

**OFFICE OF THE NEVADA ENVIRONMENTAL RESPONSE TRUST
TRUSTEE**

**Le Petomane XXVII, Inc., Not Individually, But Solely as the Nevada Environmental Response Trust Trustee
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October 8, 2018

Dr. Weiquan Dong, Ph.D.
Bureau of Industrial Site Cleanup
Nevada Division of Environmental Protection
2030 E. Flamingo Rd, Suite 230
Las Vegas NV 89119

RE: Compilation of Select Health Risk Assessment Documents for Parcel F: 2008 to 2018, and
Request for a No Further Action Determination
NDEP Facility ID # H-000539
Nevada Environmental Response Trust Site
Henderson, Nevada

Dear Dr. Dong:

On behalf of the Nevada Environmental Response Trust (NERT or the Trust), this letter requests issuance of a No Further Action (NFA) determination for Parcel F. NERT has completed an investigation of this parcel and submitted several reports documenting the conditions at the property. Attached to this letter is the *Compilation of Select Health Risk Assessment Documents for Parcel F: 2008 to 2018*, dated September 2018. This Compilation was prepared with the objective of assembling into one “binder” the key health risk assessment (HRA) documents that have been completed for soil, soil gas, and groundwater at Parcel F. In this letter, the Trust is requesting a NFA determination for Parcel F to address the soil direct contact pathway as well as the vapor intrusion pathway from soil gas and groundwater. In support of this request, the risk estimates for Parcel F from the final HRA report (*Health Risk Assessment for Parcel F*, dated December 15, 2017 and approved by the Nevada Division of Environmental Protection [NDEP] on February 1, 2018) are summarized and presented below.

Summary of the HRA

Based on the conceptual site model (CSM) for Parcel F, the post-remediation HRA was conducted to evaluate potential risks to future onsite workers from exposures to residual levels of chemicals, radionuclides, and asbestos in soils and volatile chemicals released from soil gas and groundwater to indoor, outdoor, and trench air.

- Soil: Potential exposure to soil was evaluated for future onsite indoor and outdoor commercial/industrial workers and construction workers via direct contact with soil (i.e., incidental ingestion and dermal contact) and inhalation of airborne particulates and vapors, based on the post-remediation soil data collected at 0-10 feet below ground surface (bgs) in Parcel F in 2007-2017. Through a multi-step process consisting of a concentration/toxicity screen, background evaluation for metals and radionuclides, and chemical-specific considerations, ten chemicals were identified as chemicals of potential concern (COPCs) for soil in Parcel F, including Aroclor-1254, benzo(a)pyrene equivalent (BaPEq), chloride, alpha-

hexachlorocyclohexane (BHC), hydroxymethyl phthalimide, metals (palladium and zirconium), perchlorate, and asbestos (long amphibole fibers and long chrysotile fibers).

Non-cancer hazard indices (HIs) and excess lifetime cancer risks associated with direct contact with soil and inhalation of airborne particulates and vapors were estimated for all the COPCs in soil (except asbestos, see below) based on the 95% upper confidence limit (UCL) on the mean soil concentration at the 0-2 feet depth interval and at the 0-10 feet depth interval within Parcel F. For future onsite indoor and outdoor commercial/industrial workers and construction workers in Parcel F, the estimated HIs were below or at the NDEP target HI of less than or equal to one for non-cancer effects (the maximum HI was one), and the estimated excess lifetime cancer risks were below the NDEP target cancer risk range of 10^{-6} to 10^{-4} (the maximum estimated excess lifetime cancer risk was 4×10^{-7}).

With regard to asbestos (long amphibole and long chrysotile fibers), a best estimate and an upper-bound estimate of potential cancer risk via inhalation of airborne particulates for indoor commercial/industrial workers, outdoor commercial/industrial workers, and construction workers were calculated for Parcel F. The estimated combined risks for death from lung cancer and mesothelioma associated with asbestos exposures were below or within the NDEP acceptable cancer risk range of 10^{-6} to 10^{-4} (the maximum estimated excess lifetime cancer risk was 2×10^{-6}).

- Soil Gas: Potential exposure to soil gas was evaluated for future onsite indoor and outdoor commercial/industrial workers and construction workers via inhalation of vapors migrating from soil gas to indoor air, outdoor air, and trench air respectively, based on the soil gas data collected within or near Parcel F at five feet bgs in 2008 and 2013. All volatile chemicals detected in at least one soil gas sample were selected as COPCs for soil gas. A total of 65 volatile chemicals were identified as COPCs for soil gas in Parcel F.

Non-cancer HIs and excess lifetime cancer risks associated with inhalation of vapors migrating from soil gas to indoor air, outdoor air, and trench air were estimated for all identified COPCs in soil gas based on the maximum detected soil gas concentrations within Parcel F. For future onsite indoor and outdoor commercial/industrial workers and construction workers in Parcel F, the estimated HIs were below the NDEP target HI of less than or equal to one for non-cancer effects (the maximum HI was 0.01), and the estimated excess lifetime cancer risks were below or within the NDEP target cancer risk range of 10^{-6} to 10^{-4} (the maximum estimated excess lifetime cancer risk was 2×10^{-6}). Chloroform, from a trespassing groundwater plume, is the primary contributor to the total estimated cancer risk.

- Groundwater: Potential exposure to shallow groundwater (approximately 30 feet bgs) was evaluated as an additional line of evidence for the vapor intrusion pathway for future onsite indoor and outdoor commercial/industrial workers and construction workers via inhalation of vapors migrating from groundwater to indoor air, outdoor air, and trench air respectively, based on the shallow groundwater data collected within or near Parcel F within the most recent two years. All volatile chemicals detected in at least one shallow groundwater sample were selected as COPCs for groundwater. A total of 14 volatile chemicals were identified as COPCs for groundwater in Parcel F.

Non-cancer HIs and excess lifetime cancer risks associated with inhalation of vapors migrating from groundwater to indoor air, outdoor air, and trench air were estimated for all identified COPCs in groundwater based on the maximum detected groundwater concentrations within

Parcel F. For future onsite indoor and outdoor commercial/industrial workers and construction workers in Parcel F, the estimated HIs were below the NDEP target HI of less than or equal to one for non-cancer effects (the maximum HI was 0.02). The estimated excess lifetime cancer risks were below or within the NDEP target cancer risk range of 10^{-6} to 10^{-4} (the maximum cancer risk was 6×10^{-6}). Chloroform, from a trespassing groundwater plume, is the primary contributor to the total estimated cancer risk.

The cumulative cancer risk and non-cancer HI for each receptor population were estimated by summing the results from direct contact with soil and the results from inhalation of soil gas migrating to air. For future onsite indoor and outdoor commercial/industrial workers and construction workers in Parcel F, the estimated cumulative HIs were below or at the NDEP target HI of less than or equal to one for non-cancer effects (the maximum cumulative HI was one), and the estimated cumulative cancer risks were below or within the NDEP target cancer risk range of 10^{-6} to 10^{-4} . Only the cumulative cancer risk for future indoor commercial/industrial workers (2×10^{-6}) exceeded 1×10^{-6} , and the major chemical contributor to the cumulative cancer risk was chloroform in soil gas/groundwater. The only location where the estimated excess lifetime cancer risk for vapor intrusion was greater than 1×10^{-6} for future indoor commercial/industrial workers was at the northwestern corner of Parcel F, where the nearby trespassing chloroform groundwater plume (defined as a chloroform concentration greater than 70 microgram per liter [$\mu\text{g/L}$]) overlaps with Parcel F.

No Further Action Determination

Acknowledging NDEP's prior approval of the HRA, the environmental investigations and HRA tasks for Parcel F have been deemed complete by NERT. Accordingly, the Trust concludes that a NFA determination for Parcel F is warranted and requests that NDEP issue the NFA determination for soil less than 10 feet bgs (direct contact pathways) as well as soil gas and shallow groundwater (vapor intrusion pathways). Enclosed with this letter is the approved Environmental Covenant, signed by NERT and once signed by NDEP, will be recorded.

If you have any questions or concerns regarding this matter, feel to contact me at (702) 960-4309 or at steve.clough@nert-trust.com.

Office of the Nevada Environmental Response Trust



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Remediation Director
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