of $\leq 3,000$ mg/L. The shallow groundwater with naturally occurring elevated TDS levels would flow to the Wash, if it was not intercepted by the dewatering system, therefore, the TDS standard is not applied to dewatering discharges in this area.

This permit is for the interception and passage of groundwater and thus is exempted under the Colorado River Basin Salinity Control Forum's policy on groundwater interception.

The quarterly TDS monitoring of the previous permit is proposed to be retained.

Total Petroleum Hydrocarbons (TPH): The 1.0 mg/L TPH limit is the State action level for remediation projects and was applied to this discharge in the previous permit. Because the Bureau of Corrective Actions has indicated high probability that the plume currently under remediation by other facilities will migrate to within the capture zone of the dewatering system, monitoring for TPH has been increased to quarterly. The previous permit requirement was annual sampling. Exceedance of the permit limit of TPH may trigger treatment of the captured groundwater.

Volatile Organic Compounds (VOCs): To verify that a VOC plume has not migrated/been drawn onto the site, the proposed permit requires the continuation of annual VOC analyses. Detection of VOCs in concentrations exceeding NAC445A.144 limits or BCS action levels will trigger more frequent analyses, and may require treatment of the captured groundwater.

Aluminum, Iron, Lead, Manganese, Sulfate: The concentrations of these constituents were elevated in the groundwater sample analyzed at the time of initial permit application. Further analysis in 2009 indicated that these metals were not present above reporting limits, or were not present in significant concentrations. Analyses for these constituents are proposed to be eliminated from the permit.

Hardness: Hardness was previously analyzed because this parameter is necessary to calculate the lead aquatic life standard, as well as the total ammonia and several of the metals standards. Since the parameters requiring Hardness concentration for their calculated standards are not proposed for the permit renewal, Hardness analysis will not be required.

Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Mercury, Nickel, Silver, Selenium, Thallium, and Zinc: These metals were not detected or, if detected, were well below the appropriate standards using a calculated hardness of 920 mg/L as CaCO₃ in the 1999 analysis. With the exception of Chromium, Copper and Zinc, results of the 2009 sampling event indicate these metals are not present in the discharge above appropriate detection limits. Chromium, Copper and Zinc were detected, but were

below any applicable water quality standard, limit or criteria. Analysis for Antimony, Arsenic, Beryllium, Cadmium, Mercury, Nickel, Silver, Thallium, and Zinc are proposed to be eliminated from the renewed permit. Chromium, Copper and Selenium concentrations will continue to be assessed in the renewed permit. Due to the low concentration of these metals in the analyzed groundwater sample, monitoring is proposed to be required once during the term of the permit.

Total Suspended Solids (TSS): NAC 445A.199 includes a TSS water quality standard for beneficial uses of ≤ 135 mg/L. However, the presence of Suspended Solids in groundwater is unlikely. TSS was not detected in the discharge in the 2009 sampling event. Analysis for TSS is proposed to be eliminated from the renewed permit.

Total Ammonia as N: NAC 445A.199 does not include an ammonia standard. Since the 1999 issuance of this permit, a total ammonia as N standard, NAC 445A.118, has been adopted.

From the 1st Quarter 2002 through the 2nd Quarter 2005, with a detection limit of 0.3 mg/L, ammonia has been detected once. The 2nd Quarter 2005 discharge ammonia concentration was 0.34 mg/L. This concentration is below the acute water quality criteria for total ammonia for freshwater aquatic life for all pH values within the permitted effluent discharge limitation range. At the maximum three-year pH value, 8.1 SU, and a temperature of 30°C, the maximum temperature value in NAC 445A.118 Table 2, the chronic water quality criteria for total ammonia for waters where freshwater fish in early life stages may be present is 0.773 mg/L. Due to the low ammonia concentration in the groundwater and low discharge flow, total ammonia and temperature are proposed to be monitored once during the five-year term of the permit.

Chloride, Nitrate as N: These constituents were not elevated in the 1999 groundwater analysis. The 2009 sampling event indicated that these constituents have not increased in the discharge. As these constituents are present in amounts that do not exceed any applicable water quality standard or criteria, monitoring of these constituents are not continued in the proposed permit.

Temperature: NAC 445A.199 includes a requirement to maintain existing higher quality temperature standard of zero degrees of temperature increase above water temperature at the boundary of an approved mixing zone except during storm flow conditions. However, because of the low discharge flows and the residence time within the storm drain system prior to discharge to the Las Vegas Wash, this standard is not proposed to be applied to the discharge. Monitoring of discharge temperature is proposed to be eliminated from the renewed permit.

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 that 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. **By MMM DD, 2011**, the Permittee shall submit for review and approval any necessary updates to the Operations & Maintenance (O&M) Manual for the dewatering system. If

no updates or revisions are required, the Permittee shall submit a letter stating this condition by the above due date. The document or letter shall be submitted to the Division at the following address:

**Department of Conservation and Natural Resources
Nevada Division of Environmental Protection
Bureau of Water Pollution Control
ATTN: Compliance Coordinator
901 S. Stewart Street, Suite 4001
Carson City, Nevada 89701**

Proposed Determination:

The Division has made the tentative determination to issue the proposed permit for a period of five (5) years.

Procedures for Public Comment:

Notice of the Division's intent to issue a permit authorizing the facility to continue to discharge to surface waters of the State of Nevada subject to the conditions contained within the permit, is being sent to the **Las Vegas Review-Journal** for publication. The notice is also being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing until **5:00 P.M. March 2, 2011**, a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the Applicant, any affected state, any affected interstate agency, the Regional Administrator of EPA Region IX or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held will be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted to accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.238

Prepared by: Janine O. Hartley, P.E.
Draft: January 2011
Final: