



MEMORANDUM

DATE: December 10, 2012

TO: Honorable Mayor and Council
Members

FROM: Andrew H. Quigley
Director
Environmental Services

SUBJECT: Silverbell Landfill Remediation Project and Kinder Morgan Gasoline Pipeline Break – Remediation Plan Update

This memorandum summarizes recent developments related to the Silverbell Landfill Water Quality Revolving Fund Site (WQARF) proposed remediation system and the 2003 Kinder Morgan gasoline pipeline break, and informs Mayor and Council of the City's associated options and costs. Environmental Services (ES) is planning to build and operate a pump and treat system to remediate groundwater which has been contaminated by chlorinated solvents from the Silverbell Landfill, and prevent it from being drawn into Tucson Water's (TW) Sweetwater Recharge Facility. Estimated costs to the City for the ES system are \$6M, with an additional \$890,000 in annual operating costs. This funding will come from the City of Tucson's ES Groundwater Protection Fund.

Gasoline contaminants from the Kinder Morgan gasoline pipeline break migrated into the Silverbell Landfill site (Figure 1). The ES groundwater treatment system is not designed to remove these gasoline contaminants. Kinder Morgan Energy Partners proposed that remediating gasoline contaminants is not necessary. Arizona Department of Environmental Quality (ADEQ) is currently reviewing the Kinder Morgan Remedial Investigation Report which includes their proposal.

If ADEQ approves the Kinder Morgan's Remedial Investigation Report, and the gasoline contaminants reach the ES treatment system, the City's options are as follows:

- Remove the gasoline contaminants before reinjection to the aquifer: ES can amend the design of the proposed treatment system to remove the gasoline contaminants and prevent them from entering the reclaimed water system. Estimated costs for the amendment are \$2.5M for construction and \$400,000 per year in operations costs.
- Do not remove the contaminants before reinjection to the aquifer: If, in the future, the U.S. Environmental Protection Agency (EPA) specifies a drinking water standard for one or more currently unregulated gasoline compounds, the City may be required to remediate the groundwater to that drinking water standard if these contaminants have been introduced into another part of the aquifer through recharge of reclaimed water.

The City will respond to ADEQ by requesting that Kinder Morgan be required to: 1) take the necessary steps to adequately monitor the movement of the contamination onto the Silverbell Landfill WQARF site, and 2) remove gasoline contaminants in groundwater to the remedial levels for potable downgradient receptors.

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The contamination from the Silvercroft Wash site consists of gasoline compounds including methyl-tert-butyl-ether (MTBE). MTBE is not currently listed under Federal or State drinking water regulations, although the EPA is currently reviewing MTBE and may issue a regulatory standard in the future. Under current ADEQ regulations, MTBE has a remedial level of 94 parts per billion (ug/L) if no drinking water receptor will be affected. If a drinking water receptor may be affected, the remedial level is set at 20 ug/L.

The Kinder Morgan May 7, 2012, *Draft Remedial Investigation Report, Silvercroft Wash Release Site, Tucson, Arizona*, states that the MTBE will not require treatment by Kinder Morgan before it reaches the ES proposed treatment system because Kinder Morgan believes the concentrations of MTBE will not exceed 94 ug/L after: 1) treatment by the ES treatment system air stripping unit, 2) mixing with groundwater recharged by Sweetwater, and 3) uptake by the Sweetwater extraction wells for use in the reclaimed water system. The Sweetwater Recharge Facility is considered a non-drinking water receptor by Kinder Morgan.

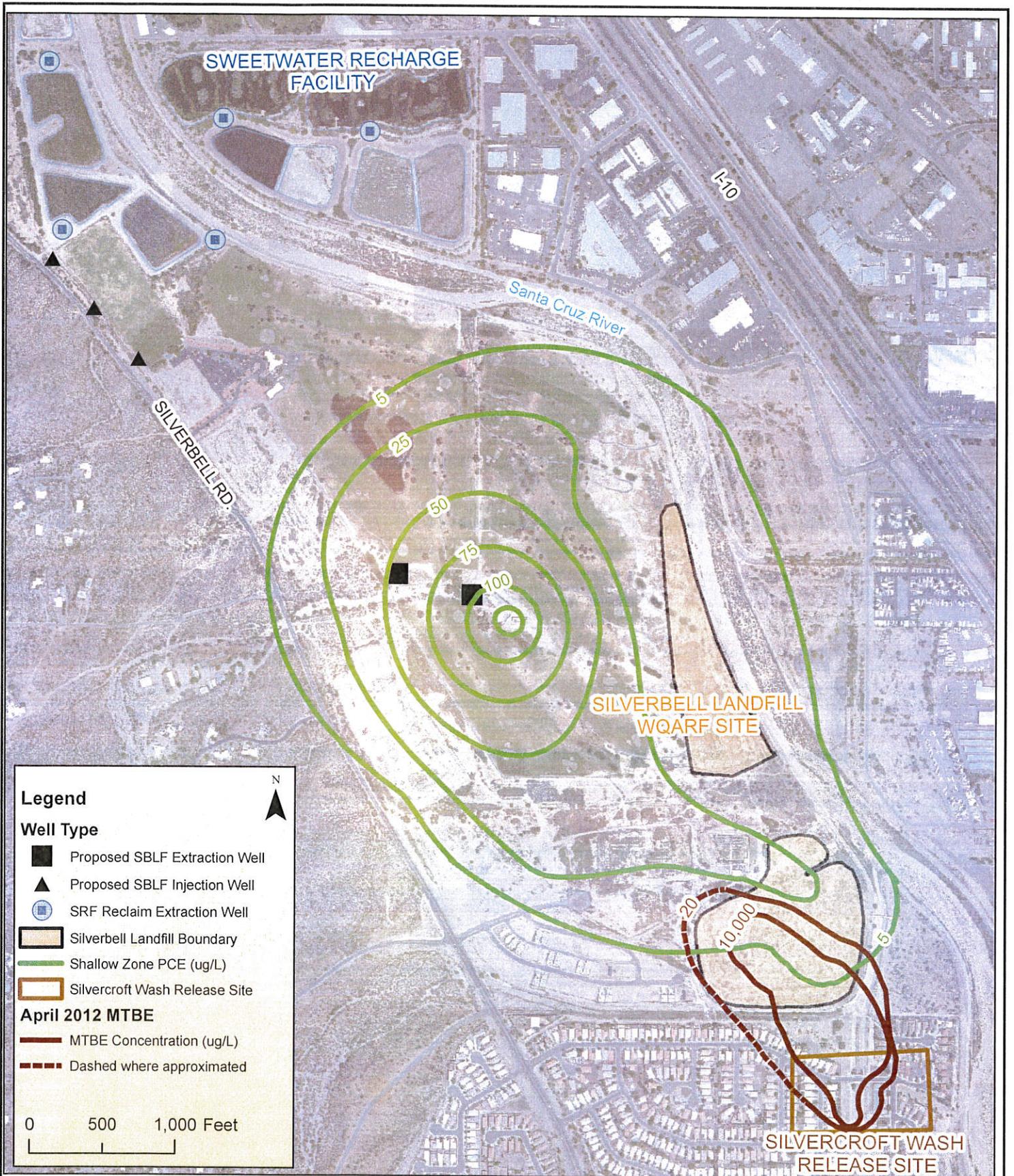
TW delivers water recovered from the Sweetwater Recharge Facility throughout the City and parts of Pima County to customers that include schools, parks, and golf courses, where the public could come into direct contact with MTBE through inhalation or skin absorption. Figure 2 illustrates the end users of the reclaimed system. Importantly, there is no MTBE in the reclaimed water at this time. In addition, TW and Pima County plan to construct a reclaimed water recharge facility in the Houghton Road area (Southeast Houghton Area Recharge Project [SHARP]). At that time, reclaimed water that is a blend of Sweetwater Recharge Facility recovered water and reclaimed water from the TW Reclaimed Water Treatment Facility will be recharged into the aquifer at SHARP to replenish groundwater. MTBE may degrade the aquifer in that area as a result. If you have any questions or require additional information, contact me at 837-3777.

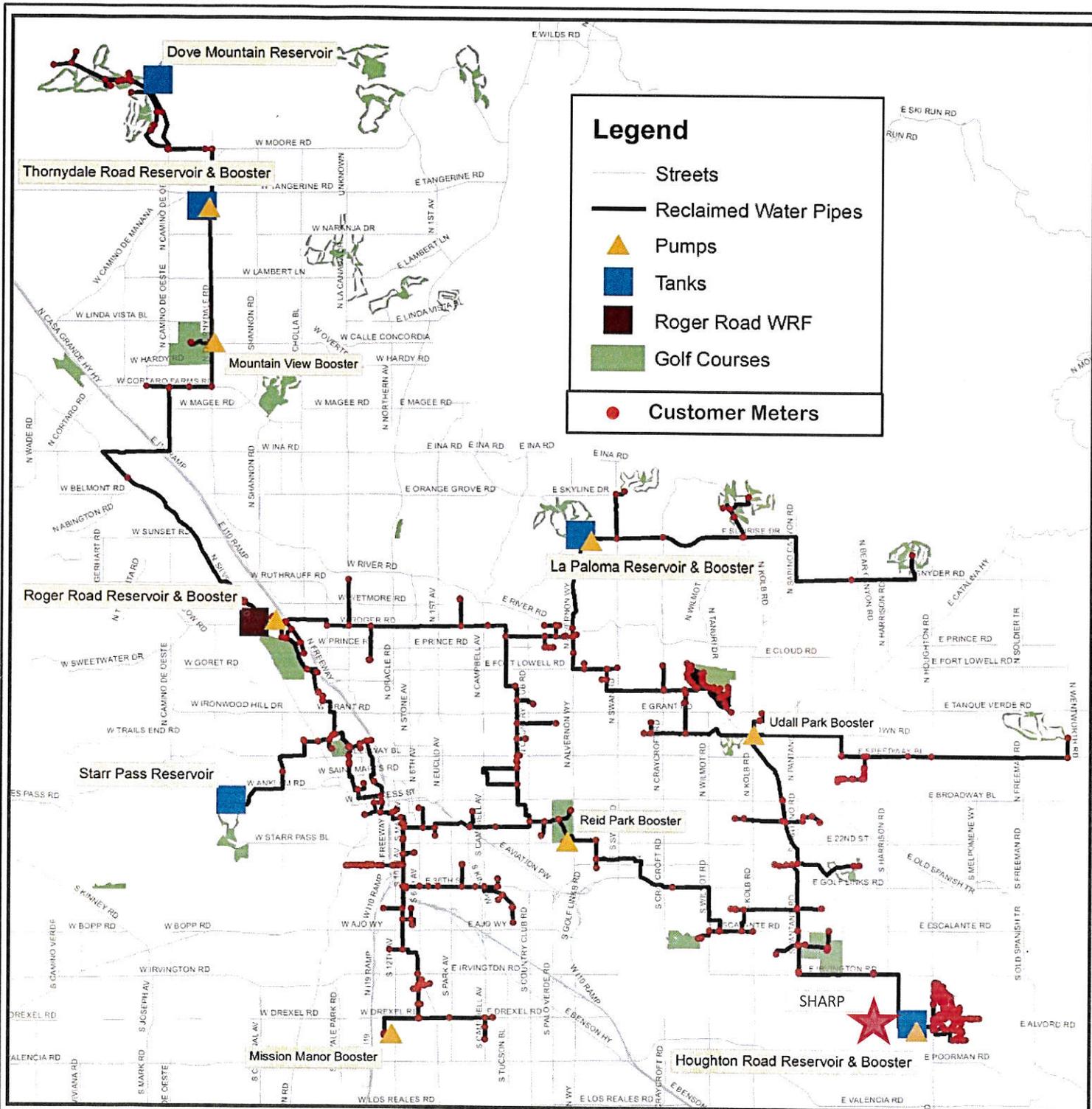
AHQ/JD/dg

Enclosures

- Figure 1: Silverbell Landfill Groundwater Quality
- Figure 2: Reclaimed Water System End User Points

cc: Richard Miranda, City Manager
Liz Miller, Deputy City Manager
Kelly Gottschalk, Assistant City Manager / CFO
Albert Elias, Assistant City Manager
Nancy Petersen, Deputy Director, Environmental Services





Reclaimed irrigation customers includes:

- 16 Golf courses
- 99 Parks
- 82 Commercial
- 69 Schools
- 724 Residential
- 3 (others)



TUCSON WATER DEPARTMENT

Figure 2

Tucson Water Reclaimed Customers