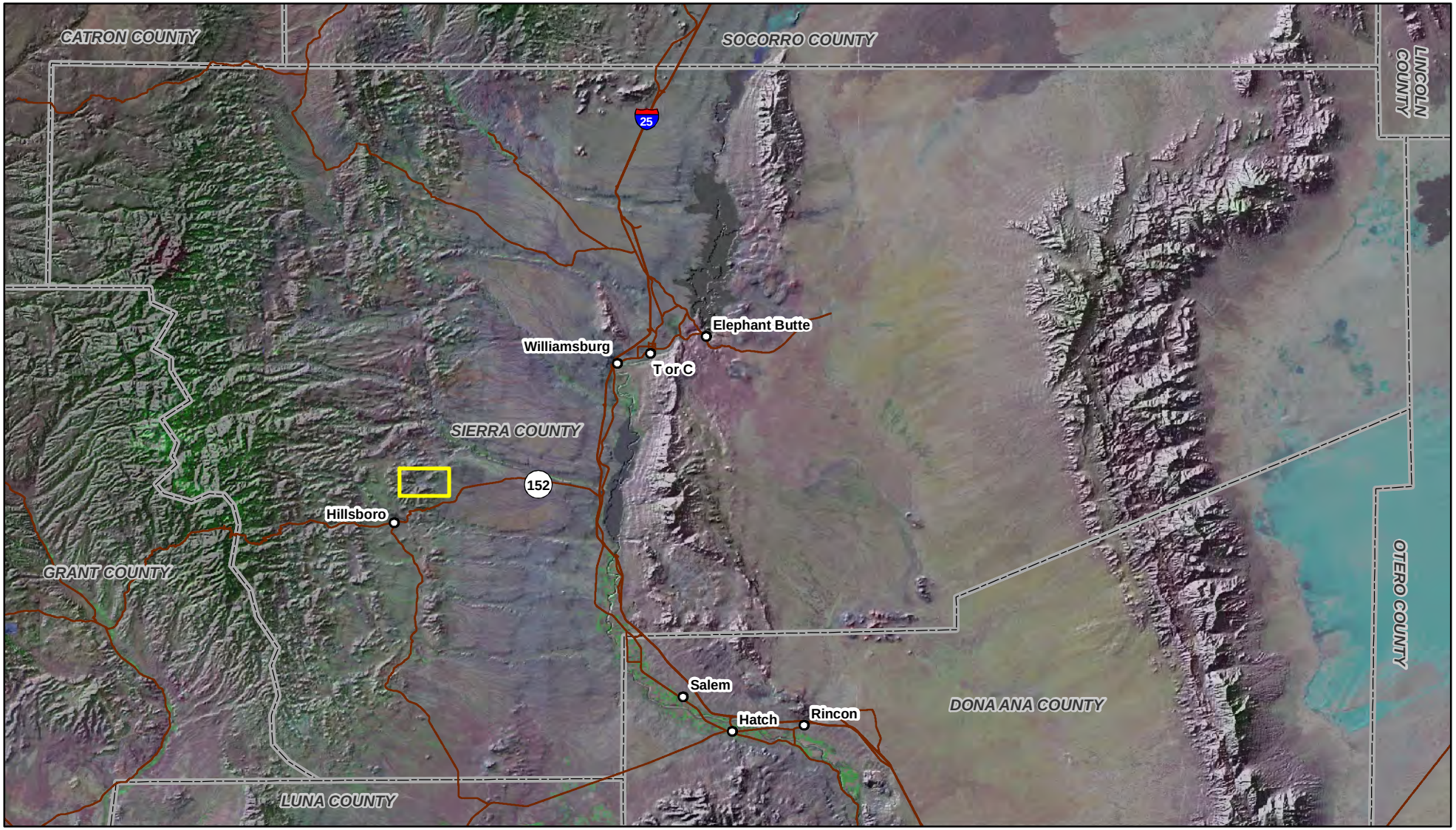


Figure 1-1
Site Location
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig1-1_SiteLocationMap.mxd 1/11/2012

Figure 2-1

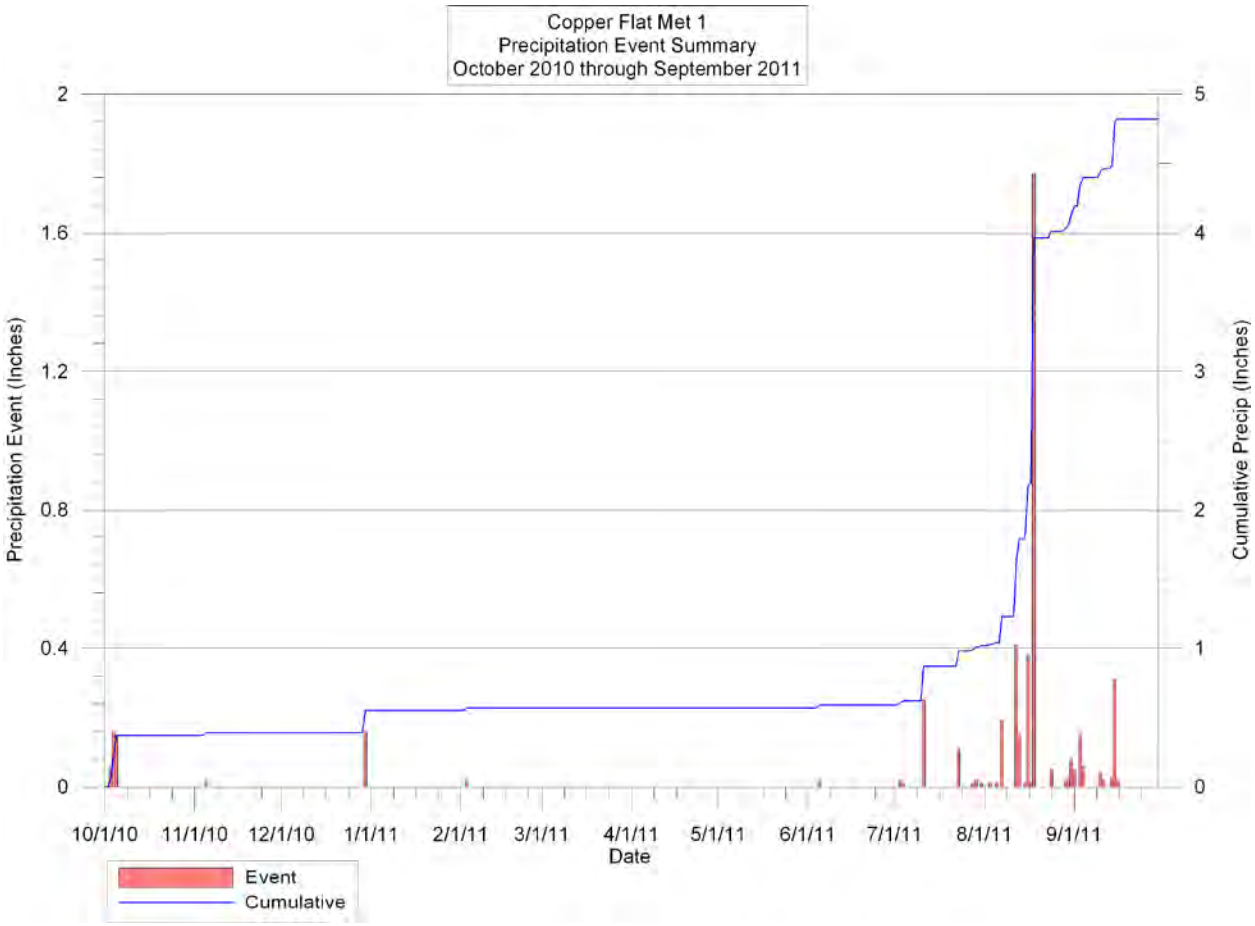

Copper Flat Met 1
Precipitation Event Summary
October 2010 through September 2011
Precipitation Event (Inches)
Cumulative Precip (Inches)
2
1.6
1.2
0.8
0.4
0
5
4
3
2
1
0
10/1/10
11/1/10
12/1/10
1/1/11
2/1/11
3/1/11
4/1/11
5/1/11
6/1/11
7/1/11
8/1/11
9/1/11
Date
Event
Cumulative

Figure 2-2

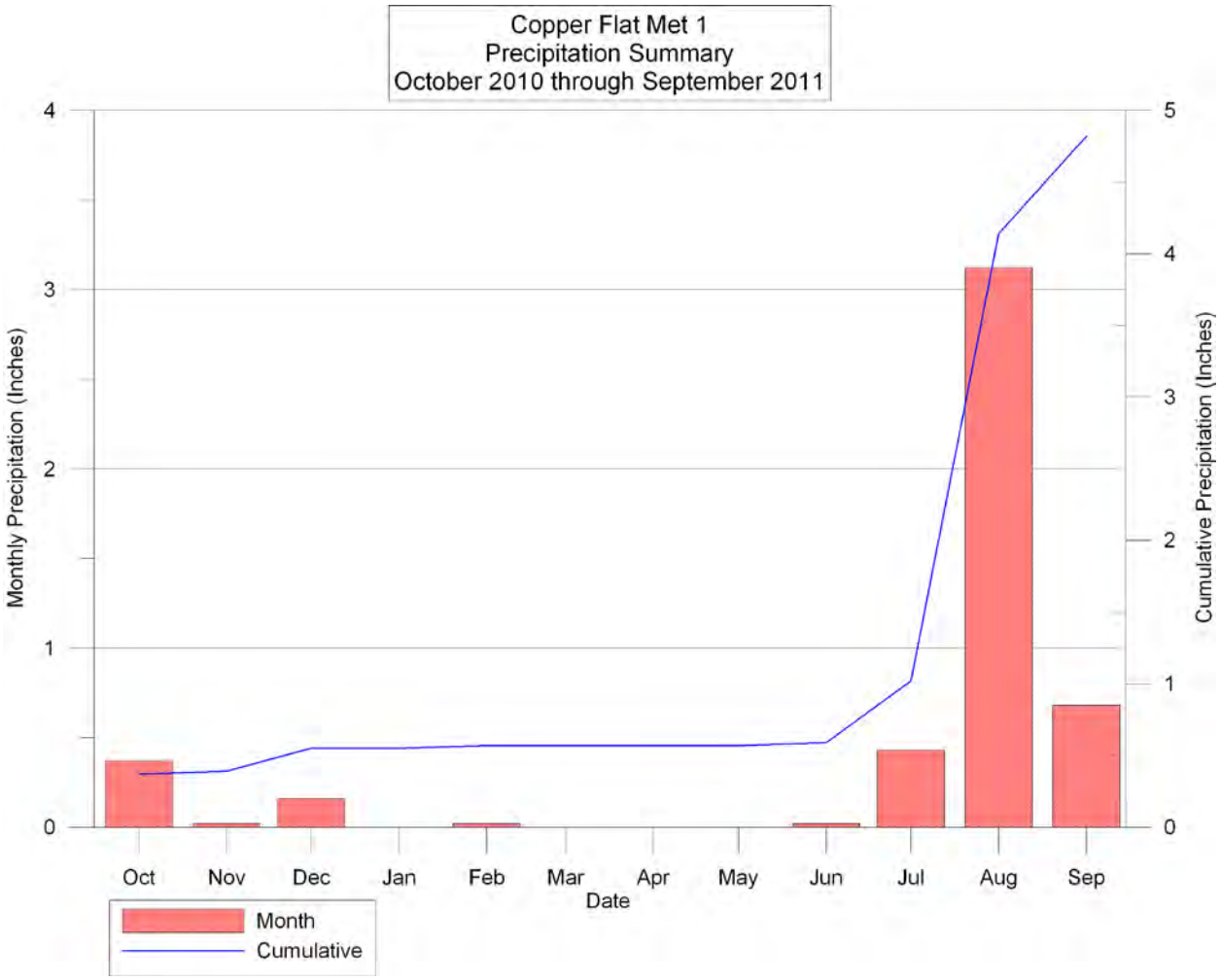

Copper Flat Met 1
Precipitation Summary
October 2010 through September 2011
Monthly Precipitation (Inches)
Cumulative Precipitation (Inches)
0
1
2
3
4
5
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Date
Month
Cumulative

Figure 2-3

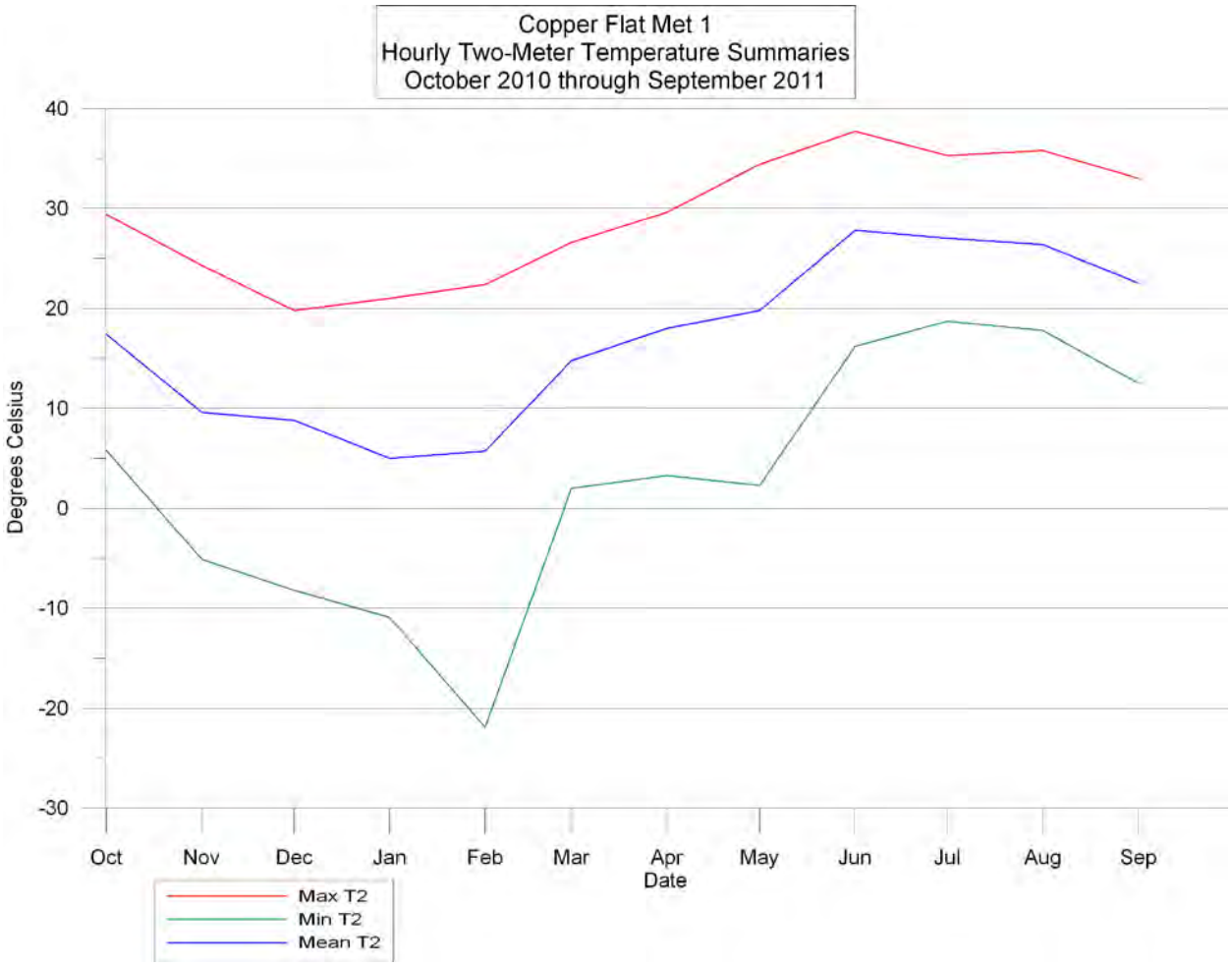

Copper Flat Met 1
Hourly Two-Meter Temperature Summaries
October 2010 through September 2011
Degrees Celsius
40
30
20
10
0
-10
-20
-30
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Date
Max T2
Min T2
Mean T2

Figure 2-4

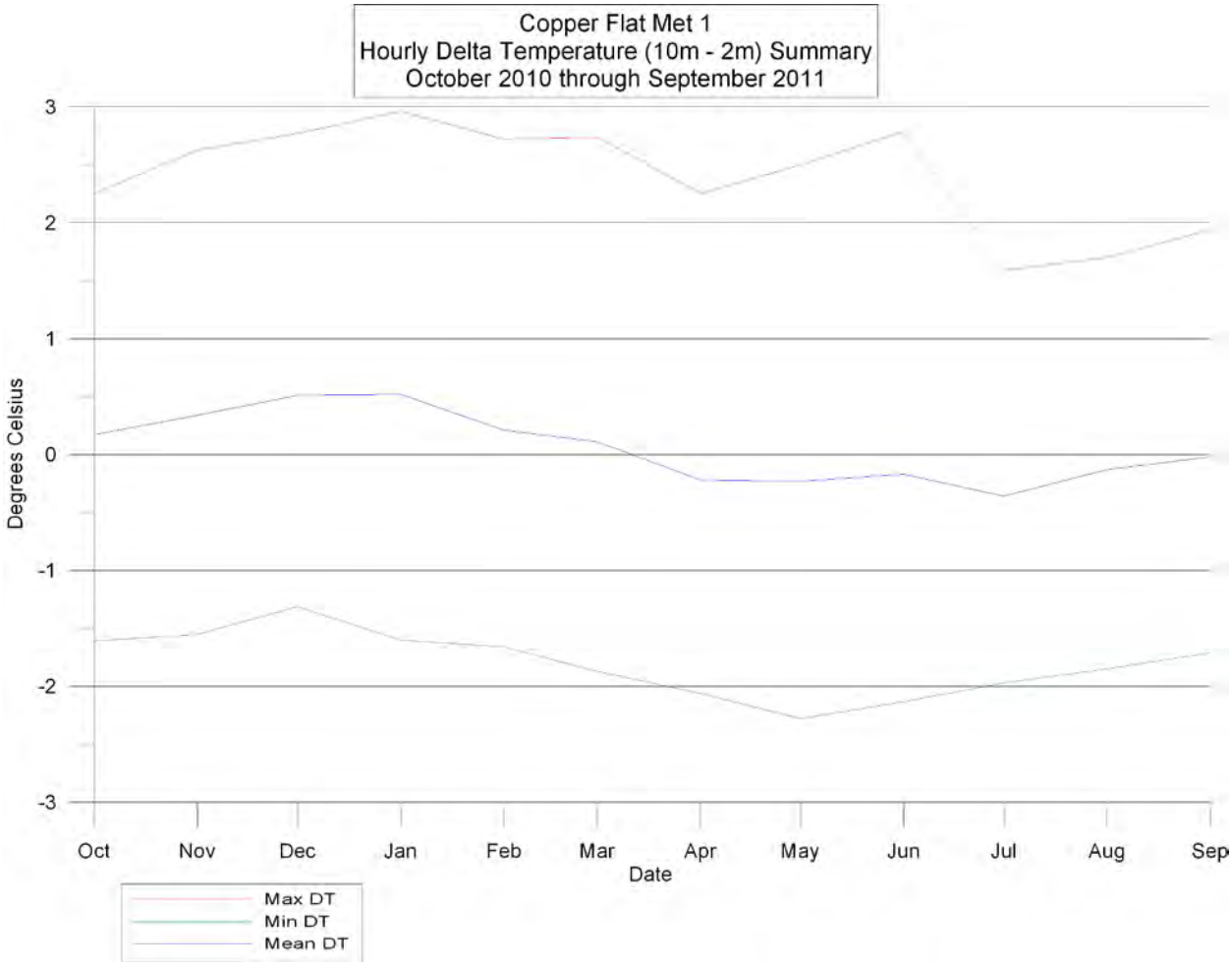

Copper Flat Met 1
Hourly Delta Temperature (10m - 2m) Summary
October 2010 through September 2011
Degrees Celsius
3
2
1
0
-1
-2
-3
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Date
Max DT
Min DT
Mean DT

Figure 2-5

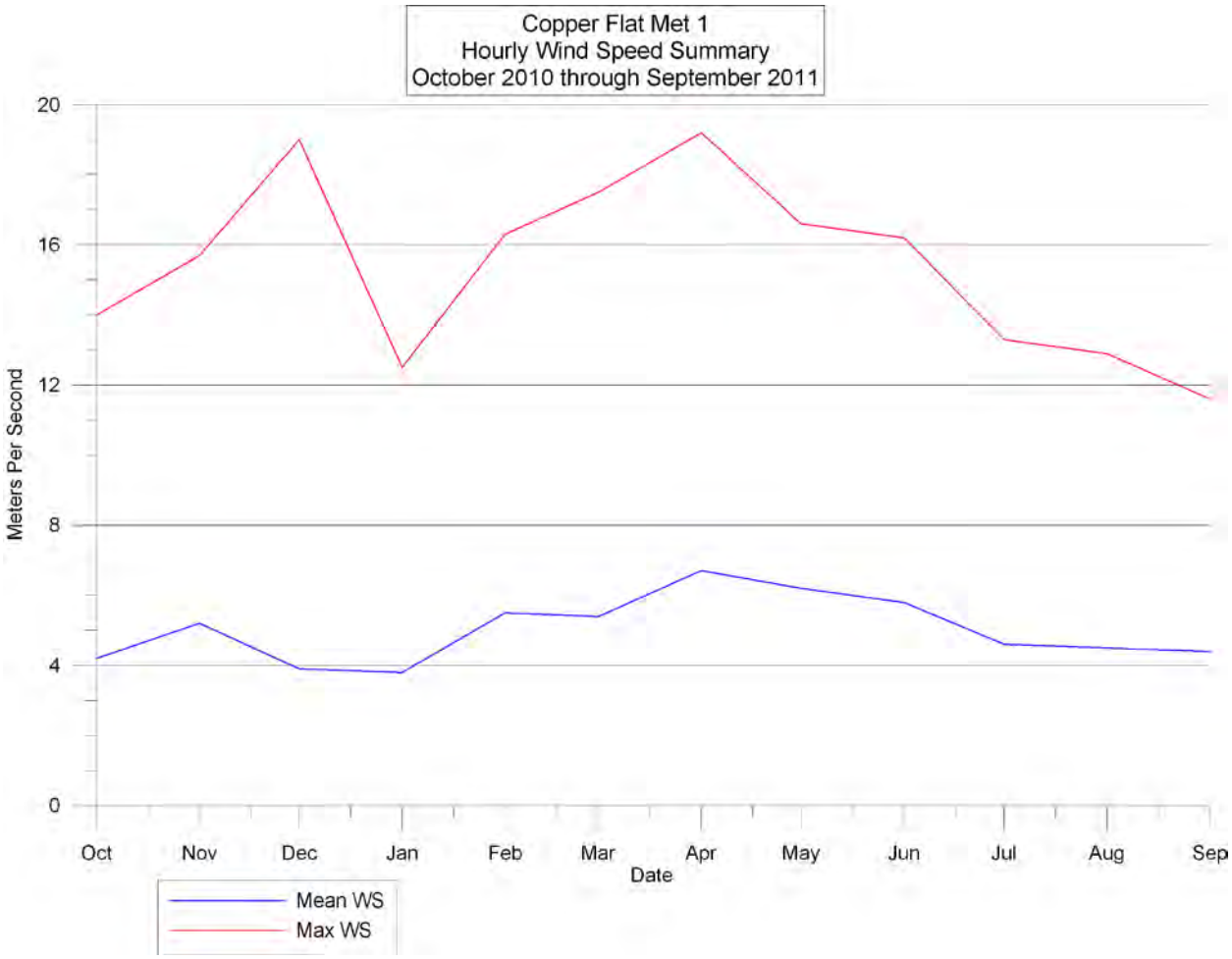

Copper Flat Met 1
Hourly Wind Speed Summary
October 2010 through September 2011
Meters Per Second
20
16
12
8
4
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Date
Mean WS
Max WS

Figure 2-6

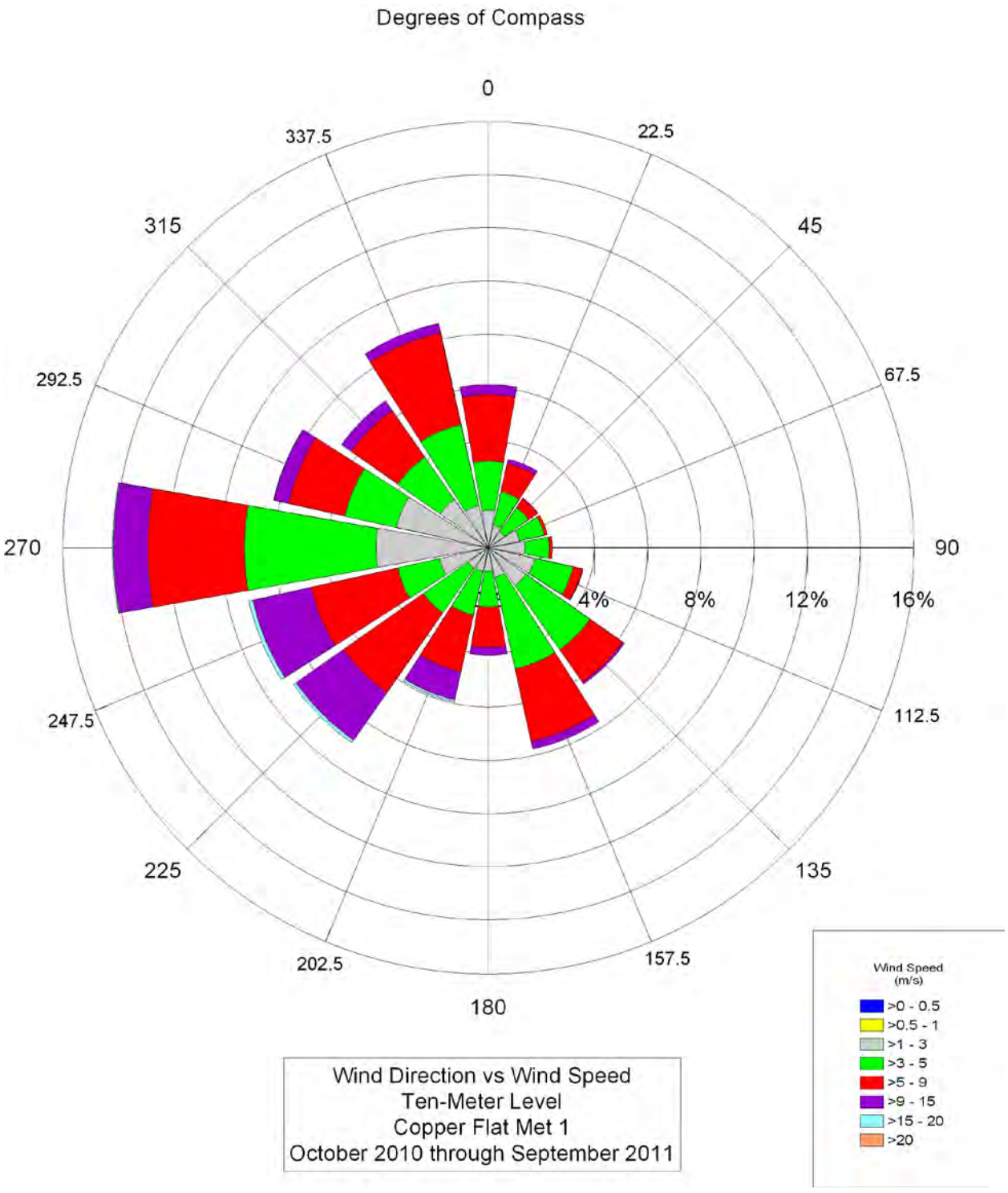

Degrees of Compass
0
22.5
45
67.5
90
112.5
135
157.5
180
202.5
225
247.5
270
292.5
315
337.5
4%
8%
12%
16%
Wind Speed (m/s)
>0 - 0.5
>0.5 - 1
>1 - 3
>3 - 5
>5 - 9
>9 - 15
>15 - 20
>20
Wind Direction vs Wind Speed
Ten-Meter Level
Copper Flat Met 1
October 2010 through September 2011

Figure 2-7

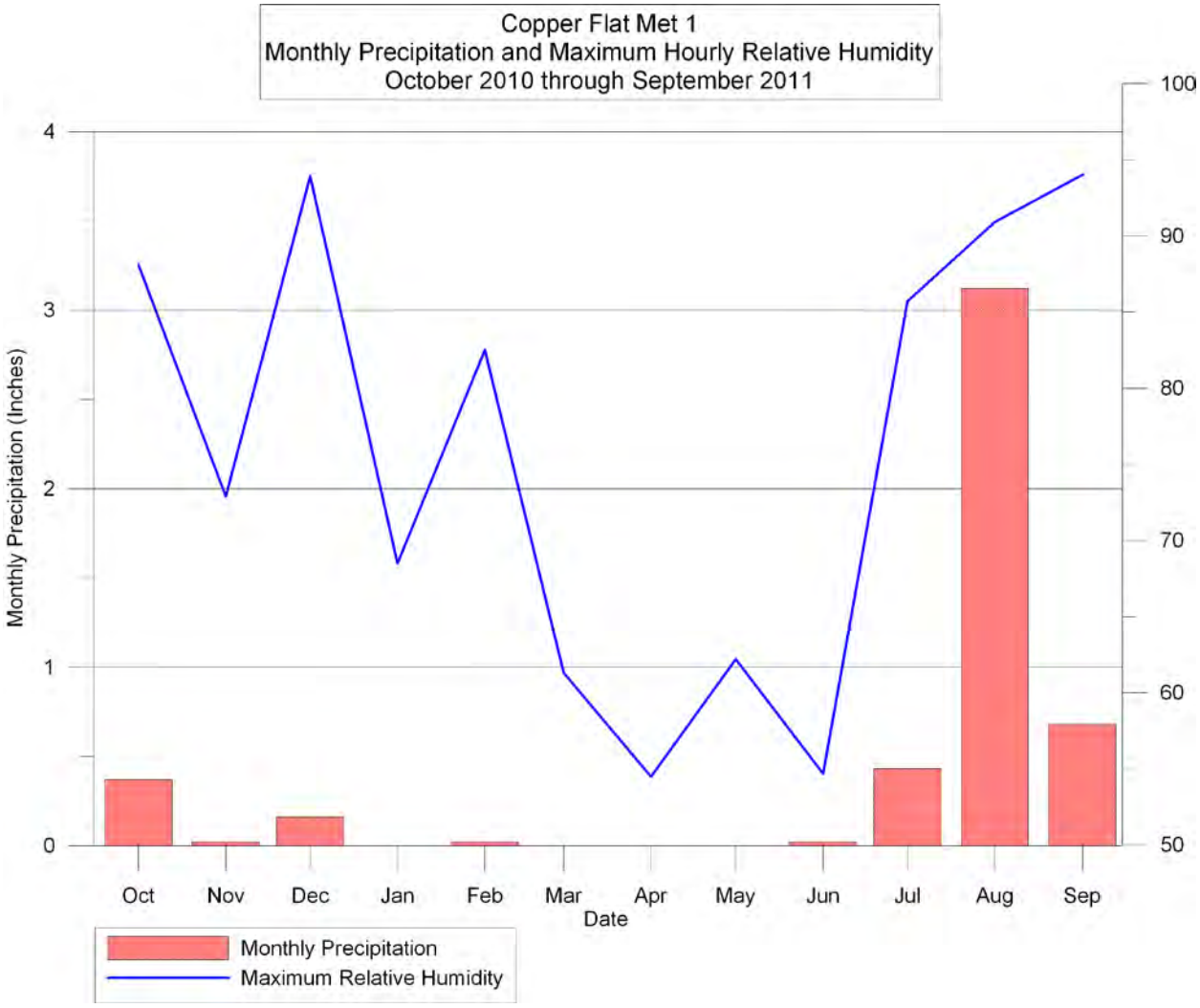

Copper Flat Met 1
Monthly Precipitation and Maximum Hourly Relative Humidity
October 2010 through September 2011
Monthly Precipitation (Inches)
0
1
2
3
4
50
60
70
80
90
100
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Date
Monthly Precipitation
Maximum Relative Humidity

Figure 2-8

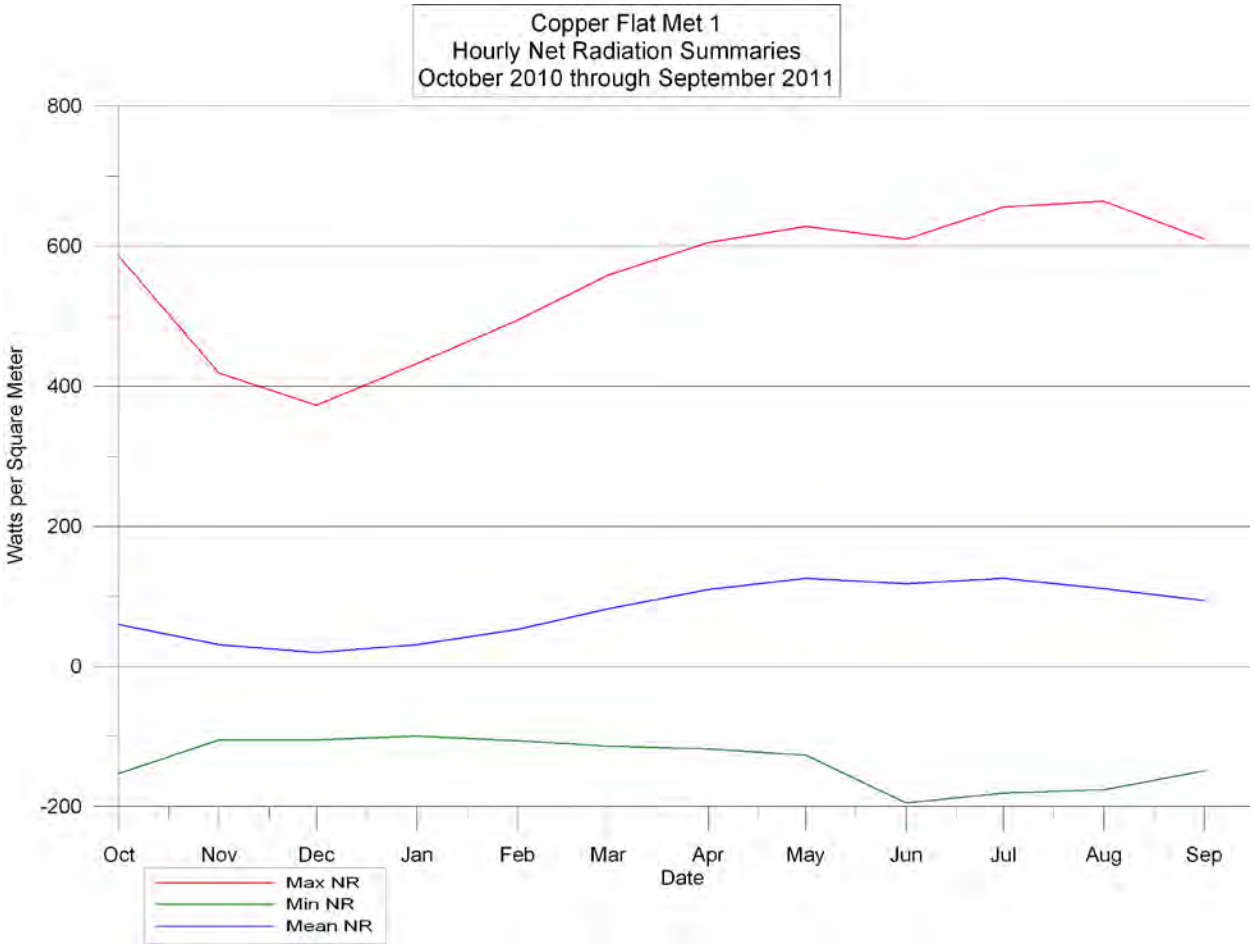
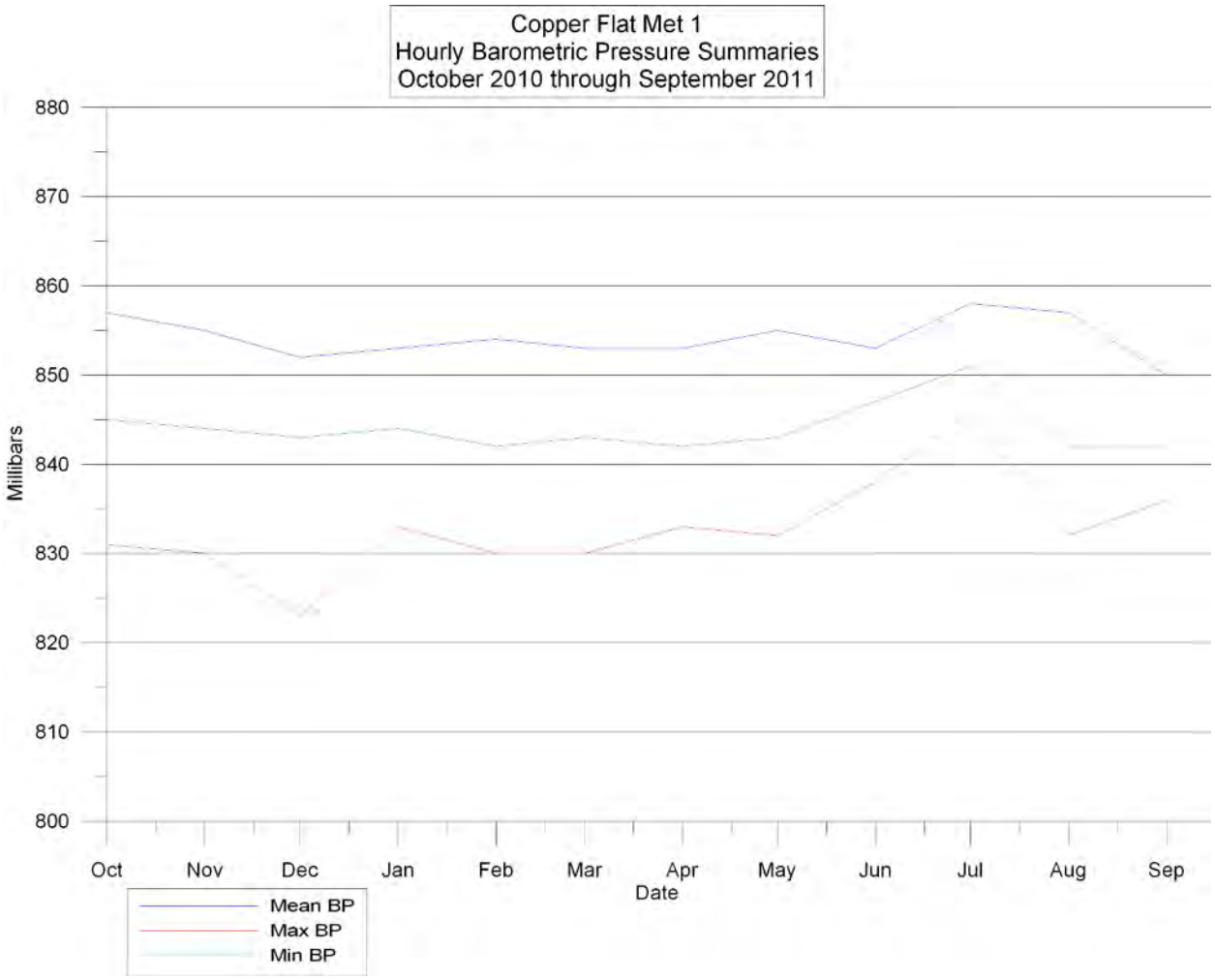

Copper Flat Met 1
Hourly Net Radiation Summaries
October 2010 through September 2011
800
600
400
200
0
-200
Watts per Square Meter
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Date
Max NR
Min NR
Mean NR

Figure 2-9


Copper Flat Met 1
Hourly Barometric Pressure Summaries
October 2010 through September 2011
880
870
860
850
840
830
820
810
800
Millibars
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Date
Mean BP
Max BP
Min BP

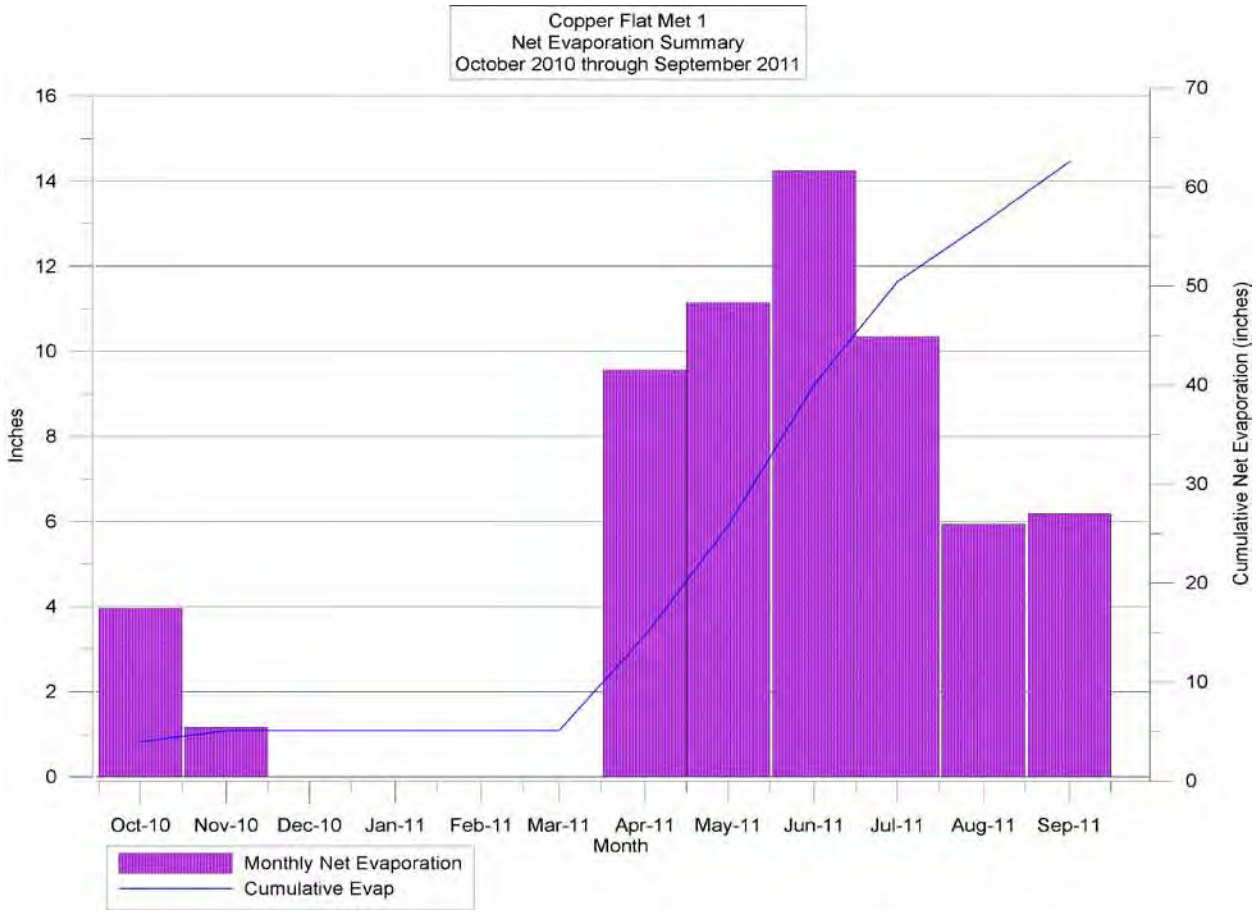
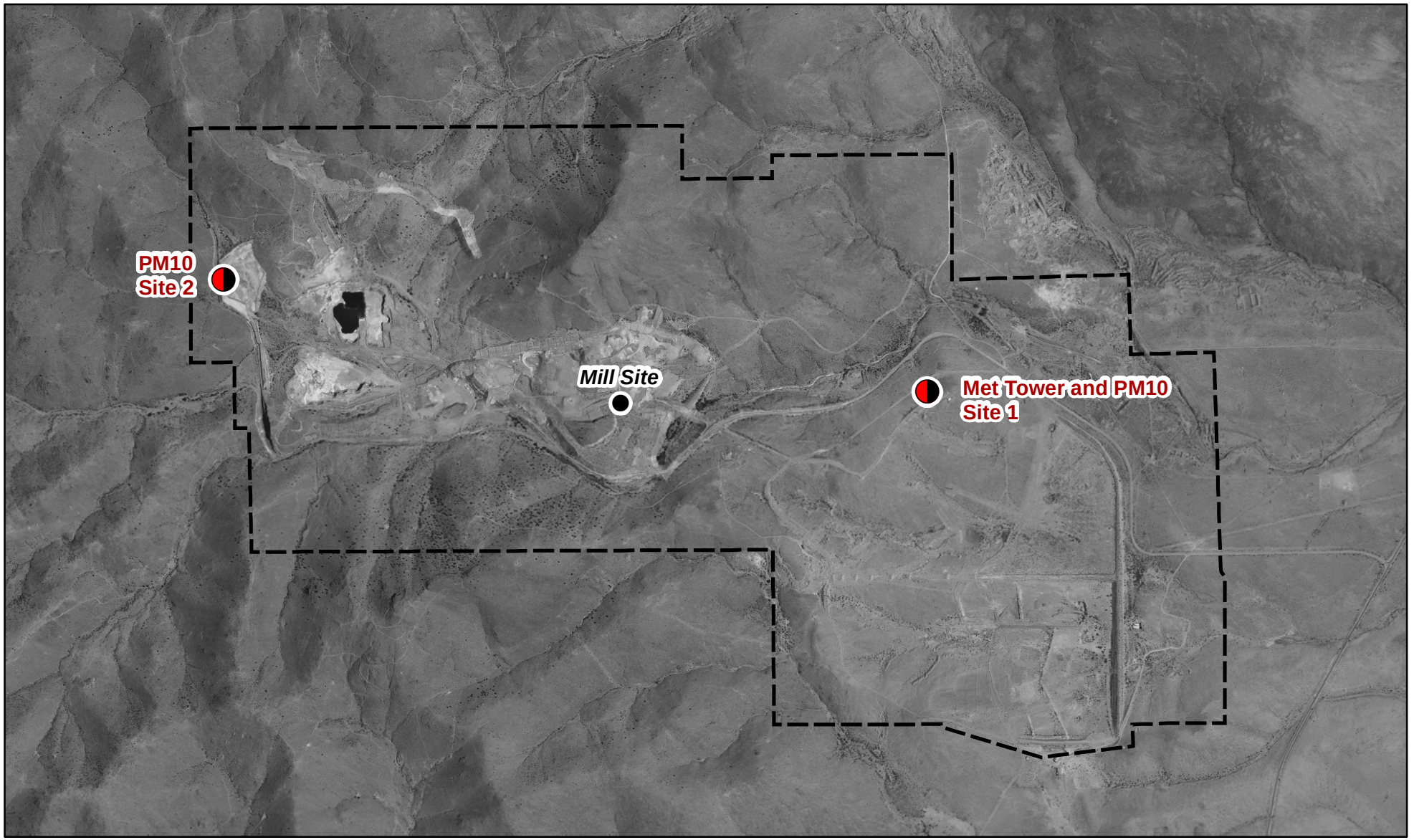

Copper Flat Met 1
Net Evaporation Summary
October 2010 through September 2011
Inches
Cumulative Net Evaporation (inches)
Month
Oct-10
Nov-10
Dec-10
Jan-11
Feb-11
Mar-11
Apr-11
May-11
Jun-11
Jul-11
Aug-11
Sep-11
Monthly Net Evaporation
Cumulative Evap

Figure 2-10



N
W E
S

0 1,000 2,000 4,000 6,000
Feet

Sample Locations:
Class One Technical Services
Mine Boundary:
Tom Van Bebber
Imagery Information:
-2011 NAIP Sierra County Mosaic
Projection Information:
-New Mexico State Plane West, NAD 1927

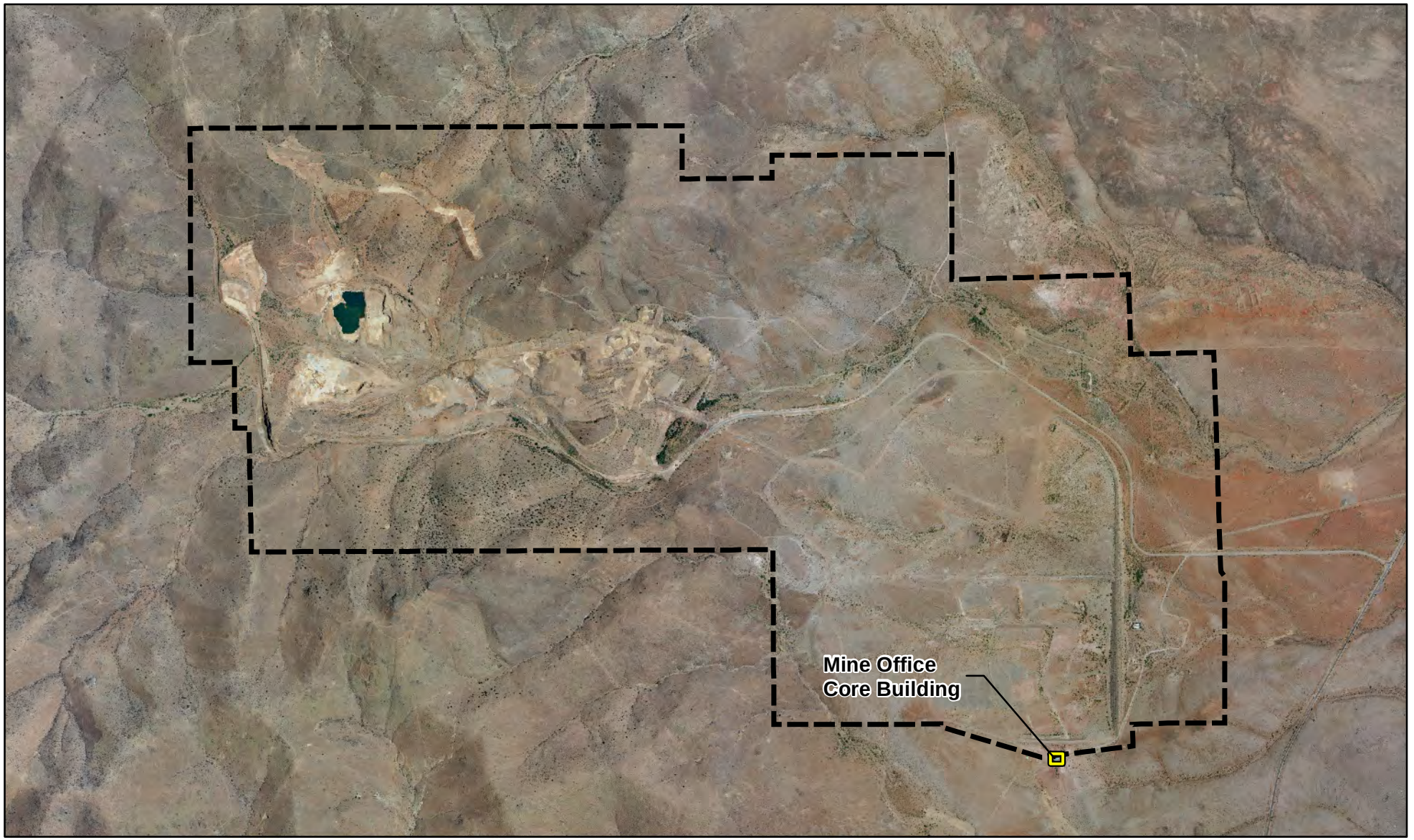
Legend

Proposed Mine Permit Boundary

Figure 2-11
Locations of the Particulate (PM_{10}) and Meteorological Monitoring Stations

New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\SAP_7-2010\2_climatological\2-1_air-met_monitoring.mxd 08/30/2010



N
W E
S

0 1,000 2,000 4,000 6,000

Feet

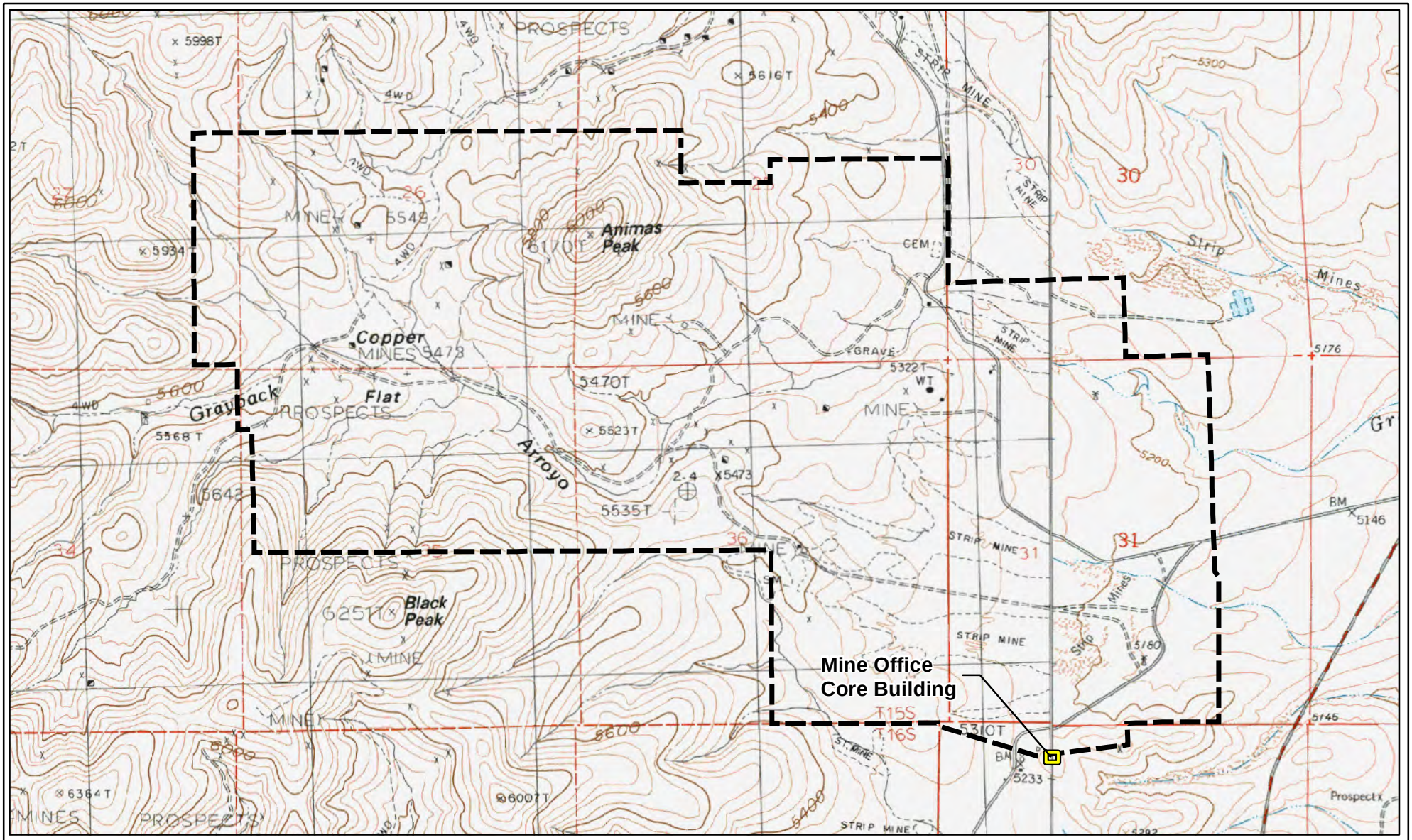
Mine Boundary:
NMCC
Imagery Information:
-Cooper Aerial, 2011
Projection Information:
-New Mexico State Plane West, NAD 1927

Legend

Proposed Mine Permit Boundary

Figure 3-1
Aerial Photograph of the Site
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig3-1_site-area_aerial.mxd 1/26/2012



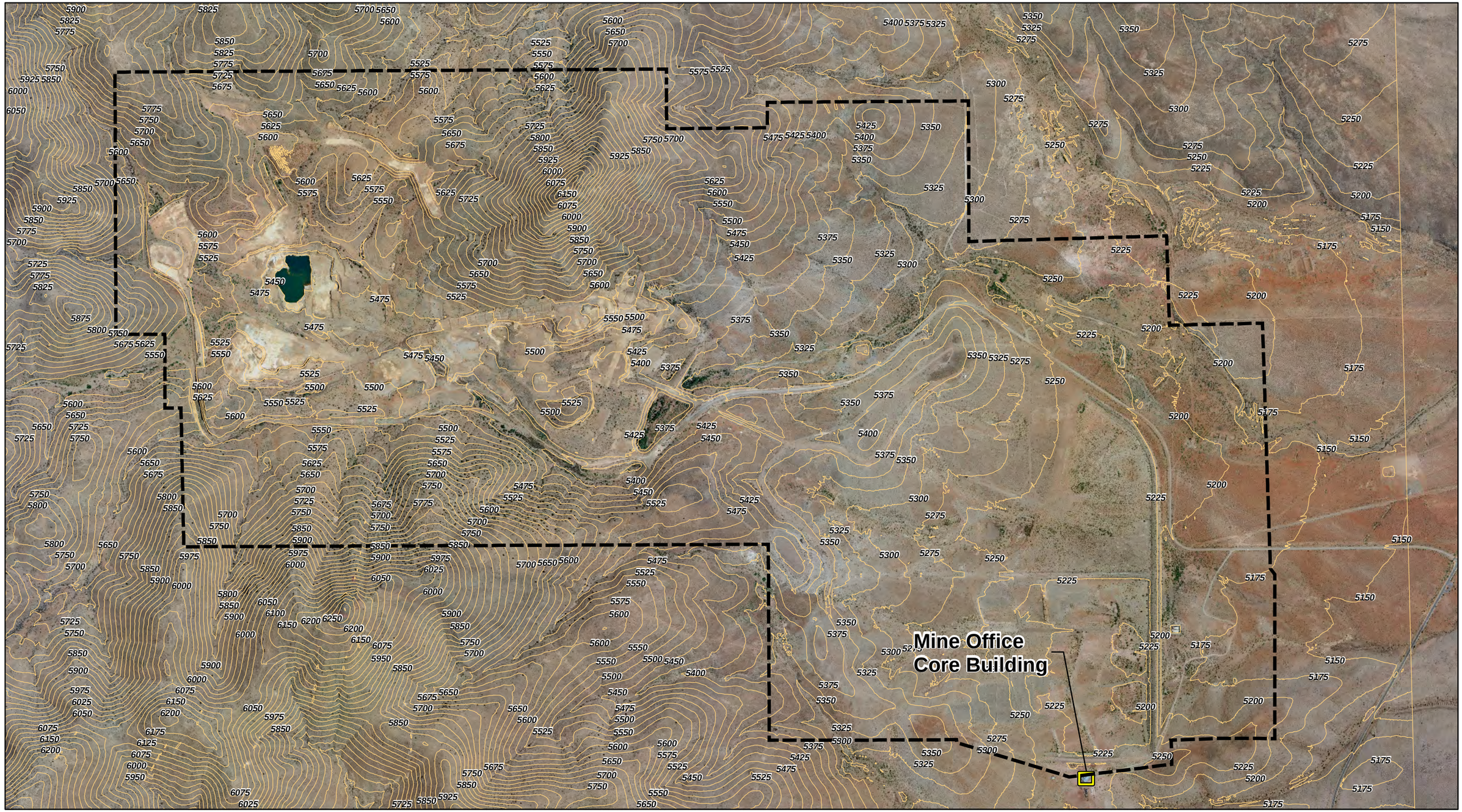
Mine Boundary:
NMCC
Imagery Information:
-USGS 7.5-Minutes Quads; Skute Stone Arroyo & Hillsboro
Projection Information:
-New Mexico State Plane West, NAD 1927

Legend

Proposed Mine Permit Boundary

Figure 3-2
Topographic Map of the Site and Surrounding Area
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig3-2_site-area_topo.mxd 1/9/2012



N
W E
S

0 600 1,200 2,400 3,600
Feet

Legend

Proposed Mine Permit Boundary

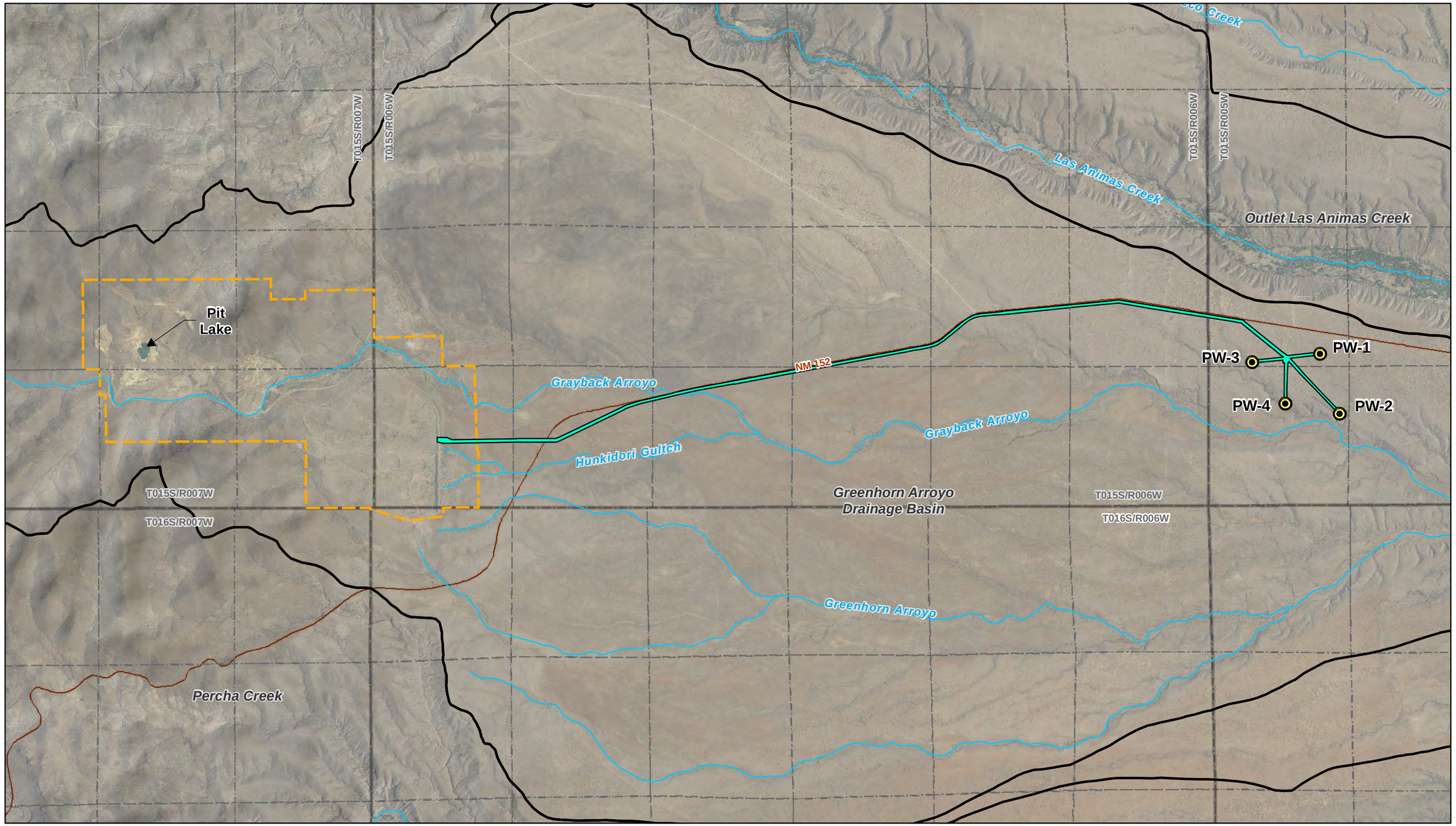
5-Foot Contour Interval

Mine Boundary:
NMCC
Imagery Information:
-Cooper Aerial, 2011
Projection Information:
-New Mexico State Plane West, NAD 1927

INTERA

Figure 3-3
2011 Aerial Survey with 5-Foot Contours
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig3-3_contours_aerial.mxd 1/16/2012



N
W E
S

Watersheds:
USGS Hydrologic Unit Map
Mine Boundary/Utility Corridor:
NMCC
Imagery Information:
-USGS 7.5-Minutes County DOQQ mosaic
Sierra County, 2011
Projection Information:
-New Mexico State Plane West, NAD 1927

0 1,750 3,500 7,000 10,500
Feet

Legend

- Production Well
- Utility Corridor
- Proposed Mine Permit Boundary
- Sub-Watershed

Figure 3-4
Utility Corridor from Production Wells to Mine Site
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig3-4_pipline.mxd

Parametrix

Copper Flat Permit Study Area

Las Animas Creek Study Area

Greyback Arroyo/Diversion Channel Study Area

Percha Creek Study Area

Source(s):
Mine Permit Boundary: New Mexico Copper Corporation
Study Areas: Parametrix
Base Maps: Bing Roads, served from ESRI Online; Terrain, ESRI, served from ESRI Online

0 0.5 1 2
Miles

Legend

- Copper Flat Mine Permit Area

Study Areas

- Las Animas Creek Study Area
- Percha Creek Study Area
- Permit Area Arroyo Study Area
- Pipeline Corridor

Map Projection = UTM, NAD 1983, Zone 13N, meters
Map created by Chad McKenna and Jim Glassley. Parametrix, Inc.
12/30/2011

Figure 4-1
Vegetation Study Areas

New Mexico Copper Corporation

Z:\PROJECTS\Sierra County\NMCCComprehensiveGISDatabase\MapDocs\BDR Report Maps\Vegetation\Figure 4-1. Study Areas 123011.mxd

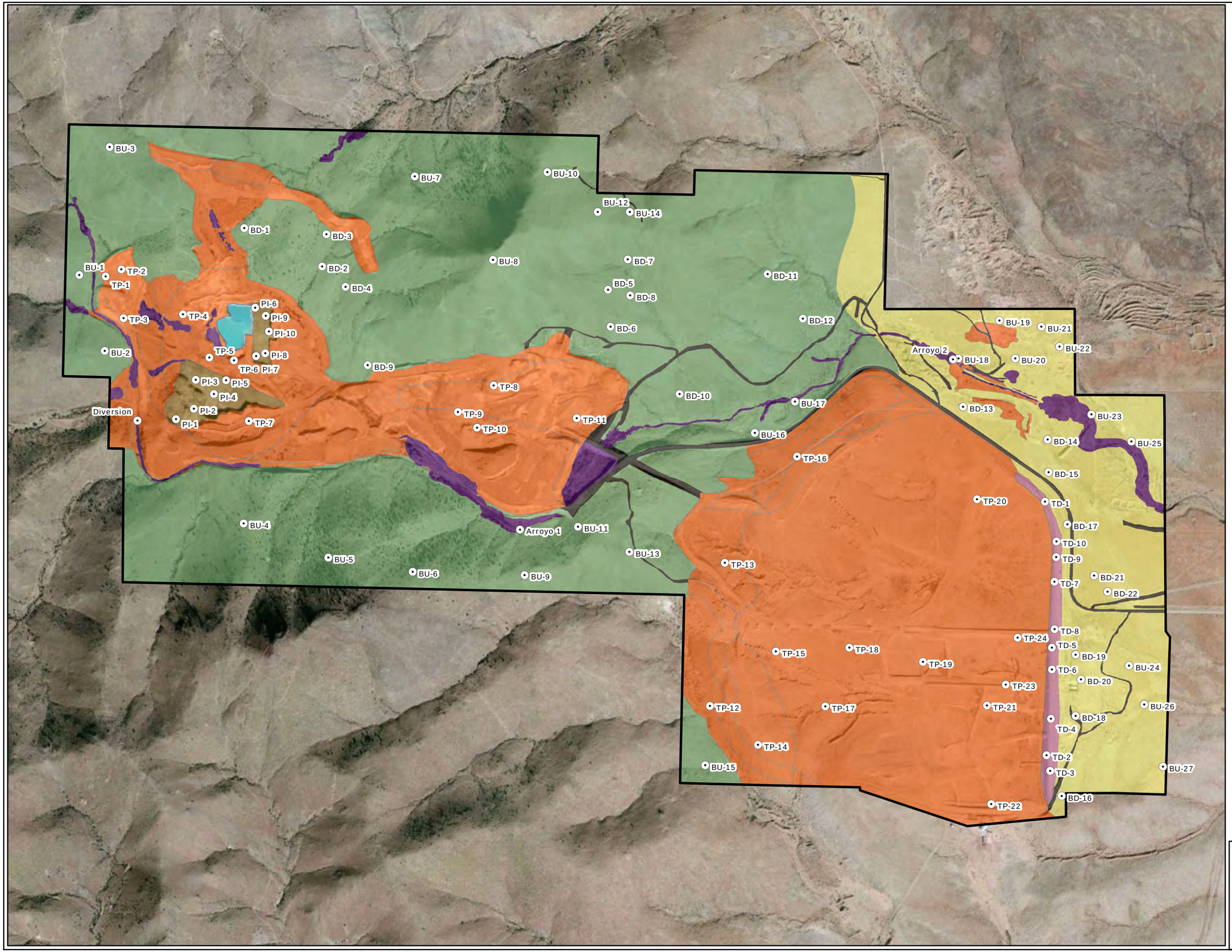
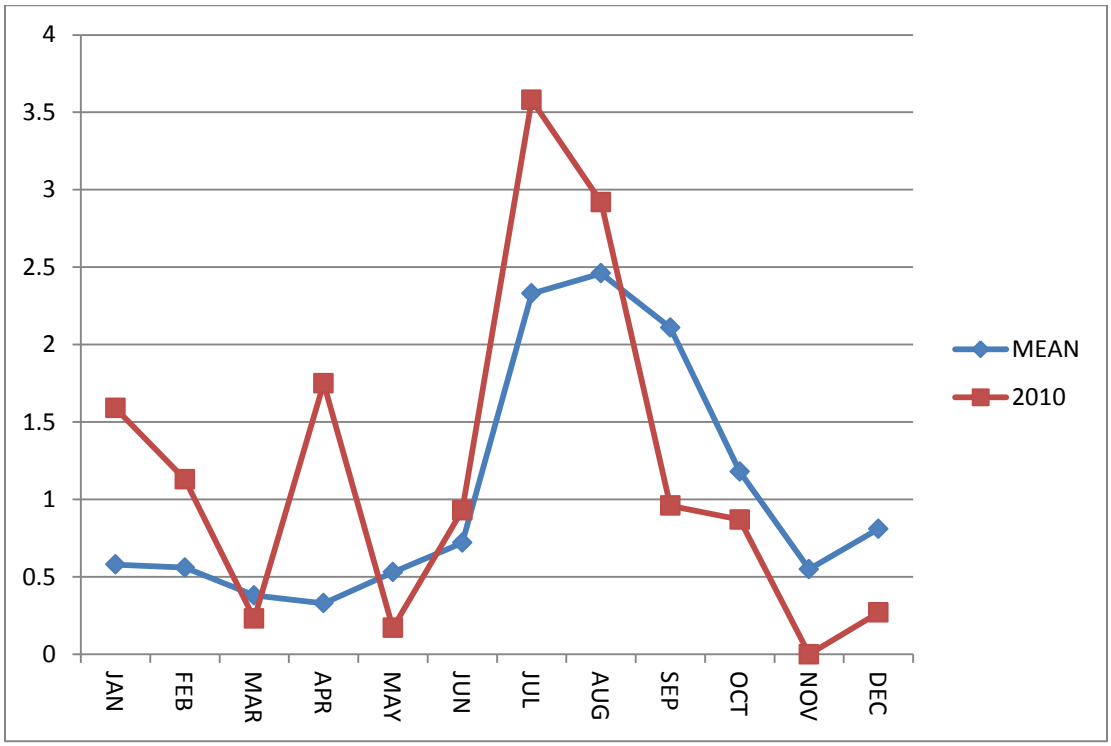


Figure 4-2
Copper Flat Permit Area Sampling Strata

New Mexico Copper Corporation

Z:\PROJECTS\Sierra County\NMCCComprehensiveGISDatabase\MapDocs\BDR Report Maps\Vegetation\Figure 4-2. Transect Locations 123011.mxd

Figure 4-3. Monthly precipitation (inches) in 2010 compared to mean monthly precipitation from 1893-2011 in Hillsboro, NM.

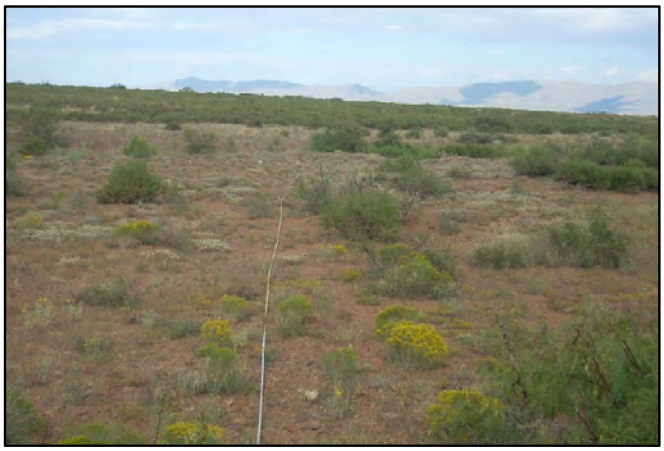


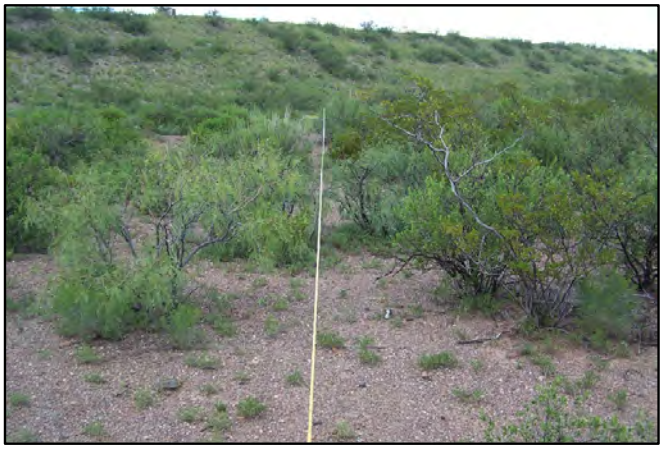
Source: Western Regional Climate Center.

Figure 4-4. Representative Field Photographs of the Chihuahuan Desert Grassland Stratum (CDG), Copper Flat Mine Permit Area, 2010

The Chihuahuan Desert Grassland stratum contained a diverse mix of warm season grasses. Animas Peak was located in this stratum. Dense patches of Wheeler's sotol were intercepted on the slopes of Animas Peak, as shown in the middle right photograph.Isolated patches of dense shrubs were also encountered, as shown in the bottom right photo, but grasses were the dominant lifeform throught the stratum.

Figure 4-5. Representative Field Photographs of the Chihuahuan Desert Shrubland Stratum (CDS), Copper Flat Mine Permit Area, 2010



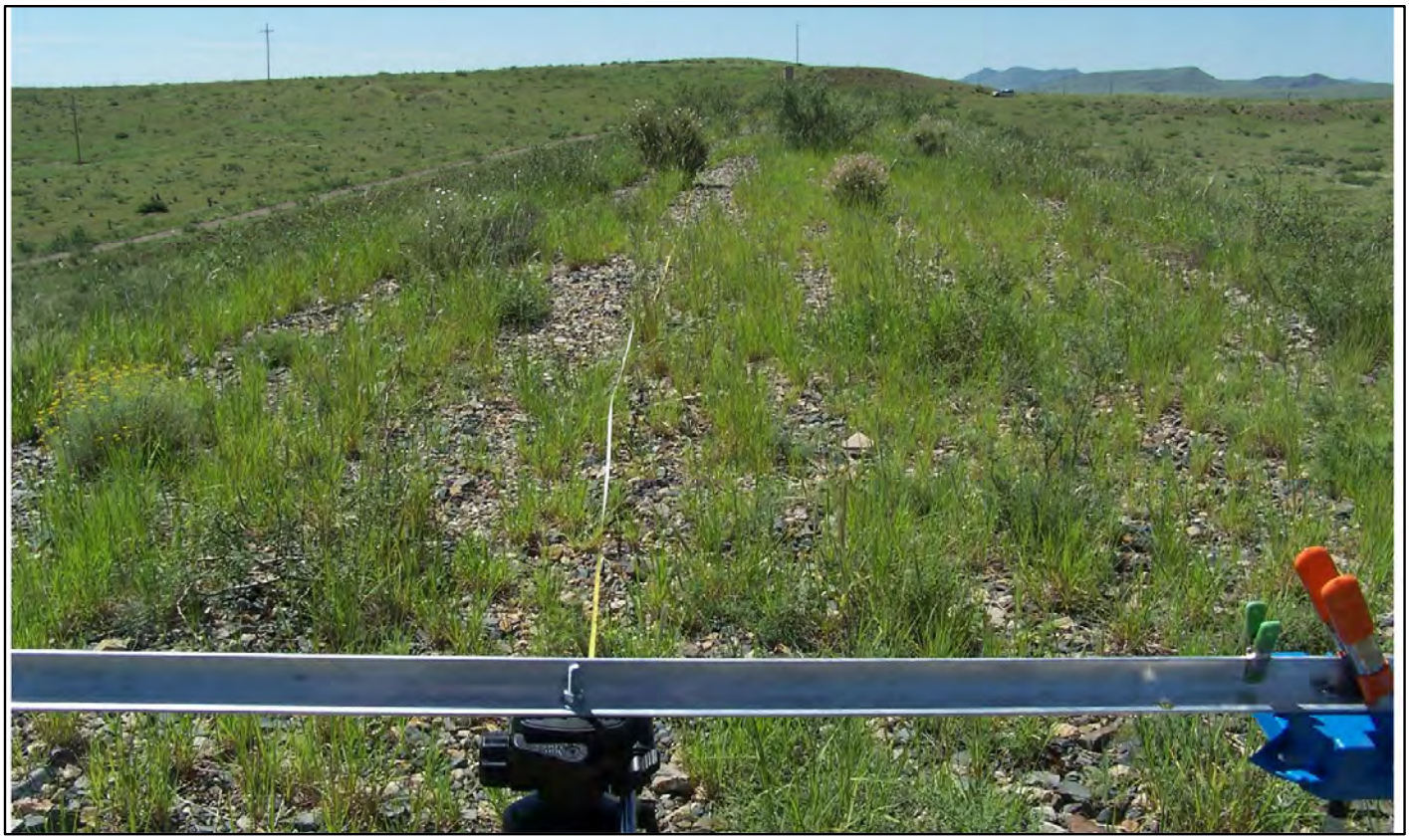


The Chihuahuan Desert Shrubland stratum lied on relatively flat terrain in the southeast corner of the site. Shrub cover was measurably higher throughout this stratum than in the grassland portions, though isolated patches of high grass production and cover were encountered, as in the bottom left photograph. Creosote bush encroachment was observed in portions of the community (middle right photo) though it was less common than gravelly areas to the south.

Figure 4-6. Representative Field Photographs of the Disturbed Area/Waste Rock Pile Stratum, Copper Flat Mine Permit Area, 2010

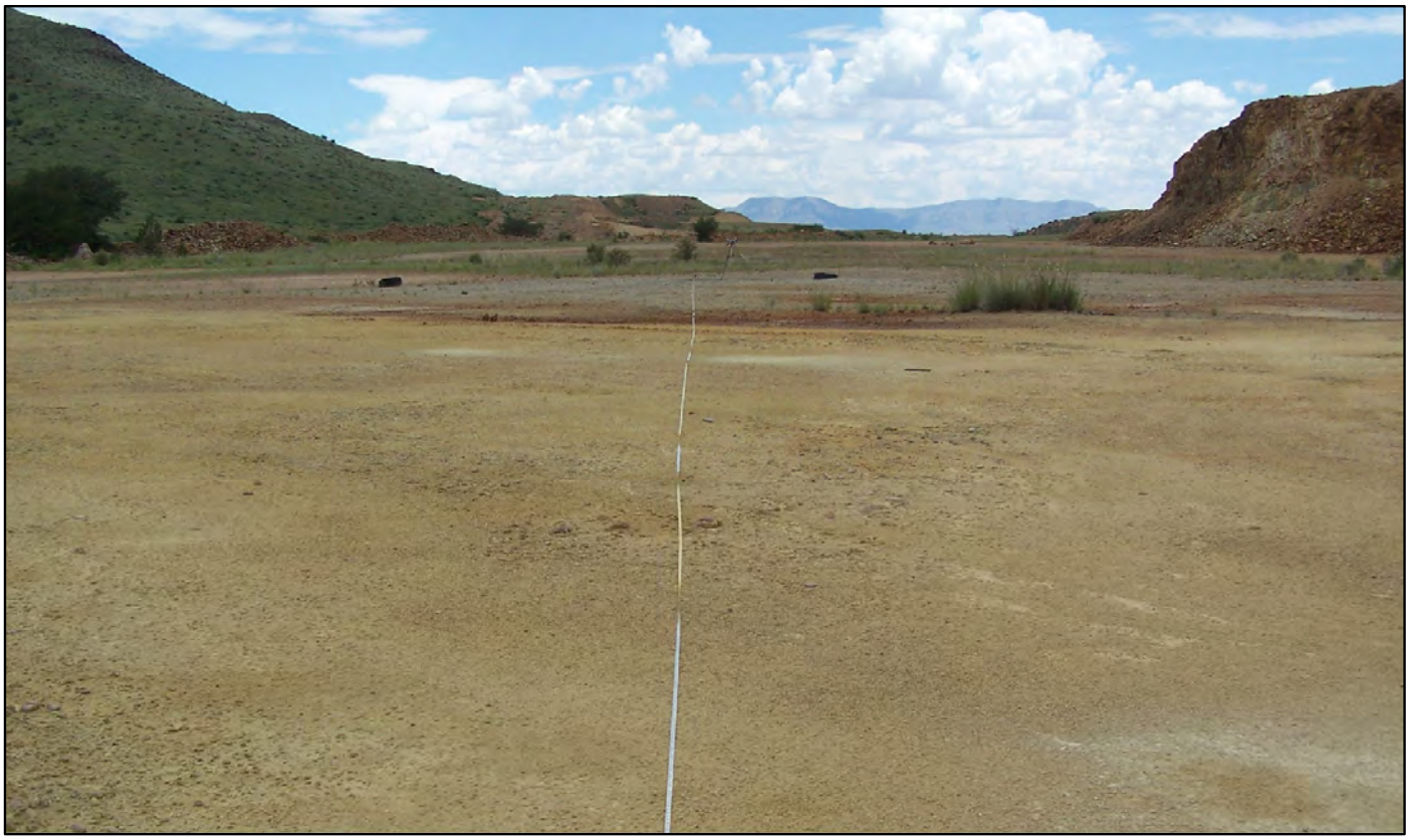
The Disturbed Area/Waste Rock Pile stratum was used to characterize areas with varying degrees of disturbance due to previous mining. rock piles, waste rock, surface scraping, and soil disturbance were evident throughout the stratum. Portions of the stratum also appeared to be revegetated in earlier reclamation efforts. Total live plant cover, relative lifeform cover, and groundcover was extremely variable across transects and even within a transect.

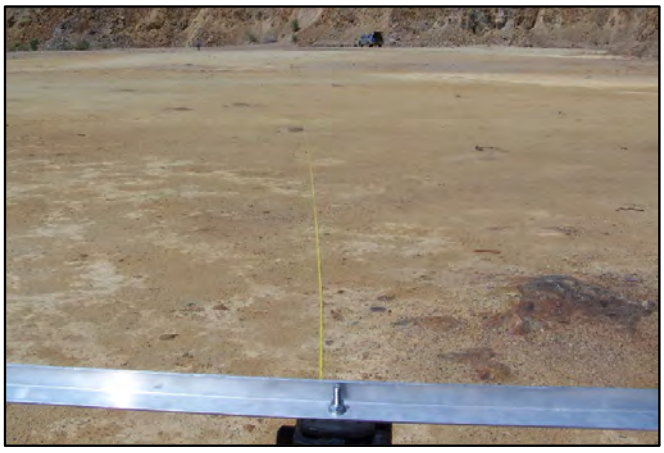
Figure 4-7. Representative Field Photographs of the Tailing Dam Stratum (TD), Copper Flat Mine Permit Area, 2010

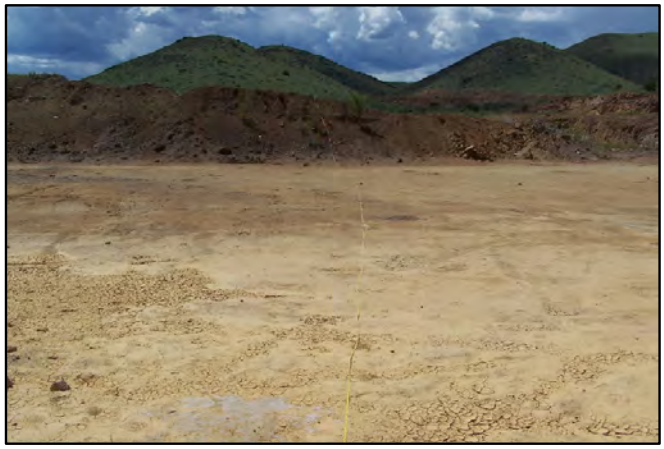


The Tailing Dam stratum (TD) characterized vegetation attributes on the tailing dam constructed during earlier mining. Relatively little bare soil was observed. Various size classes of crushed rock contributed most of the cover in the stratum. Species richness was low and shrub and perennial grass cover were relatively consistent across transects. Observations on plant spacing and species distribution on this feature compared to surrounding areas suggest that this facility may have been previously revegetated.

Figure 4-8. Representative Field Photographs of the Pit Stratum, Copper Flat Mine Permit Area, 2010







The Pit stratum was relatively unvegetated. Most of the ground surface was composed of bare soil. Cobble-sized crushed rock was also encountered regularly. Total live vegetation cover was low throughout the stratum. Vegetation was restricted to the pit lake fringe and isolated plants in other portions of the stratum. Hillsolpes between pit levels were also sometimes vegetated, as shown in the middle left photograph.

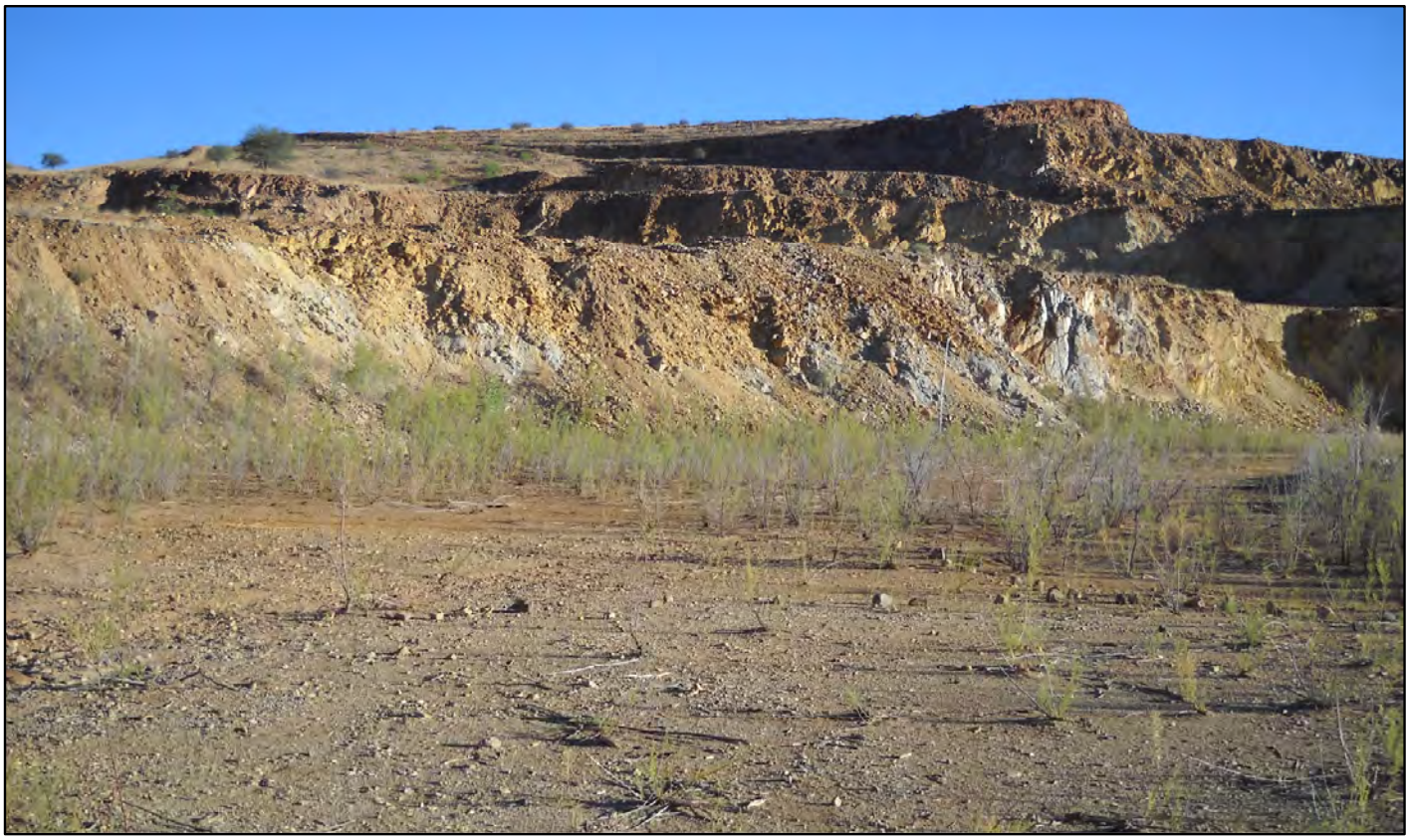
Figure 4-9. Representative Field Photographs of Baccharis and/or Burro Bush Communities in the Copper Flat Mine Permit Area, 2011

Baccharis and burro bush were observed throughout Greyback Arroyo and the bottom of diversion channel, often co-habitating sites Baccharis showed indications of moisture stress, with dead upper branches and new shoots at the base. Baccharis also appeared to prefer slightly higher soil moisture than burro bush. Burro bush generally extended higher up terraces than Baccharis. Baccharis was a common colonizer of the channel bottom.

Figure 4-10. Representative Field Photographs of Cottonwood or Goodding's Willow Communities in the Copper Flat Mine Permit Area, 2011

Isolated patches of cottonwood and Goodding's willow trees inhabited Greyback Arroyo. Cottonwood had a wider distribution than Goodding's willow at the mine site. Cottonwood trees were observed as isolated patches north of the pit lake and varoius locations along the arroyo. Both species were most abundant in the bottom of the arroyo just east of the manin entrance to the mine. Standing water was also observed in a small depression within a Goodding's willow community. This location contained the most desirable riparian habitat observed in the permit area.

Figure 4-11. Representative Field Photographs of Saltcedar Communities in the Copper Flat Mine Permit Area, 2011

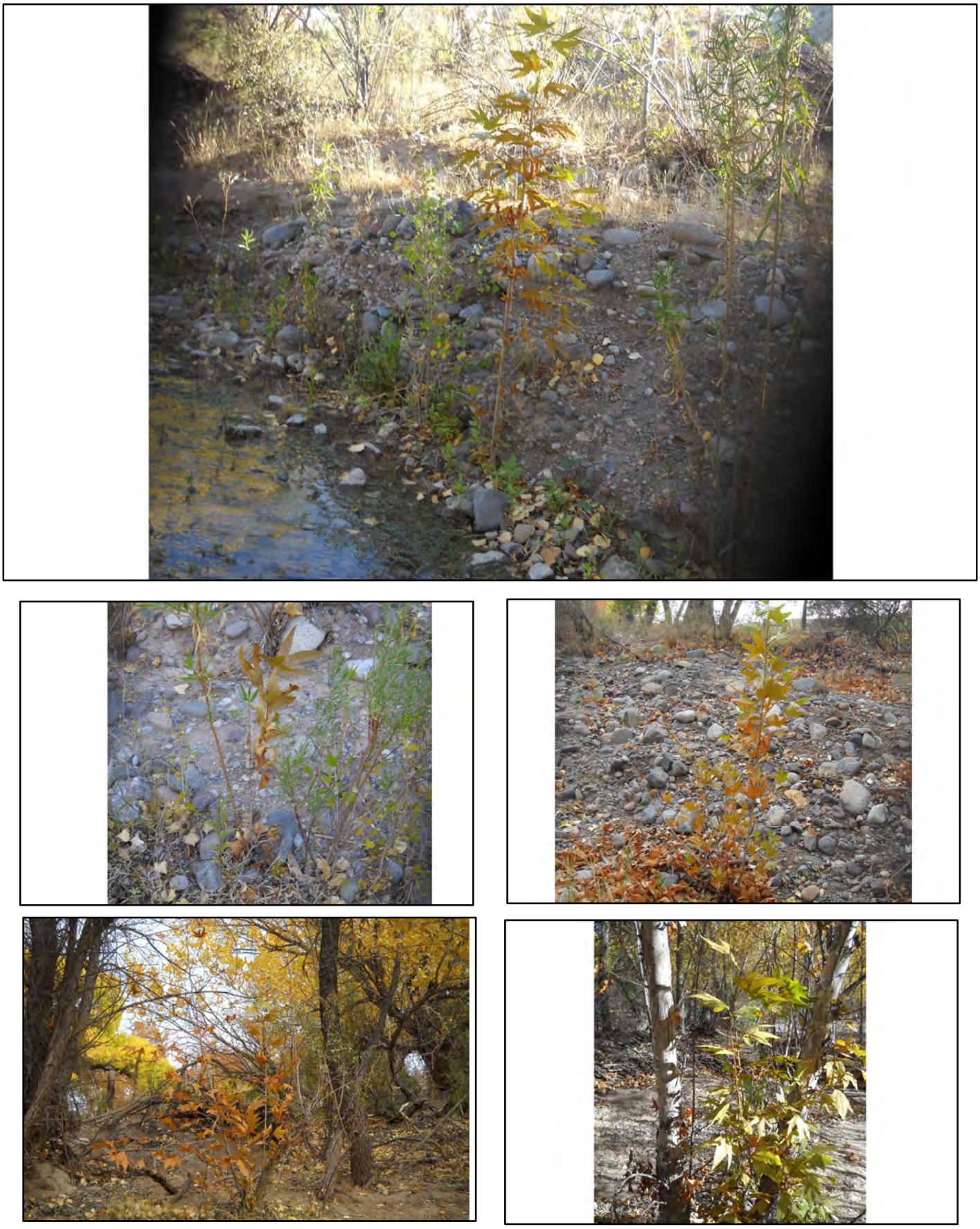


Saltcedar communities have invaded portions of Greyback Arroyo through the permit area, as well as, the fringe of the pit lake. The top three photographs show typical characteristics of saltcedar dominated communities adjacent to the pit lake. The bottom two photos show typical habitat along the arroyo. The community on the bottom left photograph was located near the mine entrance gate.

Figure 4-12. Representative Field Photographs of Isolated Wetland Plant Communities in the Copper Flat Mine Permit Area, 2011

Isolated wetland plant communities were observed at the Copper Flat Mne permit area. The top three photographs show a Goodding's willow dominated wetland community. A narrow strip of obligate wetland plants was also observed along the open water fringe. Heavy livestock use was evident at this location. A cattail community was observed along the wetland fringe as depicted in the bottom two photos.

Figure 4-13. Representative Field Photographs of Isolated Arizona Sycamore Recruitment Observations in the Las Animas Creek Study Area, 2011



Sexual recruitment (gamets) of Arizona sycamore is an isolated, rare phenomenon in the Las Animas Creek study area. Pockets of seedling or sapling size individuals were observed, however, along a short section of the study area (top three photos). Recruitment potential was often restricted to the bottom of the channel or the bank edge - which increases their vulnerability to becoming uprooted during flash flood events. Ramet production was more common along the study reach (bottom two photographs) than gamet production.

Figure 4-14. Representative Field Photographs of the Active Channel Condition in the Las Animas Creek Study Area, 2011

All of the Las Animas Creek Study Area was on private property. Private residences and other structures (top photograph) have been constructed just above the active channel. The creek bed has been canalized during past projects (middle right photograph) and current projects (middle left photograph) to contain the channel and protect homes from flooding are ongoing. Vegetation has been removed during construction in portions of the study area. These projects reduced the potential for natural recruitment and may also encourage drops in the groundwater elevation. The creek bottom geomorphology was similar to an arroyo upstream (bottom left photograph) and downstream of canalized segments. Surface flows were observed in short stretches of the creek (middle right photograph) and side channels with active alluvial deposition (bottom right) were rarely encountered.

Figure 4-15. Representative Field Photographs of Arizona Sycamore Reference Trees in the Las Animas Creek Study Area, 2011

The Lower Animas Valley contains the eastern-most population of naturally occuring Arizona sycamores in New Mexico (top photo). A total of 25 reference trees were marked and measured in September 2011. A broad range of conditions and sizes were captured. Tagged and measured trees also captured trees through the upstream and downstream reaches of the study area. The middle left photograph shows the youngest reference tree. Stressed individuals (middle right photo) were also documented. The bottom left photograph shows one of the larger reference trees. While the bottom right photograph includes a pole-sized individual, which was the western-most sycamore in the study area.

Figure 4-16. Representative Field Photographs of Baccharis Dominated Communities in the Percha Creek Study Area, 2011

Baccharis was the most widespread species observed along Percha Creek. It commonly colonized the channel bottom and low banks along nearly the entire study reach. Through portions with no perennial flow (bottom two and middle right photos), it grew on the bottom of the dry creek bed. Dense thickets lined the active channel in perennial reaches (top and mid-left photos). Stressed individuals were observed in portions of the non-perennial reaches (middle right photo) but plants appeared vibrant overall.

Figure 4-17. Representative Field Photographs of Goodding's Willow Dominated Communities in the Percha Creek Study Area, 2011

Goodding's willow was common along the entire perennial reach of Percha Creek. It was the most abundant riparian tree species through Percha Box (top photograph). Favorable conditions for seedling recruitment still exist at Percha Creek. Several age cohorts were observed - ranging from seedlings to saplings to large old trees.

Figure 4-18. Representative Field Photographs of Cottonwood Dominated Communities in the Percha Creek Study Area, 2011

Cottonwood was a common inhabitant of the riparian communities just downstream of Percha Box (top three photographs). This species was much less common outside of this portion of the Percha Creek Study Area. Isolated patches occurred both upstream and downstream of Percha Box. Cottonwoods were restricted to around homes and small off-channel stands downstream of Percha Box (bottom left photo). Smaller individuals showed signs of moisture stress (bottom right photo) upstream of Percha Box.

Figure 4-19. Representative Field Photographs of Coyote Willow Dominated Communities in the Percha Creek Study Area, 2011

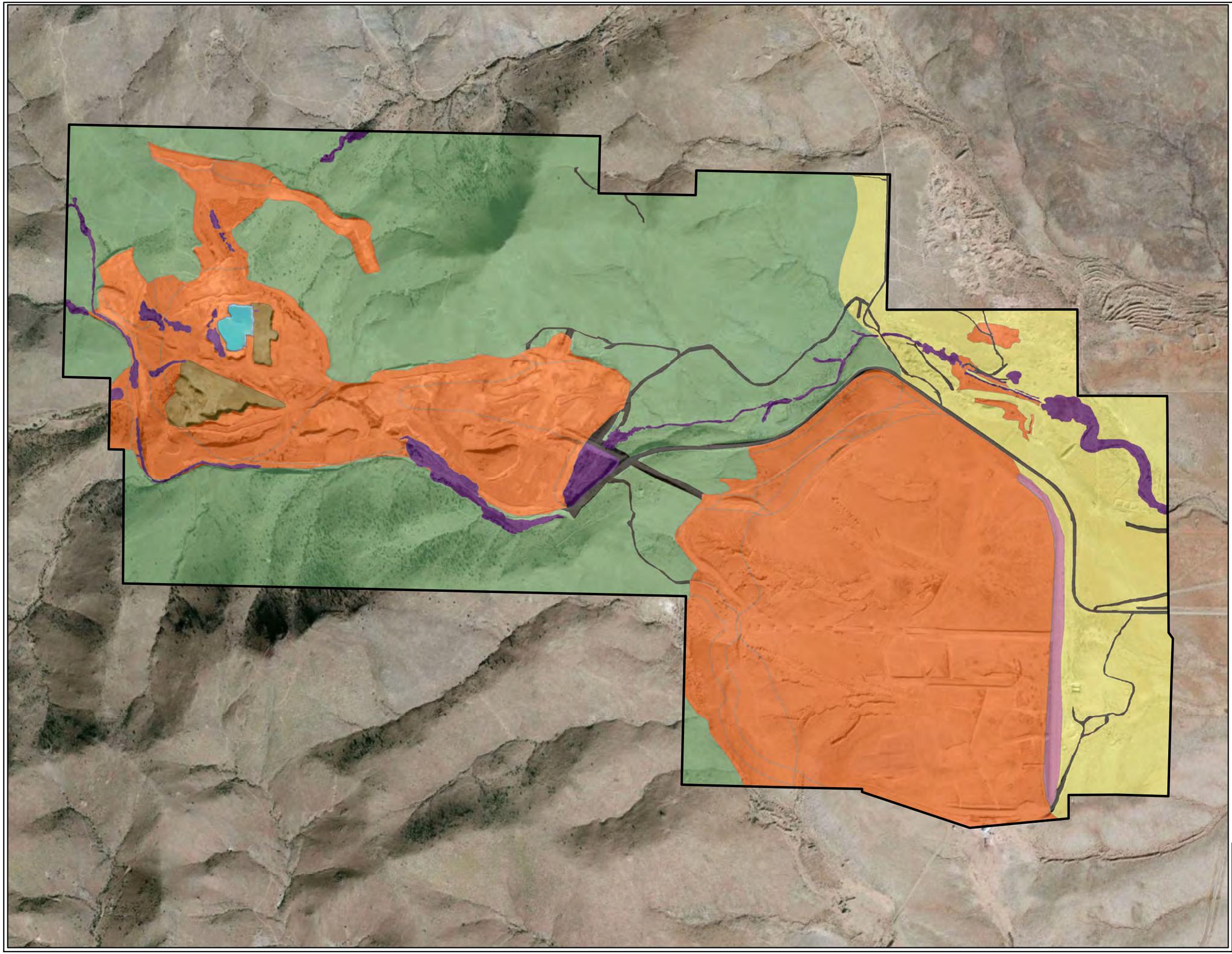
Coyote willow was sporadic in the Percha Creek Study Area. Stands were most common through Percha Box, as shown in the top three photographs, though it was a much less common understory component than Baccharis. It cohabitated sites with Gooding's willow through Percha Box Coyote willow was also observed in a depression south of the active channel in the dry creek bed just downstream of the bridge crossing in Hillsboro (bottom left photo). Small, isolated patches were also observed along the bank (bottom right photo) just downstream of Hillsboro.

Figure 4-20. Representative Field Photographs of Little Walnut Dominated Communities in the Percha Creek Study Area, 2011

Little walnut was observed both upstream and downstream of Percha Box, though relatively infrequently. Most of the individuals located during our field assessent showed signs of moisture stress, as depicted in the photographs above. Many trees had dead upper branches. Trees had died at one location shown in the bottom right photograph.

Figure 4-21. Representative Field Photographs of Siberian Elm and Tree of Heaven Dominated Communities in the Percha Creek Study Area, 2011

Two state-listed noxious weeds were observed in the Percha Creek Study Area. Tree of heaven and Siberian elm have invaded areas just downstream of the bridge crossing in Hillsoboro. All of the photographs above show trees in this location. Tree of Heaven was restricted to this general location. A small patch of Siberian elm trees was also observed downstream of Percha Box.



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Parametrix

Source(s):
Mine Permit Boundary: New Mexico Copper Corporation;
Sampling Strata: Parametrix
Base Map: Bing Imagery, served from ESRI Online

0 500 1,000 2,000
Feet

Legend

- Copper Flat Mine Permit Area

General Wildlife Habitat Type

- Access Road
- Chihuahuan Desert Grassland
- Chihuahuan Desert Shrubland
- Pit
- Pit Lake
- Riparian
- Tailings Dam
- Disturbed Areas/ Waste Rock Piles

Map Projection = UTM, NAD 1983, Zone 13N, meters
Map created by Chad McKenna and Jim Glassley. Parametrix, Inc.
12/30/2011

Figure 5-1
Wildlife Habitat Types at Copper Flat Mine Site

New Mexico Copper Corporation

Z:\PROJECTS\Sierra County\NMCCComprehensiveGISDatabase\MapDocs\BDR Report Maps\Wildlife\Figure 5-1. Wildlife Habitat in Permit Area 123011.mxd

Parametrix

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Source(s):
Mine Permit Boundary: New Mexico Copper Corporation;
Sampling Strata: Parametrix
Base Map: USGS Topo Mosaic, served from ESRI Online

0 1,000 2,000 4,000
Feet

Legend

- Sonobat Sampling Locations
- Copper Flat Mine Permit Area

General Wildlife Habitat Type

- Access Road
- Chihuahuan Desert Grassland
- Chihuahuan Desert Shrubland
- Pit
- Pit Lake
- Riparian
- Tailings Dam
- Disturbed Areas/ Waste Rock Piles

Map Projection = UTM, NAD 1983, Zone 13N, meters
Map created by Chad McKenna. and Jim Glassley. Parametrix, Inc.
12/30/2011

Figure 5-2
Sonobat Sampling Locations

New Mexico Copper Corporation

Z:\PROJECTS\Sierra County\NMCCComprehensiveGISDatabase\MapDocs\BDR Report Maps\Wildlife\Figure 5-2. Sonobat Sampling Locations 123011.mxd

Parametrix

Source(s):
Riparian Area: Parametrix
Base Map: Bing Maps Hybrid, served from ESRI Online

0 0.5 1
Miles

Legend

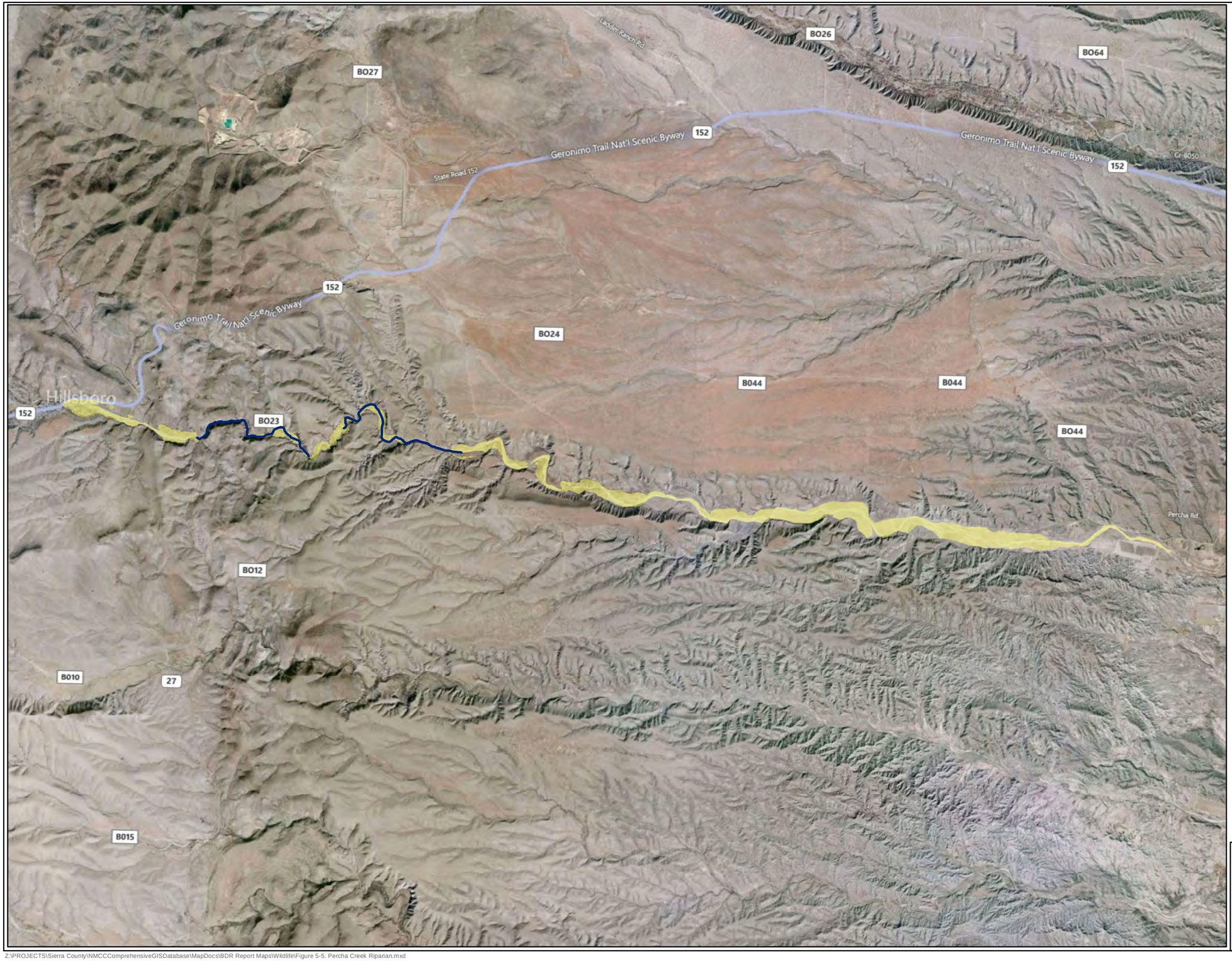
- Surface Water Observed
- Riparian Habitat Locations

Map Projection = UTM, NAD 1983, Zone 13N, meters
Map created by Chad McKenna.
Parametrix, Inc.
11/02/2011

Figure 5-3
Las Animas Creek Riparian Area

New Mexico Copper Corporation

Z:\PROJECTS\Sierra County\NMCCComprehensiveGISDatabase\MapDocs\BDR Report Maps\Wildlife\Figure 5-4. Las Animas Creek Riparian.mxd



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Parametrix

Source(s):
Riparian Area: Parametrix
Base Map: Bing Maps Hybrid, served from ESRI Online

0 0.5 1 2
Miles

Legend

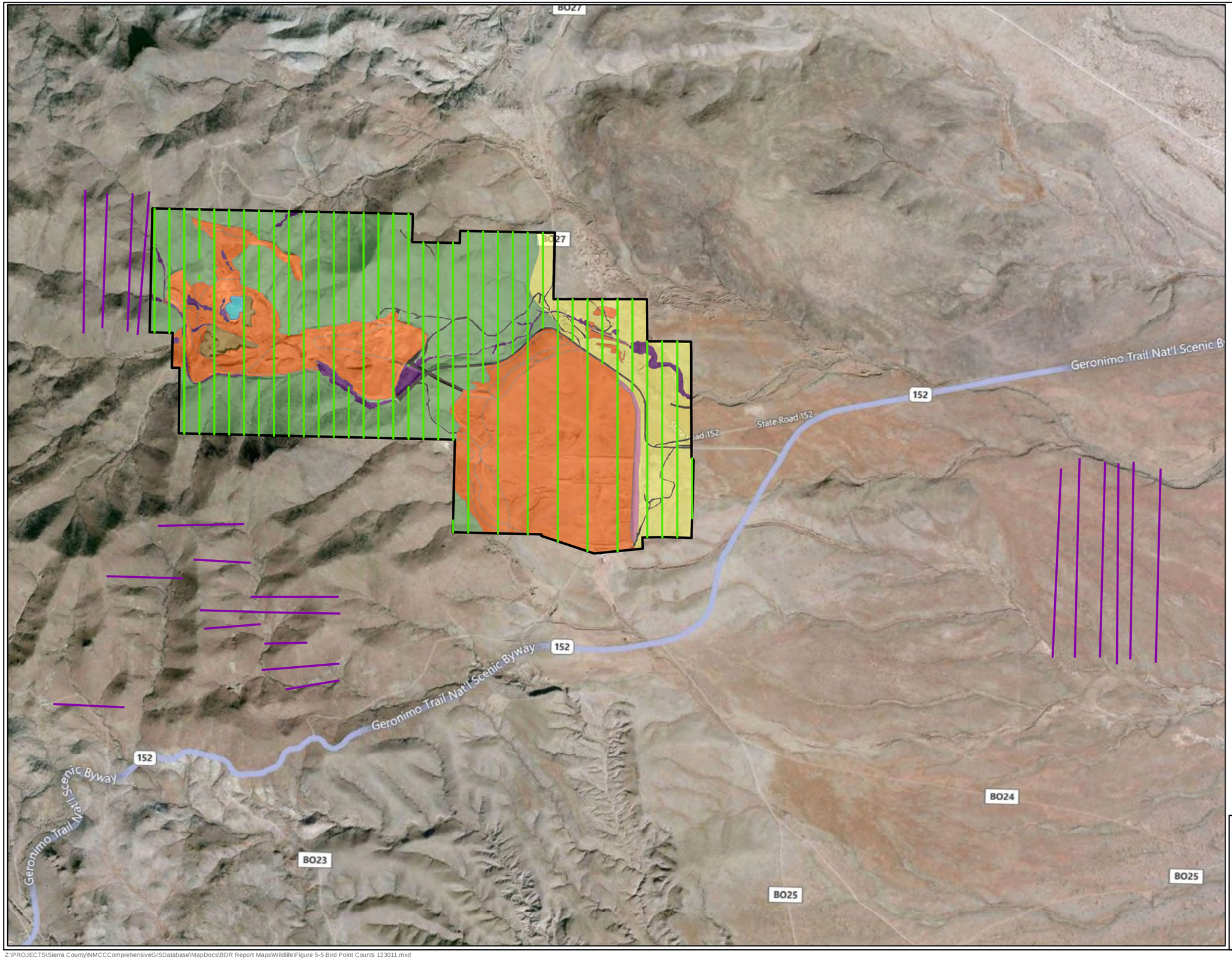
- Stream Flow Observed
- Riparian Area

Map Projection = UTM, NAD 1983, Zone 13N, meters
Map created by Chad McKenna.
Parametrix, Inc.
11/02/2011

Figure 5-4
Percha Creek
Riparian Area

New Mexico Copper Corporation

Z:\PROJECTS\Sierra County\NMCCComprehensiveGISDatabase\MapDocs\BDR Report Maps\Wildlife\Figure 5-5. Percha Creek Riparian.mxd



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Parametrix

Source(s):
Mine Permit Boundary: New Mexico Copper Corporation;
Sampling Strata: Parametrix
Sample Locations: Parametrix
Base Map: Bing Maps Hybrid, served from ESRI Online

0 0.5 1
Miles

Legend

- On-Site Transects
- Off-Site Transects
- Copper Flat Mine Permit Area

General Wildlife Habitat Type

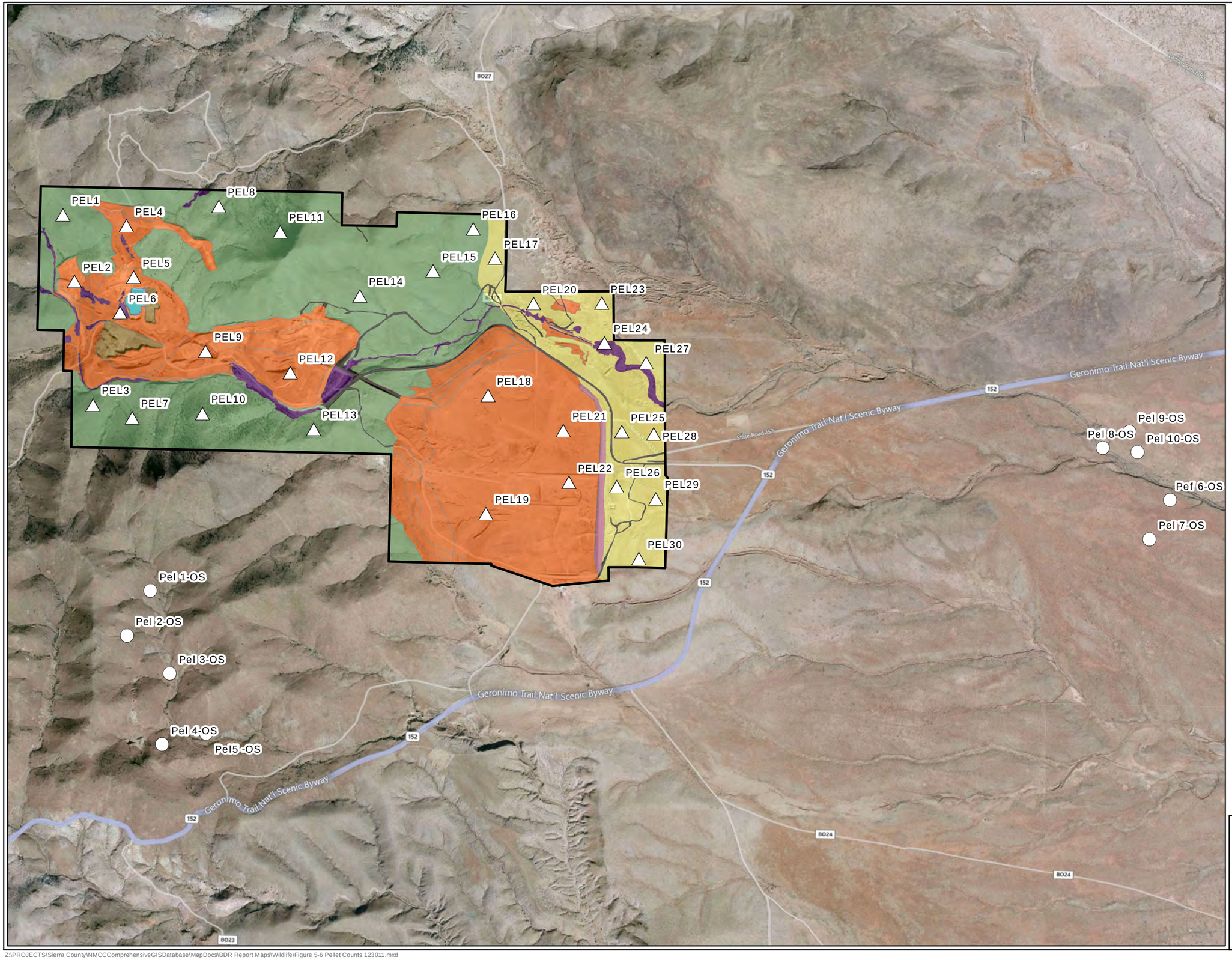
- Access Road
- Chihuahuan Desert Grassland
- Chihuahuan Desert Shrubland
- Pit
- Pit Lake
- Riparian
- Tailings Dam
- Disturbed Areas/ Waste Rock Piles

Map Projection = UTM, NAD 1983, Zone 13N, meters
Map created by Chad McKenna and Jim Glassley. Parametrix, Inc. 12/30/2011

Figure 5-5
Bird Transects
at the Copper Flat Mine Site and Reference Areas

New Mexico Copper Corporation

Z:\PROJECTS\Sierra County\NMCCComprehensiveGISDatabase\MapDocs\BDR Report Maps\Wildlife\Figure 5-5 Bird Point Counts 123011.mxd



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Parametrix

Source(s):
Mine Permit Boundary: New Mexico Copper Corporation;
Sampling Strata: Parametrix
Sample Locations: Parametrix
Base Map: Bing Maps Hybrid, served from ESRI Online

0 1,000 2,000 4,000
Feet

Legend

- Copper Flat Mine Permit Area

Pellet Count Locations

- Off-site reference
- On-site

General Wildlife Habitat Type

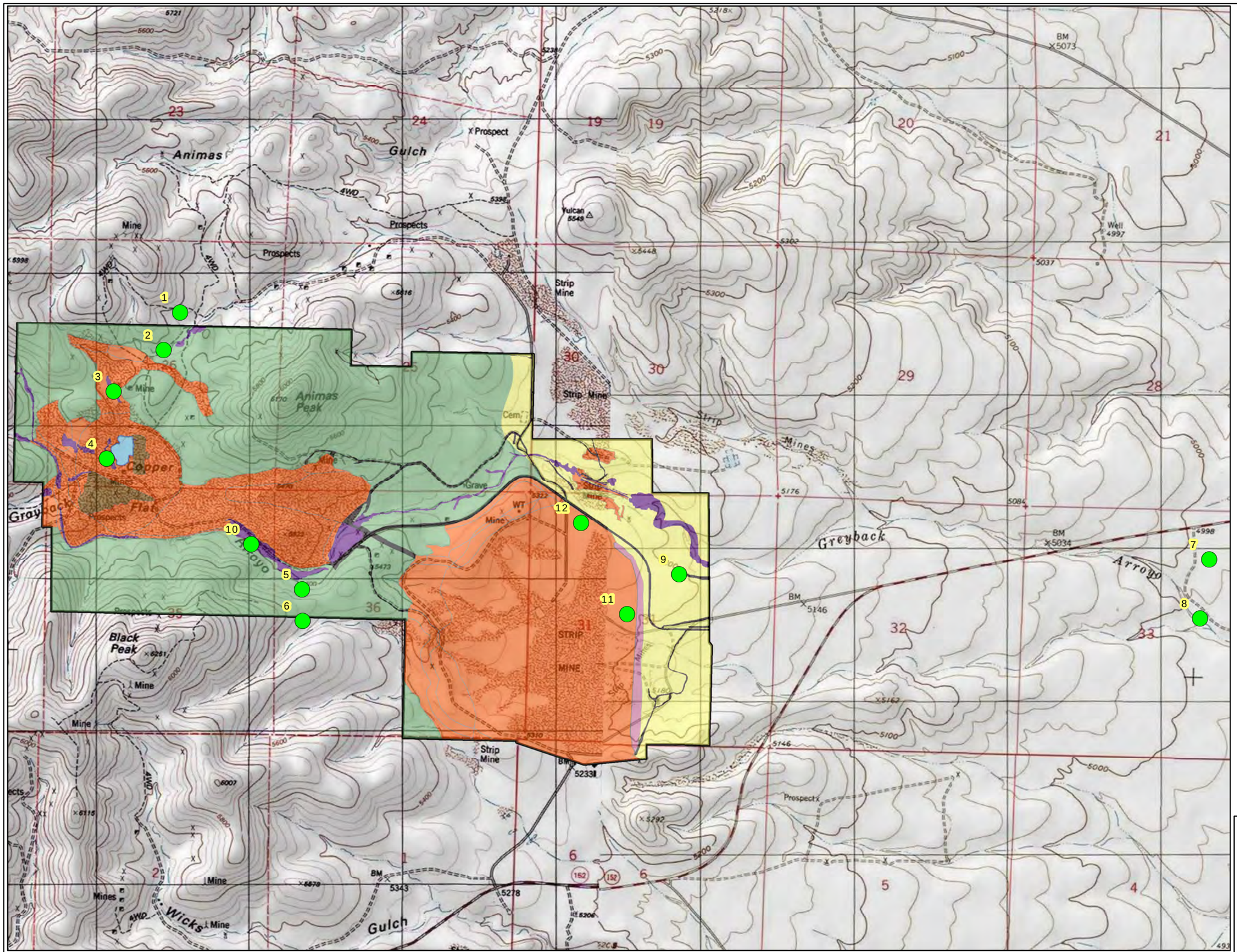
- Access Road
- Chihuahuan Desert Grassland
- Chihuahuan Desert Shrubland
- Pit
- Pit Lake
- Riparian
- Tailings Dam
- Disturbed Areas/ Waste Rock Piles

Map Projection = UTM, NAD 1983, Zone 13N, meters
Map created by Chad McKenna and Jim Glassley. Parametrix, Inc.
12/30/2011

Figure 5-6
Pellet Count Plot Locations at the Copper Flat Mine Site and Reference Areas

New Mexico Copper Corporation

Z:\PROJECTS\Sierra County\NMCCComprehensiveGISDatabase\MapDocs\BDR Report Maps\Wildlife\Figure 5-6 Pellet Counts 123011.mxd



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Parametrix

Source(s):
Mine Permit Boundary: New Mexico Copper Corporation;
Sampling Strata: Parametrix
Base Map: USGS Topo Mosaic, served from ESRI Online

0 1,000 2,000 4,000
Feet

Legend

- Small Mammal Trapping Locations
- Copper Flat Mine Permit Area

General Wildlife Habitat Type

- Access Road
- Chihuahuan Desert Grassland
- Chihuahuan Desert Shrubland
- Pit
- Pit Lake
- Riparian
- Tailings Dam
- Disturbed Areas/ Waste Rock Piles

Map Projection = UTM, NAD 1983, Zone 13N, meters
Map created by Chad McKenna and Jim Glassley. Parametrix, Inc. 12/30/2011

Figure 5-7
Small Mammal Trapping Locations at the Copper Flat Mine Site and Reference Areas

New Mexico Copper Corporation

Z:\PROJECTS\Sierra County\NMCCComprehensiveGISDatabase\MapDocs\BDR Report Maps\Wildlife\Figure 5-7 Small Mammal Trapping 123011.mxd

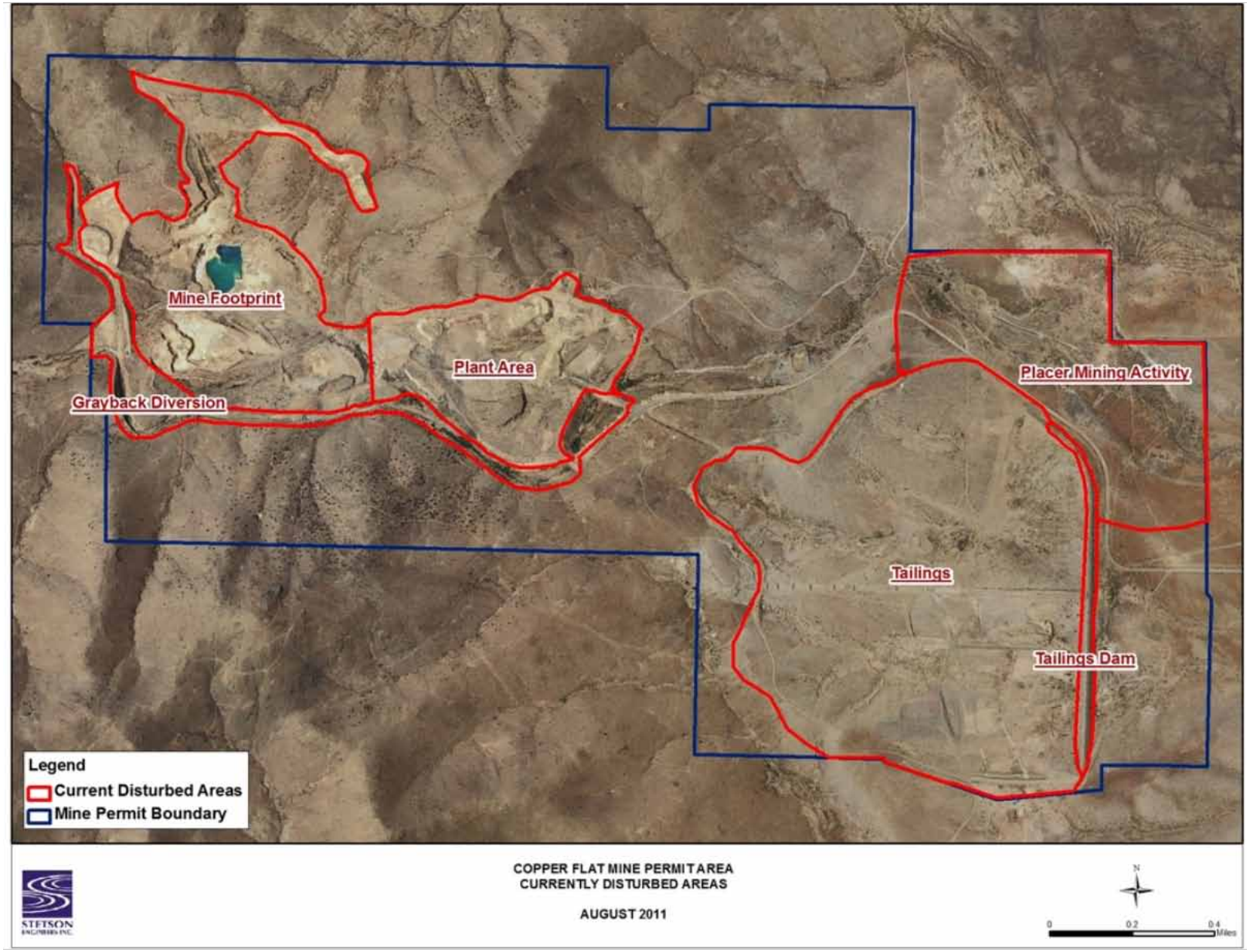
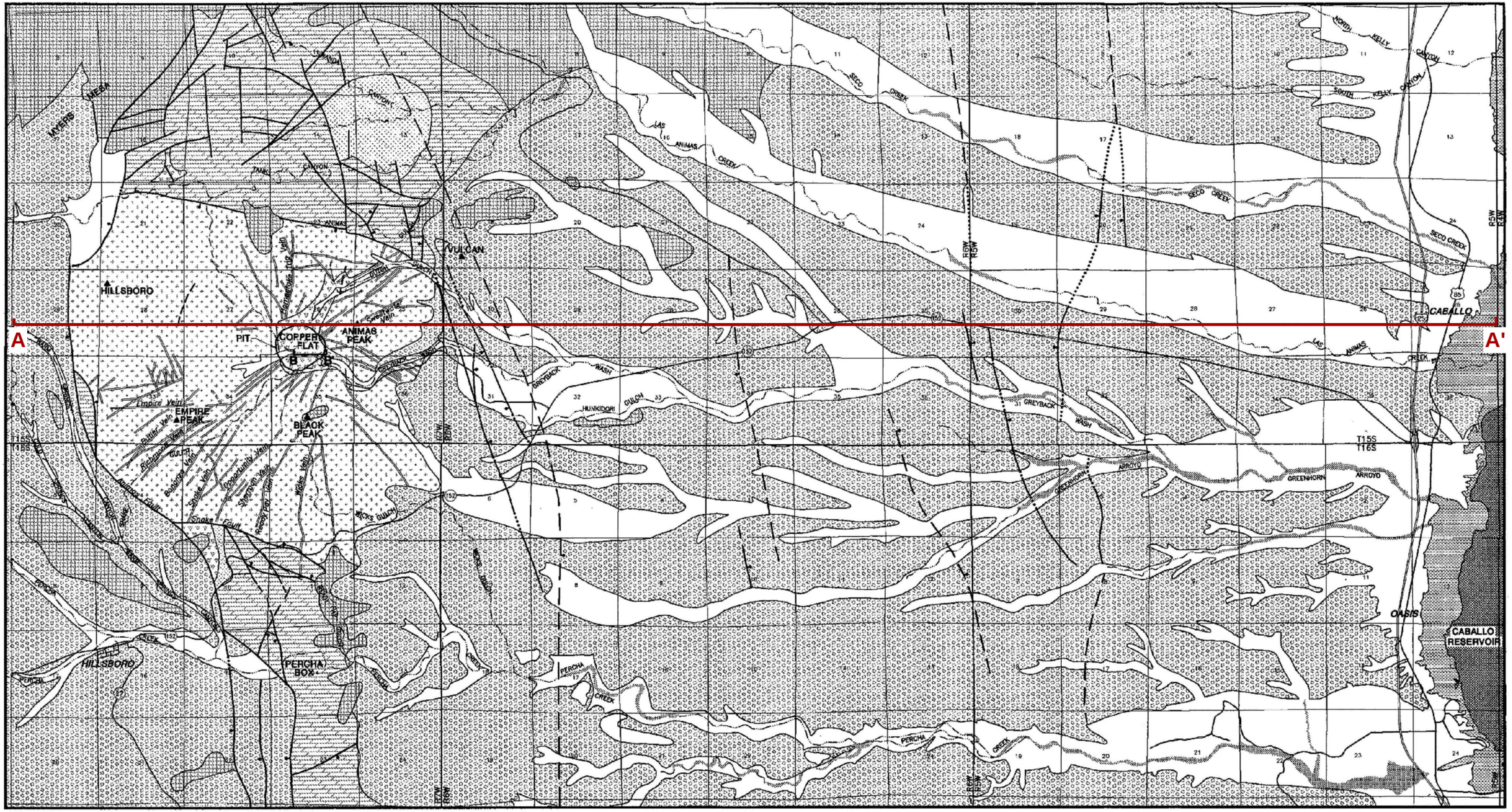

Mine Footprint
Plant Area
Grayback Diversion
Placer Mining Activity
Tailings
Tailings Dam
Legend
Current Disturbed Areas
Mine Permit Boundary
COPPER FLAT MINE PERMIT AREA
CURRENTLY DISTURBED AREAS
AUGUST 2011
STETSON
N
0
0.2
0.4
Miles

Figure 6-1



STRATIGRAPHY

TERTIARY - QUATERNARY	CRETACEOUS	PALEOZOIC AND PRECAMBRIAN
Quaternary Alluvium (Qvy+Qvo)	Late Cretaceous – Silicic Intrusives (Kli)	Paleozoic Siliclastic and Carbonate Sedimentary Rocks (pC through PM)
Tertiary Volcanics (TQb+Tv)	Cretaceous Latite – Andesite Intrusives (Kql+Kd+Kls)	
Tertiary Santa Fe Group (Tsfp+Tsf)	Andesite rocks near Copper Flat (Ka)	

LEGEND

NORMAL FAULT, BALL ON DOWNTHROWN SIDE; DASHED WHERE INFERRED, DOTTED WHERE BURIED.

CONTACT

A A' CROSS SECTION LOCATION

NORTH

0 5,825 11,650

FEET

SOURCES:
(1) HARLEY (1934)
(2) SEAGER ET AL. (1982)
(3) HEDLUND (1977)
(4) ALMINAS ET AL. (1978)

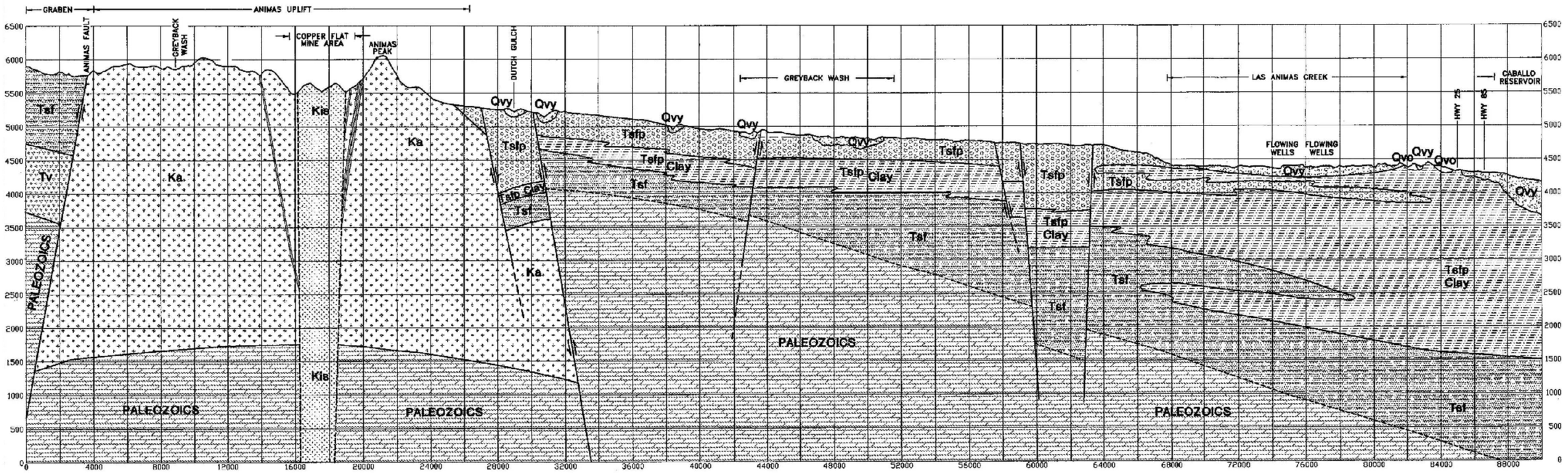
(see Figure 7-2 for cross section detail)

from BLM, 1999

Figure 7-1
Regional Surface Geology
New Mexico Copper Corporation

A

A'



LEGEND:

QUATERNARY
- Qvy
- Qvo
- } Stream Alluvium

TERTIARY
- Tsfp
- Tsfp Clay
- } Palomas Formation
- Tsf – Rincon Valley Formation
- Tv – Tertiary Volcanics

CRETACEOUS
- Ka
- Kls
- } Volcanics and Intrusives

PALEOZOIC
- Bedrock Carbonate and Clastic Rocks

SOURCES:
(1) HARLEY (1934)
(2) SEAGER ET AL. (1982)
(3) HEDLUND (1977)
(4) ALMINAS ET AL. (1975)

SCALE IN FEET
VERTICAL 1500 0'
HORIZONTAL 6000 0'

(see Figure 7-1 for cross section location)

from BLM, 1999

Figure 7-2
Schematic Geologic Cross Section (A-A')
New Mexico Copper Corporation

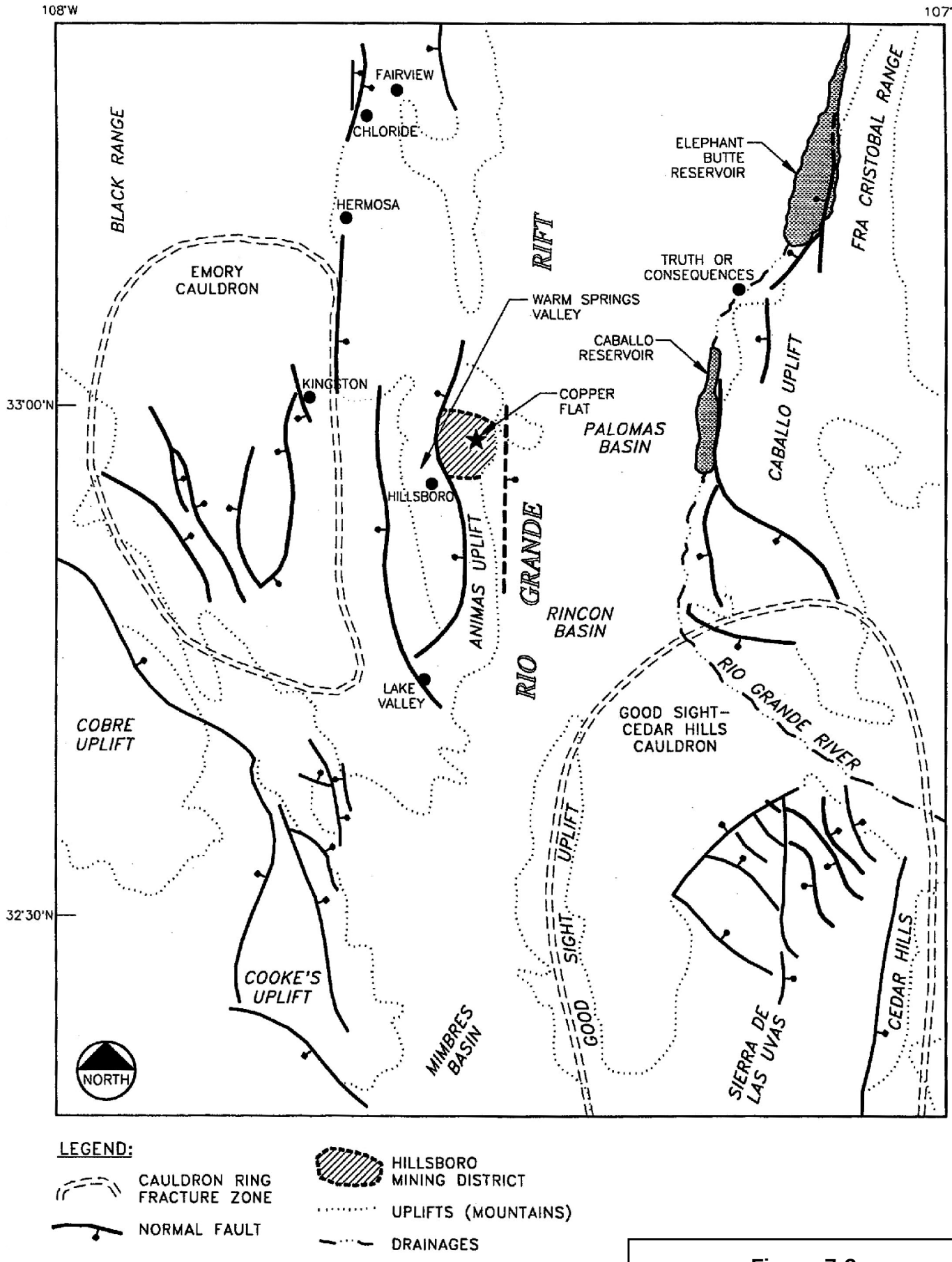
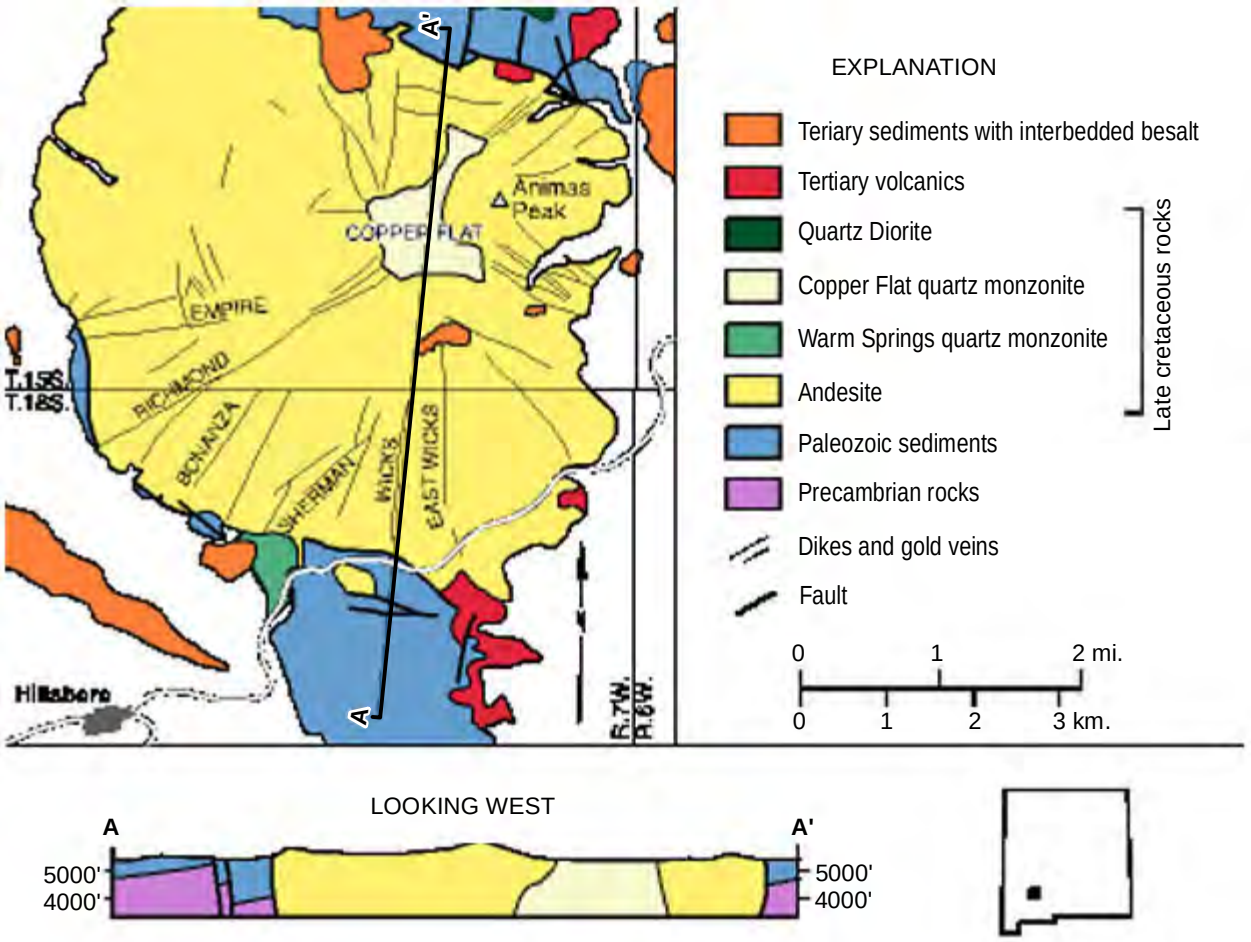


Figure 7-3
Geologic Structural Features of the Region

New Mexico Copper Corporation

from BLM, 1999

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\SAP_7-2010\7_geology\7-3_geology_hillsboro.mxd 07/16/2010



from McLemore et al., 2000; Dunn, 1982; Hedlund, 1985

Figure 7-4
Geologic Schematic of the
Hillsboro Mining District, New Mexico
New Mexico Copper Corporation

862000 863000 864000 865000 866000

11979000 11978000 11977000 11976000

Legend

Geology

- Andesite
- Biotite Breccia
- Quartz Monzonite
- Quartz-Feldspar Breccia

Structures

- Faults
- Underground Works

1 inch = 400 feet

Notes:
1. Structures and geology were digitized from a georefernced image. RMS = 3.44 meters (10.32 feet)
2. The geologic data is approximate and should not be used for purposes where very accurate data are required.
2. Base map is from Cooper Aerial 2011.

Coordinate System: NAD 1983 UTM Zone 13N
Projection: Transverse Mercator
Datum: North American 1983
False Easting: 500,000.0000
False Northing: 0.0000
Central Meridian: -105.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000
Units: Meter

N W E S

0 250 500 1,000 Feet

Geologic Map of the Main Pit Area (Adapted from Dunn, 1984)

THEMAC RESOURCES

Copper Flat Project

Figure 7-5

November 11, 2011

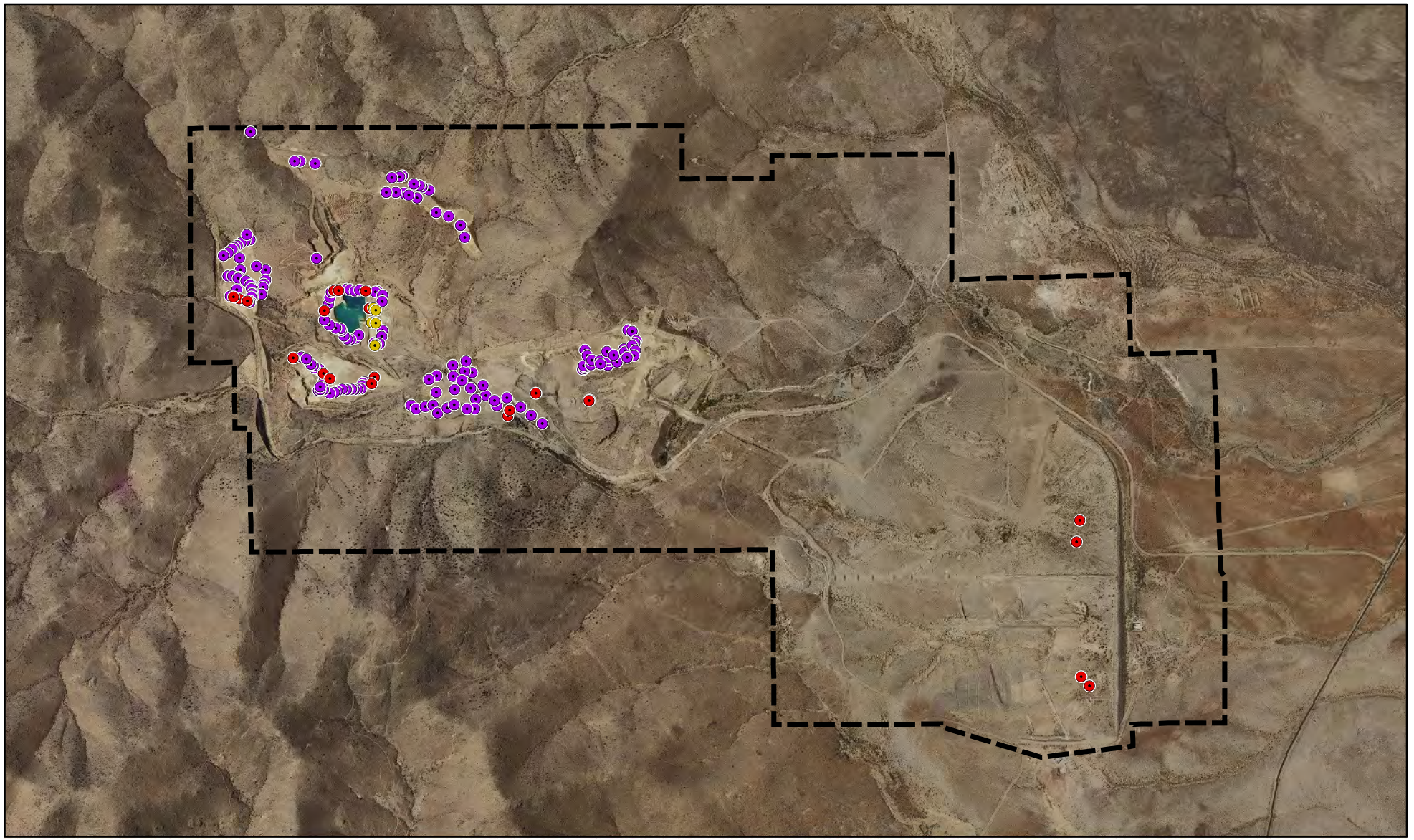
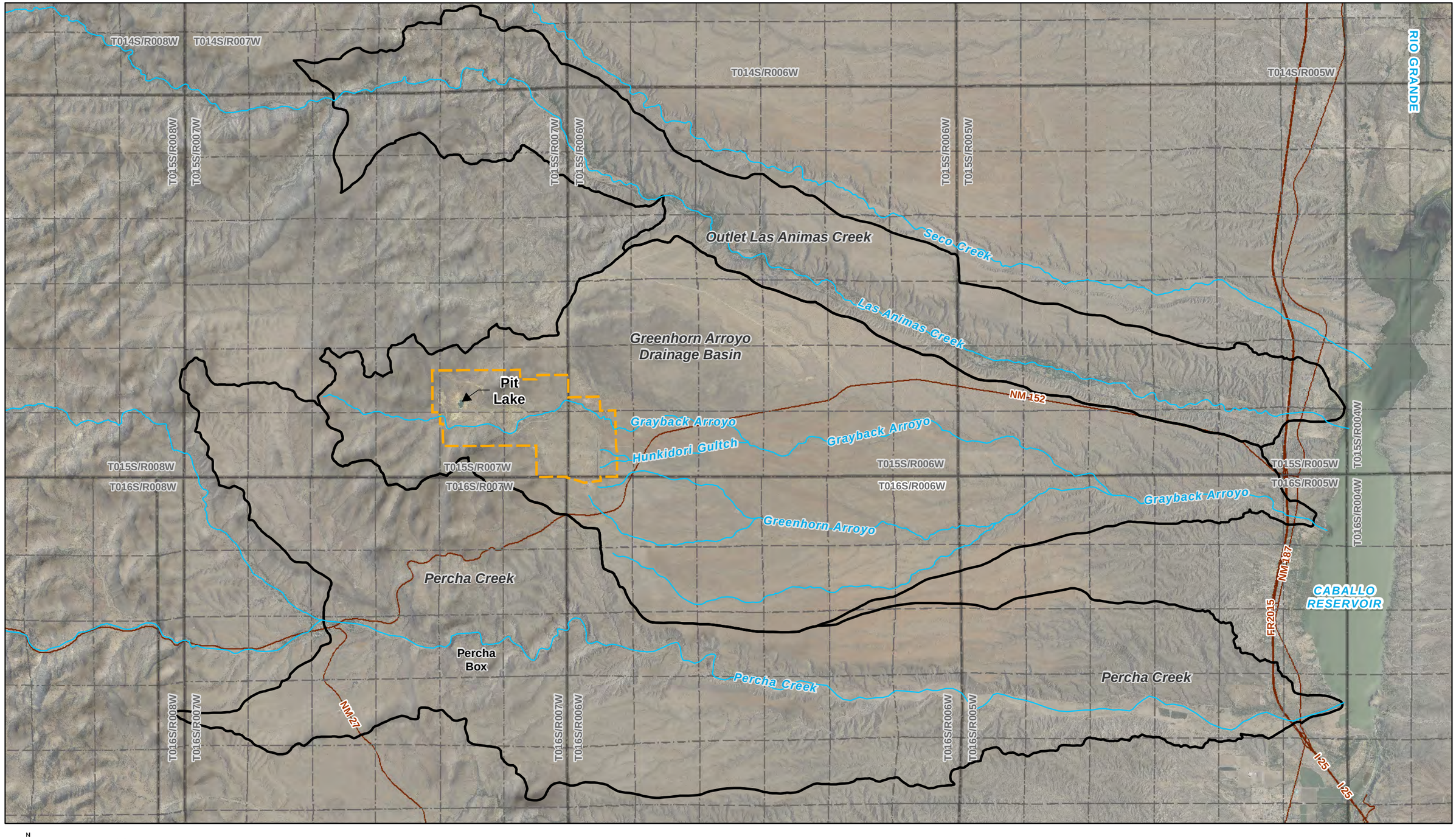


Figure 7-6
Locations of
Geologic Samples

New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig7-6_sample-locations.mxd 1/11/2012



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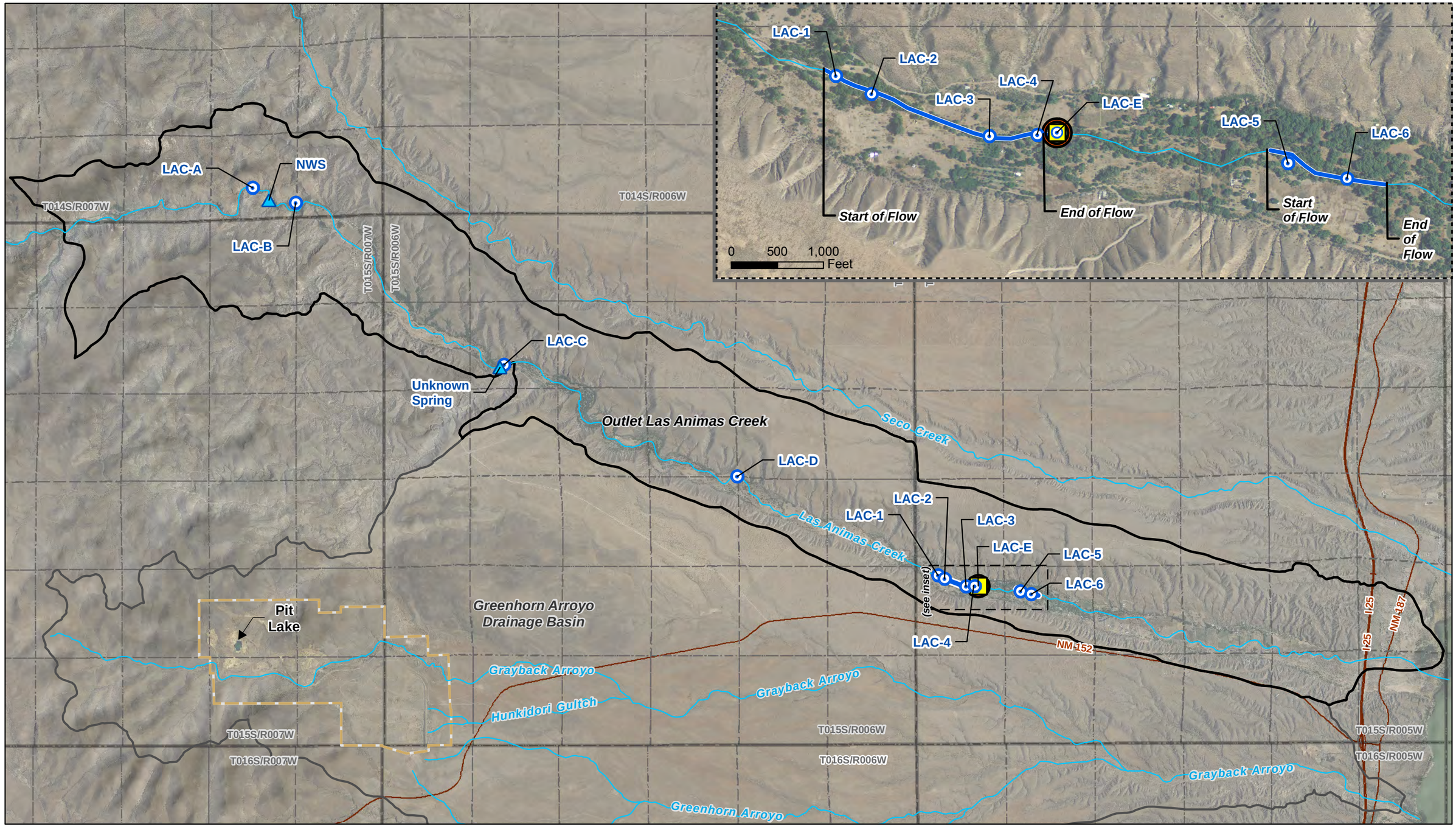
Watersheds:
USGS Hydrologic Unit Map
Mine Boundary:
NMCC
Imagery Information:
-USGS 7.5-Minutes County DOQQ mosaic
Sierra County, 2011
Projection Information:
-New Mexico State Plane West, NAD 1927

0 3,750 7,500 15,000 22,500
Feet

Legend
- Proposed Mine Permit Boundary
- Sub-Watershed

Figure 8-1
Map of Drainage Basins
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig8-01_DrainageBasins.mxd



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Watersheds:
USGS Hydrologic Unit Map
Mine Boundary:
NMCC
Imagery Information:
-USGS 7.5-Minutes County DOQQ mosaic
Sierra County, 2011
Projection Information:
-New Mexico State Plane West, NAD 1927

0 2,750 5,500 11,000 16,500
Feet

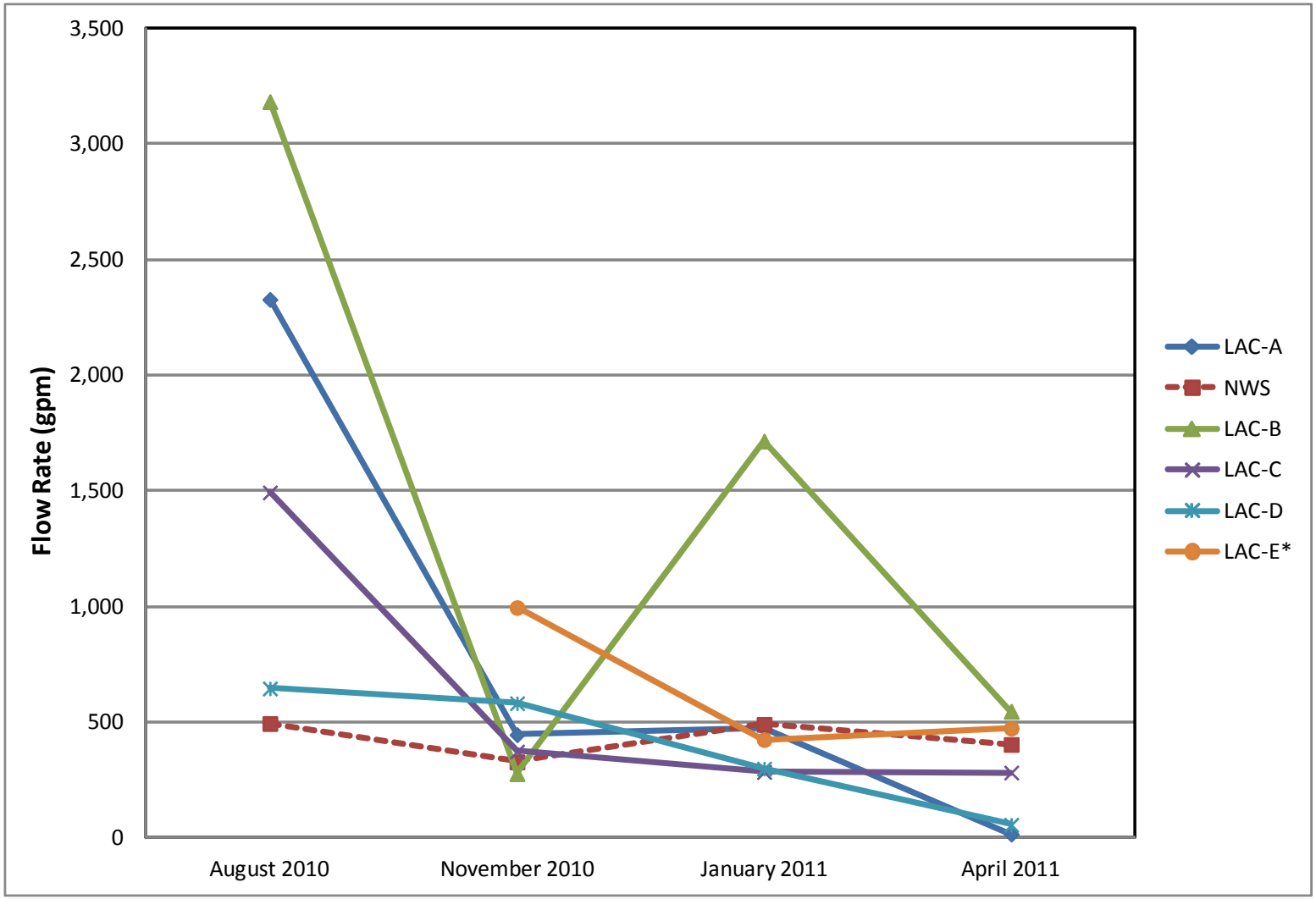
Legend

- Proposed Mine Permit Boundary
- Los Animas Creek Sub-Watershed
- Sediment Sample
- Sample Location
- Spring
- Auto Sampler
- Las Animas Perennial Flow in June 2011*

* – Only mapped downstream of LAC-D (see Appendix 8-B)

Figure 8-2
Las Animas Creek Drainage Basin with Sampling Locations
New Mexico Copper Corporation

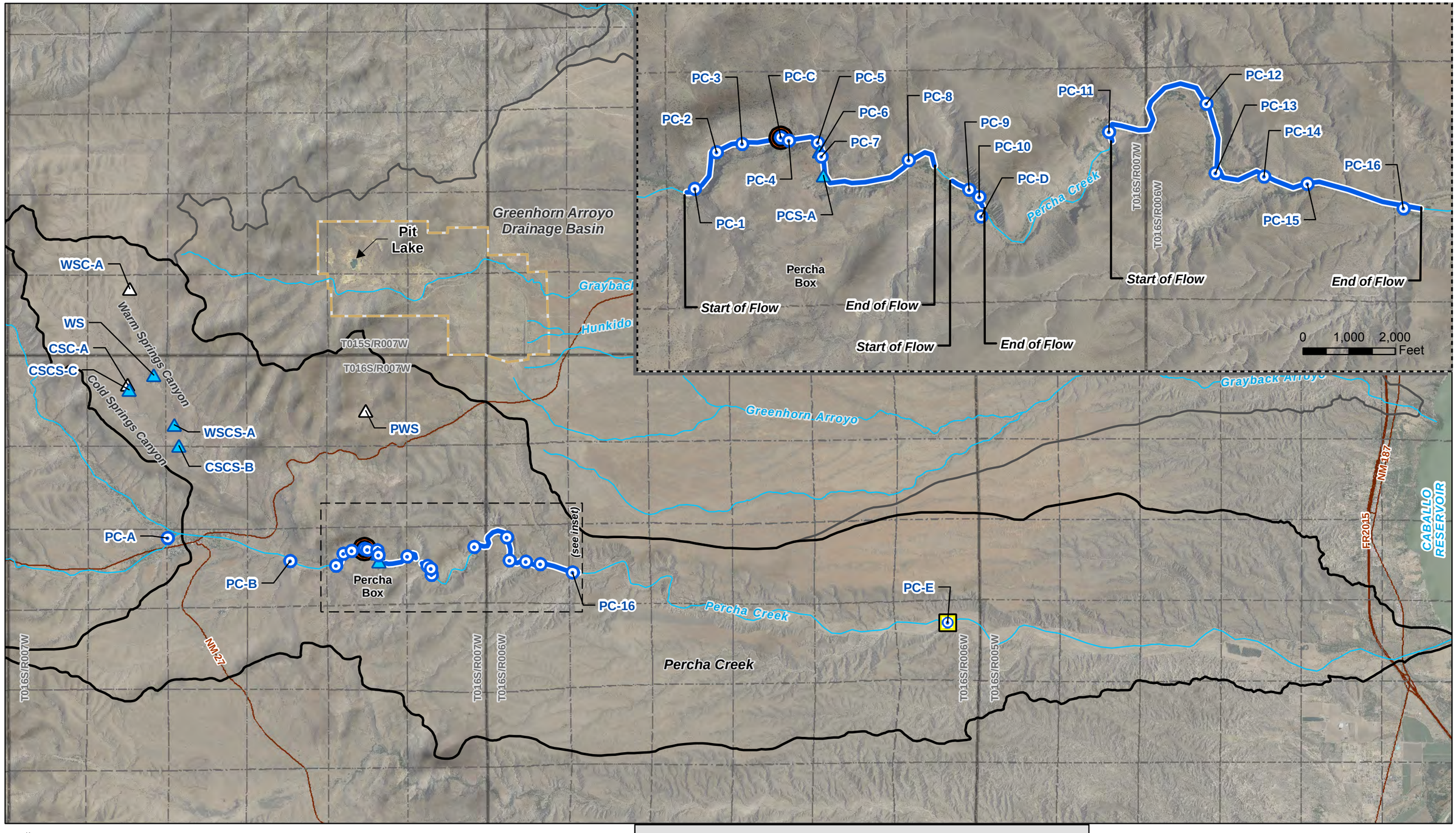
S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig8-02_SampLocsAnimas.mxd



* = Suspect data due to equipment malfunction

Figure 8-3
Las Animas Creek Flow Chart
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig8-03_LACflowchart_cfs.mxd



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Watersheds:
USGS Hydrologic Unit Map
Mine Boundary:
NMCC
Imagery Information:
-USGS 7.5-Minutes County DOQQ mosaic
Sierra County, 2011
Projection Information:
-New Mexico State Plane West, NAD 1927

0 3,000 6,000 12,000 18,000
Feet

INTERA

Legend

- Proposed Mine Permit Boundary
- Percha Creek Sub-Watershed
- Percha Creek Perennial Flow in June 2011*
- Sample Location
- Spring
- Dry Spring
- Auto Sampler
- Sediment Sample

* – See Appendix 8-D

Figure 8-4
Percha Creek Drainage Basin with Sampling Locations
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig8-04_SampLocsPercha.mxd

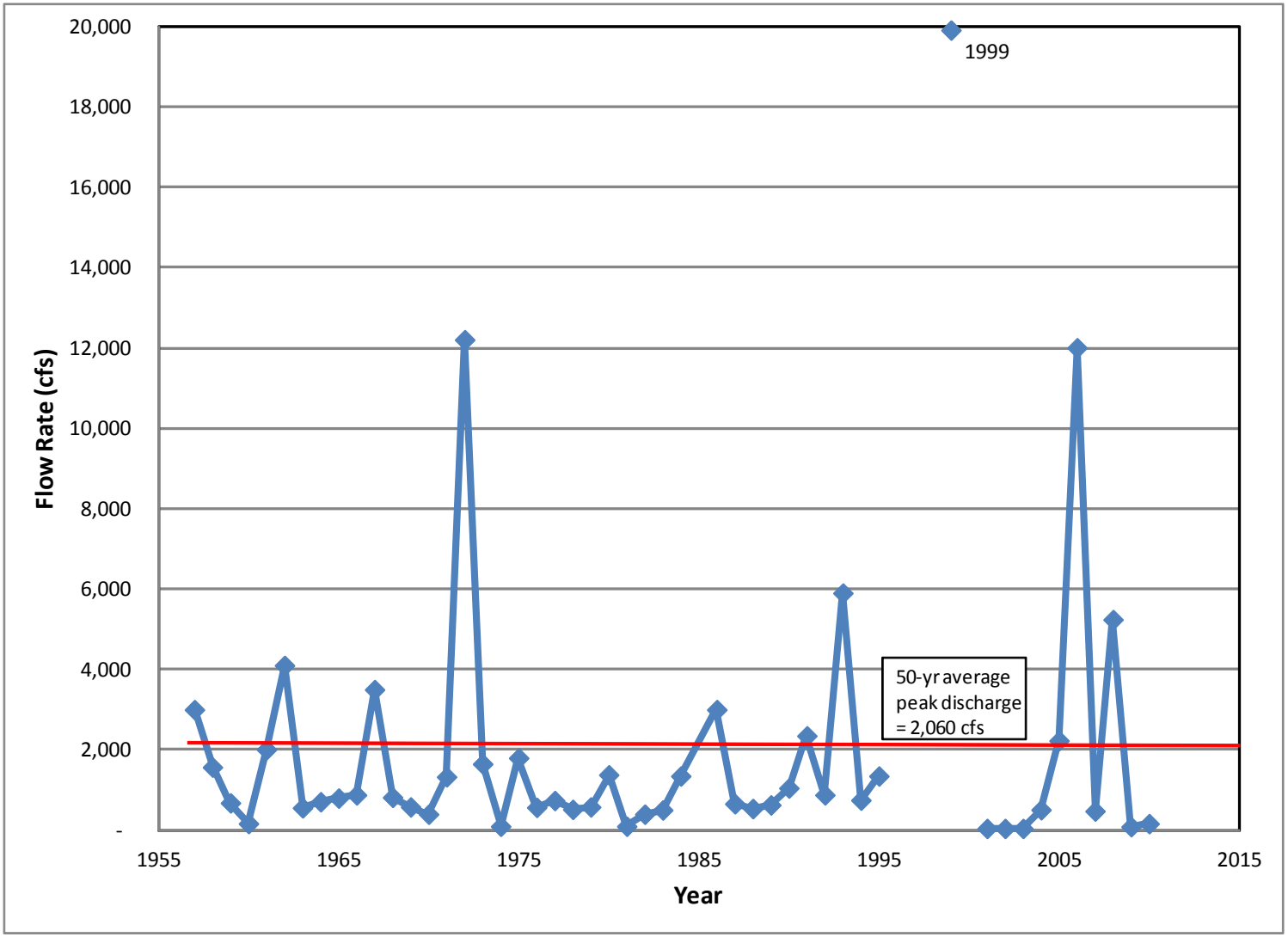


Figure 8-5
Percha Creek USGS Gauge,
Maximum Flow 1957-2010
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig8-05_PCmaxFlow_cfs.mxd

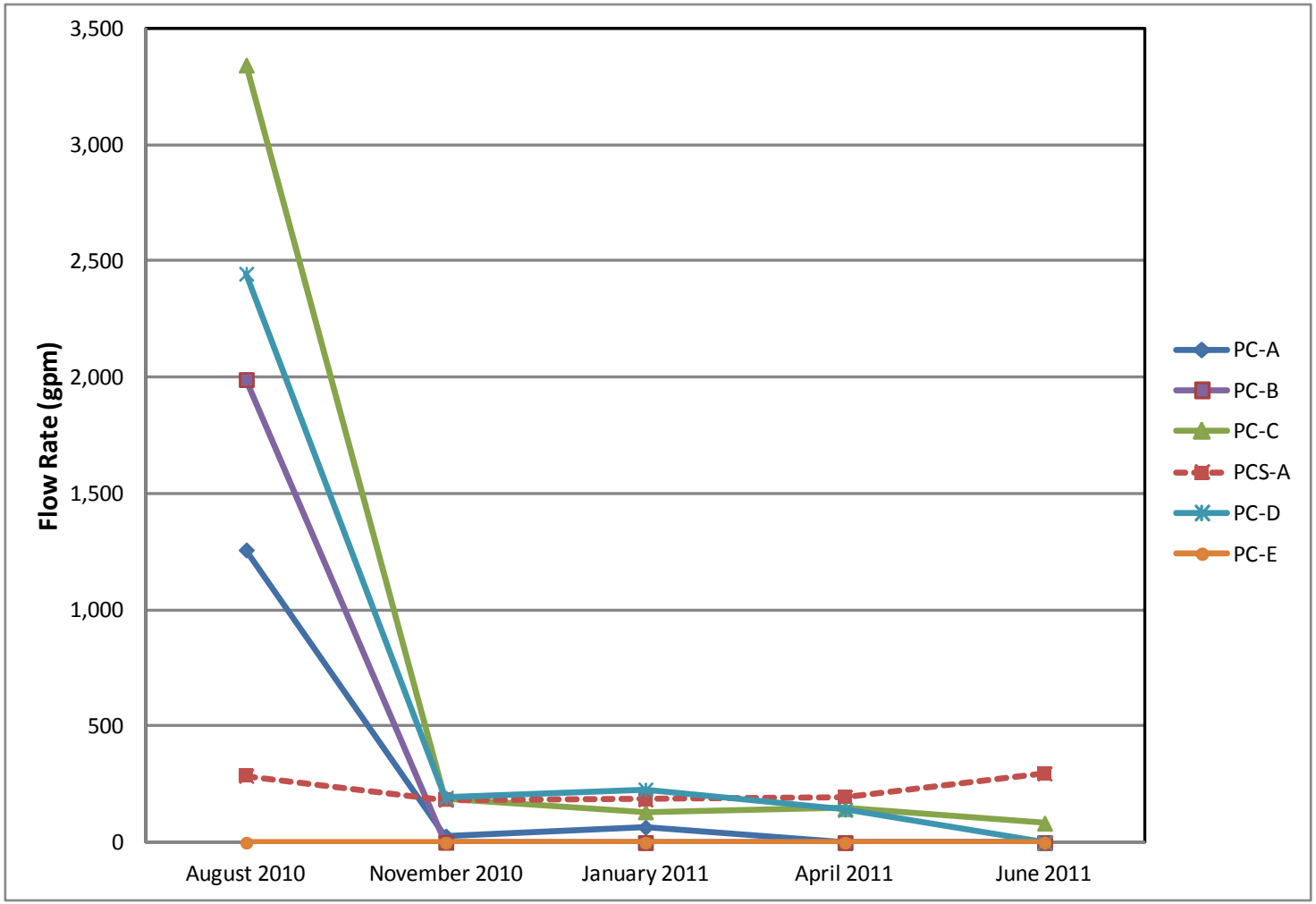
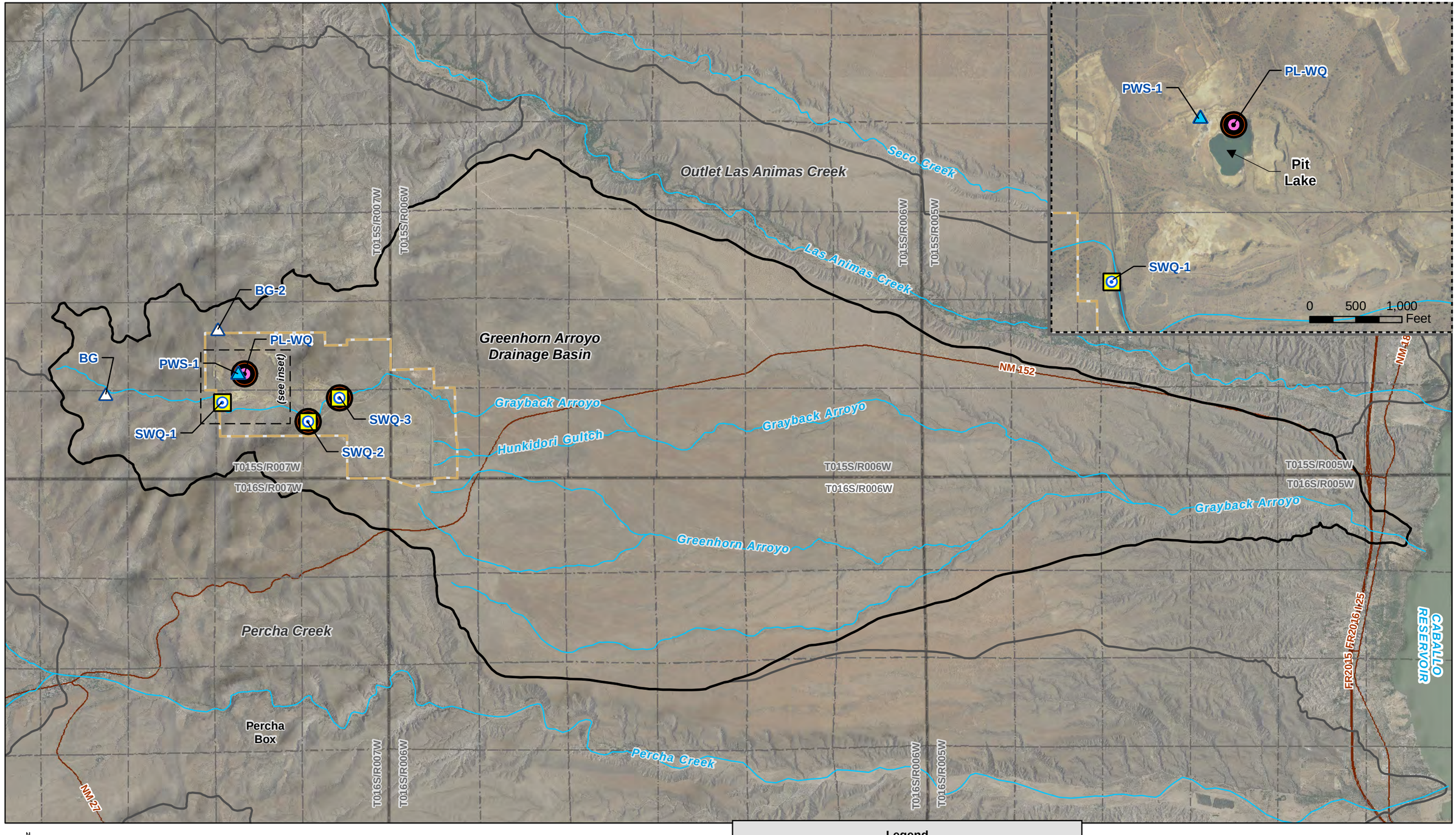


Figure 8-6
Percha Creek Flow Chart
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig8-06_PCflowchart_cfs.mxd



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Watersheds:
USGS Hydrologic Unit Map
Mine Boundary:
NMCC
Imagery Information:
-USGS 7.5-Minutes County DOQQ mosaic
Sierra County, 2011
Projection Information:
-New Mexico State Plane West, NAD 1927

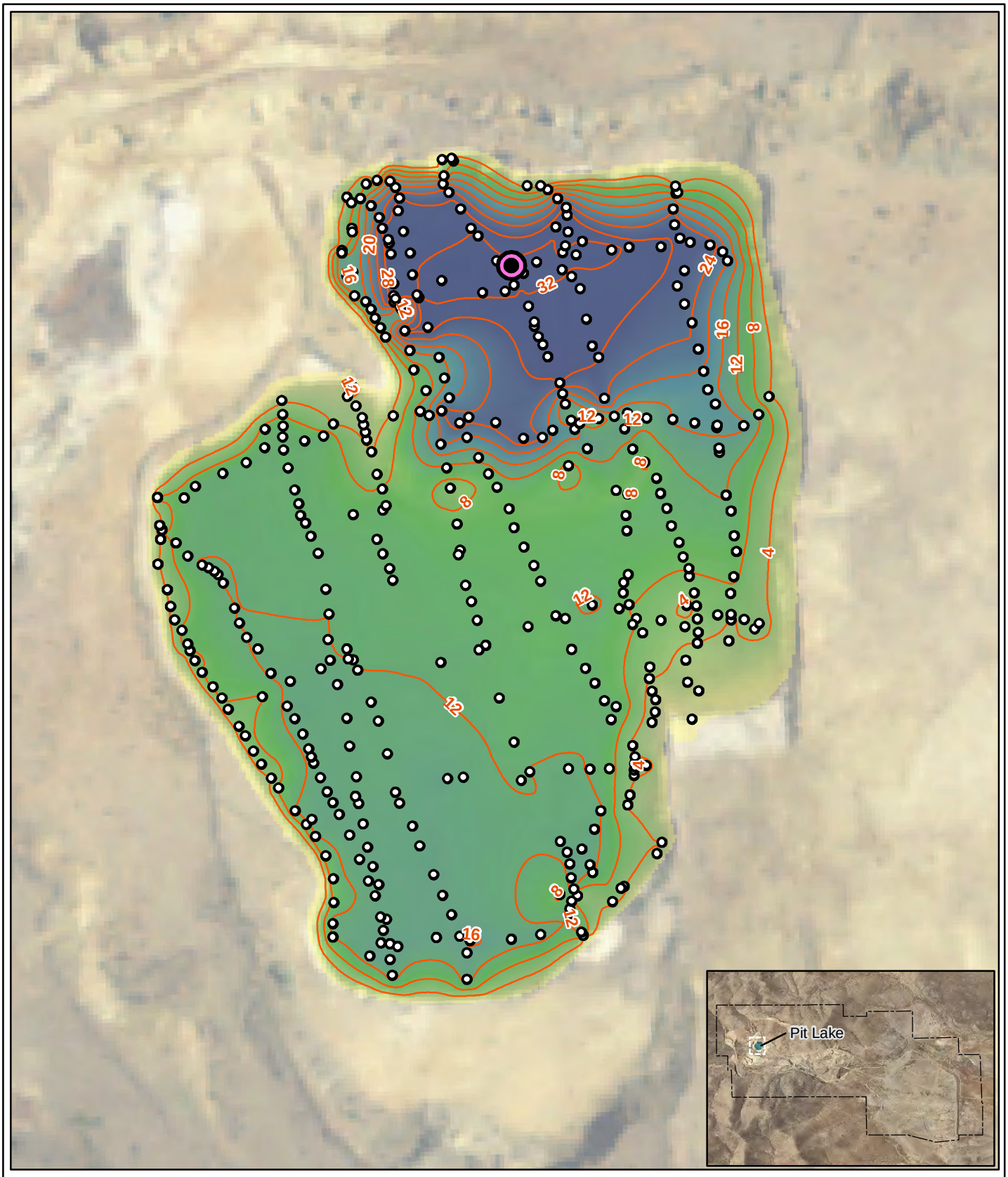
0 2,750 5,500 11,000 16,500
Feet

Legend

- Proposed Mine Permit Boundary
- Greenhorn Arroyo Sub-Watershed
- Pit Lake Sample (16 water quality; 1 sediment)
- Spring
- Dry Spring
- Auto Sampler
- Sediment Sample

Figure 8-7
Greenhorn Arroyo Drainage Basin with Sampling Locations
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig8-07_SampLocsGreenHorn.mxd



0 50 100 200

Feet

Imagery Information:
-USGS 7.5-Minutes County DOQQ mosaic
Sierra County, 2011
Projection Information:
-New Mexico State Plane West, NAD 1927

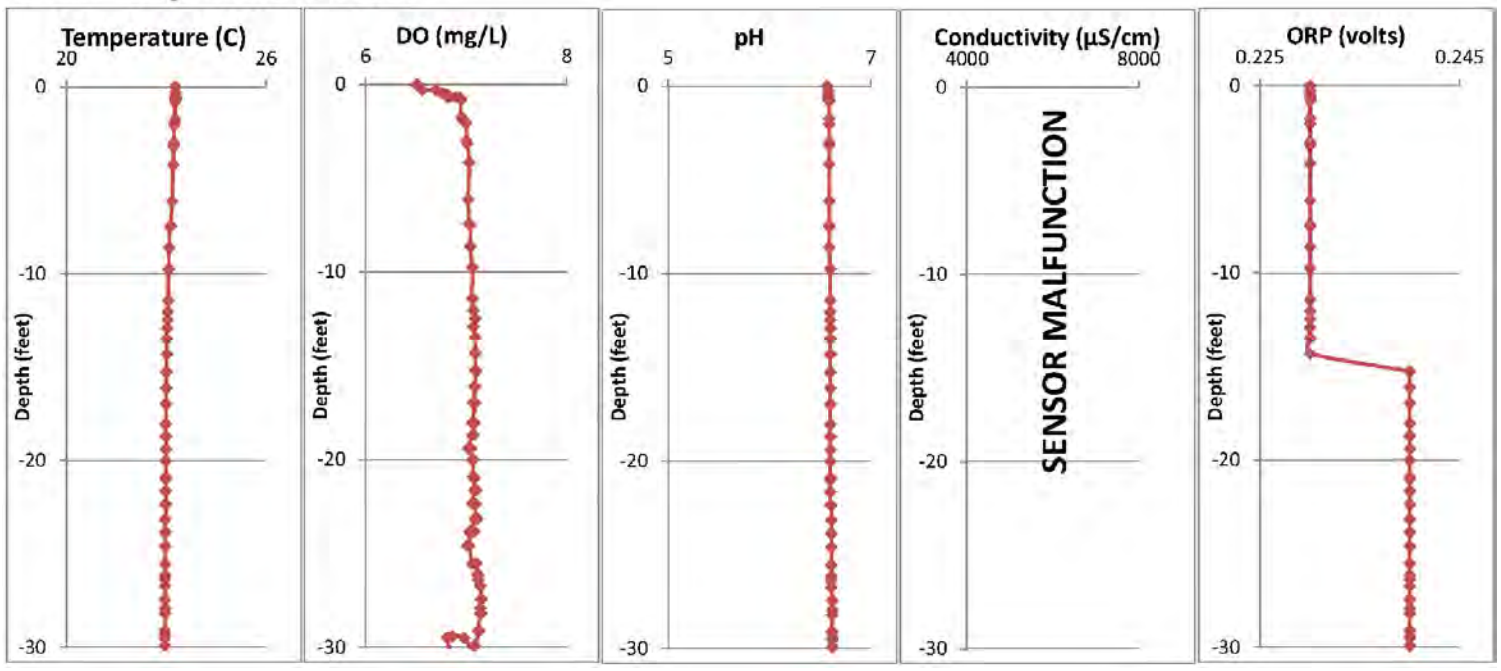
Legend

- Bathymetry Point
- Pit Lake Sample (16 water quality; 1 sediment)
- Depth of Pit Bottom in Feet

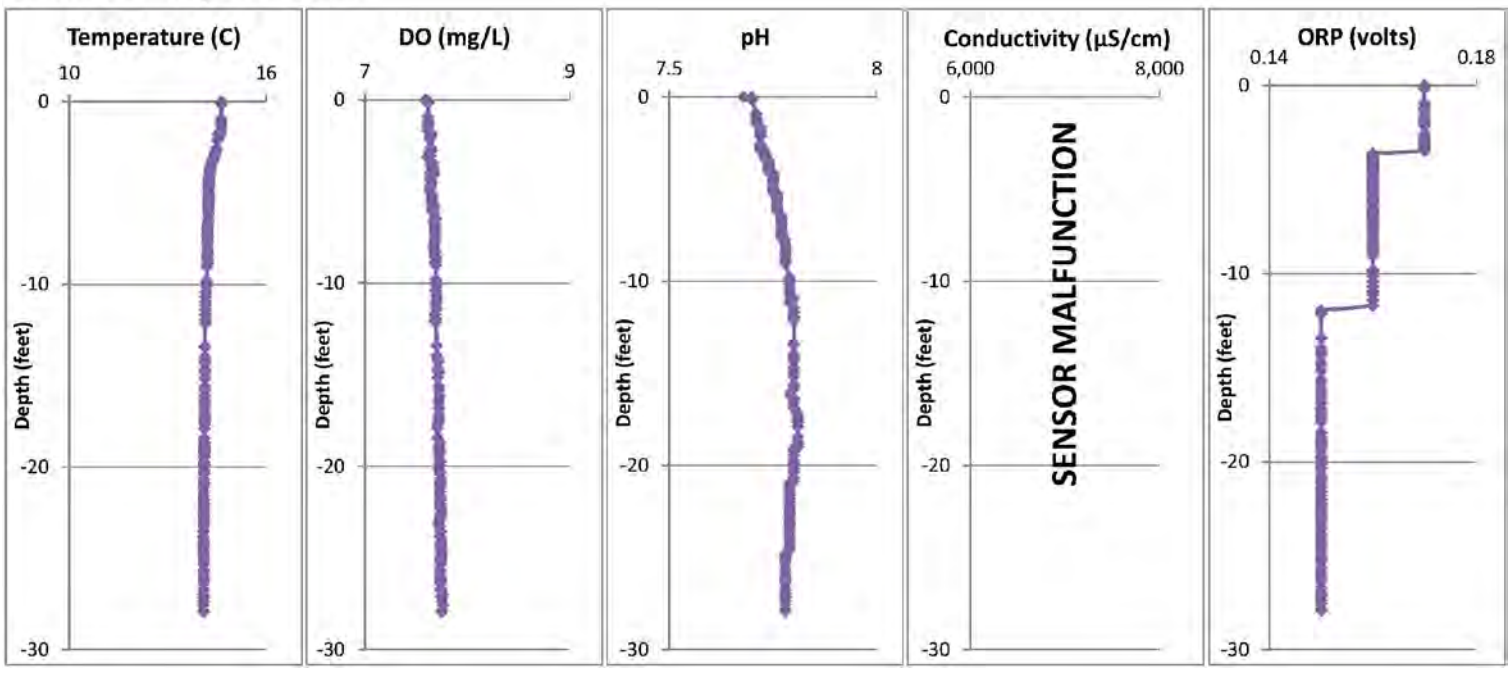
Figure 8-8
Bathymetric Map of Pit Lake with Water-Depth Measurement Locations
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig8-08_BathymetricMap.mxd

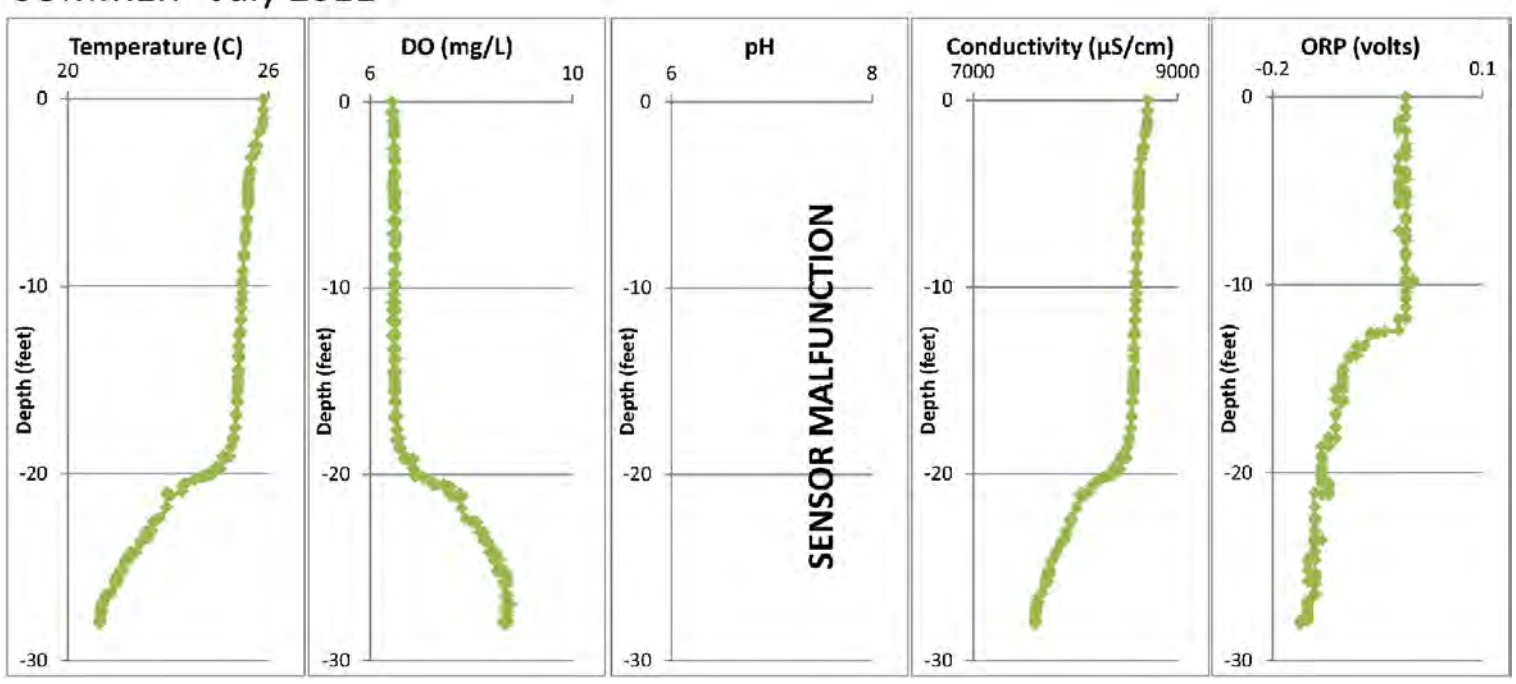
FALL - September 2010



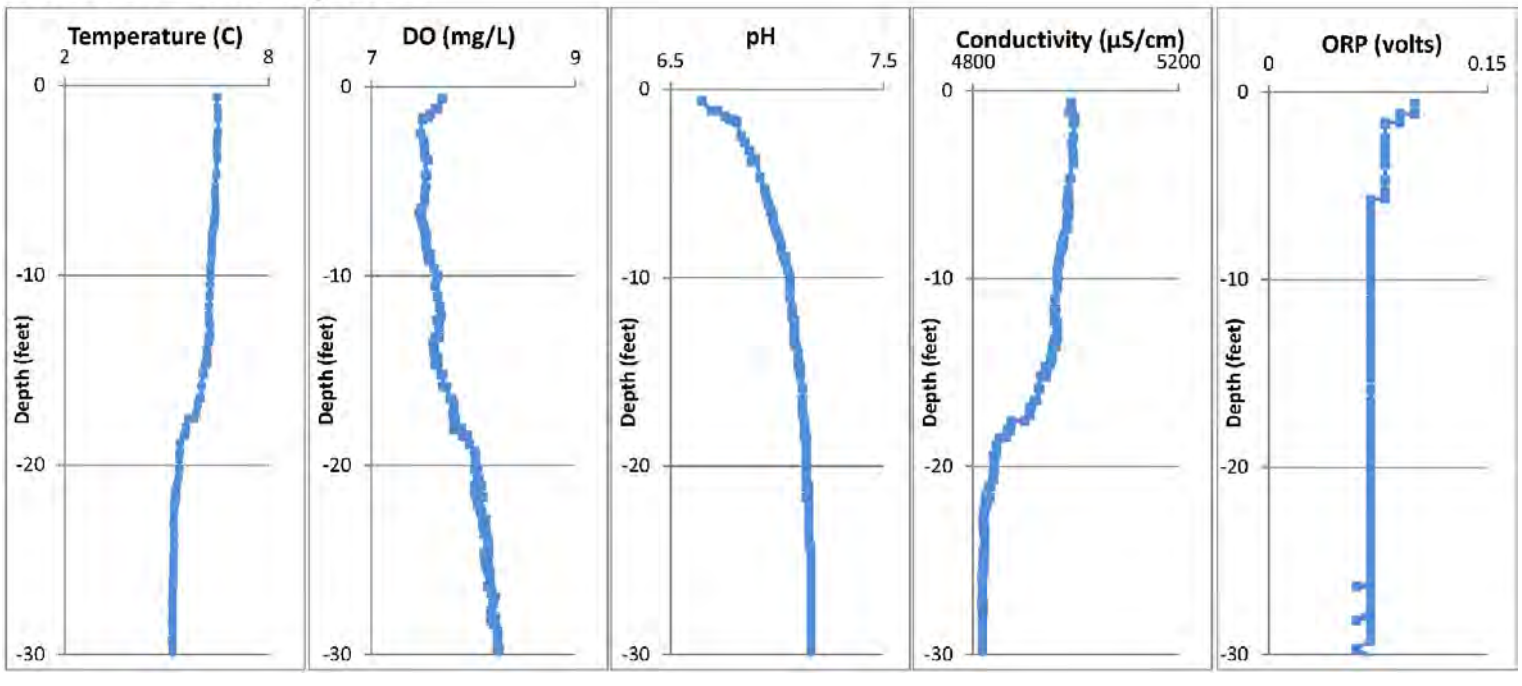
SPRING - April 2011



SUMMER - July 2011



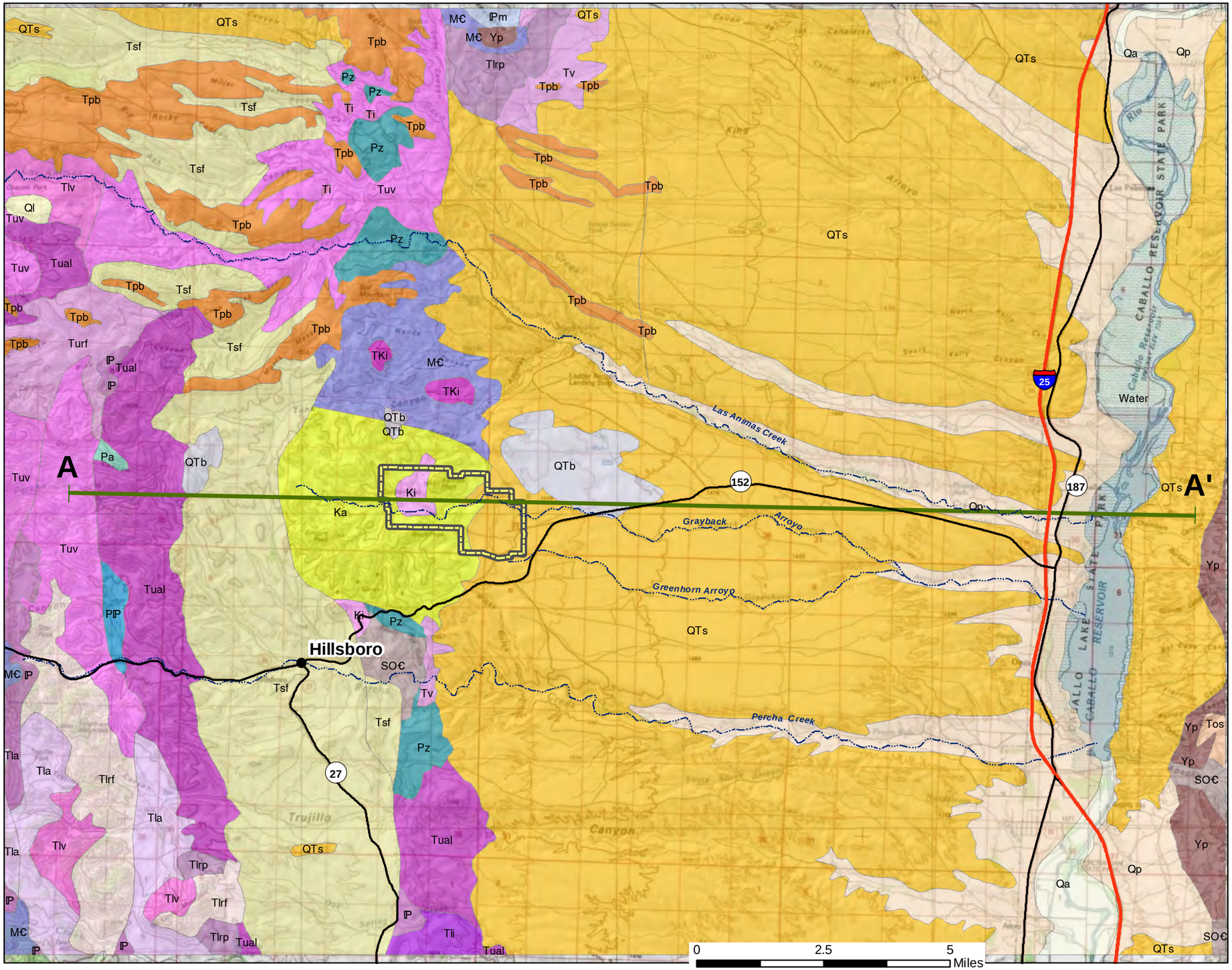
WINTER - January 2011



INTERA

Figure 8-9
Seasonal Pit Lake Profiles
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig8-09_Q1-4Profiles.mxd



Geologic Source: USGS OFR 97-0052 modified

Explanation

Quaternary

- Qa alluvium
- Qp piedmont alluvial deposits
- Ql landslide deposits

Quaternary and Tertiary

- QTs Upper Santa Fe Group
- QTb basaltic and andesite volcanics

Tertiary

- Tli quartz monzonites
- Tlrf silicic flows
- Tual basltic andesites
- Tlv volcanic rocks, undifferentiated
- Tlrp silicic pyroclastic rocks
- Tla Lower Tertiary andesite and basaltic flows
- Turf silicic flows
- Ti Tertiary instrusive rocks
- Tsf Lower and Middle Santa Fe Group
- Tos sedimentary and volcaniclostic rocks
- Tpb basalt and andesite flows
- Tuv volcanic rocks, undifferentiated
- Tv silicic flows

Tertiary and Cretaceous

- TKi Upper Cretaceous intrusive rocks

Cretaceous

- Ki Uppermost Cretaceous instrusive rocks
- Ka Uppermost Cretaceous andesite flows

Paleozoic

- Pz Paleozoic rocks, undivided
- Pa Abo Formation
- PIP Permian and Pennsylvanian rocks, undivided
- IP Pennsylvanian rocks, undivided
- IPm Madera Limestone
- SO€ Silurian through Cambrian rocks, undivided
- M€ Mississippian through Cambrian rocks, undivided

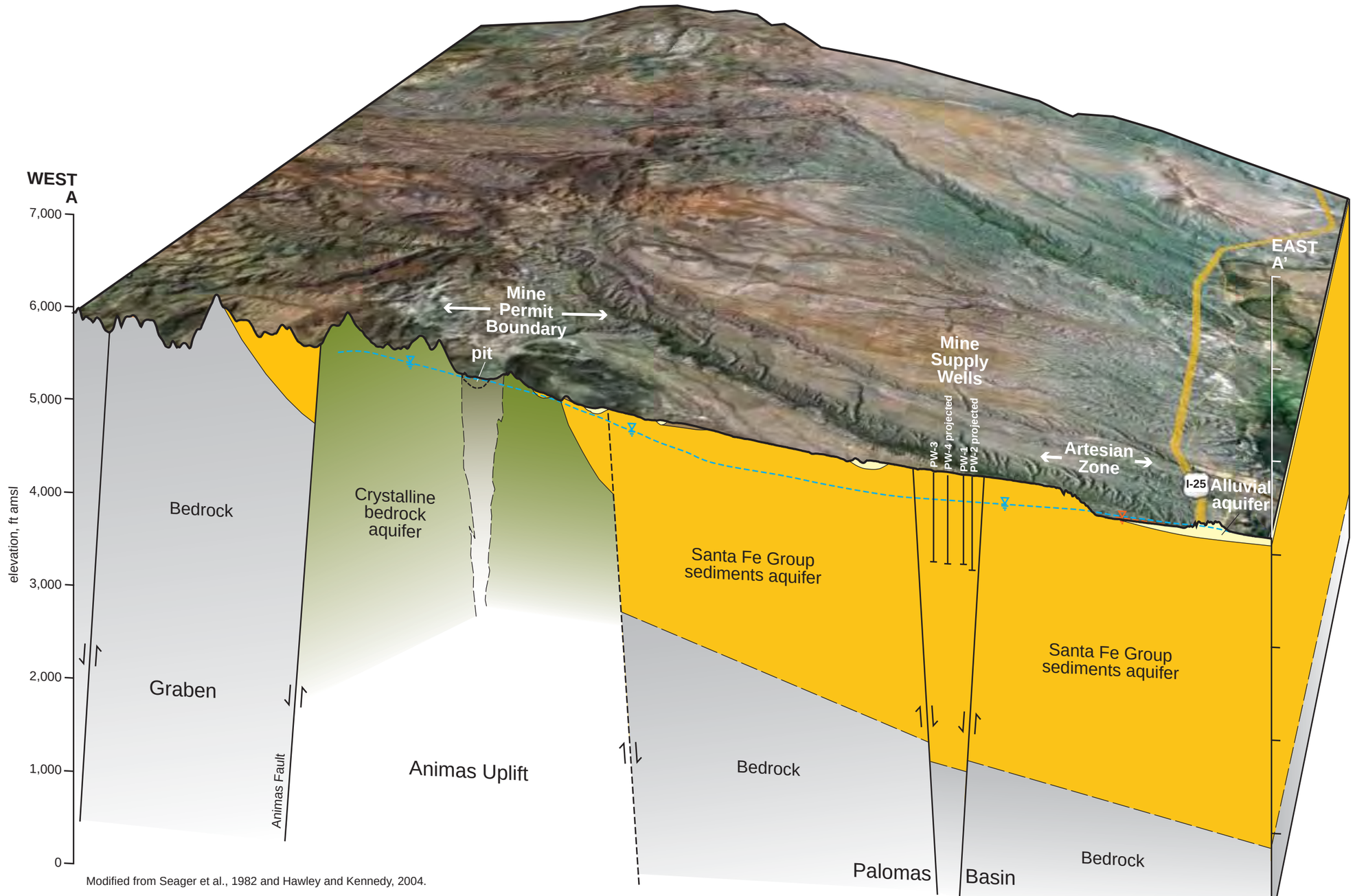
Precambrian

- Yp Middle Proterozoic plutonic rocks

line of section

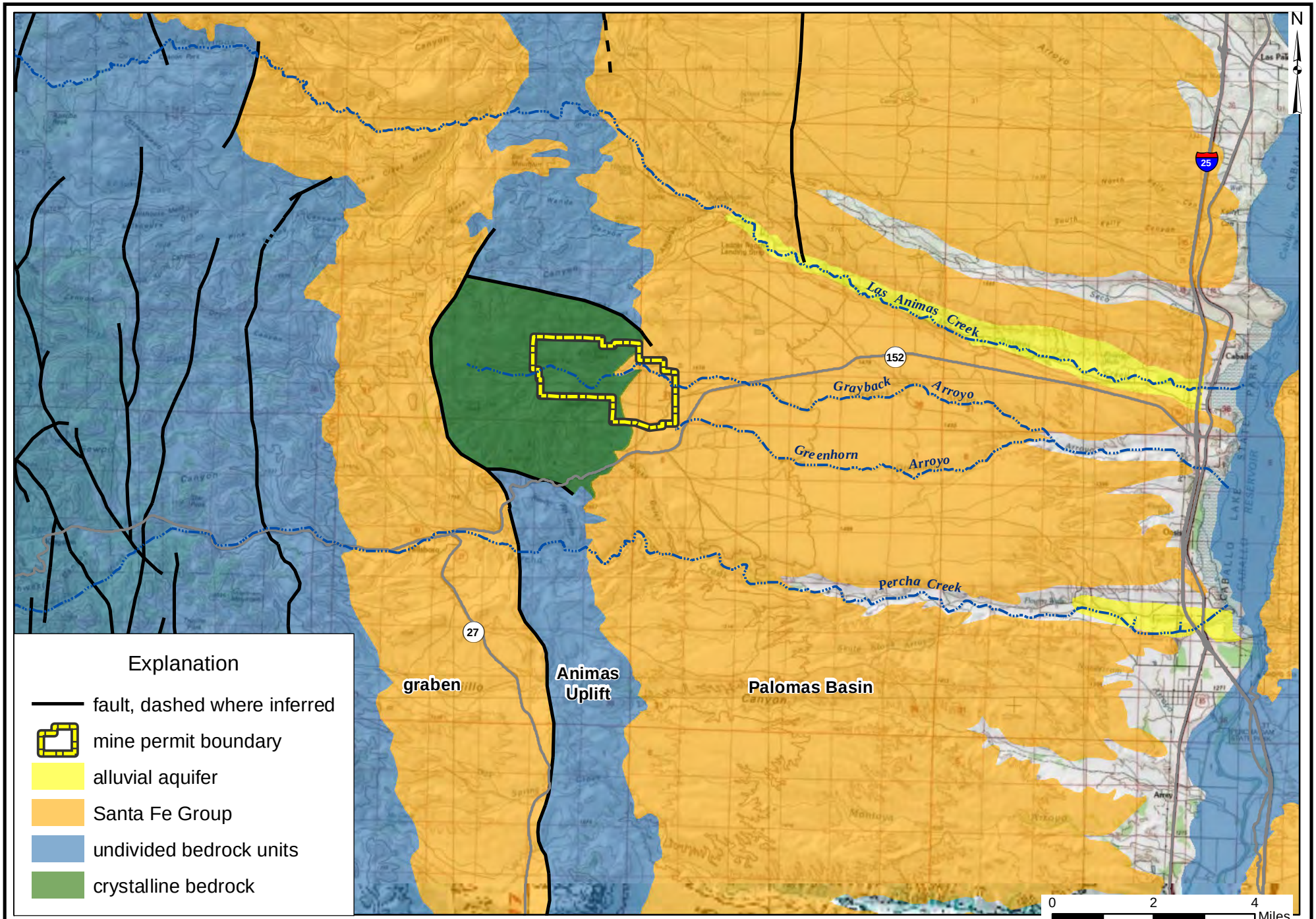
mine permit boundary

Figure 8-10. Map showing regional geology.



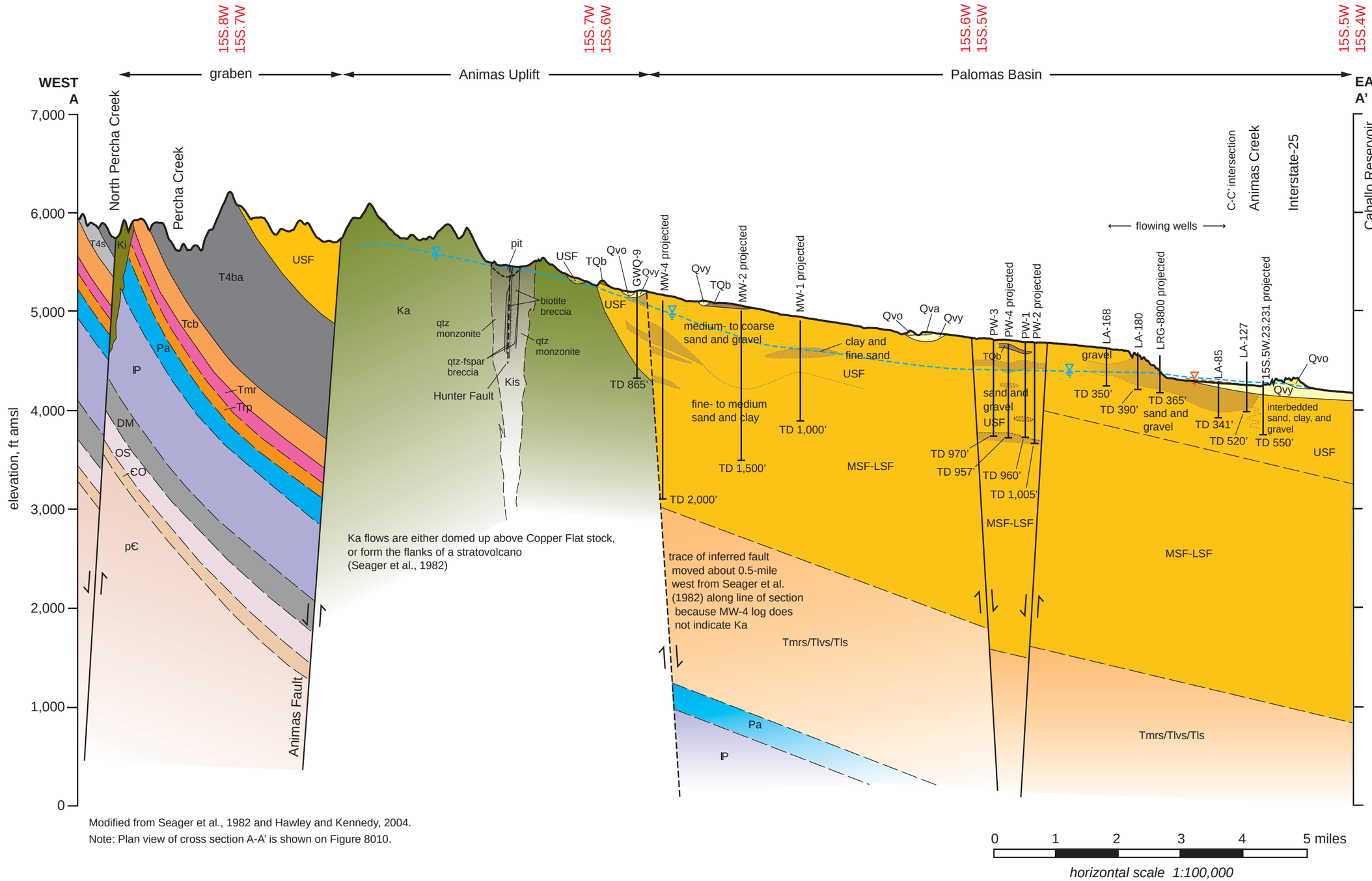
Modified from Seager et al., 1982 and Hawley and Kennedy, 2004.

Figure 8-11. Conceptual model.



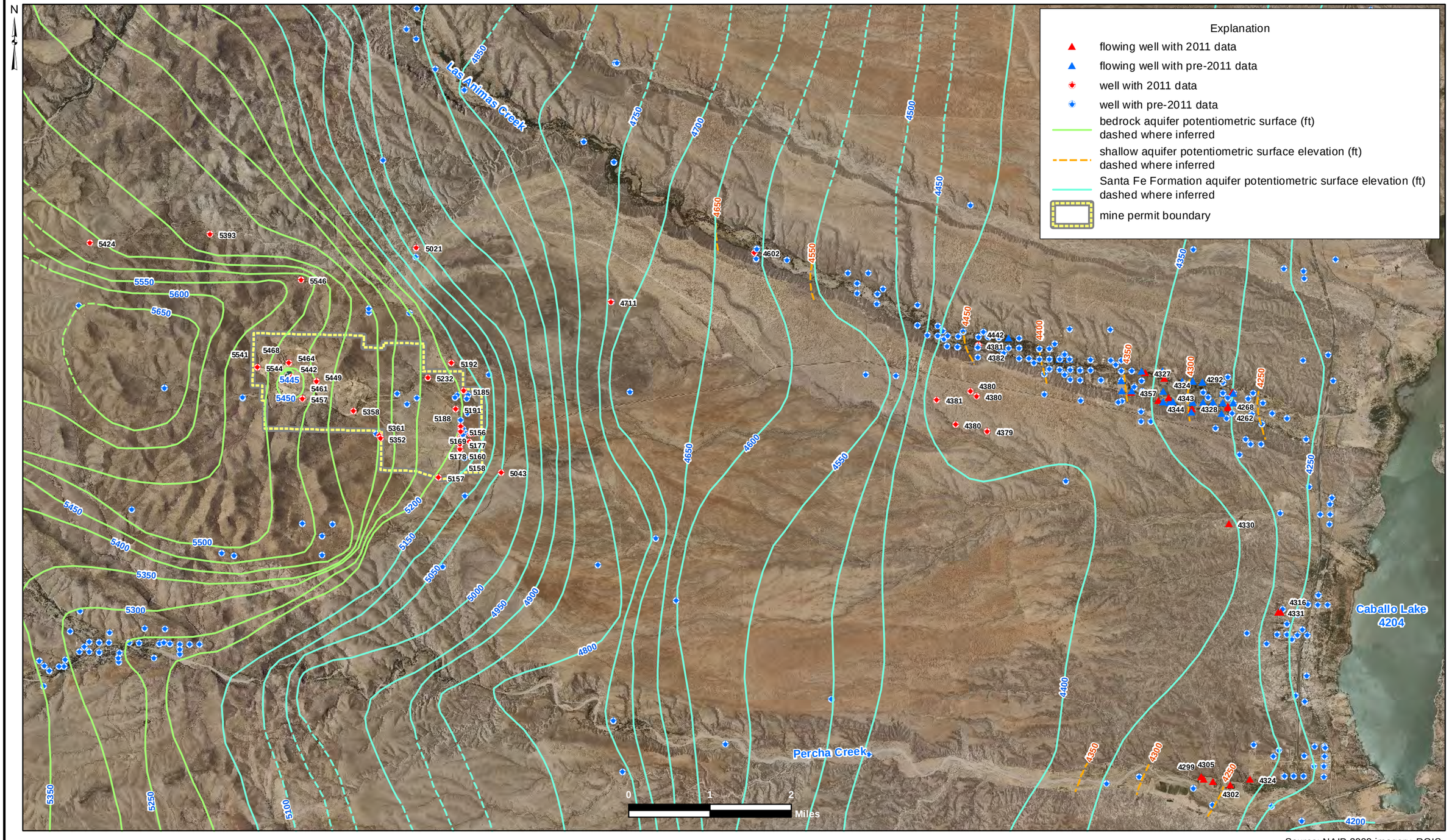
Geologic Source: USGS OFR 97-0052 modified

Figure 8-12. Map showing location of crystalline bedrock, Santa Fe Group sediments, and alluvial aquifer zones.



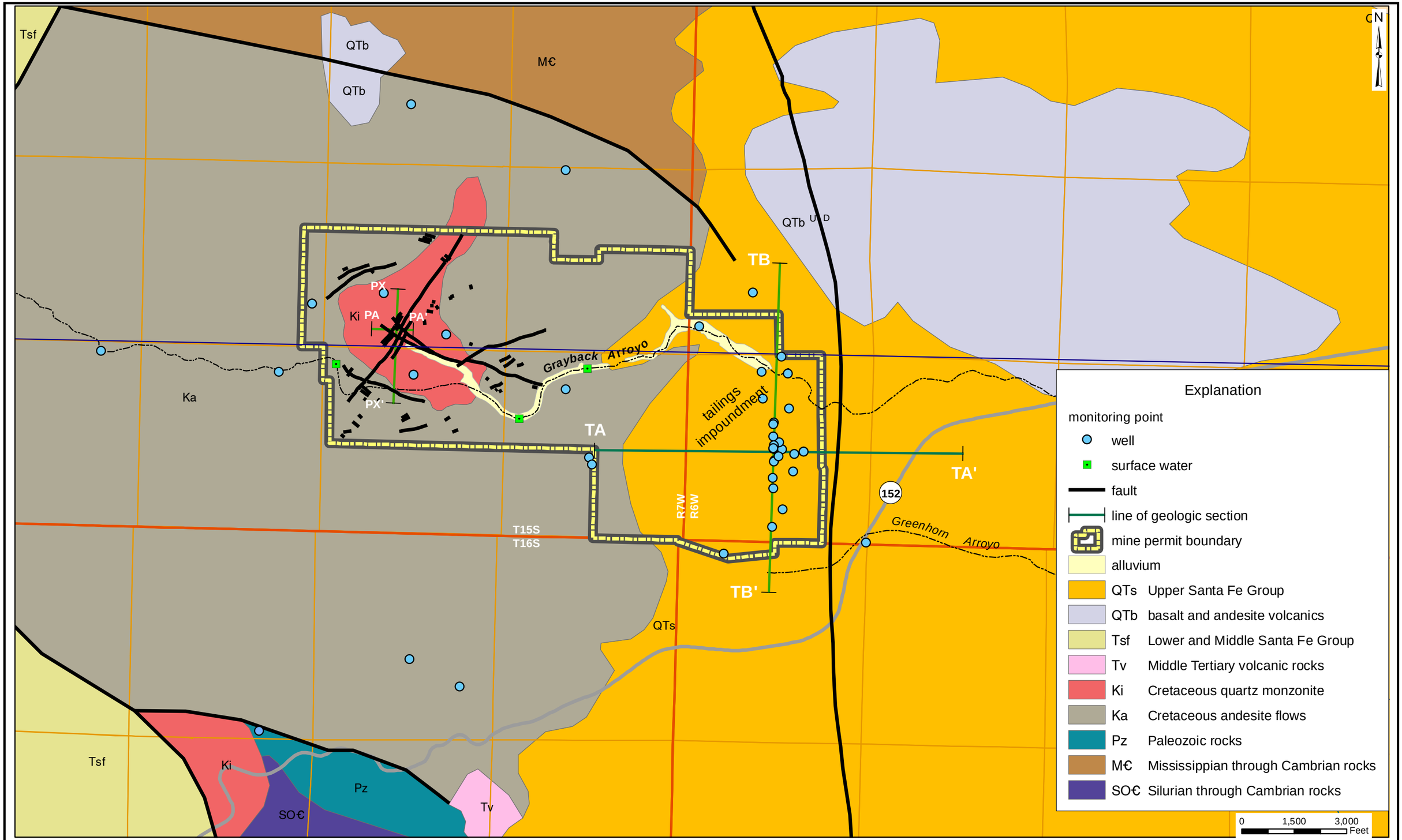
Modified from Seager et al., 1982 and Hawley and Kennedy, 2004.
Note: Plan view of cross section A-A' is shown on Figure 8010.

Figure 8-13. Regional west to east hydrogeologic cross section.



Source: NAIP 2009 imagery, RGIS.

Figure 8-14. Regional 2011 groundwater elevation contours.



Geologic Source: modified from USGS OFR 97-0052

Figure 8-15. Geologic map of Copper Flat Mine permit area.

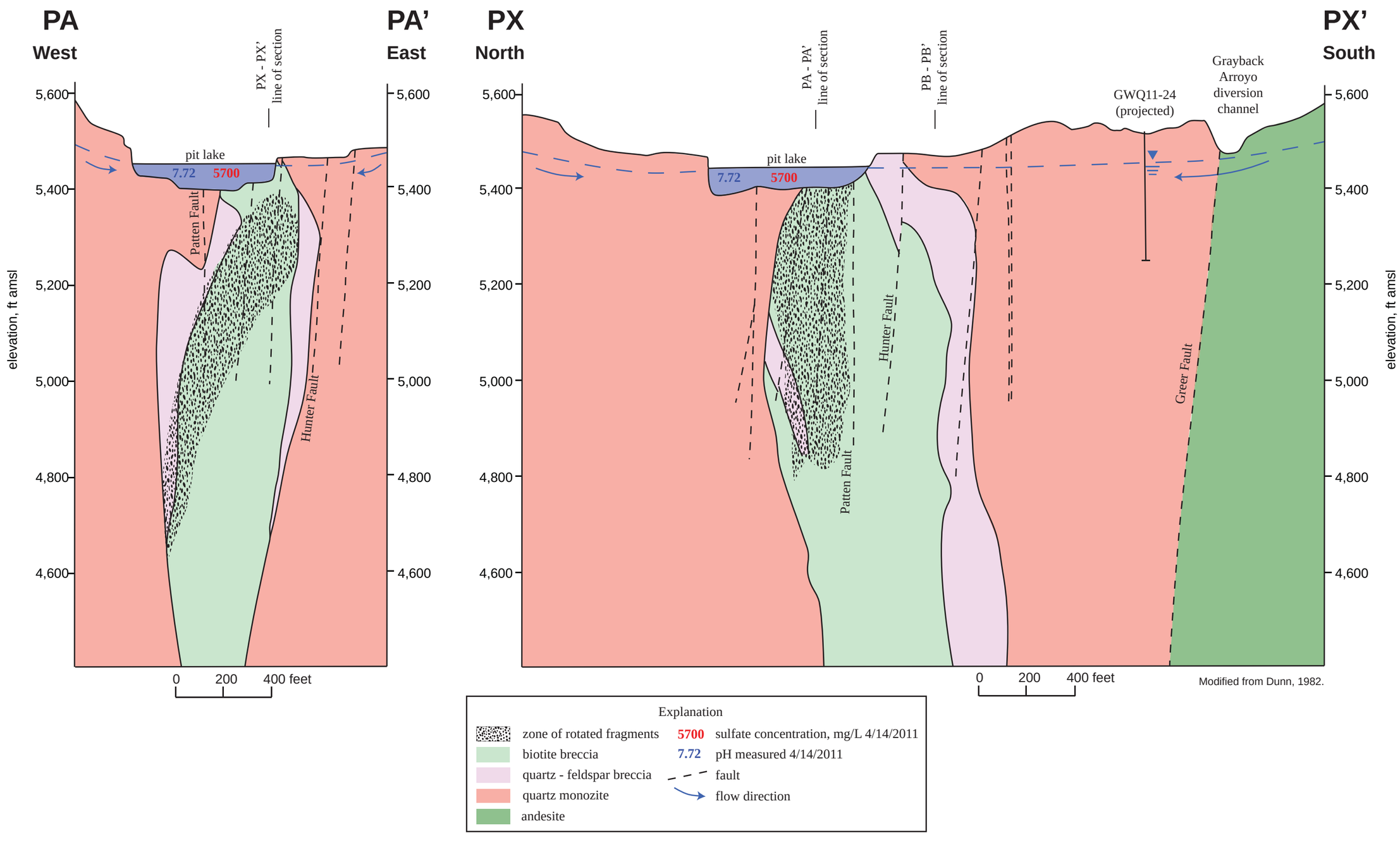
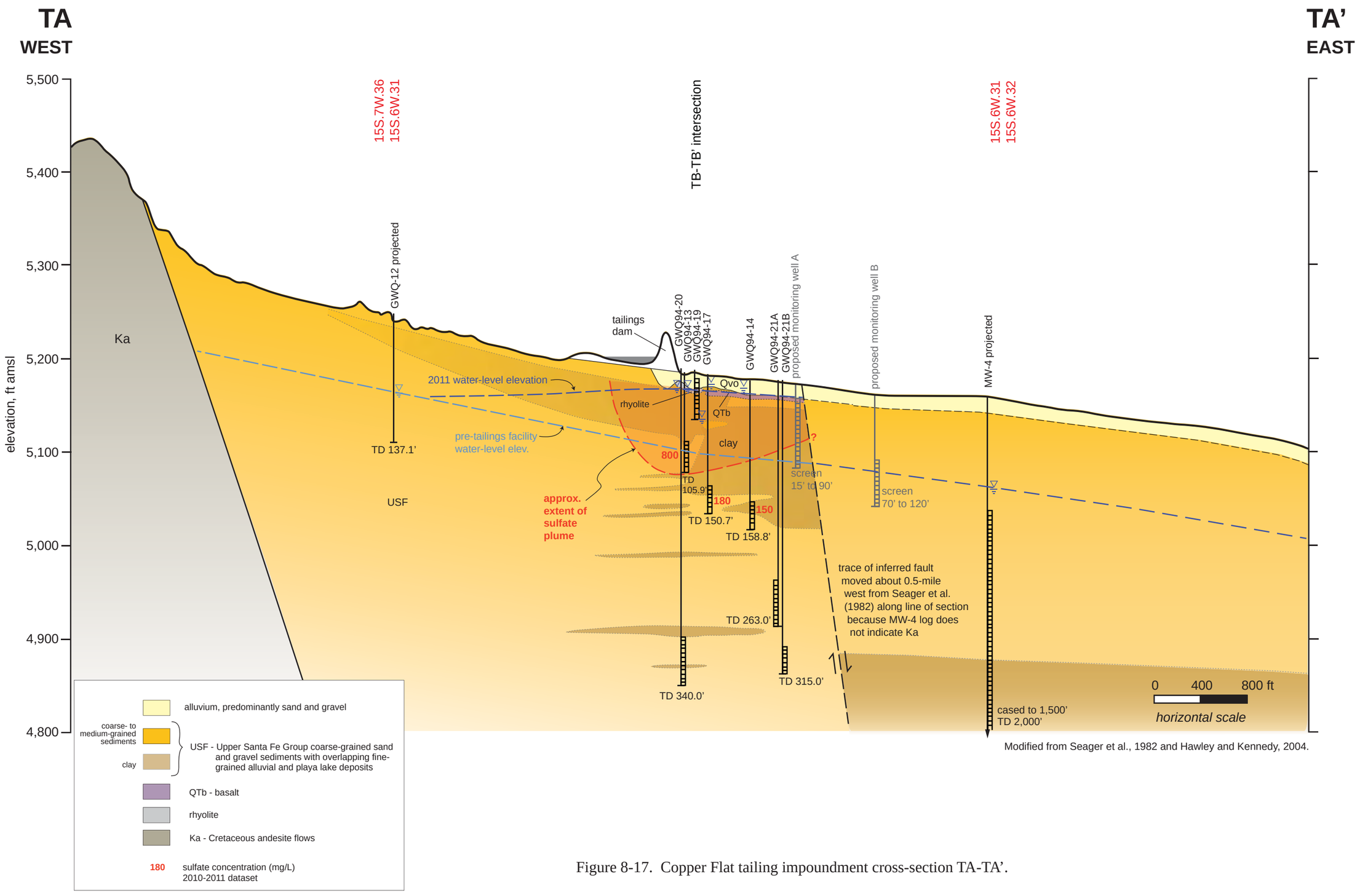
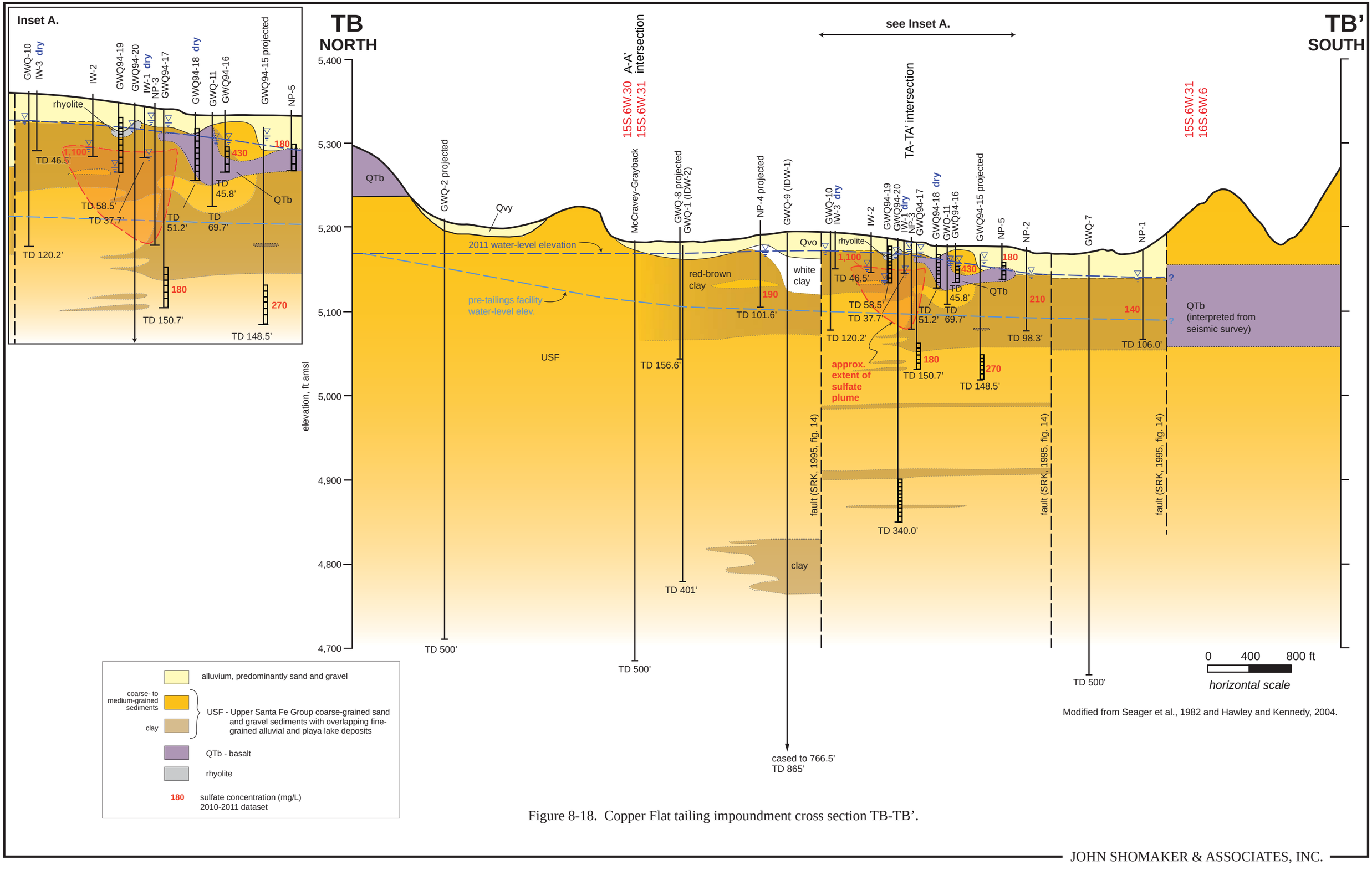


Figure 8-16. Copper Flat pit area hydrogeologic cross sections PA-PA' and PX-PX'.



Modified from Seager et al., 1982 and Hawley and Kennedy, 2004.

Figure 8-17. Copper Flat tailing impoundment cross-section TA-TA'.



Modified from Seager et al., 1982 and Hawley and Kennedy, 2004.

Figure 8-18. Copper Flat tailing impoundment cross section TB-TB'.

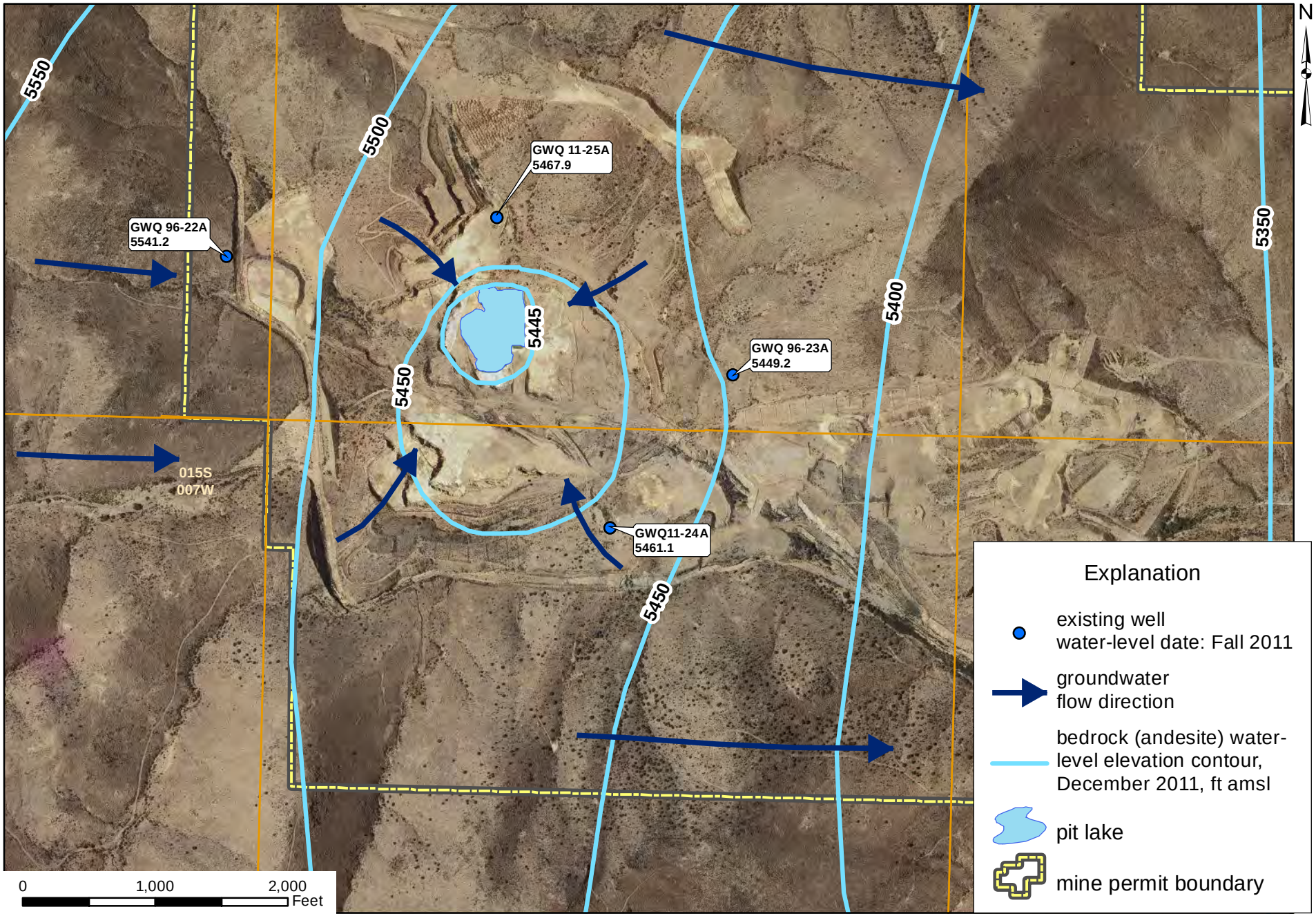
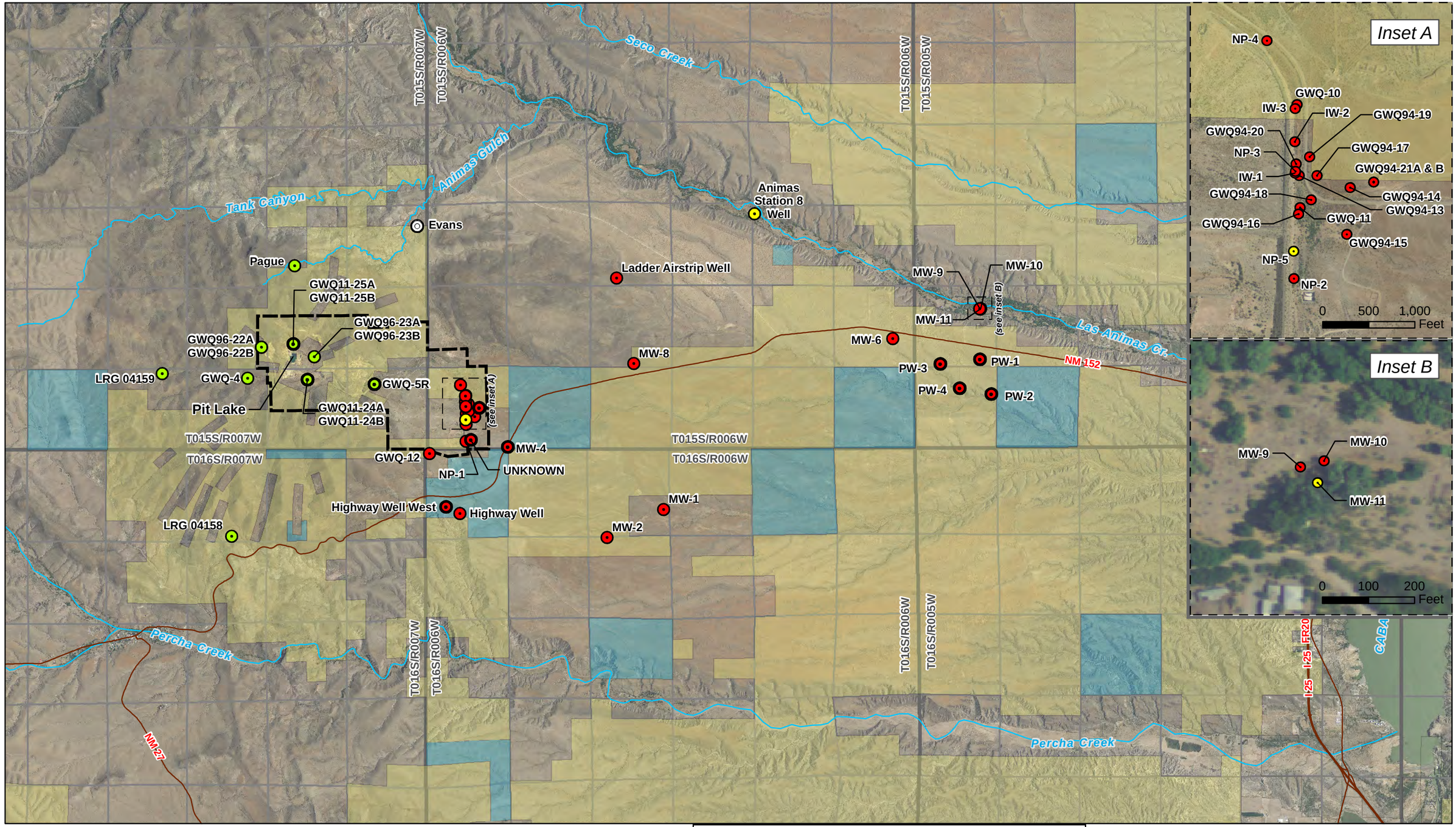


Figure 8-19. Aerial photograph showing water-level elevation contours and direction of groundwater flow for the Copper Flat Mine pit lake area, Sierra County, New Mexico.



N
W E
S

Well Locations:
INTERA, SRK, or OSE
Mine Boundary:
NMCC
Imagery Information:
-USGS 7.5-Minutes County DOQQ mosaic
Sierra County, 2011
Projection Information:
-New Mexico State Plane West, NAD 1927

0 3,000 6,000 12,000 18,000
Feet

Legend

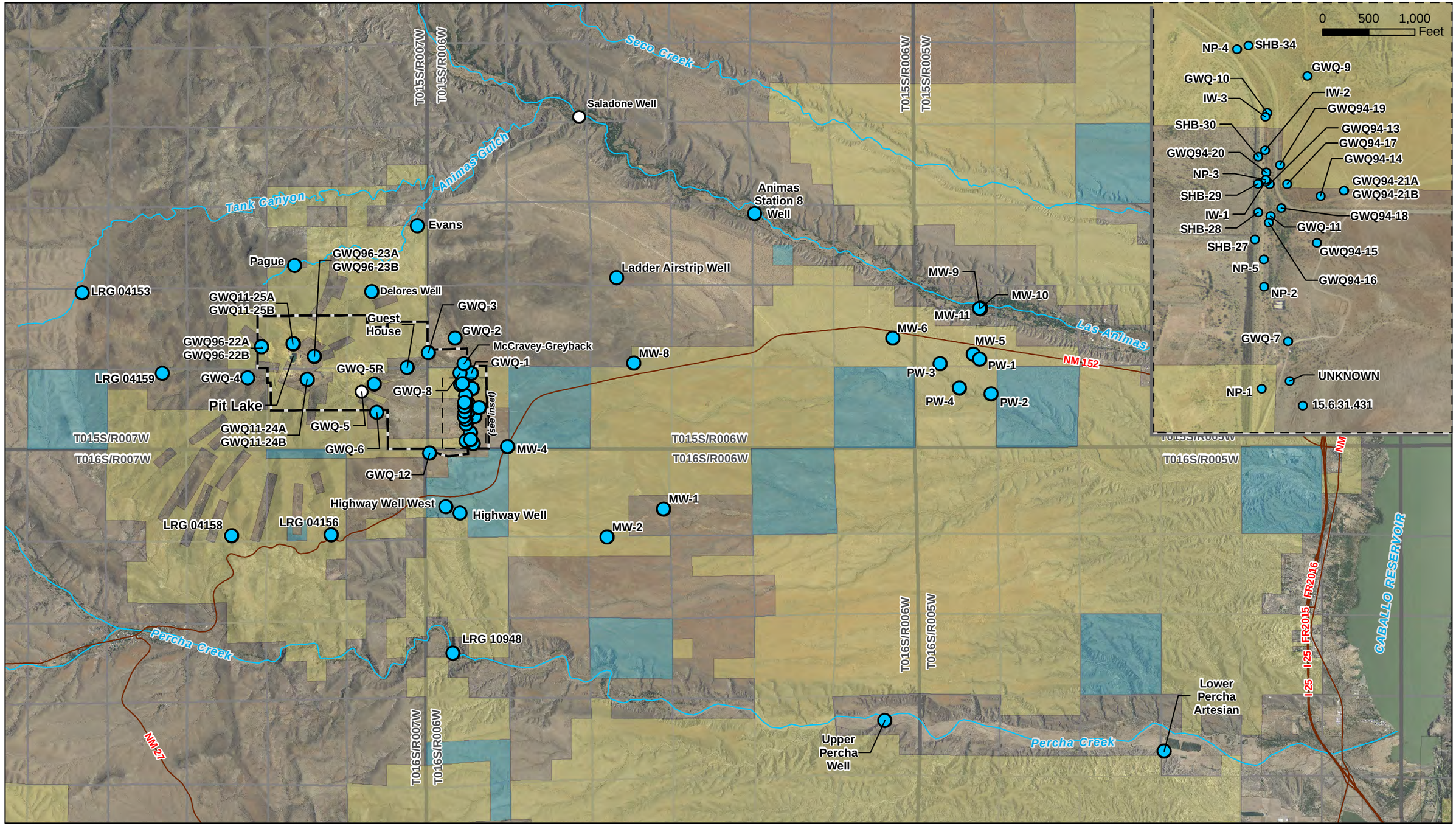
Aquifer
- Cryatlline Bedrock
- Quaternary
- Santa Fe Group
- Unknown

- BLM
- Private
- State
- Reclamation

- Proposed Mine Permit Boundary

Figure 8-20
Baseline Monitoring Wells
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig8-20_InteraSampledWells.mxd



N
W E
S

Well Locations:
INTERA, SRK, or OSE
Mine Boundary:
NMCC
Imagery Information:
-USGS 7.5-Minutes County DOQQ mosaic
Sierra County, 2011
Projection Information:
-New Mexico State Plane West, NAD 1927

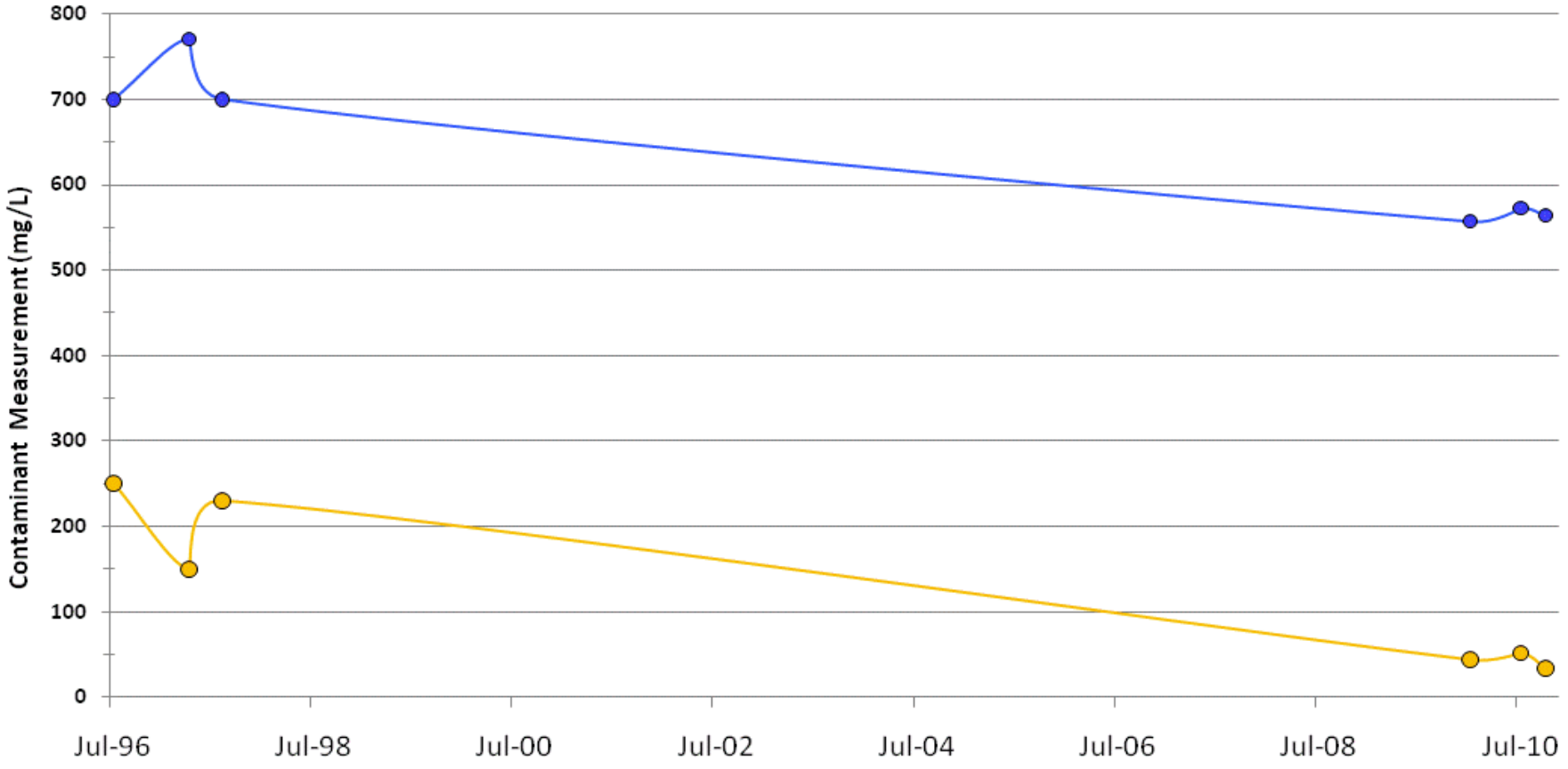
0 3,000 6,000 12,000 18,000
Feet

Legend

- Groundwater Well
- Destroyed Well
- Proposed Mine Permit Boundary
- BLM
- Private
- State
- Reclamation

Figure 8-21
Regional Groundwater Wells
New Mexico Copper Corporation

S:\Projects\NMC-001_New Mexico Copper Corporation\GIS\Maps\Reports\BaselineDR_201110\Fig8-21_RegionalGWwells.mxd



Notes:

NMWQCC = New Mexico Water Quality Control Commission

Non-detect measurements are plotted at half the analyte detection limit.

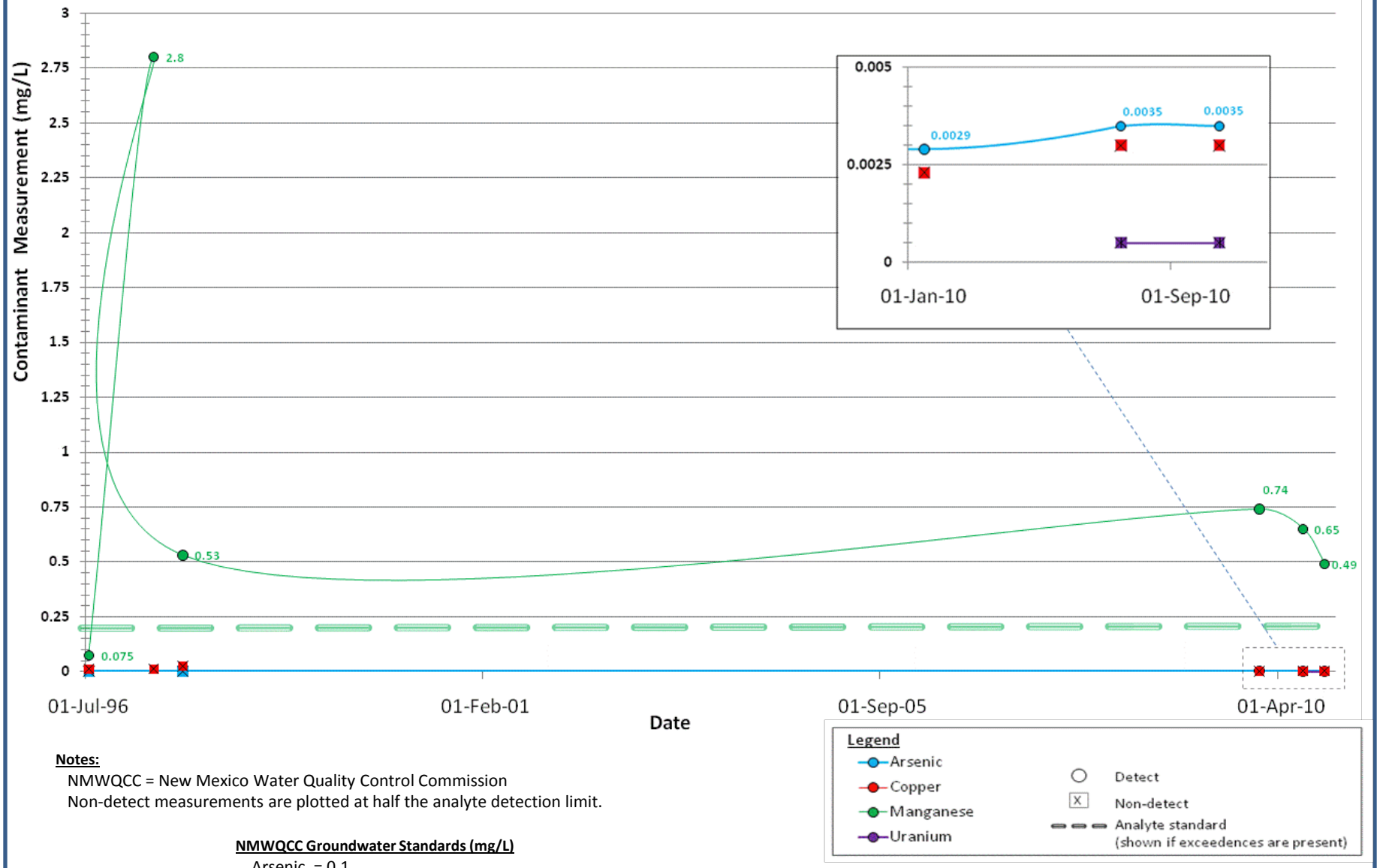
NMWQCC Groundwater Standards (mg/L)

Sulfate = 600.0

Total Dissolved Solids = 1000.0

Figure 8-22

Trends in Sulfate and Total Dissolved Solids in Well GWQ96-22A



Notes:

NMWQCC = New Mexico Water Quality Control Commission

Non-detect measurements are plotted at half the analyte detection limit.

NMWQCC Groundwater Standards (mg/L)

Arsenic = 0.1

Copper = 1.0

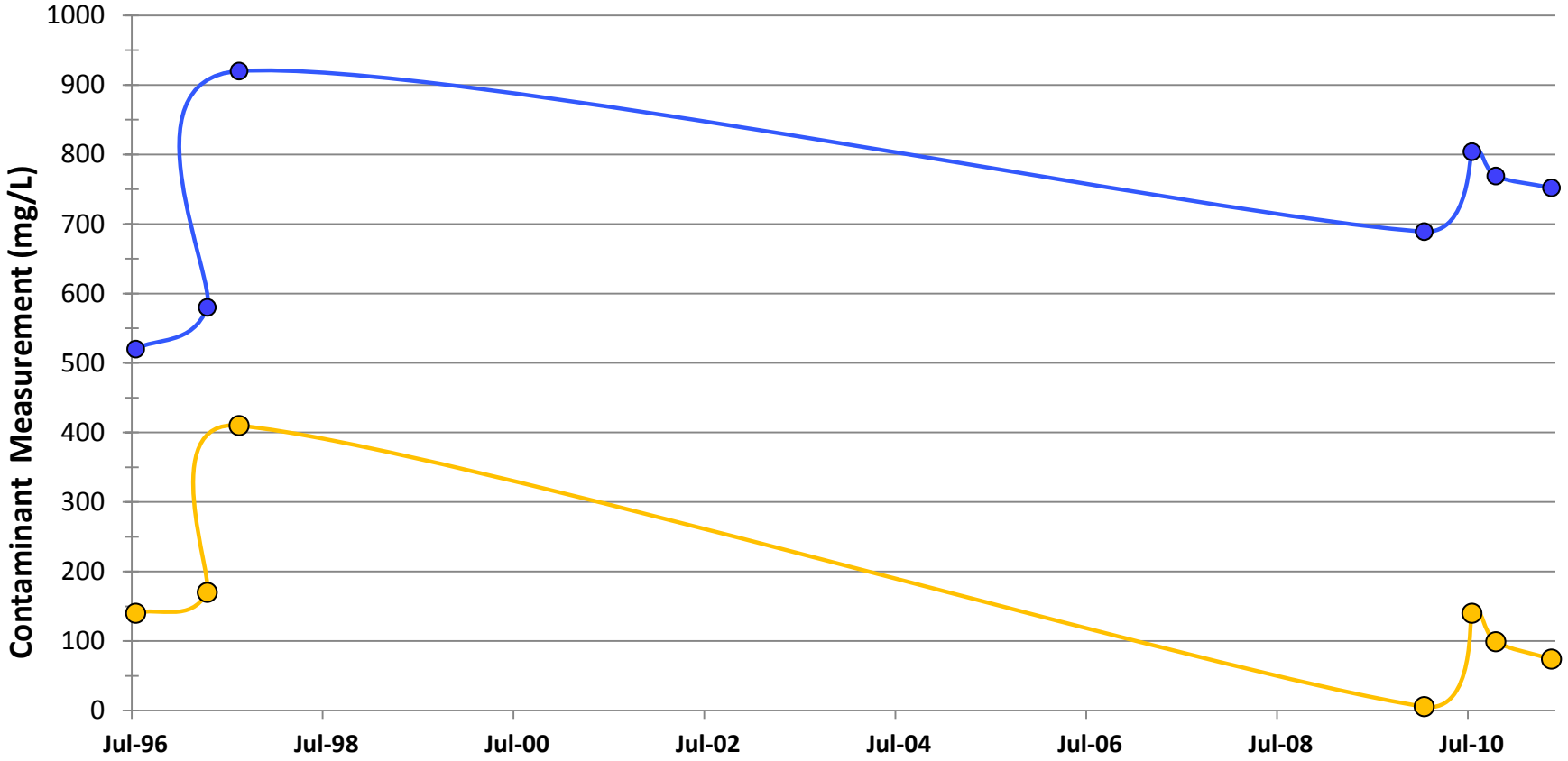
Manganese=0.2

Uranium=0.03

INTERA

Figure 8-23

Trends in Metals in Well GWQ96-22A



Notes:

NMWQCC = New Mexico Water Quality Control Commission

Non-detect measurements are plotted at half the analyte detection limit.

NMWQCC Groundwater Standards (mg/L)

Sulfate = 600.0

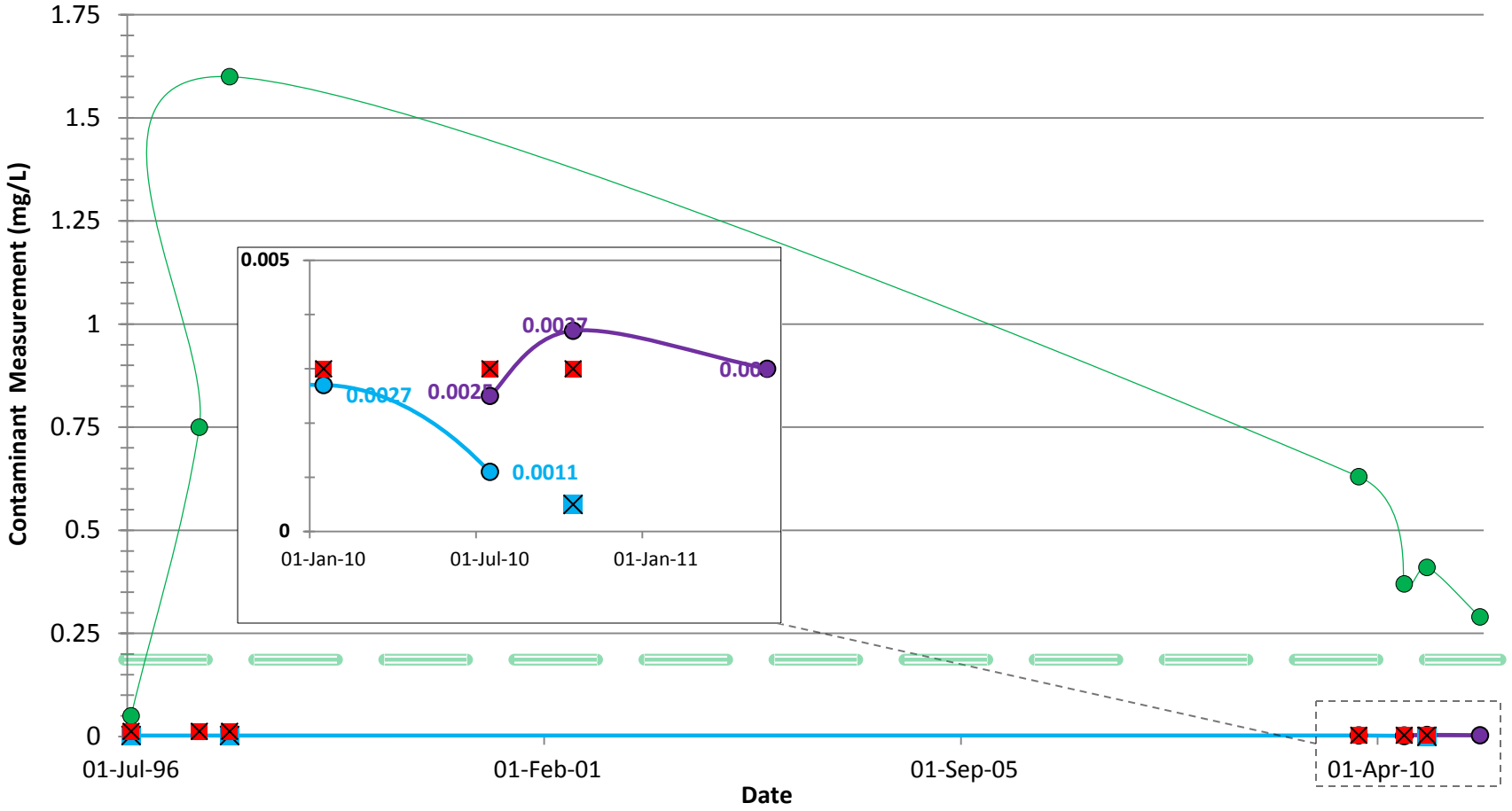
Total Dissolved Solids = 1000.0

Legend

- Sulfate
- Total Dissolved Solids
- Detect
- Non-detect
- Analyte standard (shown if exceedences are present)

Figure 8-24

Trends in Sulfate and Total Dissolved Solids in Well GWQ96-23A



Notes:

NMWQCC = New Mexico Water Quality Control Commission

Non-detect measurements are plotted at half the analyte detection limit.

NMWQCC Groundwater Standards (mg/L)

Arsenic = 0.1

Copper = 1.0

Manganese=0.2

Uranium=0.03

Figure 8-25

Trends in Metals in Well GWQ96-23A

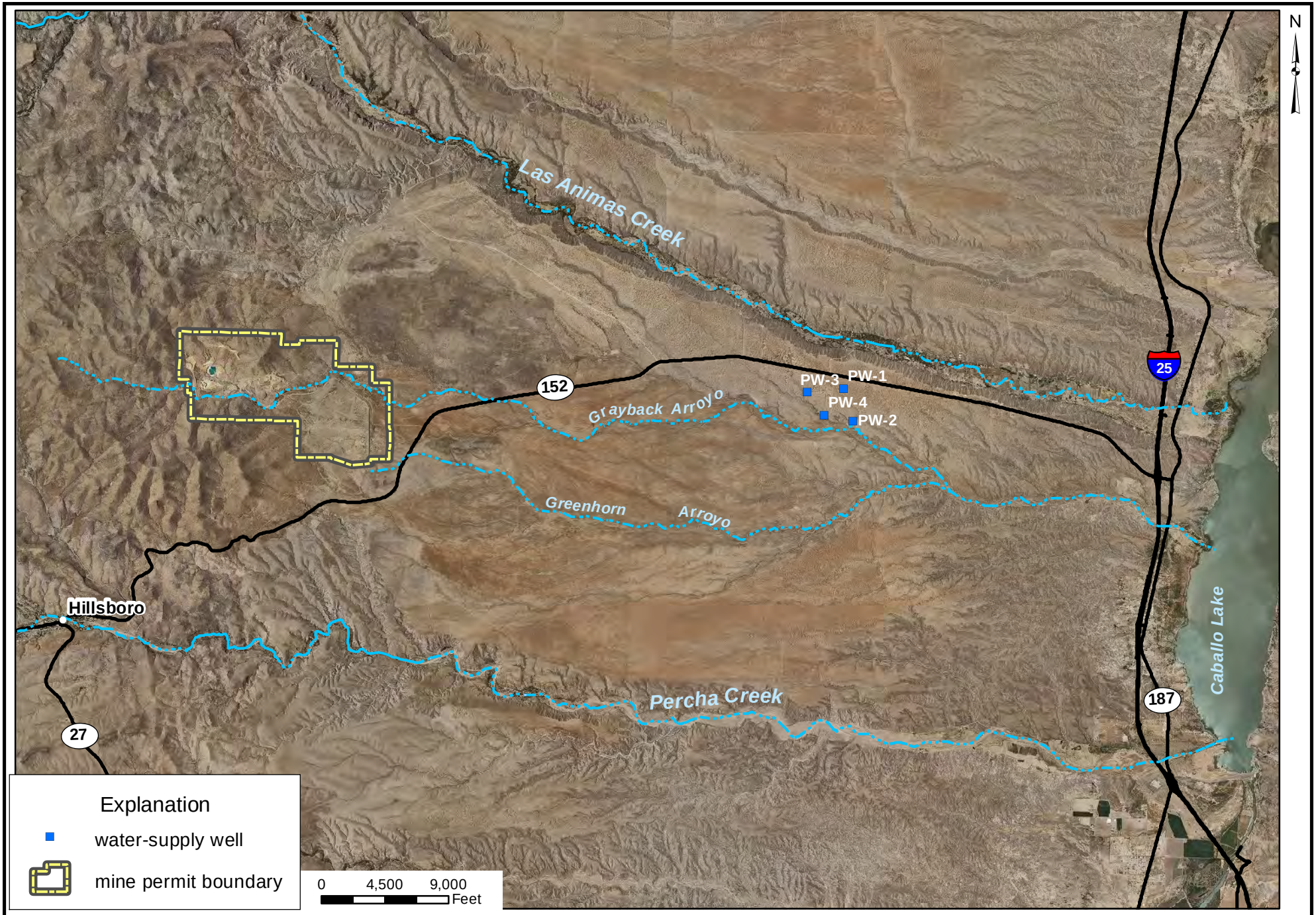


Figure 8-26. Map of project area showing Copper Flat Mine permit boundary, water supply wells, and region of baseline groundwater data collection.

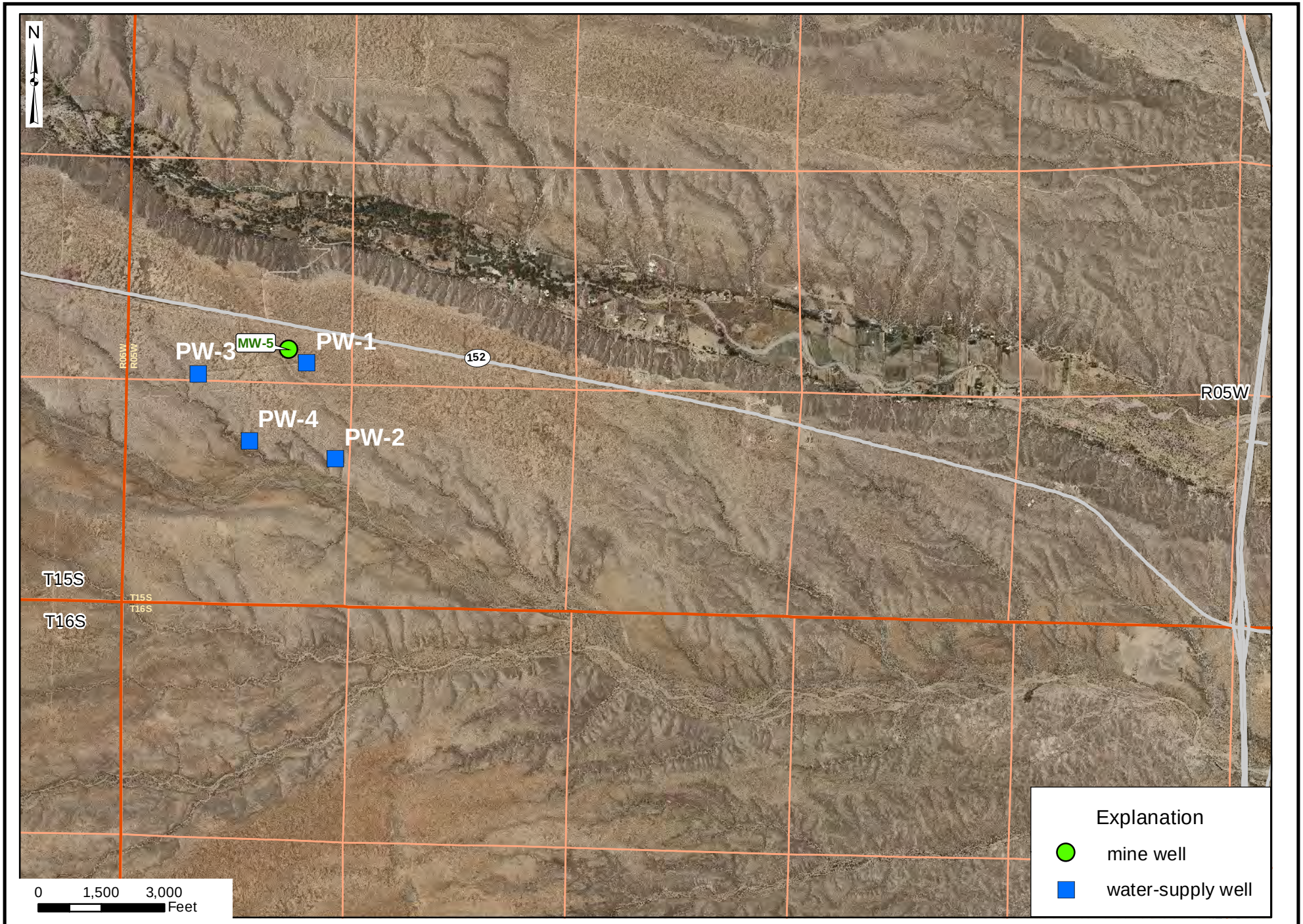
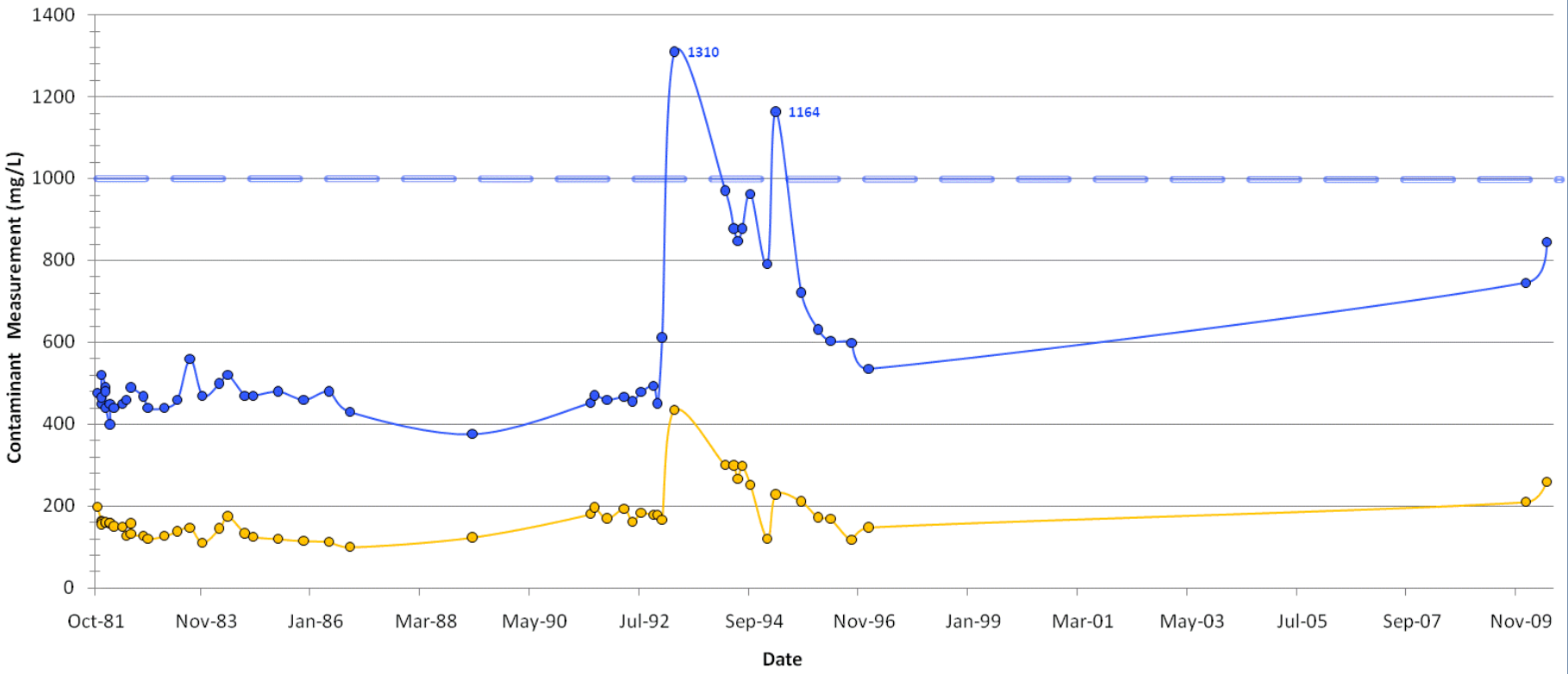


Figure 8-27. Aerial photograph showing pumping and observation wells from historic pumping test.



Notes:

NMWQCC = New Mexico Water Quality Control Commission
Non-detect measurements are plotted at half the analyte detection limit.

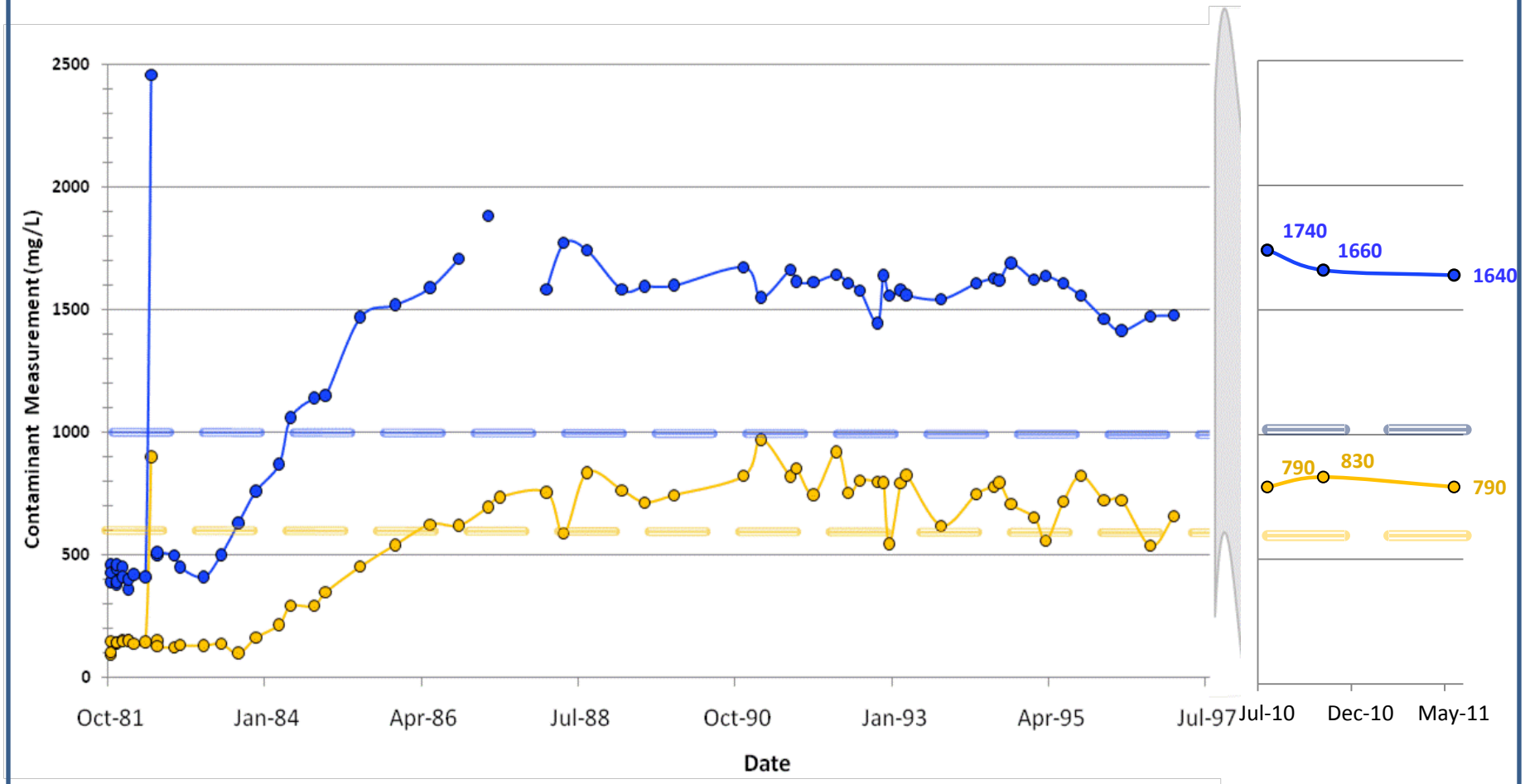
NMWQCC Groundwater Standards (mg/L)

Sulfate = 600.0
Total Dissolved Solids = 1000.0

Legend

- Sulfate
- Total Dissolved Solids
- Detect
- Non-detect
- Analyte standard (shown if exceedences are present)

Figure 8-28
Trends in Sulfate and TDS in Well NP-2



Notes:

NMWQCC = New Mexico Water Quality Control Commission

Non-detect measurements are plotted at half the analyte detection limit.

NMWQCC Groundwater Standards (mg/L)

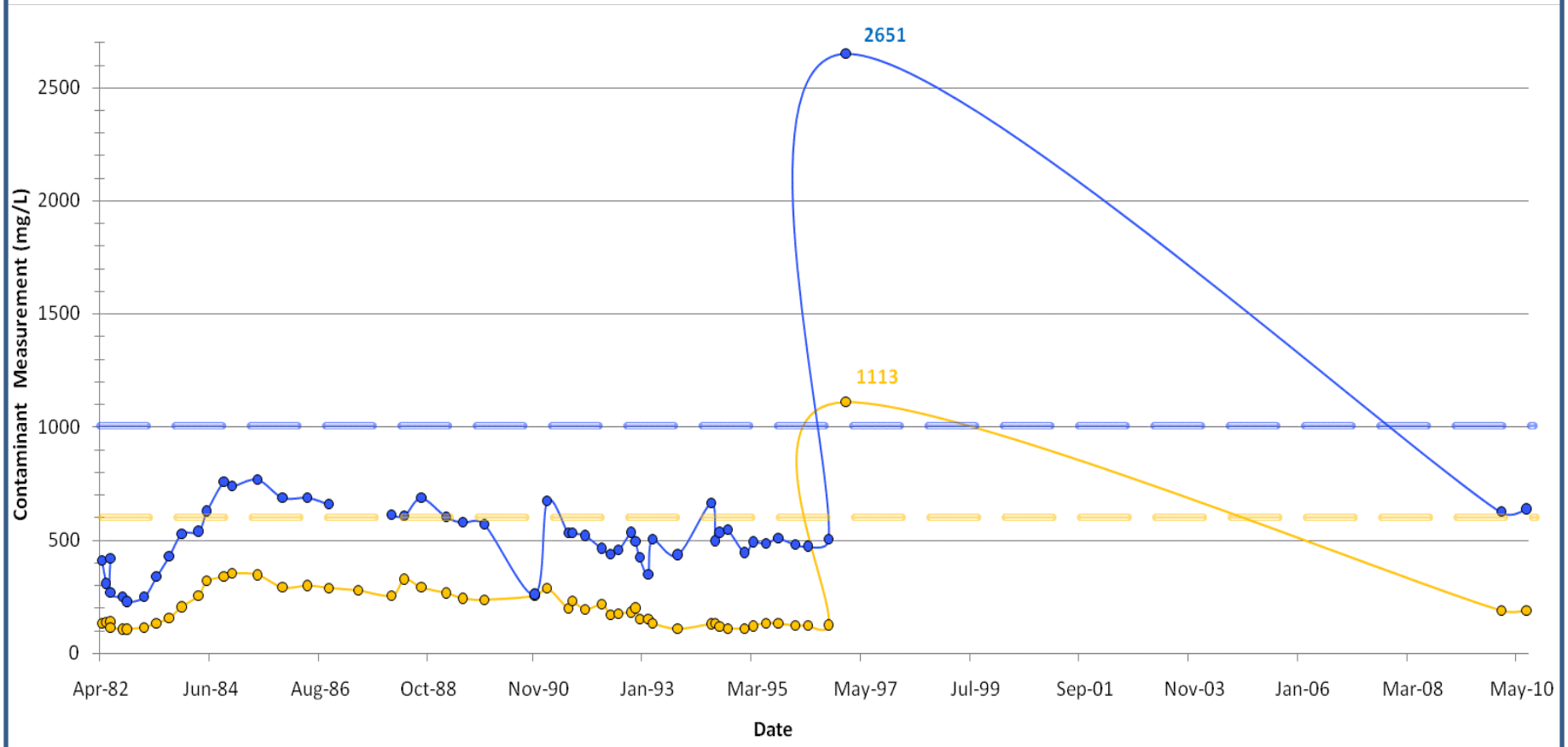
Sulfate = 600.0

Total Dissolved Solids = 1000.0

Legend

- Sulfate
- Total Dissolved Solids
- Detect
- Non-detect
- Analyte standard (shown if exceedences are present)

Figure 8-29
Trends in Sulfate and TDS in Well NP-3



Notes:

NMWQCC = New Mexico Water Quality Control Commission

Non-detect measurements are plotted at half the analyte detection limit.

NMWQCC Groundwater Standards (mg/L)

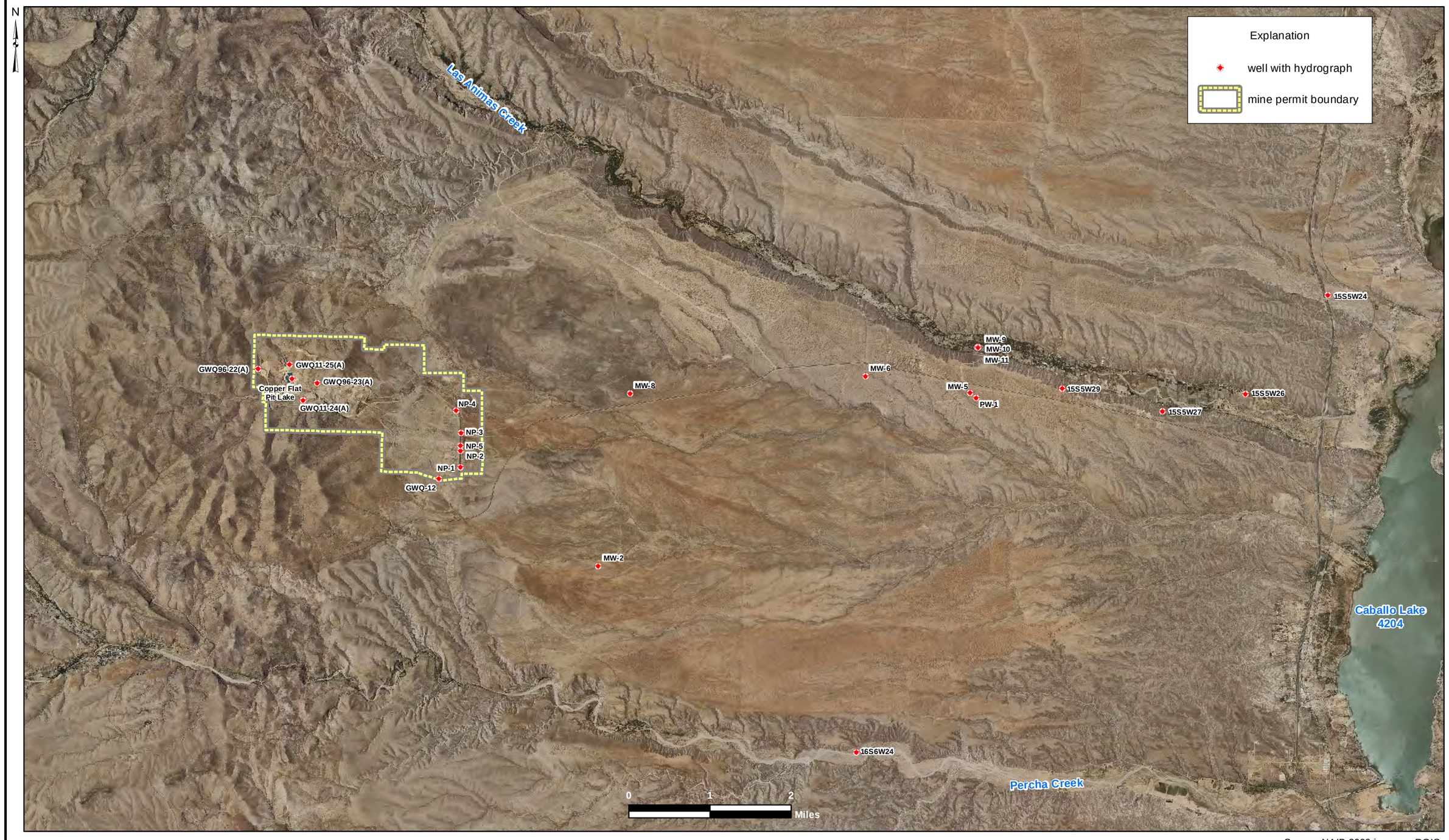
Sulfate = 600.0

Total Dissolved Solids = 1000.0

Legend

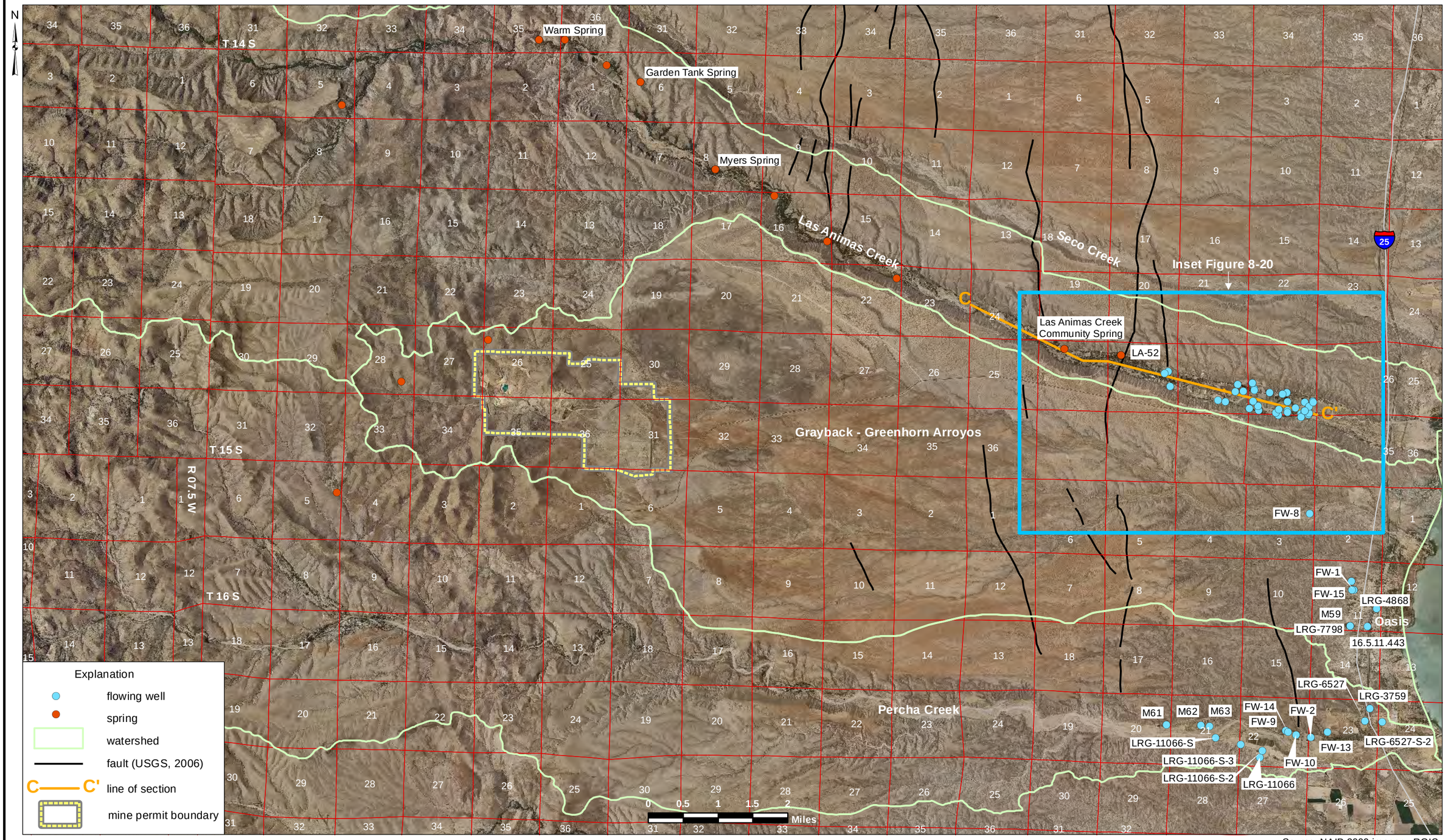
- Sulfate
- Total Dissolved Solids
- Detect
- Non-detect
- Analyte standard (shown if exceedences are present)

Figure 8-30
Trends in Sulfate and TDS In Well NP-4



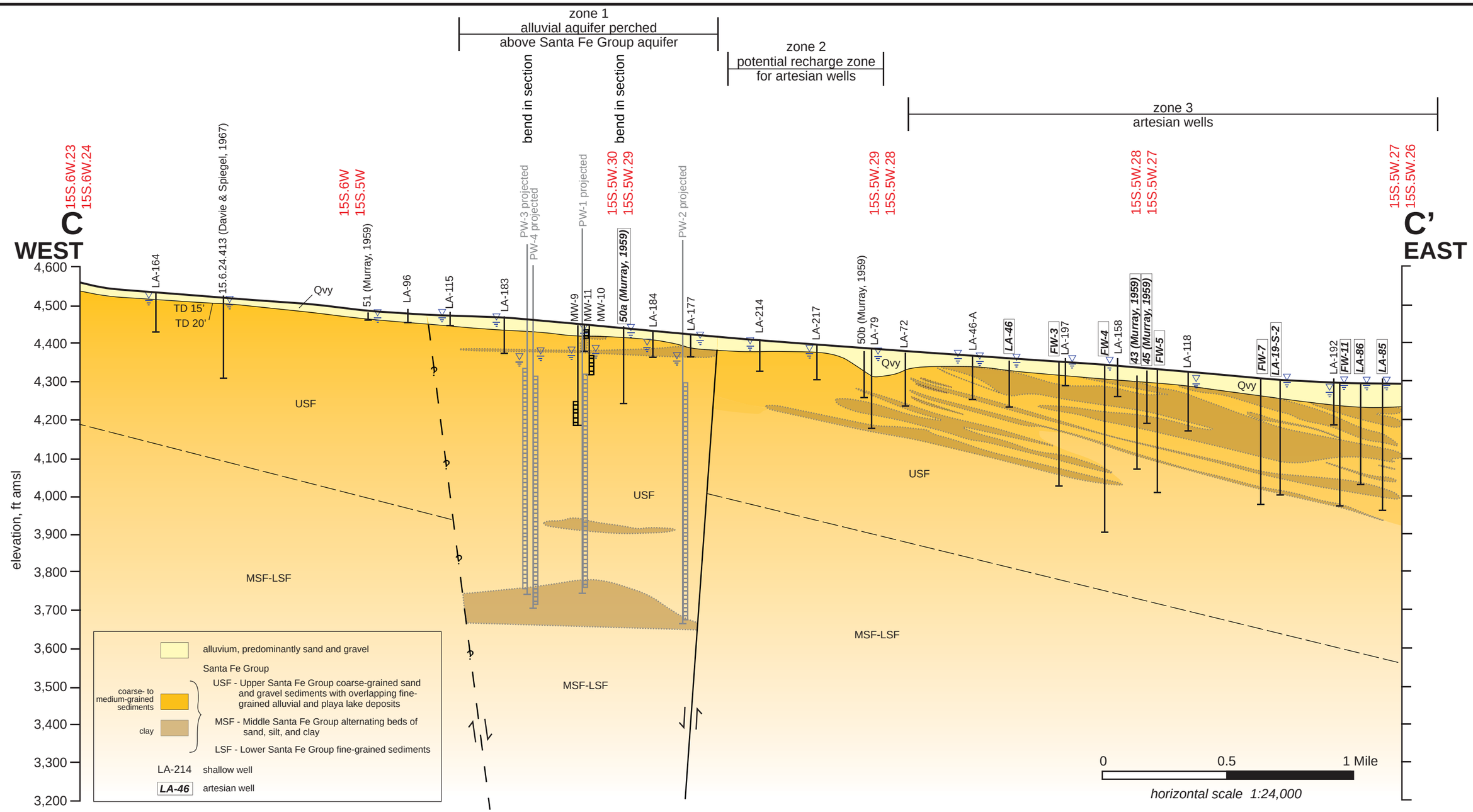
Source: NAIP 2009 imagery, RGIS.

Figure 8-31. Hydrograph location map.



Source: NAIP 2009 imagery, RGIS.

Figure 8-32. Map of artesian well inventory.



Modified from available well logs and Seager et al., 1982 and Hawley and Kennedy, 2004.

Figure 8-33. West to east hydrogeologic cross section of artesian zone in Santa Fe Group aquifer.

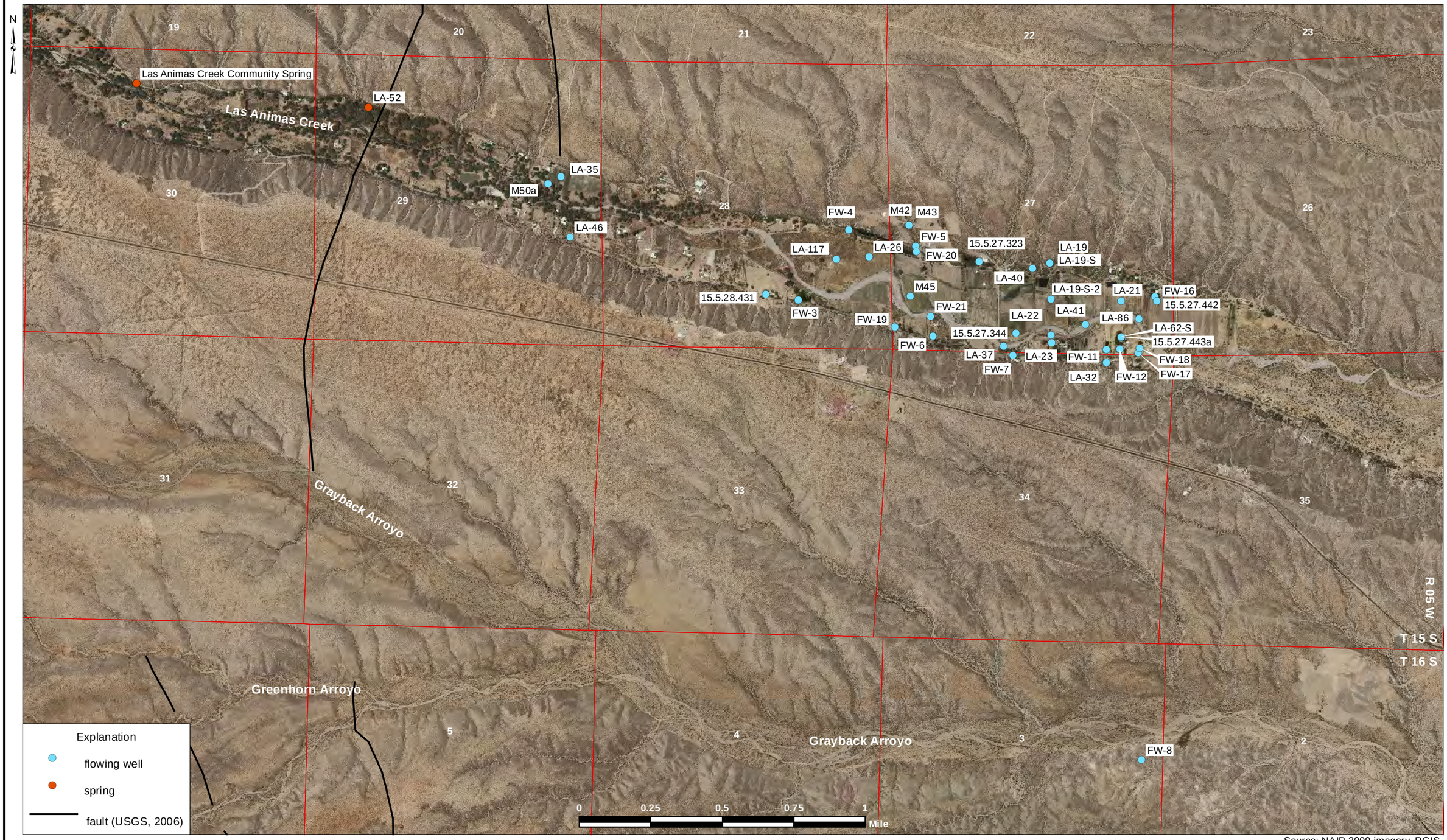


Figure 8-34. Map of artesian well inventory along Las Animas Creek.

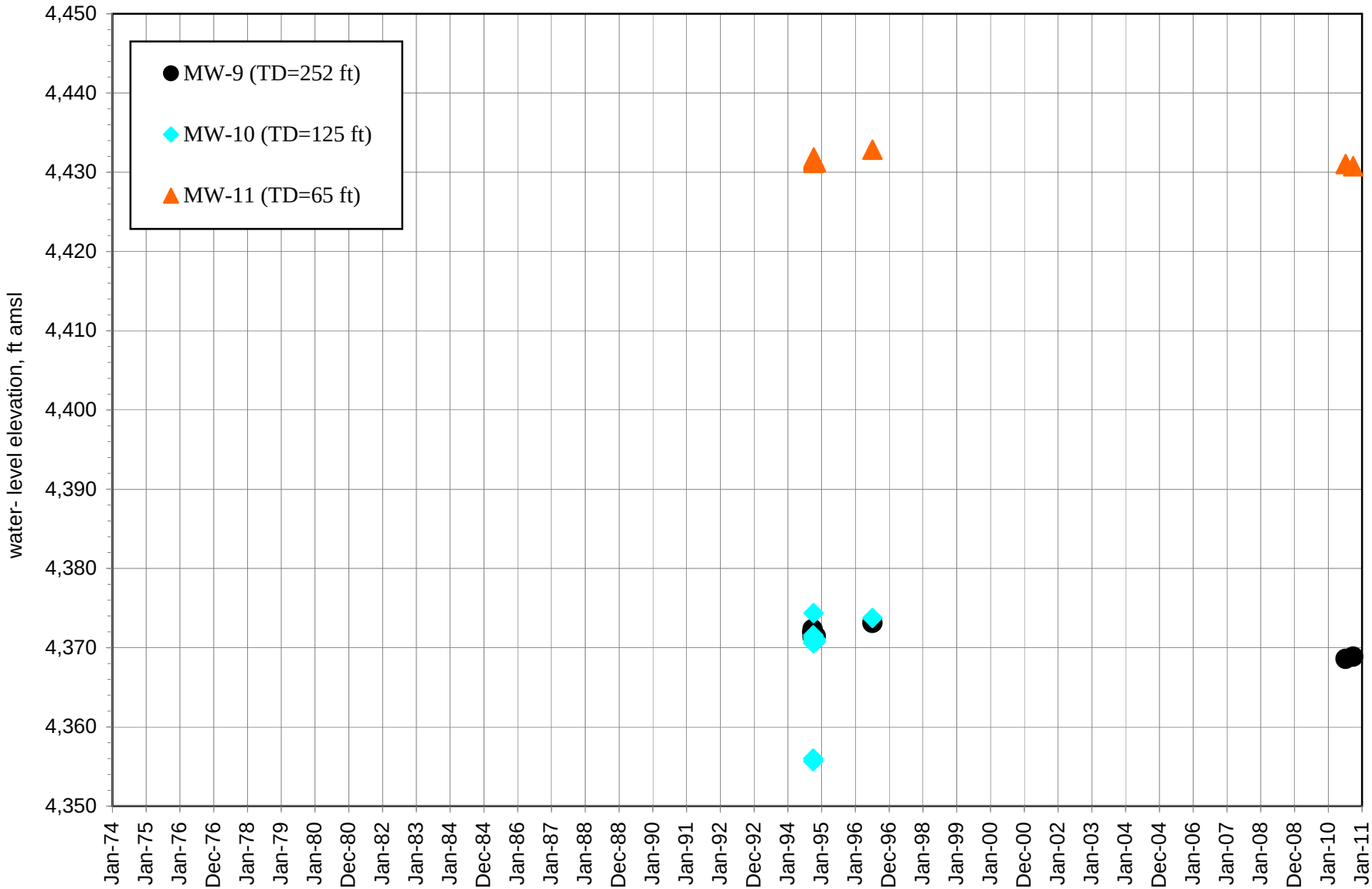


Figure 8-35. Graph of water levels in Las Animas Creek alluvial aquifer and underlying regional Santa Fe Group aquifer.

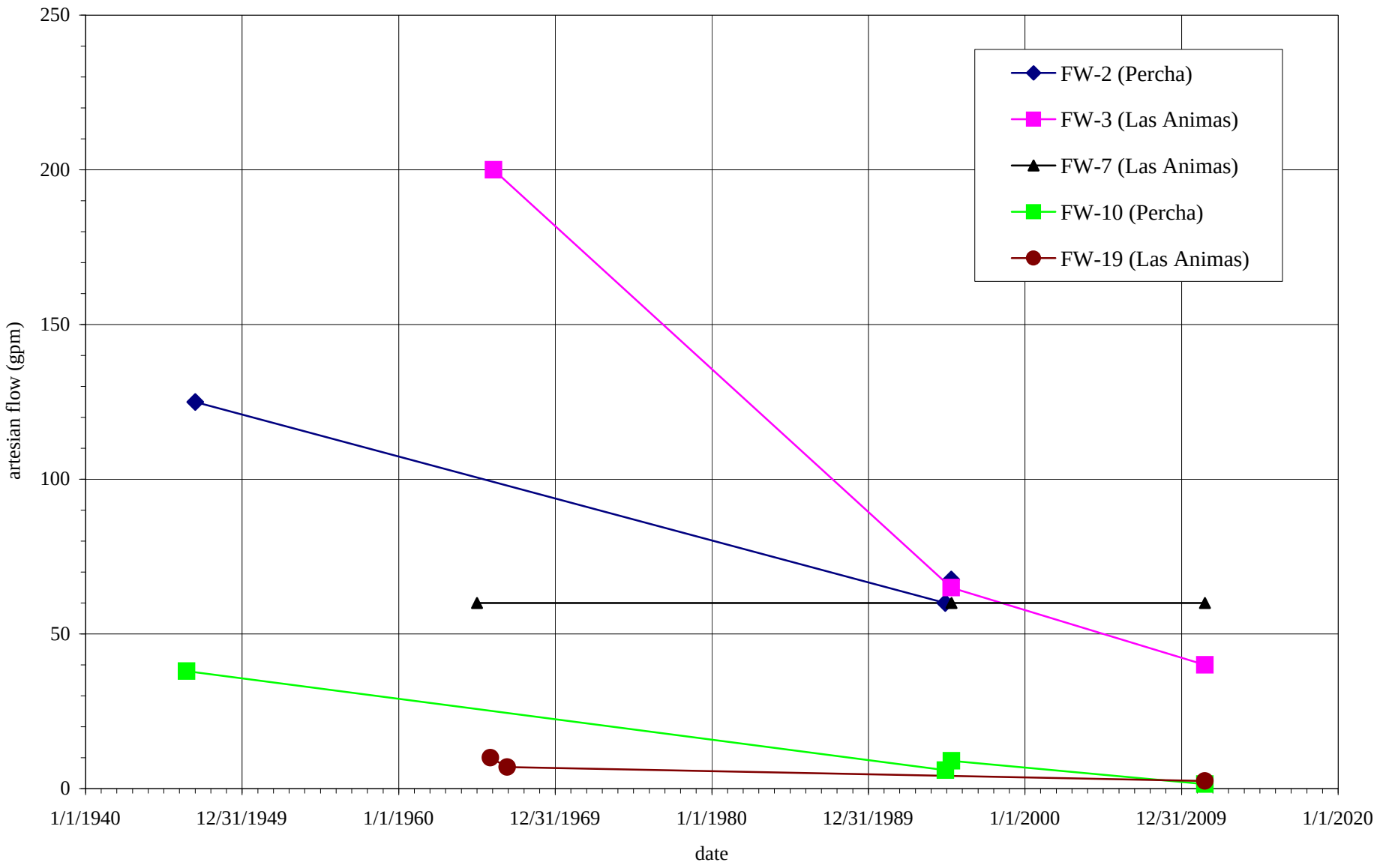


Figure 8-36. Graph of declining flow from artesian wells.

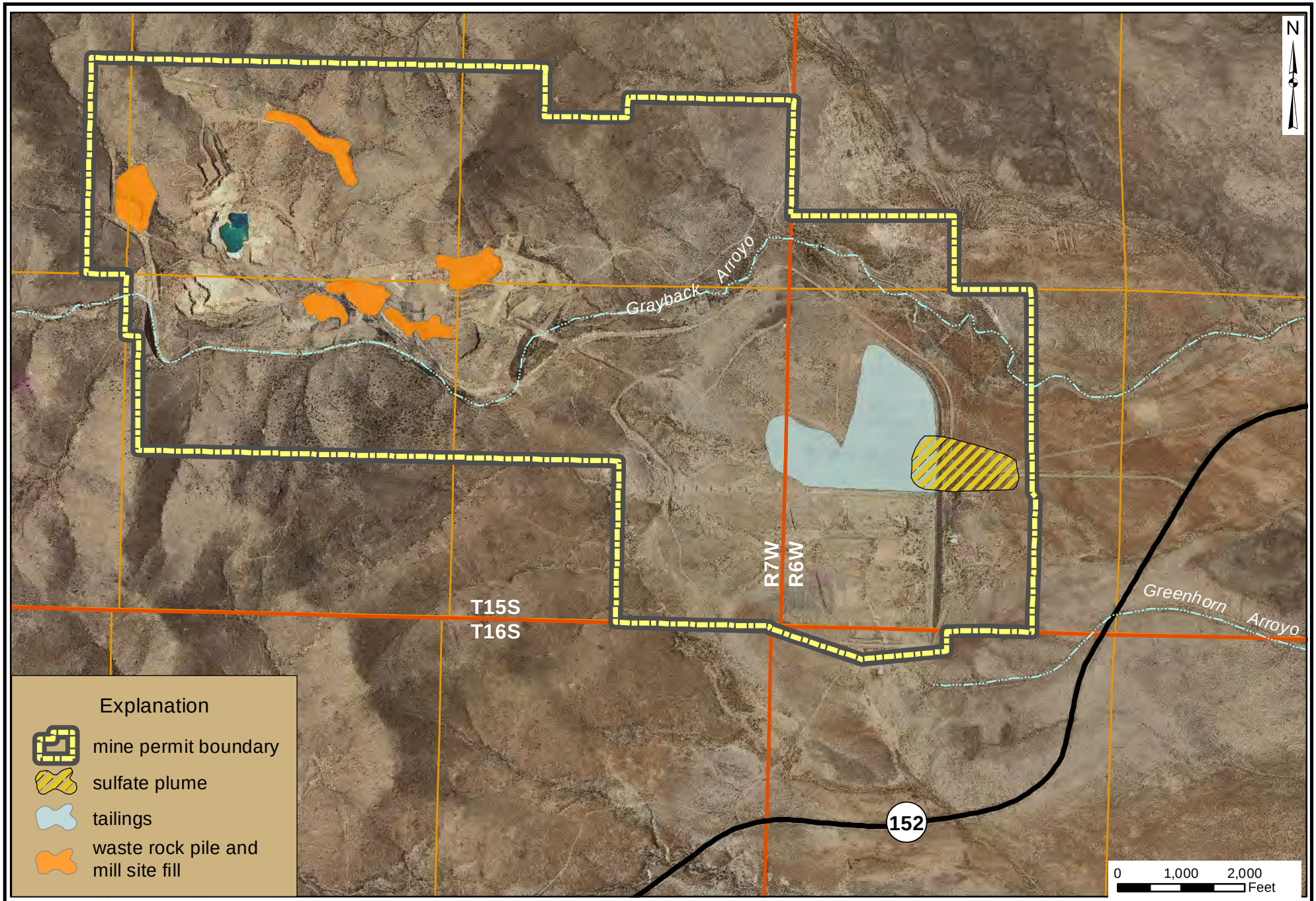


Figure 8-37. Map showing locations of existing mine pit, waste-rock piles, and tailing impoundment, Copper Flat Mine, Sierra County, New Mexico.

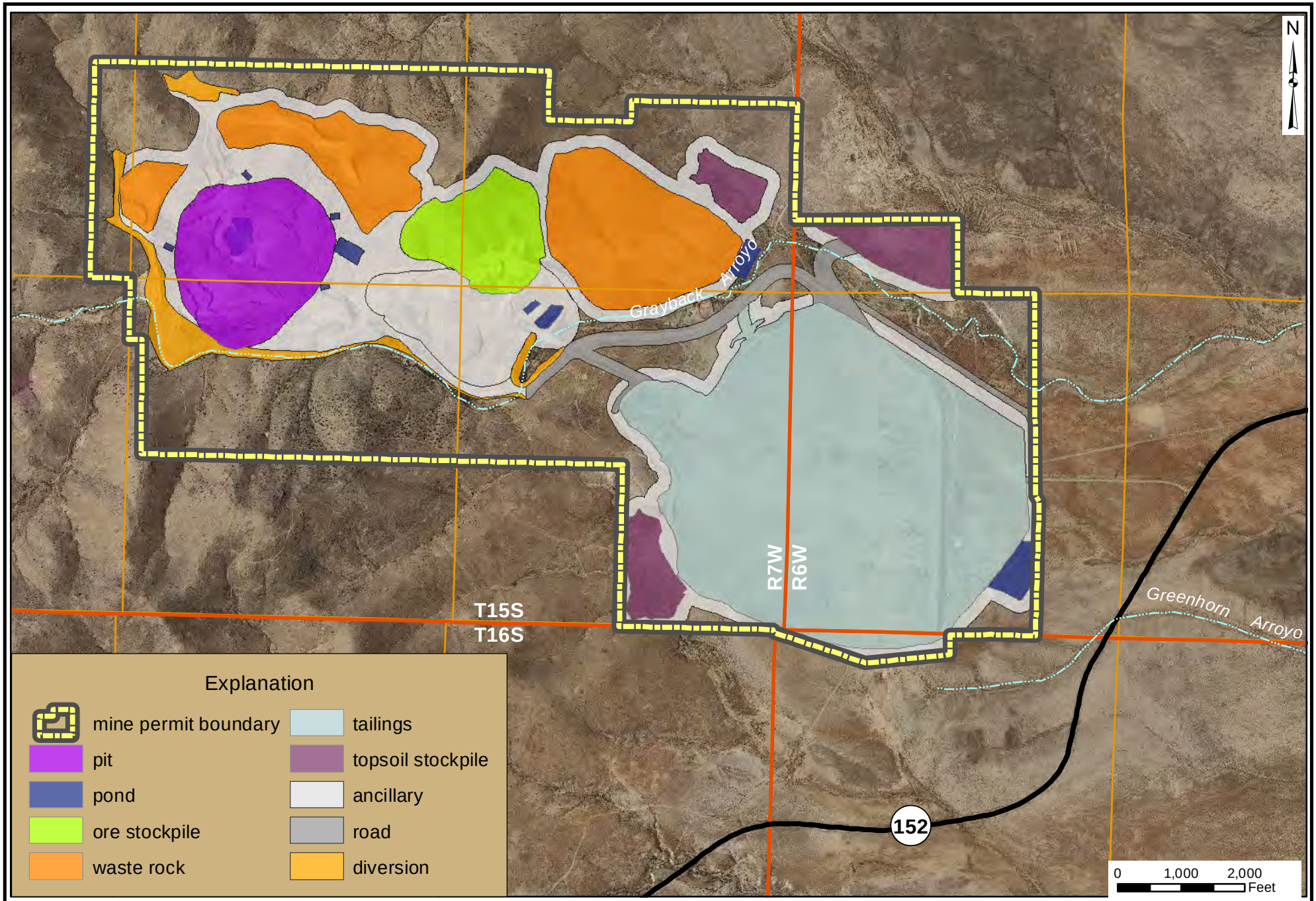


Figure 8-38. Map showing proposed site conditions within Copper Flat Mine permit area.

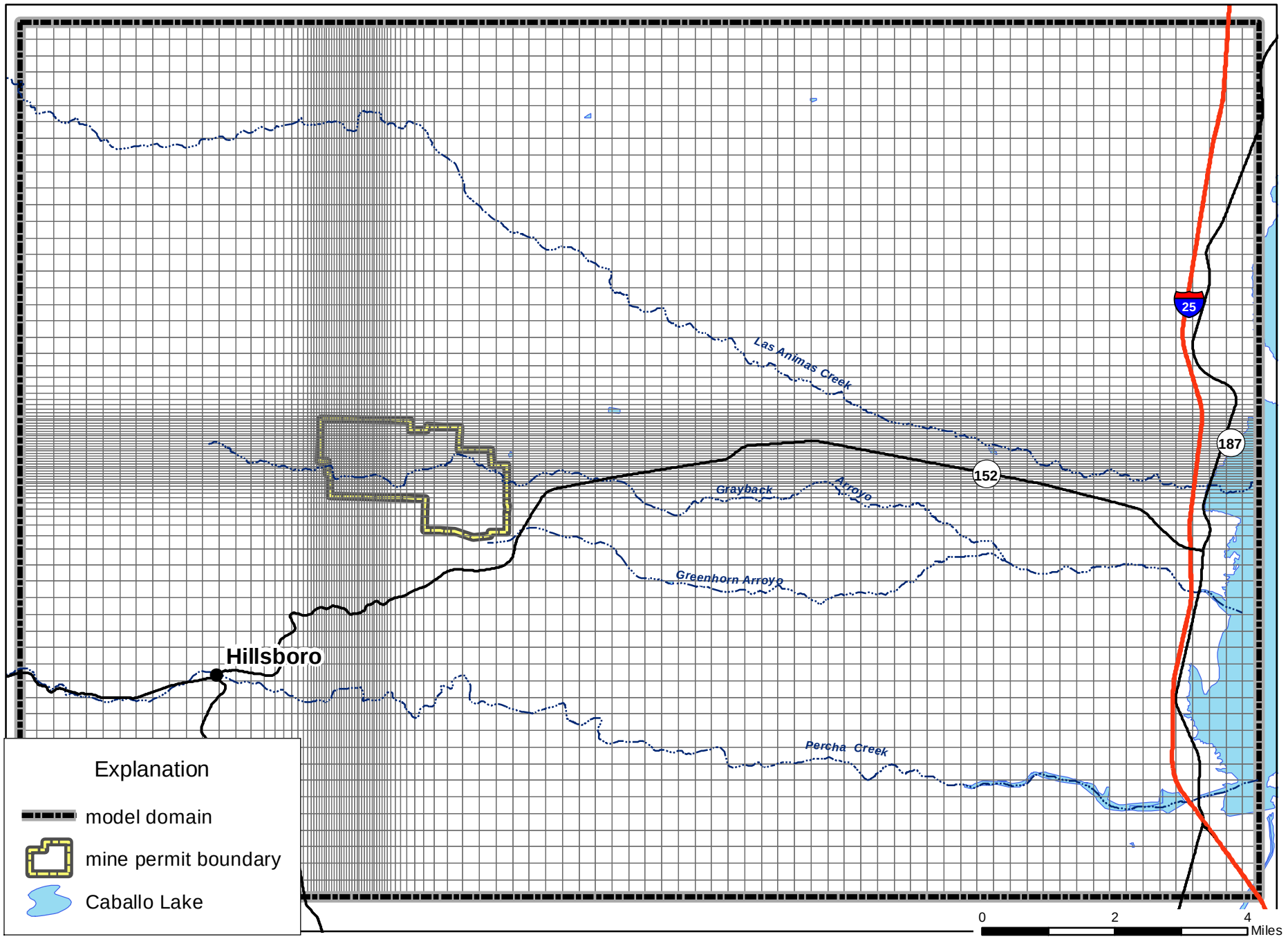


Figure 8-39. Map showing grid for Copper Flat Mine Regional Groundwater Flow Model.

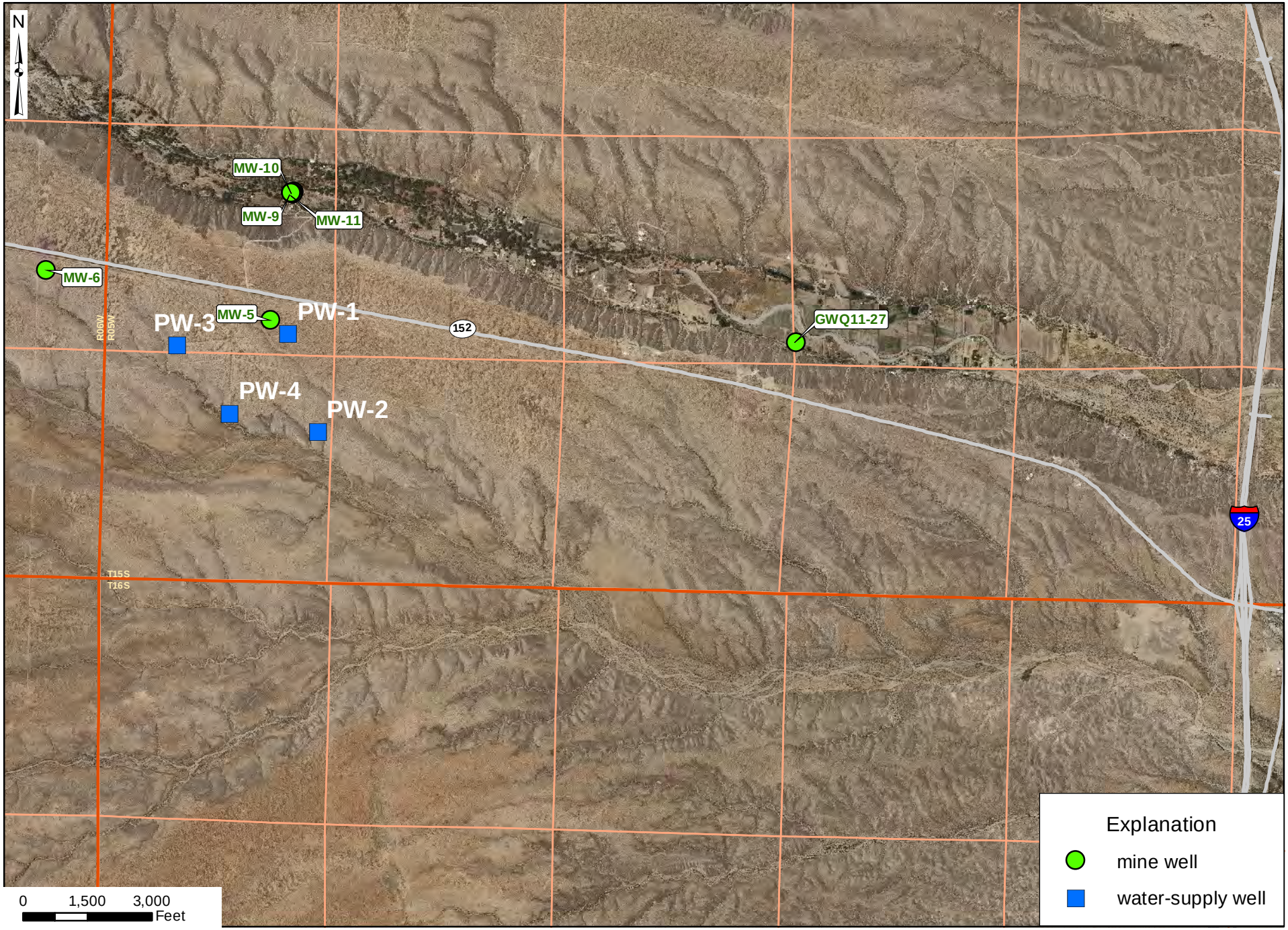


Figure 8-40. Aerial photograph showing pumping and observation wells proposed for pumping test.

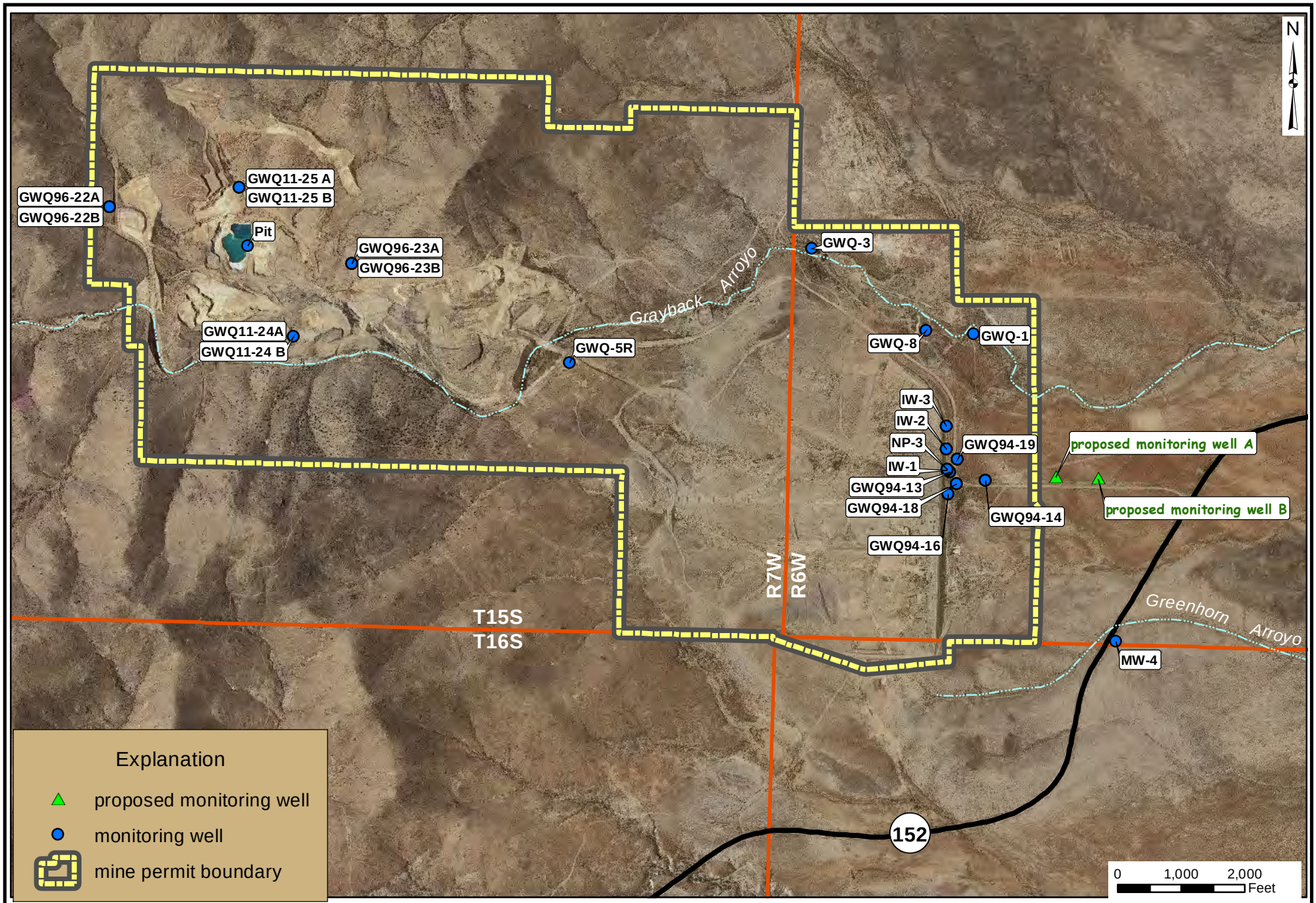


Figure 8-41. Copper Flat Mine Site Data Collection

Pit

Mine Office
Core Building

0 600 1,200 2,400 3,600

Feet

N
W E
S

Mine Boundary:
NMCC
Imagery Information:
-Cooper Aerial, 2011
Projection Information:
-New Mexico State Plane West, NAD 1927

Legend

- Proposed Mine Permit Boundary
- 1982 Plant Facilities Footprint
- 5 Foot Contour Interval
- Tailings
- Waste Rock Pile and Mill Site Fill

Figure 9-1
Disturbance from Prior Mining Operations
New Mexico Copper Corporation

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