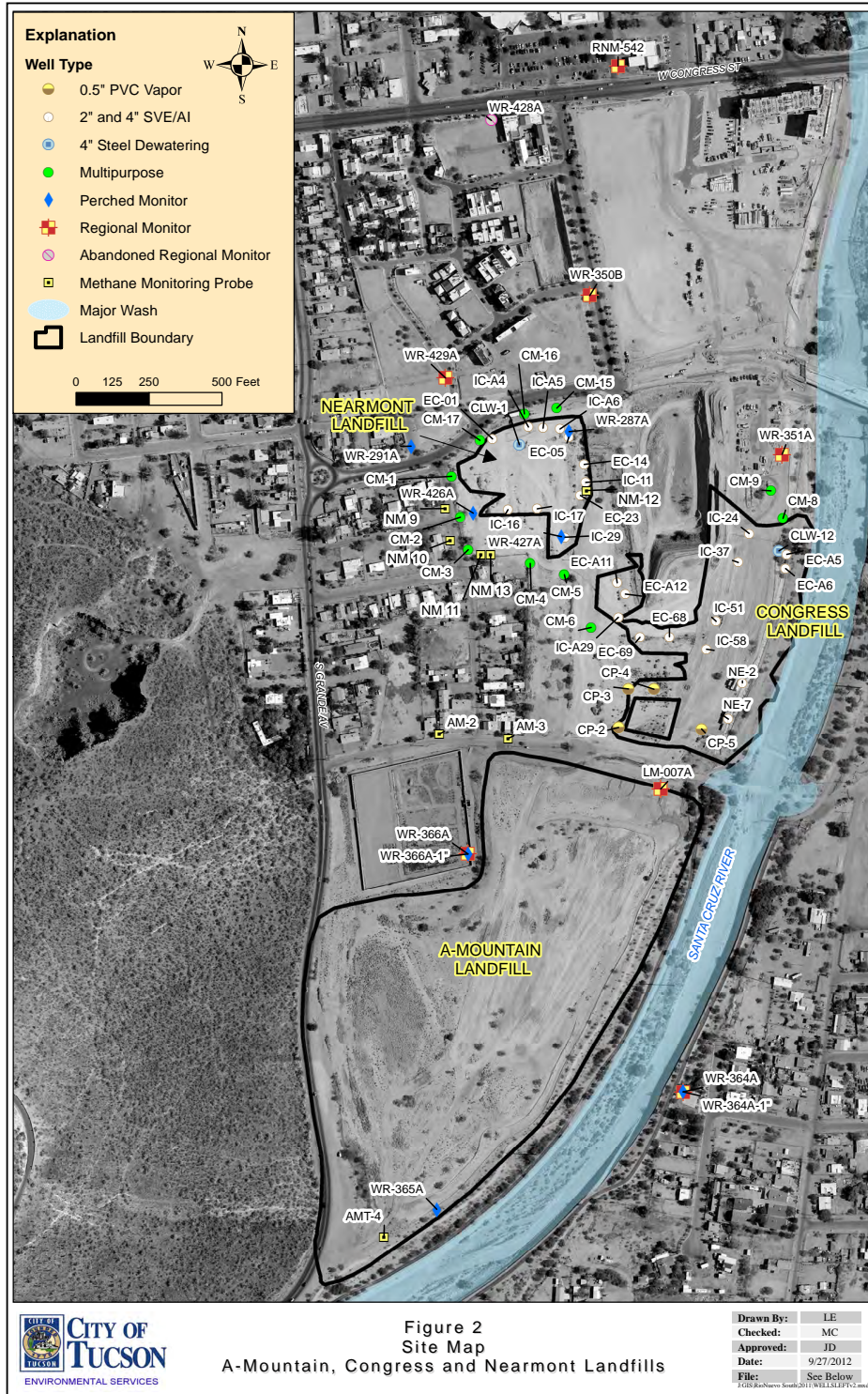


A-MOUNTAIN LANDFILL BACKGROUND

The City of Tucson operated three landfills in the vicinity of Mission Garden: the Nearmont and Congress Landfills north of Mission Lane, and the A-Mountain Landfill (AMLF) east and south of Mission Garden. The image below shows their locations.



Landfill Operation:

A-Mountain Operated 1953-1962 Size: 31.5 acres
 Congress Operated 1953-1960 Size: 7.8 acres
 Nearthmont Operated 1960-1967 Size: 3 acres

A-Mountain Landfill Extent and Location of Methane Gas Monitoring Wells



The A-Mountain Landfill:

The AMLF received primarily residential refuse between 1953 and 1962. Contents also included commercial and construction/demolition debris and probably some wildcat dumping. As noted in a report by the consultant, HydroGeoChem, a geophysical survey conducted in 2000 indicated that refuse was prominent over an area of 31.4 acres at thicknesses up to 45 feet.¹

Refuse over the area was typically most prevalent between 15 and 30 ft below ground surface (bgs), with the deepest and thickest refuse, extending to 30-45 ft bgs, present in the northeast portion of the site and thinner, often discontinuous or absent refuse present in the western portion of the site.

HydroGeoChem reported that Kleinfelder, another consultant, performed soil borings in 2007 and recommended excavation and removal of refuse to a depth of about 20 ft below the then-current grade at the northeast portion of the site to facilitate construction of a historical replica house. [I could not locate the Kleinfelder report but presume this refers to the Leopoldo Carrillo house.] HydroGeoChem further states that “partial excavation and re-grading of the northern portion of the landfill, including part of the deep northeastern zone, appears to have occurred in early 2008.”

Methane Gas Generation and Groundwater Quality:

Both methane gas and groundwater monitoring have been conducted since at least 2000. The HydroGeoChem report concludes that neither methane generation nor adverse impacts to groundwater are a significant concern at the AMLF.

“Methane generation rates at the site are relatively low, consistent with the age of the refuse and the relatively dry conditions that limit refuse degradation rates.”

“No substantive impacts to groundwater appear to be associated with the AMLF under current conditions.”

Under the City of Tucson’s current permit from ADEQ for the Santa Cruz River Heritage Recharge Project, the groundwater level below the AMLE must be kept below 60 feet below land surface. This limit allows maintenance of a 10 to 15 foot buffer below the lowest known point in the landfill. The City occasionally has had to throttle back the discharge rate to the river to ensure that this limit is not violated.

Repurposing of a Chandler Landfill Into a Park and Comparison with the AMLF

In November, 2018, Mission Garden arranged a visit to a City of Chandler 64-acre closed landfill that had been successfully turned into a city park, the Paseo Vista Recreation Area. Mission Garden representatives were accompanied by staff from Pima County and the City of Chandler, and the President and Chief Design Engineer of the landfill consultant for Chandler, HydroGeo Chem.

The landfill is 40 feet high, or about four times as high as the AMLF. The landfill generates significant methane concentrations, which is controlled by an onsite methane extraction system. Suction is applied

¹HydroGeoChem, “Landfill Gas and Soil Conditions Evaluation, A-Mountain Landfill, Tucson, Arizona, September 29, 2015”.

to a system of pipes buried in the landfill below the soil cap, allowing the captured methane to be flared off.

At the AMLF, because of low methane generation rates, a methane extraction system would not be needed. It is likely that only periodic methane testing would be necessary at selected test wells to ensure that activities on the landfill are not initiating significant methane generation. A qualified landfill consultant could determine whether additional soil cover, capping, or other measures are needed.

The following two pictures provide a glimpse of what has been done at the Paseo Vista Recreation Area:



Ramada at top of repurposed landfill and contoured landfill surface with native vegetation.



Entrance to Paseo Vista Recreation Area. Parking lot in background on top of repurposed landfill.

Summary by Chuck Graf,
April 21, 2022