

## Legend

### Well Type

- Water Quality and Water Level Monitoring
- ⊕ Water Level Monitoring
- Decommissioned East Pump Back
- ▲ Revised East Pump Back (Inactive)

— Cell Boundary

▬ Property Boundary

■ Approximate Extent of Zone 1 Seepage Impact

■ Approximate Extent of Zone 1 pH Less Than 4.0

[71] Chloride result in mg/L

(6.03) Field-measured pH in SU

### Notes:

1. Seepage impacts delineated by chloride detections greater than 50 mg/L.
2. Aerial photo taken on August 1, 1996.

0 250 500 1,000  
Feet

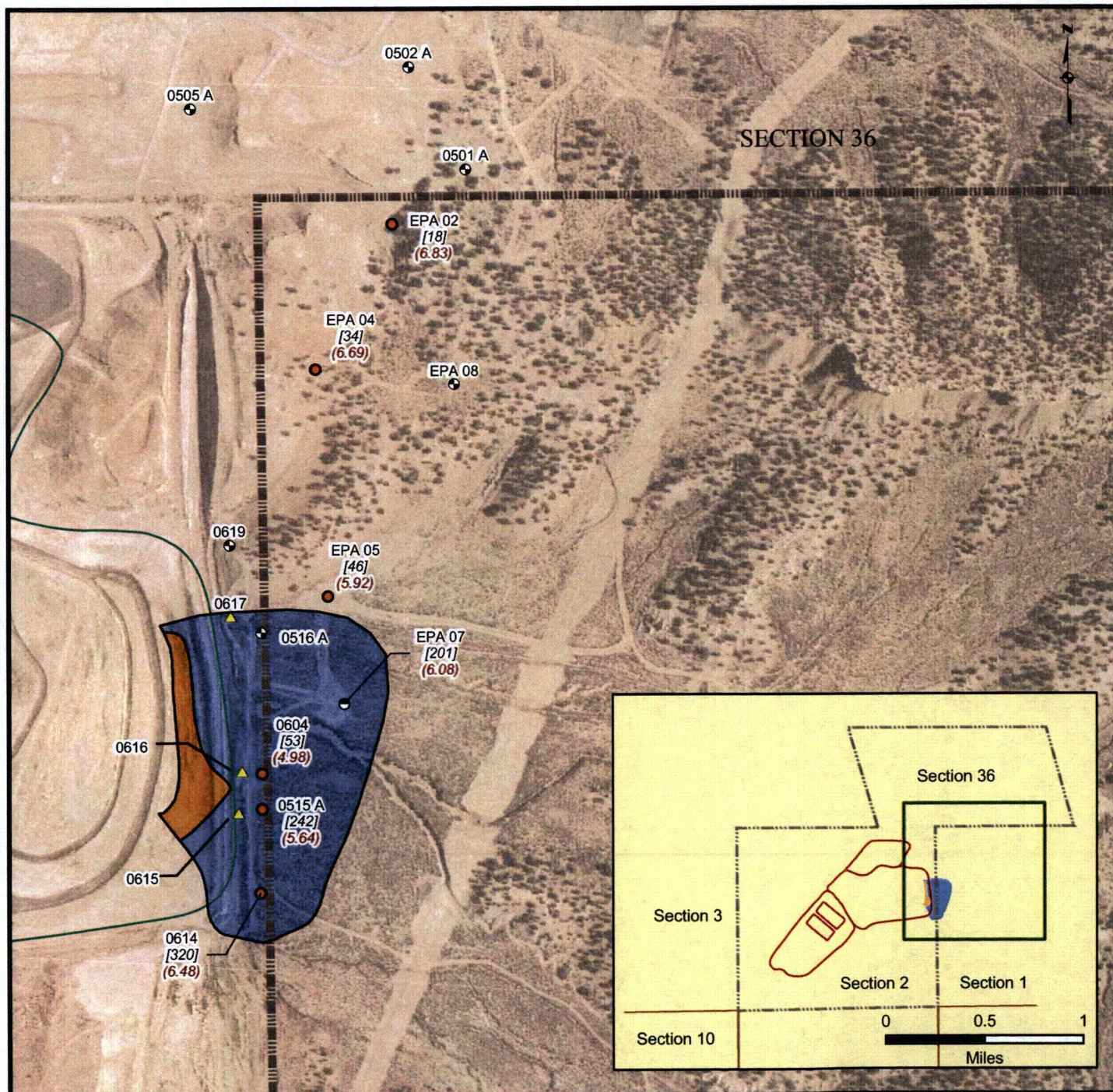
## FIGURE 48

Zone 1 Extent of Seepage Impacts as Depicted Last Year, October 2007

United Nuclear Corporation Church Rock Site, Church Rock, New Mexico







## Legend

### Well Type

- Water Quality and Water Level Monitoring
- ⊙ Water Level Monitoring
- ⊙ Decommissioned East Pump Back
- ▲ Revised East Pump Back (Inactive)

— Cell Boundary

--- Property Boundary

■ Approximate Extent of Zone 1 Seepage Impact

■ Approximate Extent of Zone 1 pH Less Than 4.0

[71] Chloride result in mg/L

(6.03) Field-measured pH in SU

### Notes:

1. Seepage impacts delineated by chloride detections greater than 50 mg/L.
2. Aerial photo taken on August 1, 1996.

0 250 500 1,000  
Feet

## FIGURE 49

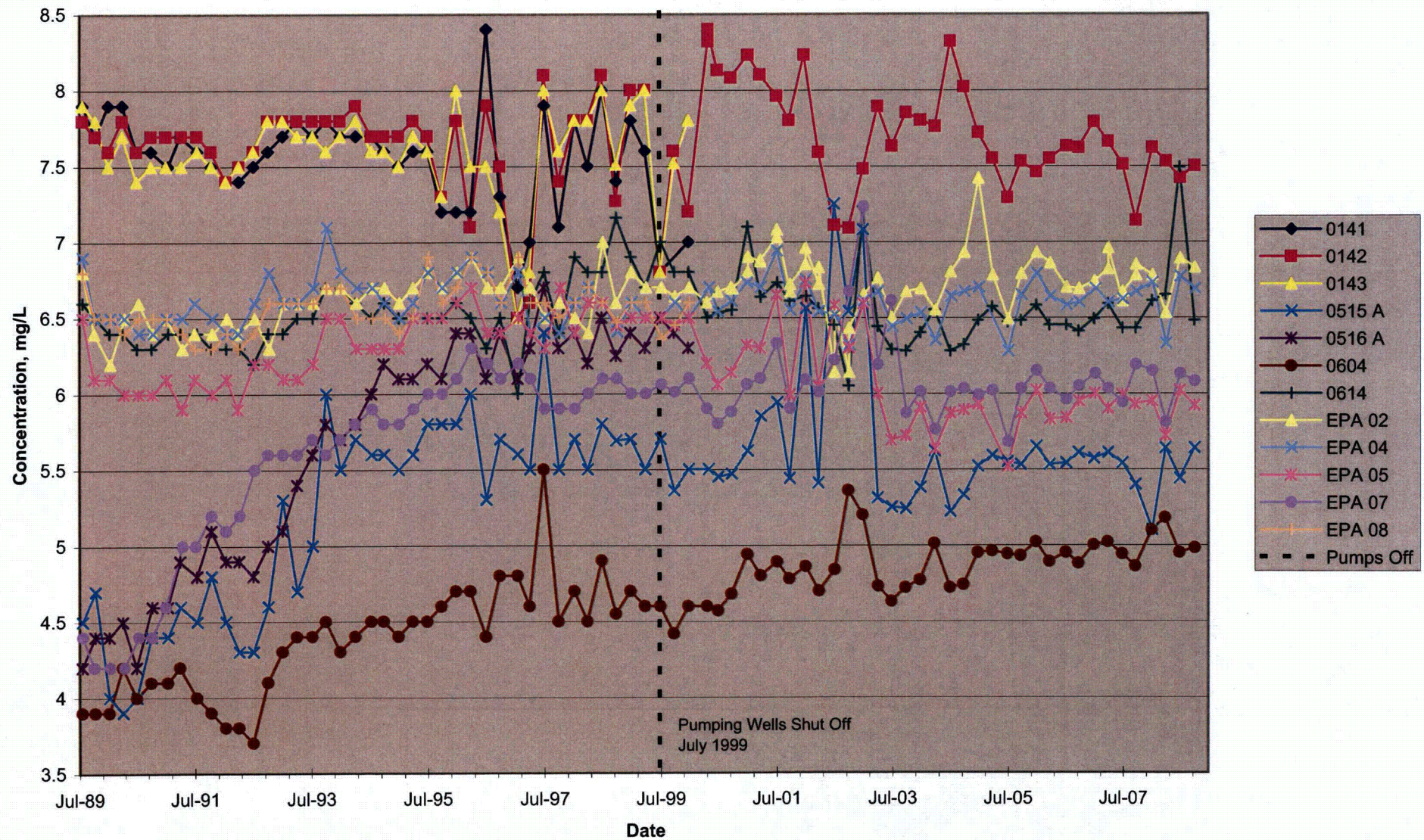
Revised Depiction of Zone 1  
Extent of Seepage Impacts,  
October 2008

United Nuclear Corporation Church Rock Site,  
Church Rock, New Mexico



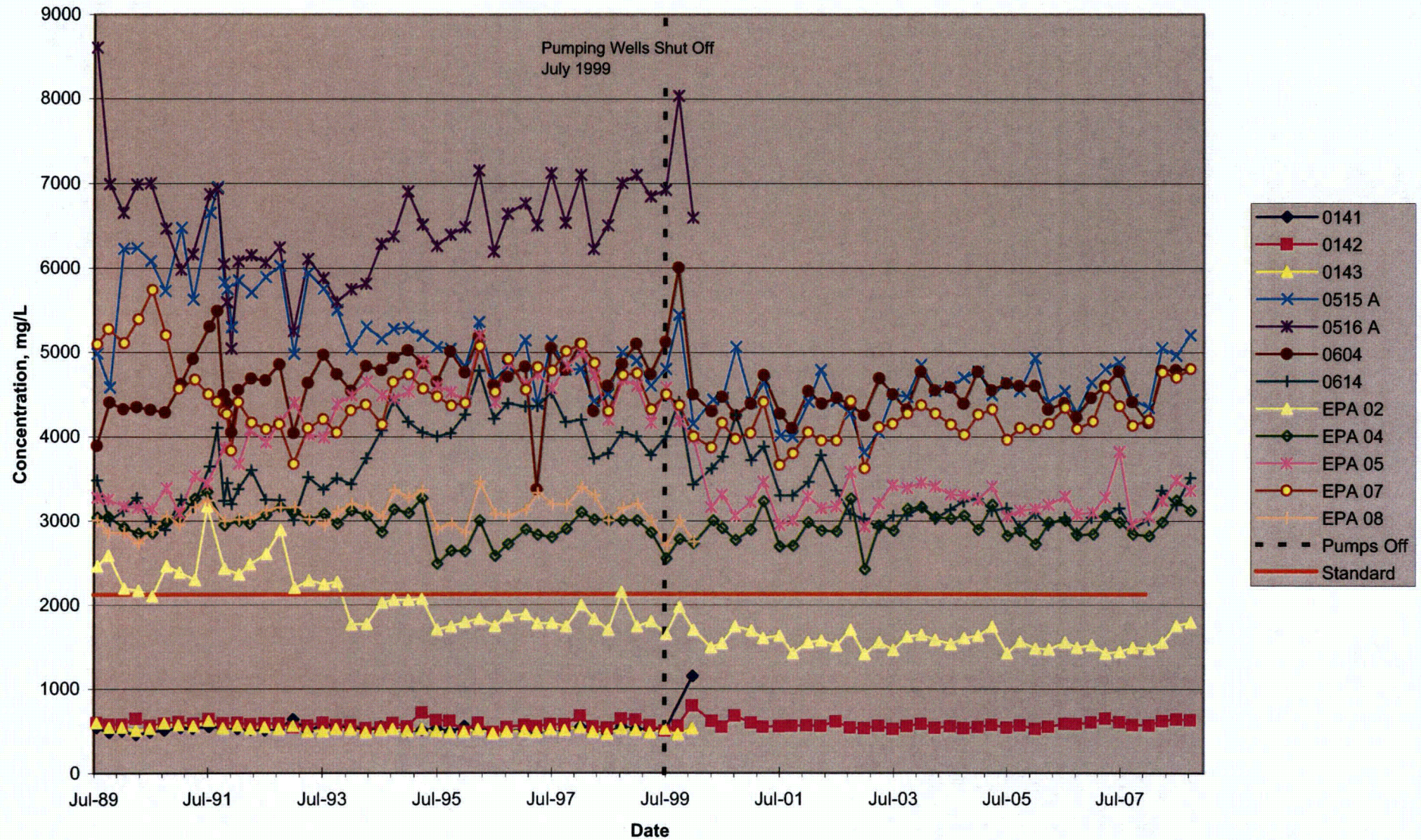


**FIGURE 50**  
 Zone 1 pH Over Time  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico

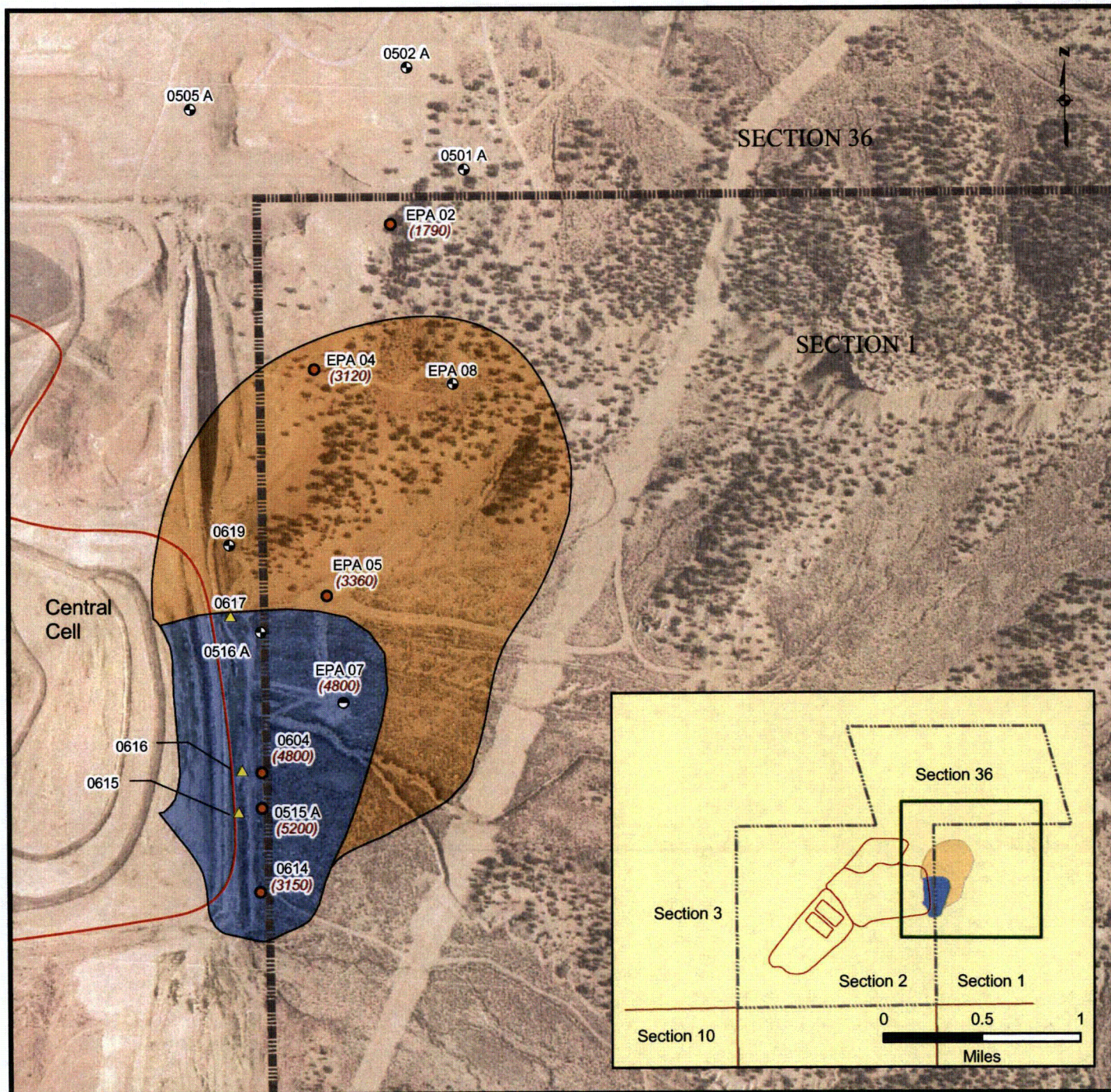




**FIGURE 51**  
**Zone 1 Sulfate Concentrations Over Time**  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico







## Legend

### Well Type

- Water Quality and Level Monitoring
- ⊙ Water Level Monitoring
- ⊖ Decommissioned East Pump Back
- ▲ Revised East Pump Back

— Cell Boundary

▬ Property Boundary

■ Approximate Extent of Zone 1 Seepage Impacts

■ Approximate Extent of Sulfate Exceeding 2,125 mg/L

( $<0.01$ ) Sulfate Concentration, mg/L

### Notes:

1. Seepage impacts delineated by Chloride detections greater than 50 mg/L.
2. Well names are displayed with black text.
3. Aerial photo taken on August 1, 1996.

0 250 500 1,000  
Feet

## FIGURE 52

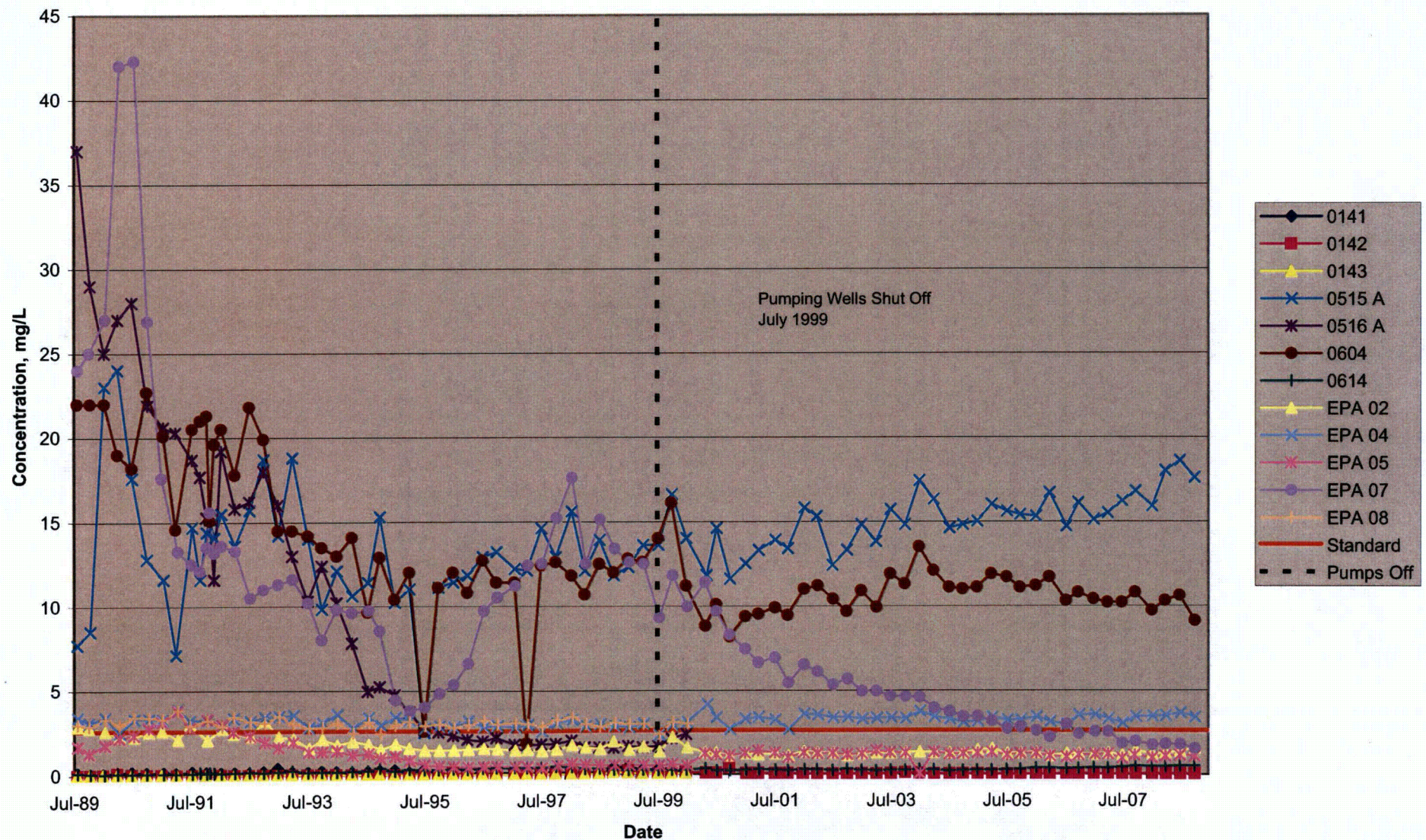
Zone 1 Approximate Extent of Sulfate Exceeding 2,125 mg/L, October 2008

United Nuclear Corporation Church Rock Site, Church Rock, New Mexico

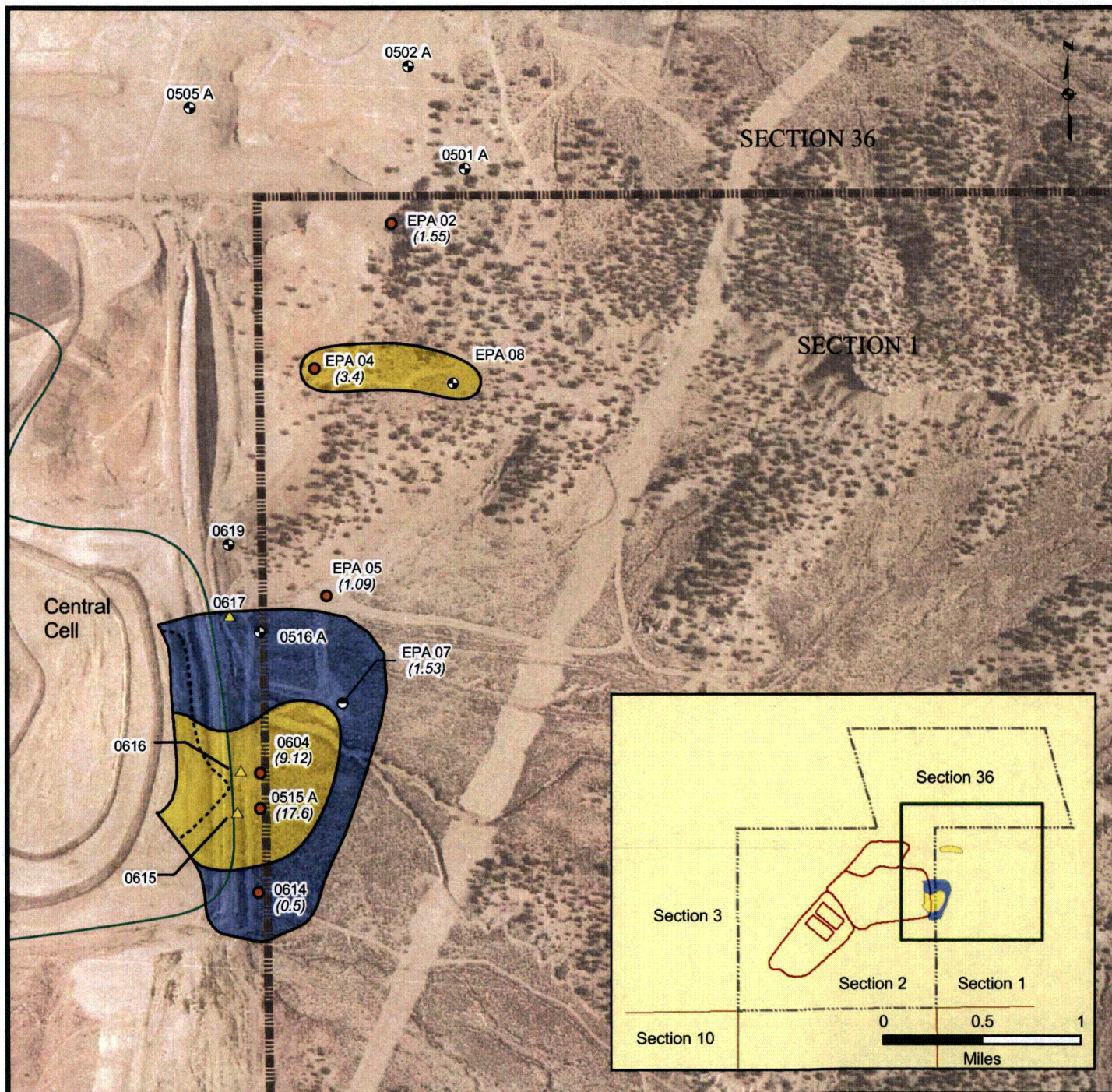




**FIGURE 53**  
 Zone 1 Manganese Concentrations Over Time  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico







## Legend

### Well Type

- Water Quality and Water Level Monitoring
- ⊙ Water Level Monitoring
- ⊙ Decommissioned East Pump Back
- ▲ Revised East Pump Back (Inactive)

— Cell Boundary

▬ Property Boundary

■ Approximate Extent of Zone 1 Seepage Impacts

■ Approximate Extent of Manganese Exceeding 2.60 mg/L

(3.43) Manganese values in mg/L

### Notes:

1. Seepage impacts delineated by chloride detections greater than 50 mg/L.
2. Aerial photo taken on August 1, 1996.

0 250 500 1,000  
Feet

## FIGURE 54

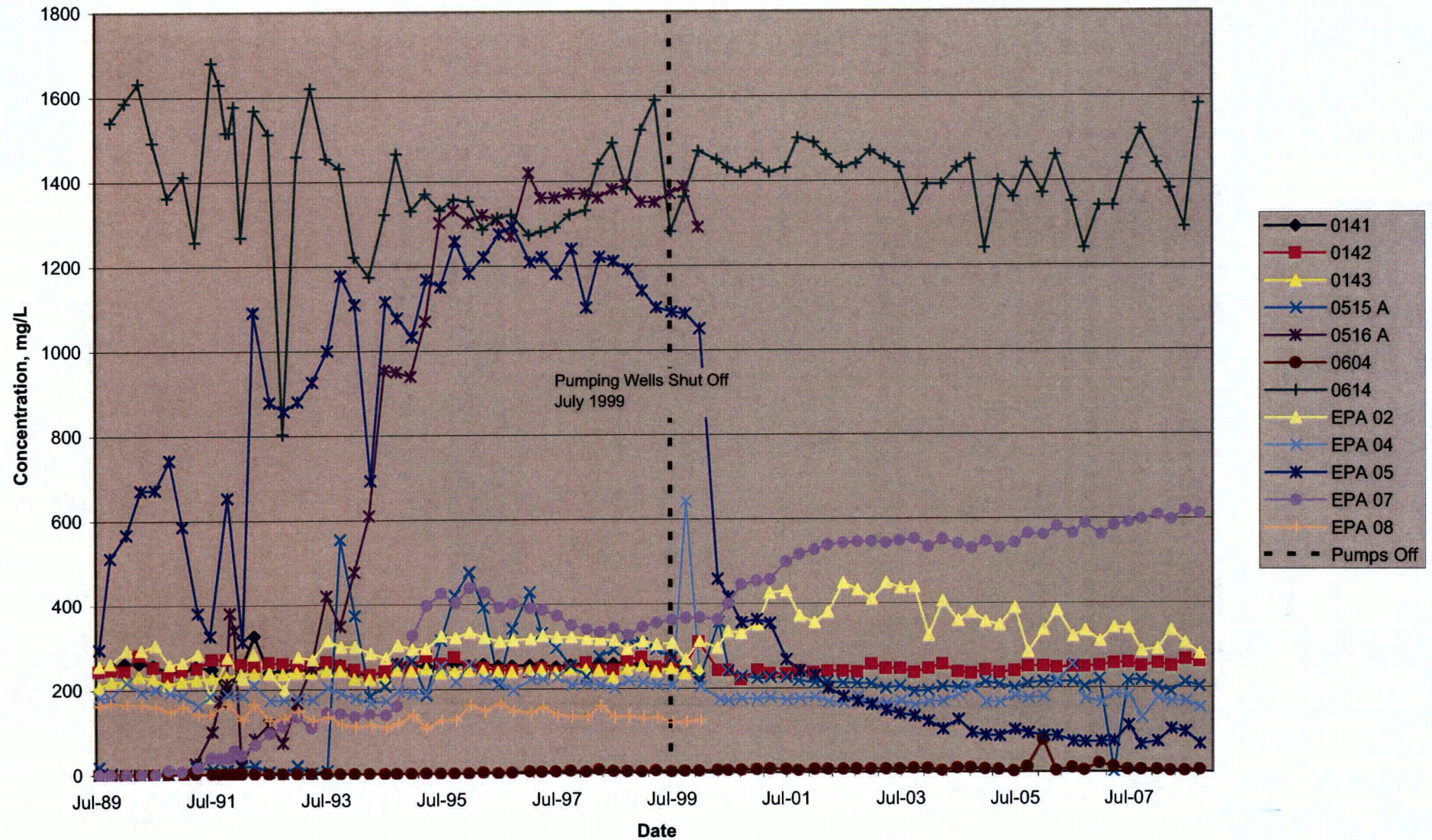
Zone 1 Approximate Extent of Manganese Exceeding 2.6 mg/L, October 2008

United Nuclear Corporation Church Rock Site, Church Rock, New Mexico





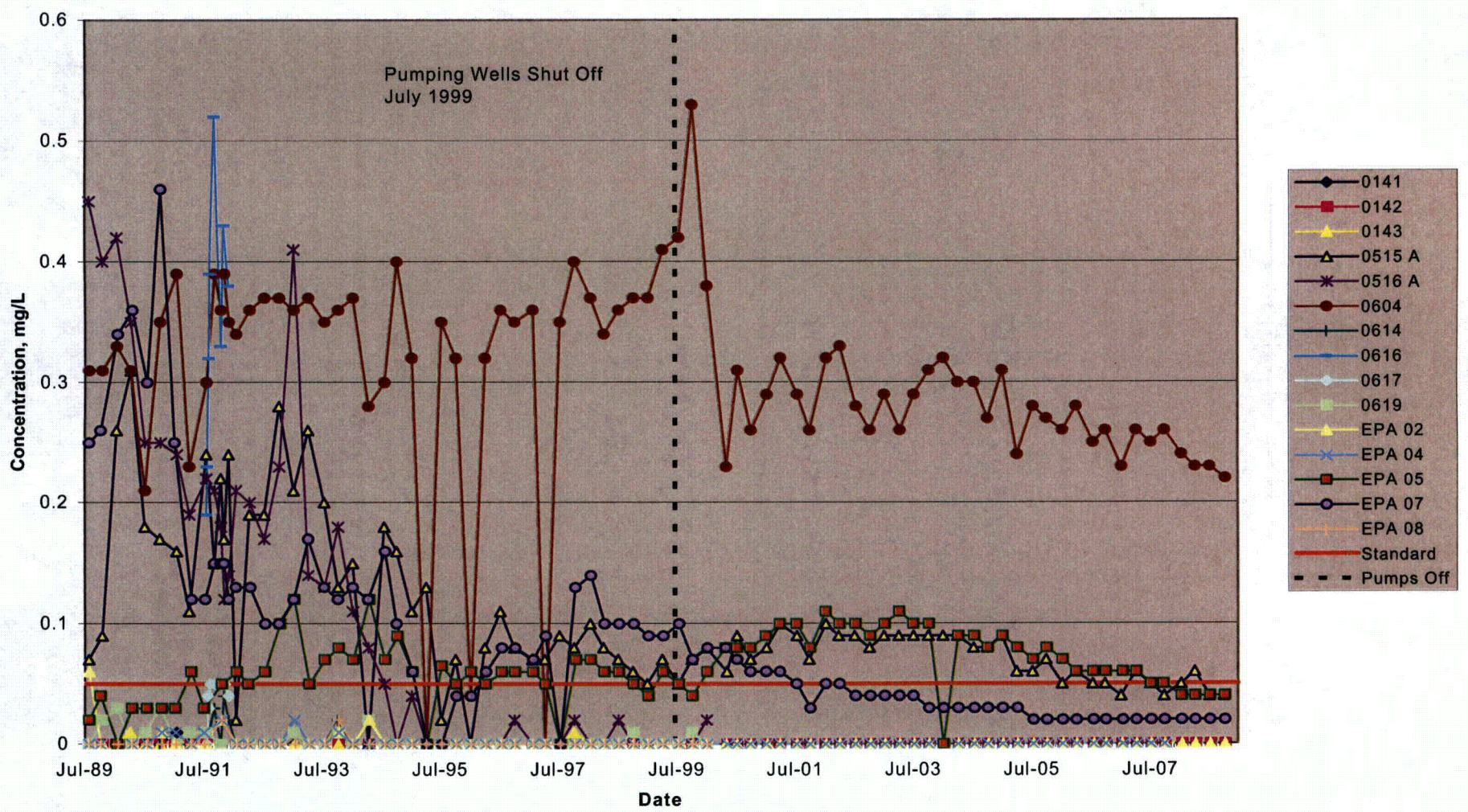
**FIGURE 55**  
 Zone 1 Bicarbonate Concentrations Over Time  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico



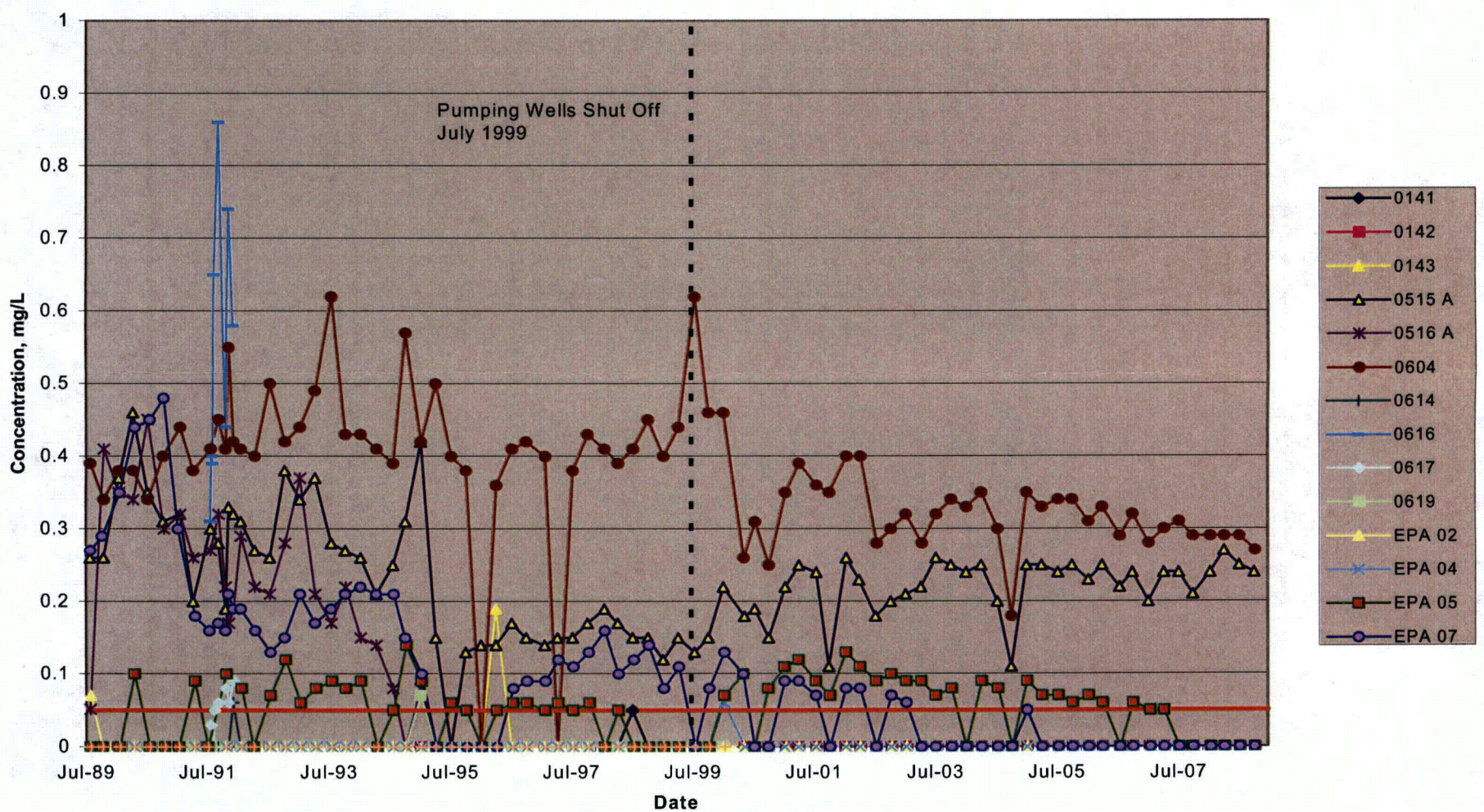


**FIGURE 56**  
**Zone 1 Cobalt and Nickel Concentrations over Time**  
 United Nuclear Corporation Church Rock Site, Church Rock, New Mexico

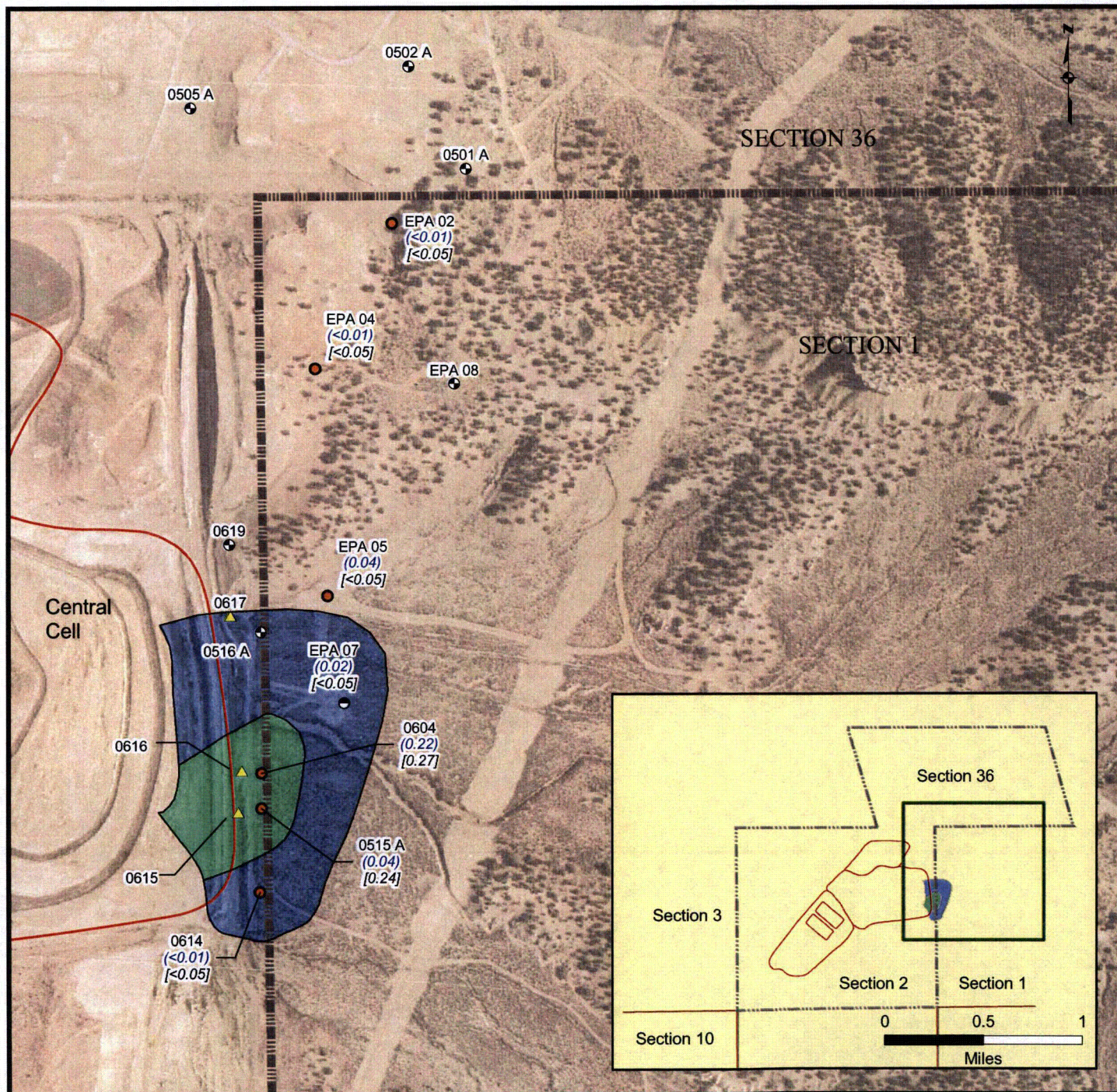
**Zone 1 Cobalt**



**Zone 1 Nickel**







## Legend

### Well Type

- Water Quality and Level Monitoring
- Water Level Monitoring
- Decommissioned East Pump Back
- ▲ Revised East Pump Back

— Cell Boundary

--- Property Boundary

■ Approximate Extent of Zone 1 Seepage Impacts

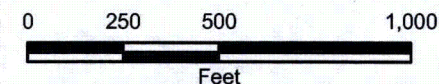
■ Approximate Extent of Cobalt and/or Nickel Exceeding 0.05 mg/L

( <0.01 ) Cobalt Concentration, mg/L

[ <0.05 ] Nickel Concentration, mg/L

### Notes:

1. Seepage impacts delineated by chloride detections greater than 50 mg/L.
2. Well names are displayed with black text.
3. Aerial photo taken on August 1, 1996.



## FIGURE 57

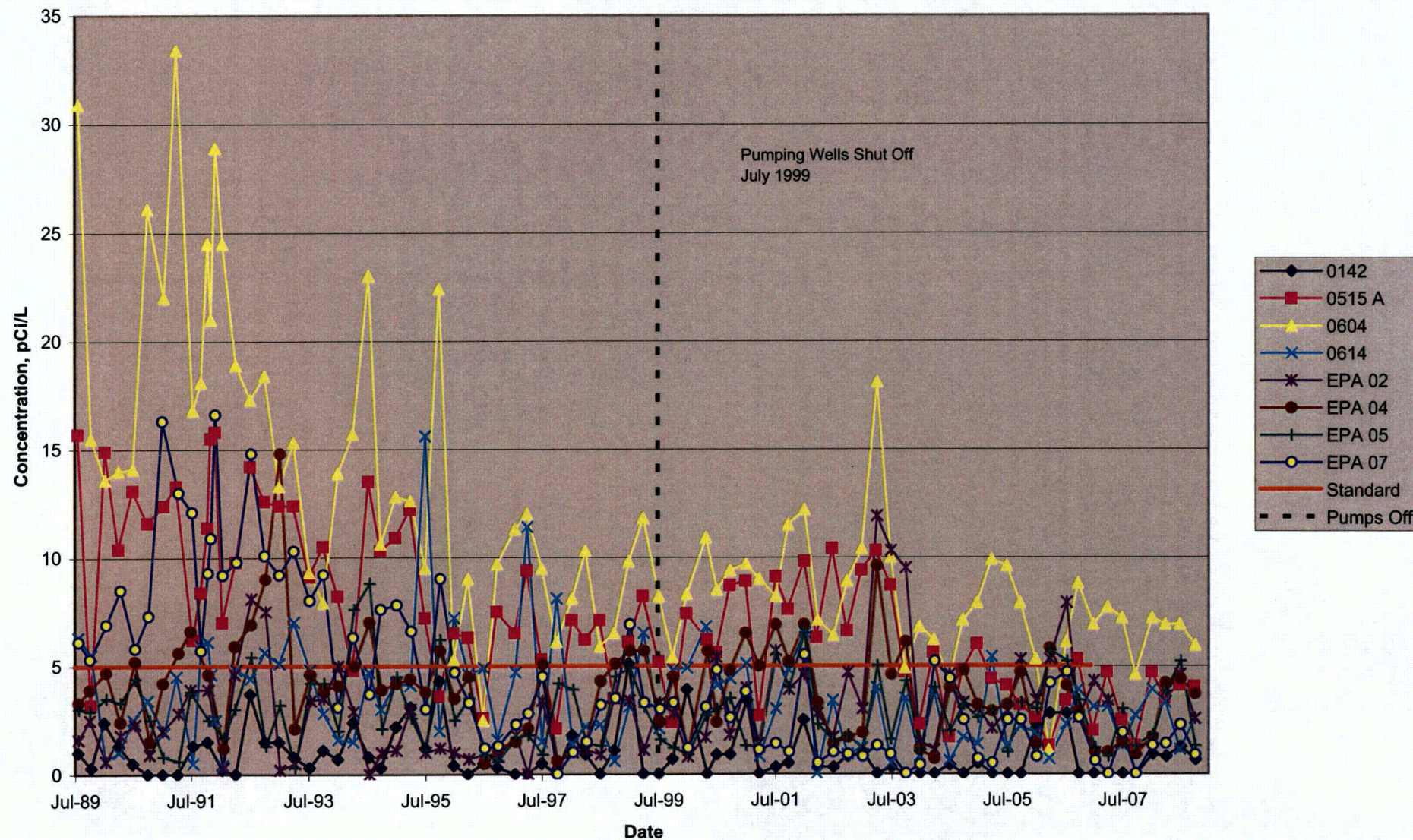
Zone 1 Extent of Cobalt and Nickel Exceeding 0.05 mg/L, October 2008

United Nuclear Corporation Church Rock Site, Church Rock, New Mexico

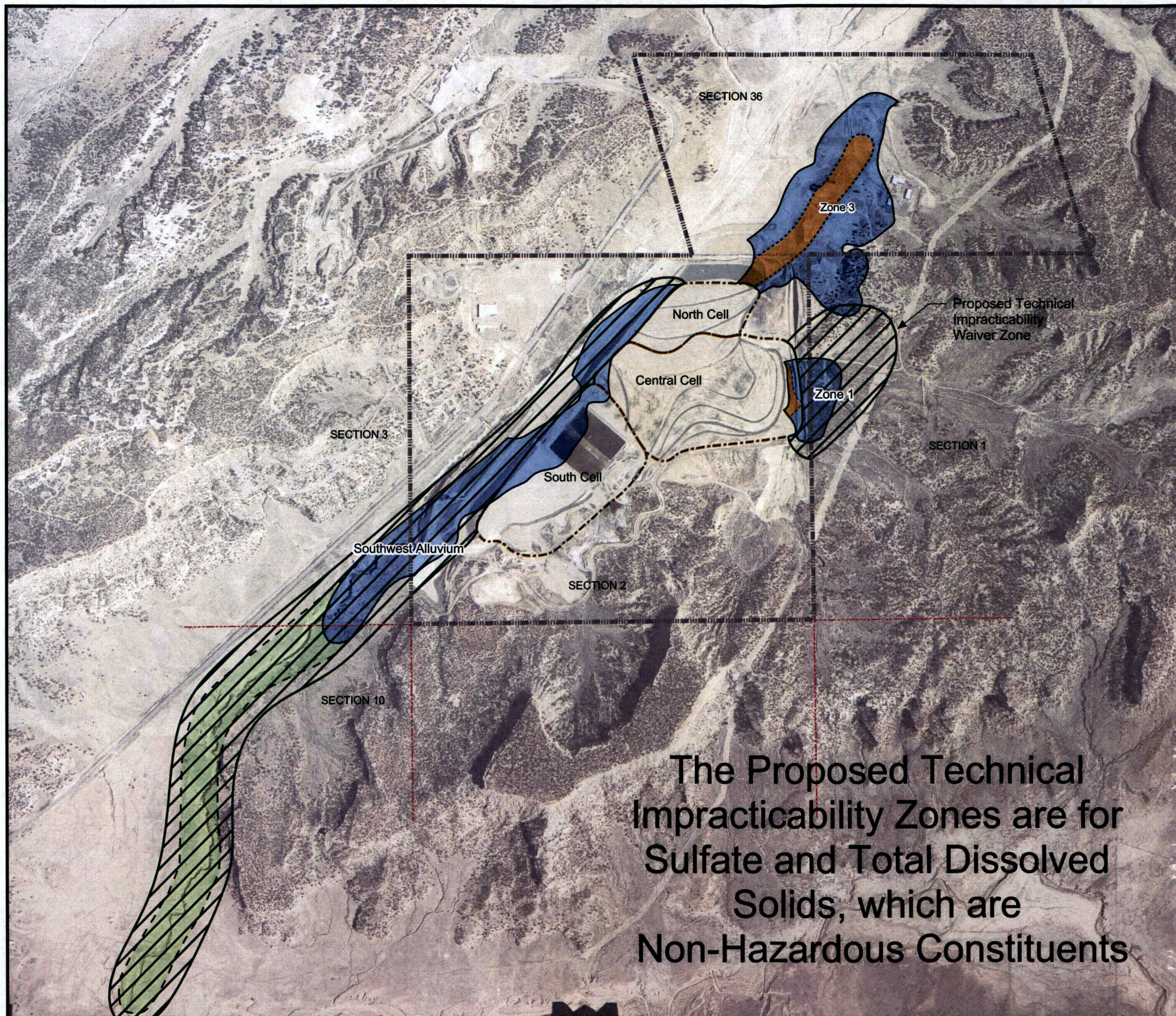




**FIGURE 58**  
 Zone 1 Combined Radium-226 and Radium-228 Over Time  
 United Nuclear Corporation, Church Rock Site, Church Rock, New Mexico





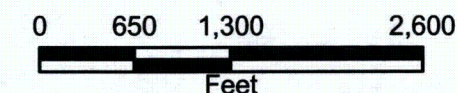


### Legend

- Section Boundary
- Property Boundary
- Tailings Pond
- Groundwater with pH  $\leq 4$
- Seepage-Impacted Groundwater
- Proposed Technical Impracticability Waiver Zone
- Seepage Impact in 2204
- Extrapolated Extent of Seepage Impact in Southwest Alluvium in 2204

### Notes:

1. Extrapolated Extent of Southwest Alluvium Seepage Impact in 2204 based upon an average annual seepage impact advance of 30 feet per year.
2. Aerial photo taken on August 1, 1996.



**FIGURE 59**

Proposed TI Waiver for Zone 1 and Extrapolated Extent of Southwest Alluvium Seepage Impact in 2204

United Nuclear Corporation Church Rock Site  
Church Rock, New Mexico

