

Nevada Division of Environmental Protection

FACTSHEET (Pursuant to NAC 445A.236)

APPLICANT: 7-ELEVEN INCORPORATED

PERMIT NUMBER: NV0023396

LOCATION: 7-ELEVEN STORE - STORE 20826
1600 North Decatur Drive
Las Vegas, Clark County, Nevada 89108

**Latitude: 36° 11' 17" North, Longitude: 115° 12' 21" West
Township 20S, Range 61E, Section 19 MDB&M**

FLOW: Daily Maximum: 0.0216 million gallons per day (MGD);
15 gallons per minute

PUBLIC WATER SUPPLY: This location is within the 3,000 Drinking Water Protection Area (DWPA).

BUREAU OF CORRECTIVE ACTIONS: There are 3 other "leaking underground storage tanks" (LUST) Bureau of Corrective Actions sites within one (1) mile of this site:

- ARCO # 5314
- Eberhardt's Automotive & tires.
- City of Las Vegas Redevelopment Agency.

GENERAL: 7-Eleven Incorporated has applied for a renewal of its current National Pollutant Discharge Elimination System (NPDES) permit, NV0023396, to discharge treated groundwater to the Las Vegas Wash via the City of Las Vegas storm drain system. 7-Eleven Store No. 20826, a convenience store that formerly included a fueling station, is located on the northeast corner of North Decatur Drive and Vegas Drive. Prior leakage of gasoline from the underground storage tank system has contaminated the shallow groundwater aquifers with petroleum hydrocarbons. The fueling systems were removed in February 2003.

Groundwater remediation is to be accomplished by using a high vacuum dual-phase pump-and-treat system. The on-site groundwater recovery and monitoring system includes five groundwater remediation wells, twelve monitoring wells, eight air sparging wells, four vapor extraction wells, four nested air sparge/soil vapor extraction wells, three vapor monitoring wells, and two vapor monitoring

points. A two stage remediation system was installed at the site. Stage 1 consists of a liquid ring pump, a liquid knockout tank and a transfer tank. Stage 2, the permanently mounted system, includes a transfer pump, a chemical tank with a metering pump, a low profile air stripper with a blower, a liquid knockout tank, and two vapor-phase carbon vessels. An anti-scaling chemical, Anlytix™ AN-310FG, containing copolymers and organic phosphorus compounds, is added to the groundwater prior to being processed through the air stripper. The treated groundwater will be discharged via a three-inch PVC pipe to a City of Las Vegas storm drain inlet on Las Vegas Drive.

Petroleum hydrocarbon contaminants of concern in the affected groundwater include benzene, ethylbenzene, toluene, and total xylenes (BTEX), methyl tertiary butyl ether (MTBE) and total petroleum hydrocarbons (TPH). The Division's Bureau of Corrective Actions regulates the on-site cleanup activities and final site closure requirements.

FLOW: The max permitted discharge flow rate of this groundwater remediation system is specified as 15 gallons per minute (gpm), which is equivalent to 0.0216 million gallons per day (MGD). This flow rate is based on the treatment capacity of the groundwater remediation system; actual flow is significantly smaller than permitted.

GROUNDWATER INFORMATION: Depth to groundwater at this site is approximately 13.0 feet below ground surface (bgs). Groundwater flow is generally southeast at a gradient of approximately 0.016 ft/ft toward the Las Vegas Wash.

Groundwater at the facility is of poor quality with naturally occurring elevated concentrations of aluminum (1.57 mg/L), barium (2.70 mg/L), iron (4.27 mg/L), manganese (0.087 mg/L), total dissolved solids (1,040 mg/L). Antimony, arsenic, beryllium, cadmium, nitrate, mercury, silver, and thallium were not detected in ICP total metals analysis of this water.

The following chemicals were detected at this site along with their respective concentration: 1,2,4-trimethylbenzene (602 µg/L), benzene (301 µg/L), ethylbenzene (368 µg/L), MTBE (14 µg/L), n-propylbenzene (70 µg/L), naphthalene (141 µg/L), toluene (120 µg/L), BTEX (494 µg/L) and gasoline, 13,200 µg/L. Other volatile organic compounds were not detected.

RECEIVING WATER CHARACTERISTICS: The receiving water for the treated groundwater is the Las Vegas Wash via the City of Las Vegas storm drain system. Water quality standards for the Upper Las Vegas Wash are specified in NAC 445A.199, Las Vegas Wash from Telephone Line Road to confluence of discharges from City of Las Vegas and Clark County wastewater treatment plants. NAC 445A.199 includes requirements to maintain existing higher quality (RMHQ) temperature, total inorganic nitrogen, total dissolved solids (TDS), pH, nitrate, nitrite, total suspended solids (TSS), fecal coliform and other water quality standards for beneficial uses.

The beneficial uses of the Upper Las Vegas Wash, as designated in NAC 445A.198, are propagation of aquatic life, excluding fish; propagation of wildlife; irrigation; recreation not involving contact with water; maintenance of a freshwater marsh; and watering of livestock. The Division does not monitor the upper Las Vegas Wash water quality.

PROPOSED EFFLUENT LIMITATIONS: Samples taken in compliance with the monitoring

requirements specified below shall be taken from:

- i. the sample port on the discharge line from the treatment system, Outfall 001; and
- ii. the sample port on the influent line to the treatment system.

Table 1: Effluent Limitations

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	30-Day Average	Daily Max	Sample Location	Measurement Frequency	Sample Type
Flow – MGD	0.0216	0.0216	i. Effluent	Continuous	Flow Meter
Flow – gpm	15	15	i. Effluent	Continuous	Flow Meter
Volatile Organic Compounds – VOCs (µg/L) report all parameters ⁴ .	Monitor & Report		i. Effluent	Quarterly	Discrete
			ii. Influent	Annually ²	
Benzene (µg/L)	-	5	i. Effluent	Monthly ¹	Discrete
Ethylbenzene (µg/L)	-	100	i. Effluent	Monthly ¹	Discrete
Toluene (µg/L)	-	100	i. Effluent	Monthly ¹	Discrete
Xylenes, Total (µg/L)	-	200	i. Effluent	Monthly ¹	Monthly ¹
MTBE ³ (µg/L)	-	20	i. Effluent	Monthly ¹	Discrete
Total Petroleum Hydrocarbons⁴	-	1.0	i. Effluent	Monthly ¹	Discrete
	Monitor & Report		ii. Influent	Annually ²	
pH (SU)	6.5 ≤ pH ≤ 9.0		i. Effluent	Quarterly ¹	Discrete
Total Dissolved Solids (mg/L)	Monitor & Report		i. Effluent	Quarterly	Discrete
Total Inorganic Nitrogen –N (mg/L)	-	20	i. Effluent	Quarterly	Discrete
Total Phosphorus –P (lb/day)	< 1.0		i. Effluent	Quarterly	Discrete
Total Ammonia –N (lb/day)	< 1.0		i. Effluent	Quarterly	Discrete
Iron ³ (mg/L)	Monitor & Report		i. Effluent	Quarterly	Discrete
Manganese ³ (mg/L)	Monitor & Report		i. Effluent	Quarterly	Discrete
Barium ³ (mg/L)	Monitor & Report		i. Effluent	Annually ²	Discrete
Aluminum ³ (mg/L)	Monitor & Report		i. Effluent	Annually ²	Discrete

NOTES:

1. If the treated ground water exceeds any permit limit, the Permittee shall make appropriate treatment system adjustments and resample the discharge within 72 hours after lab notification of exceedance. Sampling frequency will be switched to weekly if any exceedance is found.
2. To be sampled in the fourth quarter and submitted to the Division with the Annual Report.
3. Total recoverable.
4. **EPA Method 8015B** and **EPA Method 8260B** – Full range (C6 – C40). Summation must meet permit limits. – **mg/L**

MGD: Million gallons per day.

µg/L: Micrograms per liter.

mg/L: Milligrams per liter.

VOC: Volatile organic compounds.

MTBE: Methyl tertiary butyl ether.

EPA: U.S. Environmental Protection Agency.

TPH: Total petroleum hydrocarbons.

SU: Standard units.

lb/day: Pounds per day.

gpm: Gallons per minute.

RATIONALE FOR PERMIT REQUIREMENTS: Monitoring requirements for the parameters specified in **Table 1:** Discharge Limitations are being proposed to ensure that the receiving water (Las Vegas

Wash) is not degraded as a result of the Applicant's groundwater remediation discharge.

Volatile Organic Compounds (VOC): The shallow groundwater in the immediate area of the facility was impacted by a release of petroleum hydrocarbons containing VOCs. Discharge limitations for the VOCs associated with hydrocarbon releases have been included in Table 1. Benzene, BTEX, ethylbenzene, and toluene were detected at levels above the daily maximums in groundwater analysis. The Division adopted an action level for MTBE of 20 µg/L for sites in close proximity to receptors and/or sensitive receptors. This limit is being used for all applicable surface water discharges. MTBE was detected in groundwater analysis at a concentration of 14 µg/L.

Total Petroleum Hydrocarbons (TPH): The shallow groundwater in the vicinity of the facility was contaminated by a petroleum hydrocarbon release. Gasoline was detected at a concentration of 13,200 µg/L in the groundwater.

pH: NAC 445A.199 includes a single value pH water quality standard for beneficial uses within the range of 6.5 – 9.0 SU. The pH of the treated groundwater is within the acceptable range.

Total Dissolved Solids (TDS): NAC 445A.199 includes a single TDS standard (180°C) for beneficial uses of ≤ 3,000 mg/L and an RMHQ of 95% of the samples ≤ 1,900 mg/L. The TDS concentration of the groundwater was 1,040 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 remediation discharges in this area. Quarterly monitoring is included in the permit. 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.

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 TIN concentration in the groundwater was not reported. Nitrate was not detected in the groundwater at a reportable detection limit of 0.1 mg/L; quarterly monitoring is included in the permit.

Total Phosphorus as Phosphorus (TP): In 1987, a TP total maximum daily load (TMDL) of 434 lb/day was established for the Las Vegas Bay/Wash. The waste load allocations (WLAs) set are applicable for only April through September and were based on a target concentration of 0.64 mg/L. WLAs have been assigned only to the Cities of Las Vegas and Henderson and the Clark County Sanitation District.

Based on the State's "*de minimus*" policy of exempting discharges of less than 1 lb/day TP from the TMDL analysis, a WLA has not been assigned to this Applicant. At the maximum permitted flow of 0.0216 MGD and the August 2004 TP concentration of 0.16 mg/L, the Applicant would discharge 0.029 lb/day TP. Quarterly monitoring is included in the permit.

Total Ammonia as Nitrogen: A total ammonia TMDL of 970 lb/day has been established for the Las Vegas Bay/Wash. Based on the low concentrations of total ammonia in groundwater and the State's "*de minimus*" policy of exempting discharges of less than 1.0 lb/day total ammonia from the TMDL analysis, the total ammonia load has not been an issue. Quarterly monitoring is included in the permit.

Iron: Per NAC 445A.144, the aquatic life standard for total recoverable iron is 1.0 mg/L. Iron was

detected in the groundwater at a concentration of 4.27 mg/L in August 2004. The shallow groundwater with naturally occurring elevated iron levels would flow to the Wash, if it was not intercepted by the dewatering system, therefore, the metals standards are not applied to this remediation discharge. Quarterly monitoring without a discharge limitation is included in the permit.

Manganese: Per NAC 445A.144, the irrigation standard for total recoverable manganese is 0.20 mg/L. The manganese secondary drinking water standard is 0.05 mg/L. Manganese was detected in the groundwater at a concentration of 0.087 mg/L in August 2004. The shallow groundwater with naturally occurring elevated manganese levels would flow to the Wash, if it was not intercepted by the dewatering system, therefore, the metals standards are not applied to this remediation discharge. Quarterly monitoring is included in the permit.

Barium: NAC 445A.144 does not include barium standards for the listed beneficial uses. Barium was detected in the groundwater at a concentration of 2.70 mg/L. Annual monitoring without a discharge limitation is included in the permit.

Aluminum: NAC 445A.144 does not include aluminum standards for the listed beneficial uses. Aluminum was detected in the groundwater at a concentration of 1.57 mg/L. Annual monitoring without a discharge limitation is included in the 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 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. **By December 30th, 2010** the Permittee shall submit to the Division, for review and approval, an updated Operations & Maintenance (**O&M**) Manual for the groundwater extraction and treatment system.
- c. All schedule of compliance submittals and evidence of compliance documents shall be submitted to the Bureau Compliance Coordinator at the address in **Section I.B.2**.

PROPOSED DETERMINATION: The Division has made the tentative determination to issue the proposed permit, under the provisions prescribed, for a 5-year period.

PROCEDURES FOR PUBLIC COMMENT: The Notice of the Division's intent to issue a groundwater discharge permit to the applicant, subject to the conditions contained within the permit is being sent to **Las Vegas Review Journal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the date of publication of the public notice in the newspaper. The comment period can be extended at the discretion of the Administrator. The deadline date and time by which all comments are to be submitted (via postmarked mail or time-stamped faxes, e-mails, or hand-delivered items) to the Division is **October 30th, 2010 by 5:00 P.M.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator 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 must 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 in accordance with NAC 445A.238. The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

The application and proposed permit on file and may be copied or copies may be obtained by writing or by calling [Alexi Lanza, P.E.](mailto:alanza@ndep.nv.gov), Bureau of Water Pollution Control at **(775)687-9468**; fax: **(775)687-4684**; or email: alanza@ndep.nv.gov. This notice and the fact sheet can be viewed at <http://ndep.nv.gov/admin/public.htm>

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Nevada Division of Environmental Protection
Bureau of Water Pollution Control – Permits Branch