Overview of Groundwater at the Tyrone Mine
October 30, 2012
Introduction

- Summary of groundwater conditions at the Tyrone Mine
- Sources of groundwater to Silver City wells
Tyrone Mine Site and Town of Silver City Wells

Source: Well locations from Balleau Groundwater, Inc., 2009
Perched Water and Regional Groundwater

- Drainage basin divide
- Alluvial channel
- Regional groundwater
- Perched water

- Igneous rocks
- Gila Conglomerate
- Alluvium
Water Table Contour Maps

Groundwater flow

Daniel B. Stephens & Associates, Inc.
Mangas Valley Groundwater
Reclaimed No. 2 Tailing Impoundment
Regional Groundwater Elevation and Water Quality for Mangas Valley Tailing Area, 2010

Frank’s
Woodward

Sample location equals or exceeds one or more standards
Sample location below all standards
Water level elevation contour (ft msl)
Fault
No. 3A Leach Stockpile - Capture Systems

Source: Well locations from Balleau Groundwater, Inc., 2009
Leach Solution Collection Systems

- Sprinkler system
- Stockpile
- Regional groundwater
- Solution collection systems
Regional Groundwater Quality and Collection Systems at No. 3A Leach Stockpile Area

- Sample location equals or exceeds one or more standards
- Sample location below all standards
- Water level elevation contour (ft msl)

**Well P-56**

- **SO₄**
- **TDS**

**Well P-57**

- **SO₄**
- **TDS**

Concentrations (mg/L)

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Mine/Stockpile Unit

Source: Well locations from Balleau Groundwater, Inc., 2009
Pit Capture Zone

Pit capture zone boundary

Roads

Evaporation and pumping

Runon

Groundwater inflow
Regional Groundwater Elevation for Mine and Stockpile Area, 2010
No. 1 Leach Stockpile
Reclaimed No. 1 Leach Stockpile

Hwy 90

Brick Kiln Gulch

2009
Tyrone East Side Groundwater Conditions
Tyrone Mine East Side Area, 2010
Eastside Perched Groundwater - Historical and Current
Simulated Pre-Development Water Levels

Source: Balleau Groundwater, Inc., 2009
Historical Extent (1946-2008) of Groundwater Captured by Silver City Supply Wells

Source: Balleau Groundwater, Inc., 2009
Predicted Extent (1946-2048) of Groundwater Captured by Silver City Supply Wells
Impacted groundwater does occur beneath some areas of the Tyrone Mine.

Areas of impacted groundwater have been investigated, are monitored, and various capture systems and source control measures have been implemented.

NMED oversees all groundwater monitoring and abatement activities.
Conclusions - Continued

- Groundwater beneath and adjacent to the Tyrone Mine has not in the past, does not currently, and will not in the future flow toward the Town of Silver City water supply wells.
- Consequently, Tyrone has not affected and will not affect the Town’s water supply wells.
Thank You