

local government agencies did not keep information on landfill activities until after the landfills were closed, little information is available. Most of the information available is from site investigation activities that began around 1988 as part of the SIBW Superfund Site investigation. Five landfills were operated on the property in the vicinity of the proposed redevelopment project in Tempe, Arizona. These landfills are: Maricopa County Landfill; Old Tempe Landfill; Resources Reclamation Corporation of America; First Street Landfill; and the Bennett Family Trust Landfill.

The Maricopa County Landfill operated on the southwest portion of the landfill area properties and consisted of approximately 40 acres. The landfill has two distinct areas, a northern portion and a southern portion, based on apparent differences in fill material, time of emplacement, and soil vapor sampling results.

A number of buildings were constructed on the southern portion of the landfill. None of the buildings were associated with the landfill operations. The buildings housed many industrial businesses, most notably the former Allstate Mine Supply. The Allstate Subsite was investigated as a separate and distinct subsite of SIBW as discussed above.

The Old Tempe Landfill was located on the northeast corner of the landfill properties and consisted of approximately 11.5 acres. This landfill operated between 1971 and 1977, prior to which it was a gravel quarry. Conflicting information exists regarding the operating timeframe of this landfill. According to various property owners in the area, the landfill was operated as a municipal landfill by the cities of Tempe, Mesa, Phoenix, and Scottsdale from 1968 to 1979. The landfill primarily accepted solid waste; however, liquid and/or hazardous wastes may also have been accepted, although never verified. Resources Reclamation Corporation of America (RRCA), discussed below, purchased the property and continued the municipal landfill operations from 1978 to 1982.

The RRCA property totaled approximately 104 acres and included the area of the First Street Landfill, the Old Tempe Landfill, and adjacent parcels in the northwest corner of the landfill properties. The landfill accepted demolition debris, municipal solid wastes, and recyclable material, including metals, glass, and paper from the Cities of Tempe and Mesa, Arizona and reportedly did not accept any liquid or hazardous wastes. Additionally, RRCA was supposedly producing

combustible materials for fuel cubes (refuse-derived fuel) from non-recyclable products received at the landfill. RRCA disposed of the wastes over the area of the Old Tempe Landfill. The First Street Landfill property consisted of approximately 80 acres and included the area of the Old Tempe Landfill. The First Street Landfill accepted demolition debris and was to accept only inert materials such as dirt, concrete, and asphalt. Wood and uncontained refuse was also allowed if it was buried above the historical high water level.

The Bennett Family Trust Landfill is located adjacent to the First Street Landfill and is comprised of approximately seven acres. Little information is available for this property. The Bennett Family Trust obtained the property in the 1970s and used an onsite pit for storage of automobiles related to their scrap yard. The pit was susceptible to flooding, so the Bennetts decided to fill the pit with clean material. Supposedly, the Bennetts observed every load of material used to fill the pit and did not allow wood, garbage, tires, or the like to be disposed of in the pit.

The VOCs identified in the shallow soil-vapor within the SIBW Landfill Area include TCE, PCE and 1,1,1-TCA. These VOCs were identified because they were pervasive and persistent with respect to the three shallow soil vapor studies. In addition to the VOCs identified above, methane is also present in soil vapor at the SIBW Landfills. The methane concentrations are well below the lower explosive limit for methane, but still may cause a potential explosion risk if the gases build up inside of a structure.

The highest concentrations of 1,1,1-TCA or PCE observed within the SIBW Landfill Area were associated with the Allstate Subsite. None of the VOCs of concern were detected in the soil beneath the SIBW Landfills at concentrations that suggest that there could be a continuing source contamination to the groundwater into the future. 1,1,1-TCA contamination is present in soil vapor at concentrations ranging from 0.68 mg/L to 210 mg/L. The samples that contained the highest measured concentrations of 1,1,1-TCA are near the drywell on the former Allstate property. Data from SVMW-6, located at the former Allstate property, exhibited concentrations of 1,1,1-TCA that decreased with depth suggesting the 1,1,1-TCA source is above 30 feet bgs.

Within the SIBW Landfill Area, PCE contamination is present in soil vapor at concentrations ranging from 0.24 mg/L

to 30 mg/L. The samples that contained the highest measured concentrations of PCE are associated with the former Allstate property. PCE concentrations appear to be decreasing with depth, peak at approximately 30 feet bgs, and decrease below 30 feet bgs at the former Allstate property.

TCE was observed only once within the SIBW Landfill Area in shallow soil vapor at a concentration of 0.55 mg/L in 1990. This TCE concentration was observed in SVMW-6 in 1998 and 1999 which is located at the former Allstate property. Unlike 1,1,1-TCA and PCE, the TCE concentrations do not appear to follow any identifiable pattern related to depth.

The 1993 Soils ROD identified very specific criteria that determines whether or not soil remediation is required at SIBW subsites. The subsite must meet the following criteria in order for EPA to require soil remediation:

(1) Present cancer risk (incremental risk) of more than one in one million to a person from both ingestion of VOCs in groundwater and inhalation of VOCs during other household uses of groundwater, such as showering, over a lifetime;

(2) Present a cancer risk to a person of more than one in one million from inhalation of air above the soils at the subsite itself, over a lifetime;

(3) Present a hazard index for non-cancer effects of more than one to a person from both ingestion of VOCs in groundwater and inhalation of VOCs during household uses of groundwater, over a lifetime;

(4) Present a hazard index for non-cancer effects of more than one to a person from inhalation of air above the soils at the subsite itself, over a lifetime; and

(5) Increase the concentration of VOCs in groundwater (incremental concentration) by an amount greater than the federal Maximum Contaminant Level (MCL) under the Safe Drinking Water Act.

The maximum concentrations of 1,1,1-TCA, TCE and PCE in soil gas at the SIBW Landfill Area were obtained from sample points at the Allstate facility, which did not plug in to the 1993 soils ROD Remedy. Therefore, since the concentrations observed on the landfill properties are less than or equal to the concentrations observed at the Allstate Subsite, EPA has determined that the landfill properties would not meet any of the criteria listed above and therefore would not Plug-in to the 1993 soils ROD Remedy.

In conclusion, the concentration of VOCs detected in soil gas at the SIBW Landfill Area do not require any soil