

**EXPLANATION**

- BASIN FILL
- MORITA FORMATION
- GLANCE CONGLOMERATE
- PALEOZOIC SEDIMENTS
- MIXED, BASIN FILL AND MORITA FORMATION
- ▲ UNKNOWN
- FAULT (DASHED WHERE INFERRED) FROM SET 1988C
- 1996 SULFATE PLUME
- 2005 SULFATE PLUME

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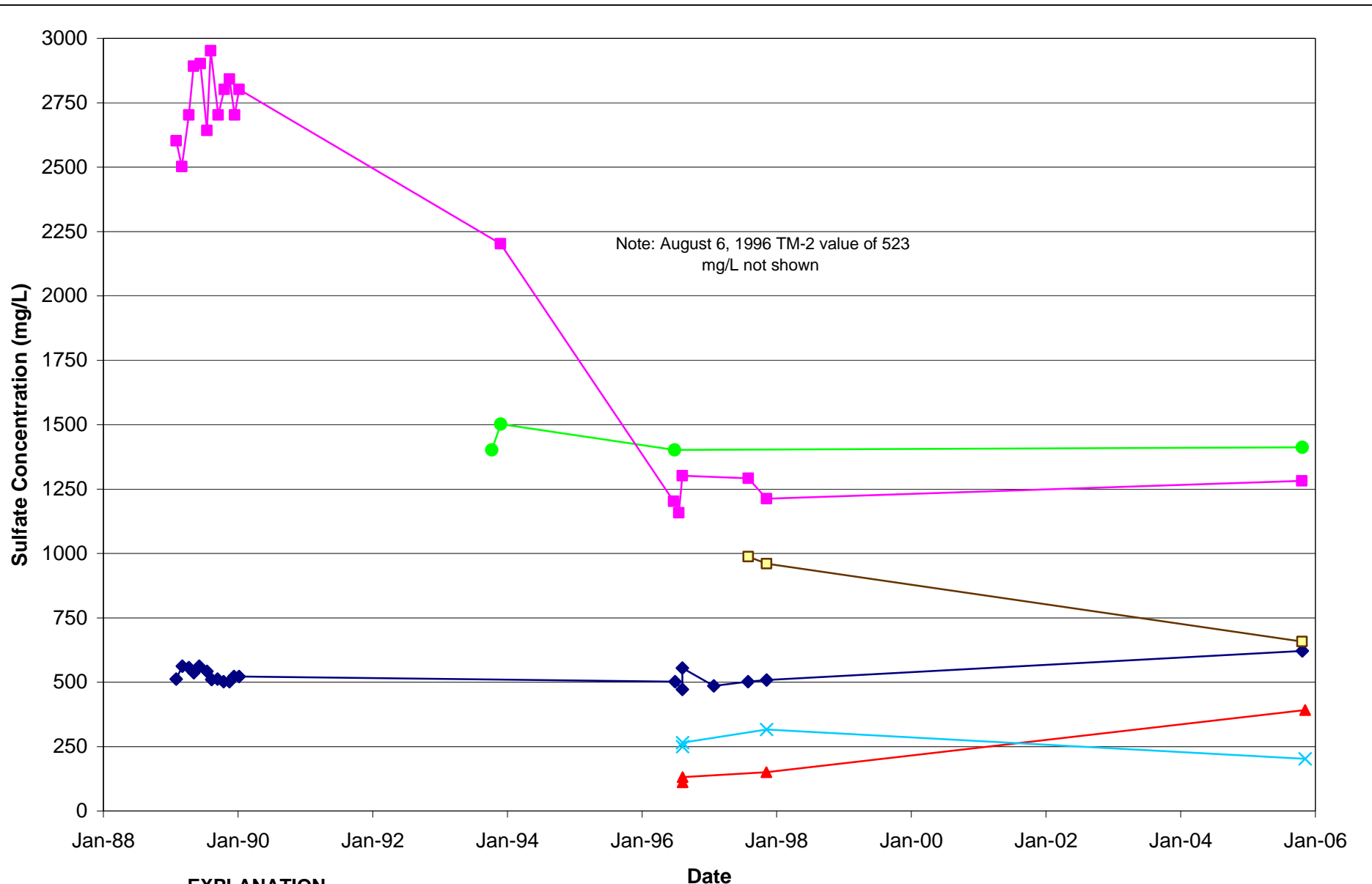
**MAP SOURCE:** USGS 7.5 MIN QUADS: BISBEE, BISBEE NE, BISBEE SE, AND NACO, ARIZONA  
 NAD 27 ZONE 12 CENTRAL, METERS

**HYDRO GEO CHEM, INC.**

**COMPARISON OF 1996 AND 2005 SULFATE PLUME BOUNDARIES**  
**CONCENTRATOR STORAGE TAILINGS AREA AND VICINITY**  
**BISBEE, ARIZONA**

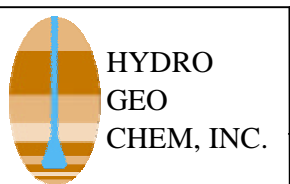
Approved: **JRN** Date: **4/4/07** Revised By: **KSW** Date: **07/19/07** File Name: **8720010A** Figure: **17**

Scale: 0 1/2 1 MILE  
 0 2000 4000 6000 FEET  
 0 .5 1 2 KILOMETER



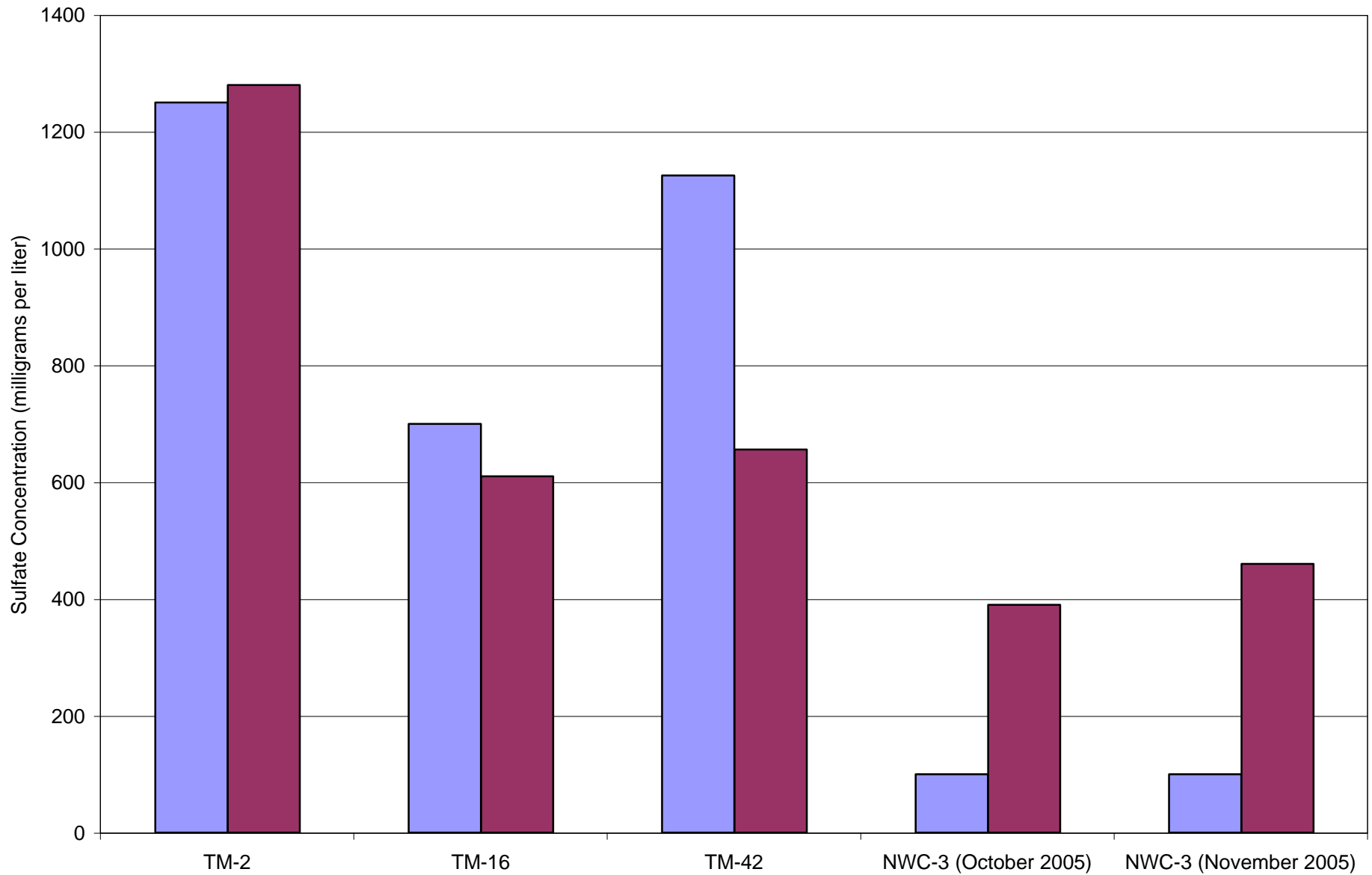
**EXPLANATION**

- BF-1 mixed basin fill and Morita Formation
- ▲ NWC-3 basin fill
- ✕ NWC-4 Morita Formation
- TM-2 basin fill
- ◆ TM-16 Morita Formation
- TM-42



**SULFATE CONCENTRATIONS IN  
WELLS BF-1, NWC-3, NWC-4, TM-2,  
TM-16, and TM-42**

APPROVED	SJS	DATE	09/10/07	FIGURE	18
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**EXPLANATION**

- Predicted
- Measured



HYDRO  
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CHEM, INC.

**MEASURED AND PREDICTED SULFATE  
CONCENTRATIONS FOR YEAR 2005**

APPROVED

SS

DATE

2/2/07

FIGURE

**19**

## EXPLANATION

### Inside Plume - Morita

- △ TM-41
- △ TM-16

### Inside Plume - Basin Fill

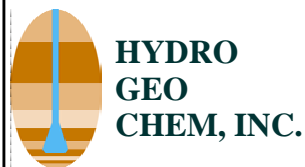
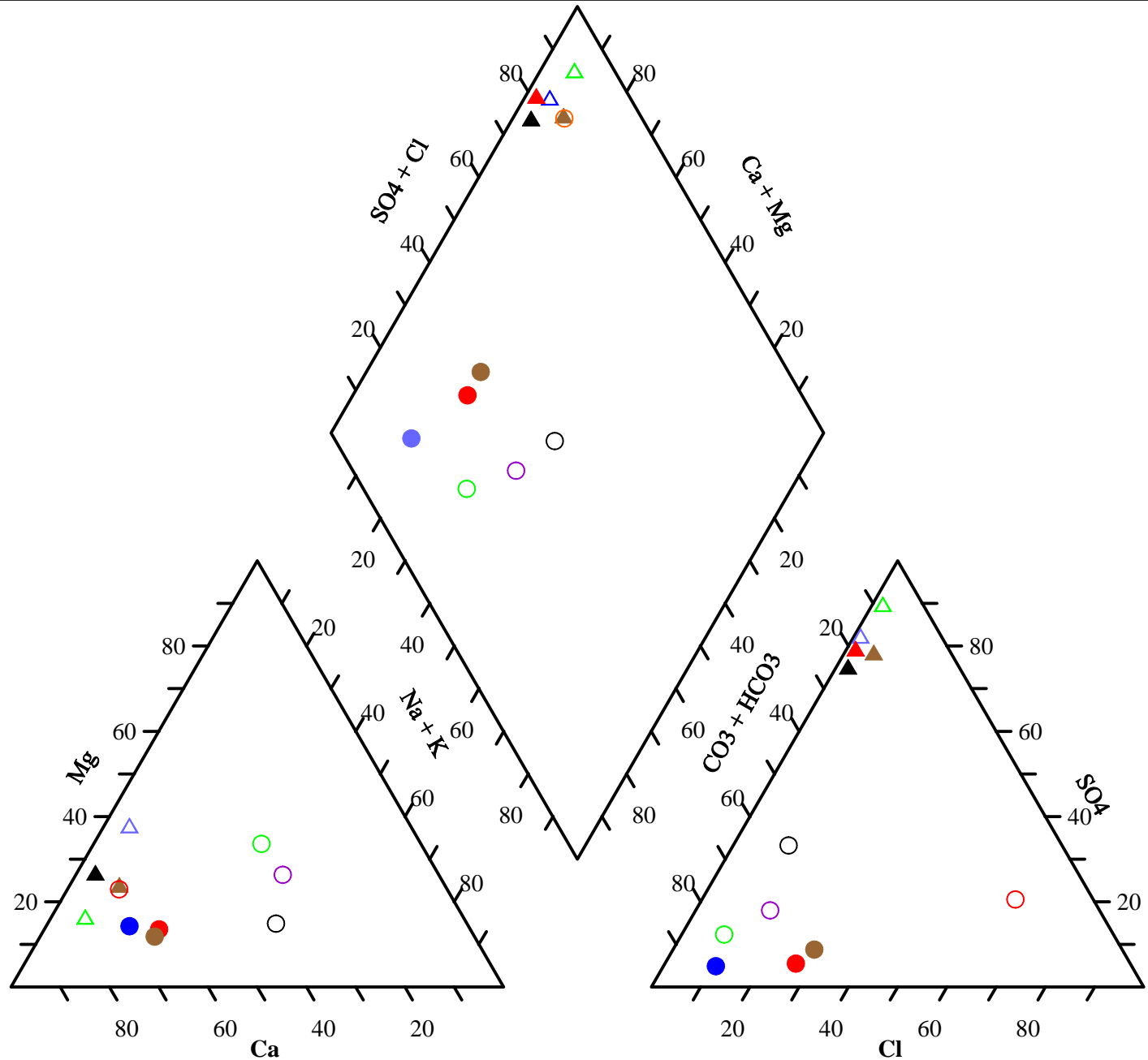
- ▲ TM-2
- ▲ BF-2
- ▲ TM-19

### Outside Plume - Morita

- NWC-5
- TM-6
- TM-19A
- TM-15

### Outside Plume - Basin Fill

- TM-12
- AWC-3
- TM-5



## TRILINEAR DIAGRAM OF MAJOR IONS (1996)

APPROVED  
NWH

DATE  
12/15/2006

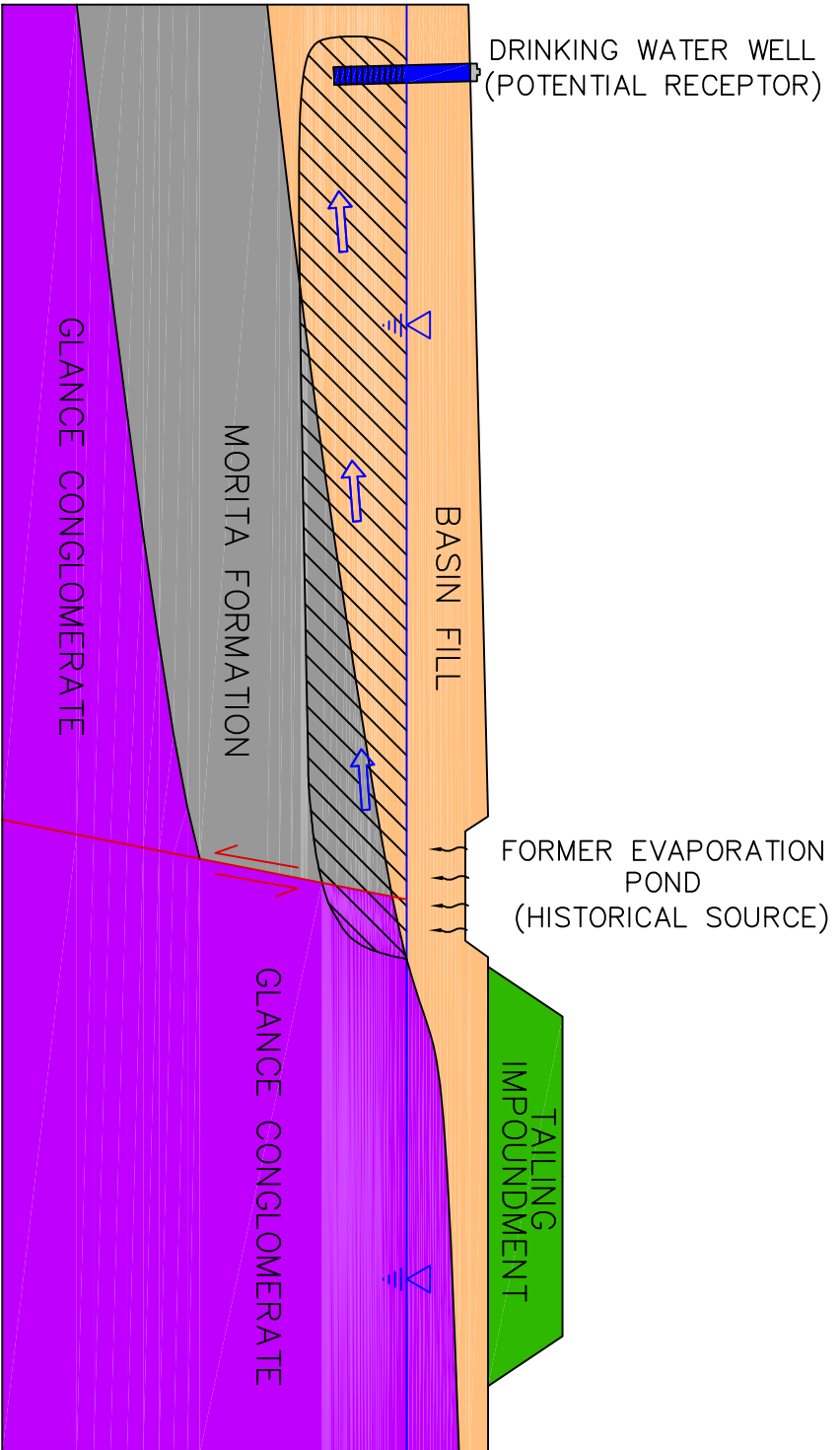
REFERENCE  
H:/872000/WorkPlan/Figures/Figure 20.srf

FIGURE  
**20**

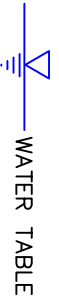


SOUTHWEST

NORTHEAST



**LEGEND**



WATER TABLE



SEEPAGE THROUGH VADOSE ZONE

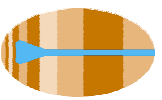


GROUNDWATER FLOW DIRECTION (MIGRATION PATHWAY)



SULFATE BEARING GROUNDWATER

**N.T.S.**

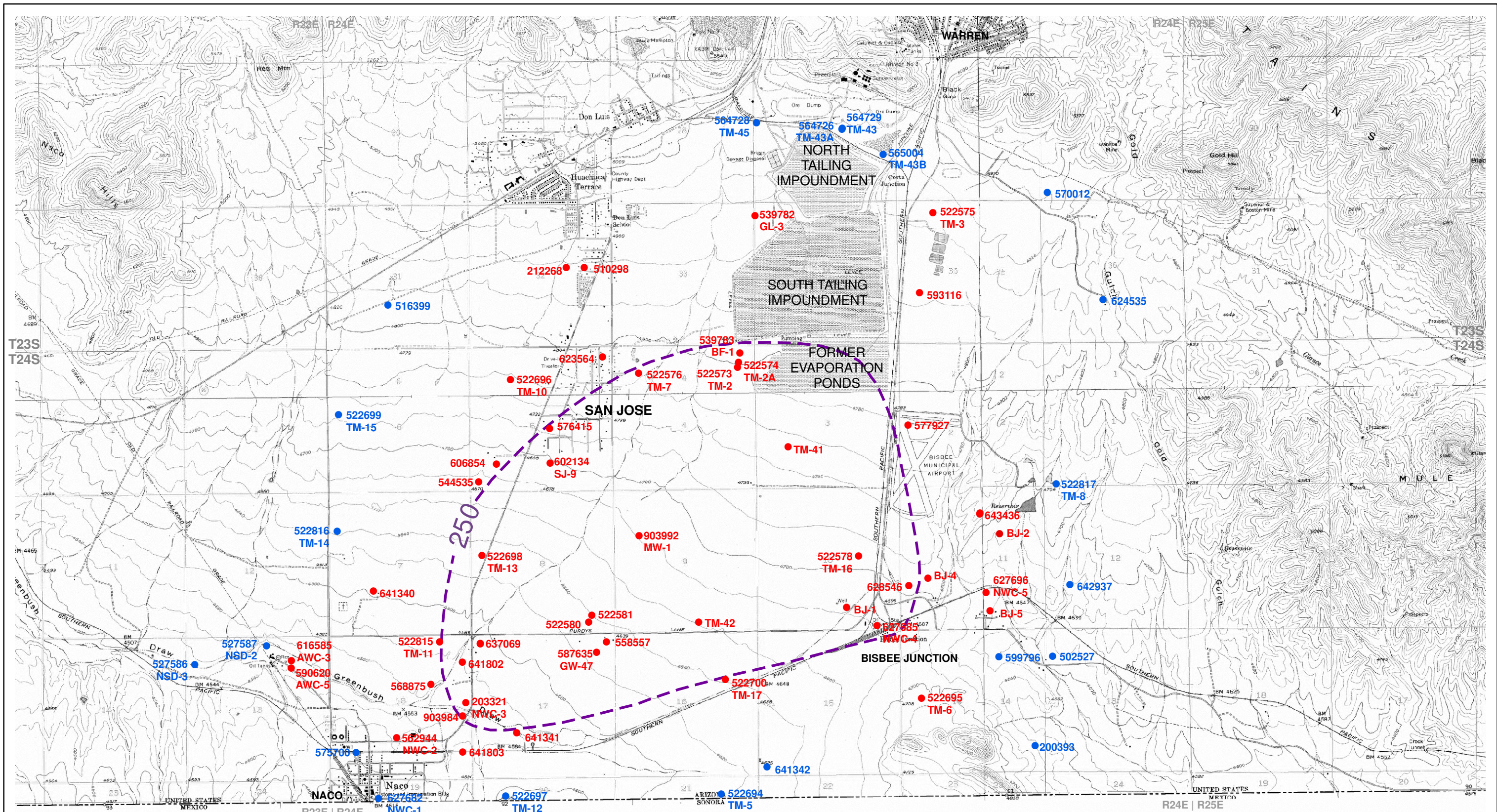


**HYDRO  
GEO  
CHEM, INC.**

**SCHEMATIC DIAGRAM OF CONCEPTUAL SITE MODEL**

Approved	Date	Author	Date	File Name	Figure
JRN	04/11/08	MTC	04/11/08	8720027A	21

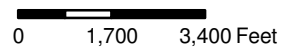




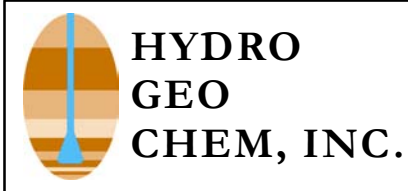
**EXPLANATION**

- Quarterly Monitoring
- Semi-Annual Monitoring
- 2005 Sulfate Plume, 250 mg/L Contour

1 inch equals 3,500 feet



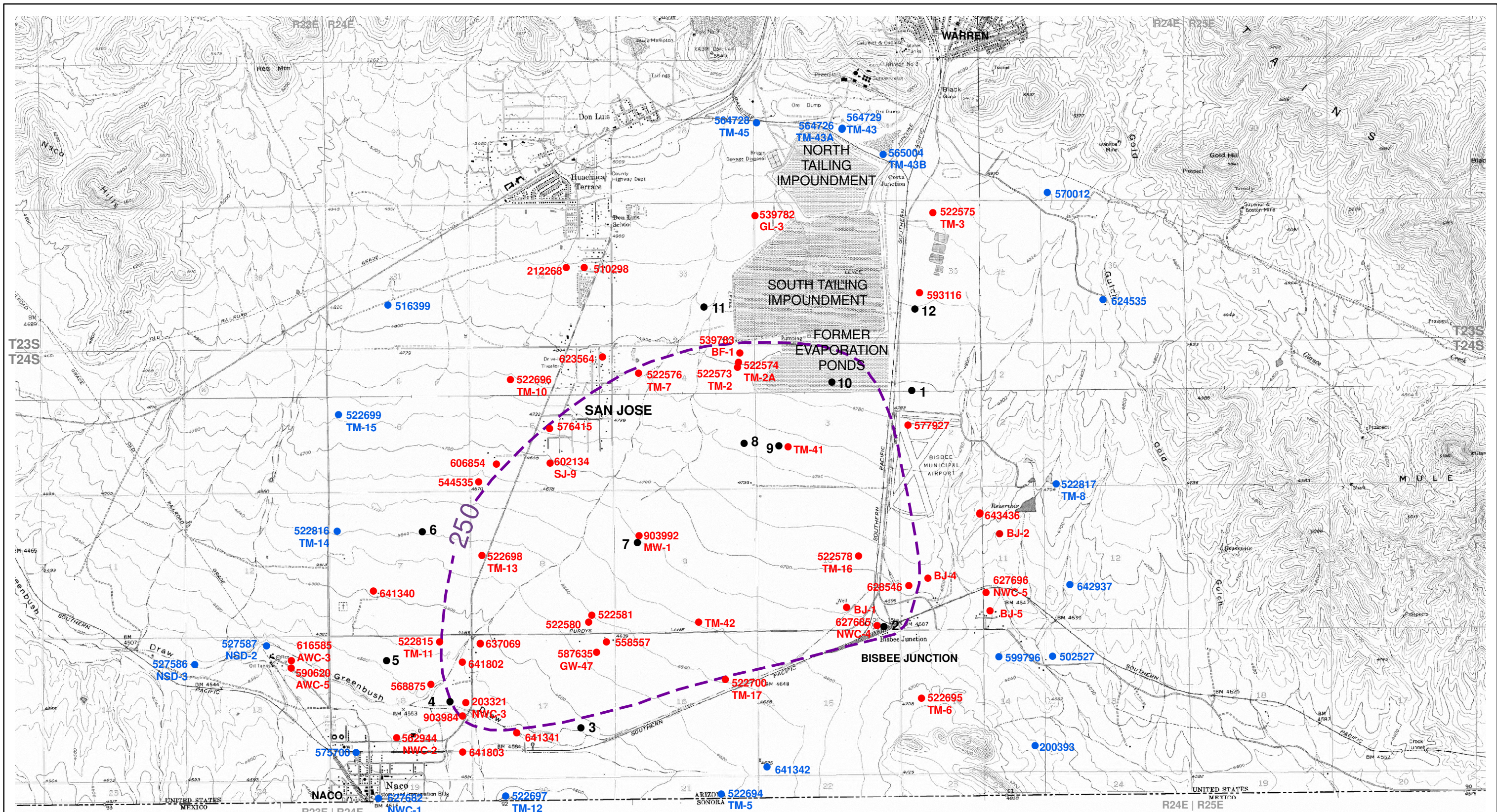
MAP SOURCE: USGS 7.5 MIN QUADS  
UTM Zone 12N NAD27, METERS



**PROPOSED WELL LOCATIONS FOR GROUNDWATER MONITORING (TASK 2.2) AT EXISTING WELLS**

Approved <b>KSW</b>	Date <b>04/12/07</b>	Revised <b>JRN</b>	Date <b>06/16/08</b>	File Name <b>8720002G 3</b>	Figure <b>22</b>
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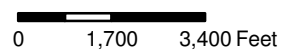




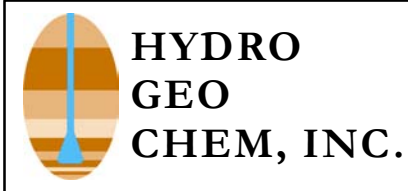
**EXPLANATION**

- Proposed Well Site
- Existing Quarterly Monitoring Well
- Existing Semi-Annual Monitoring Well
- 2005 Sulfate Plume, 250 mg/L Contour

1 inch equals 3,500 feet



MAP SOURCE: USGS 7.5 MIN QUADS  
UTM Zone 12N NAD27, METERS



**PROPOSED NEW MONITORING WELL LOCATIONS (TASK 2.3)**

Approved <b>KSW</b>	Date <b>03/20/07</b>	Revised <b>JRN</b>	Date <b>06/16/08</b>	File Name <b>8720018G</b>	Figure <b>23</b>
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**FIGURE 24**  
**Schedule for Aquifer Characterization and Sulfate Mitigation Plans**

TASK	2008												2009											
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		
<b>AQUIFER CHARACTERIZATION PLAN <sup>1</sup></b>																								
<b>TASK 1 WELL INVENTORY</b>	■	■	■	■																				
<b>TASK 2 PLUME CHARACTERIZATION</b>																								
Task 2.1 - Data Compilation	■	■	■	■	■																			
Task 2.2 - Groundwater Monitoring	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Task 2.3 - New Monitoring Well Installation and Testing																								
Access and Permits	■	■	■	■																				
Well Installation			■	■	■	■	■	■	■	■	■													
Sampling and Testing			■	■	■	■	■	■	■	■	■	■												
Task 2.4 - Additional Hydraulic Testing						■	■	■	■	■	■	■												
<b>TASK 3 FATE AND TRANSPORT STUDY</b>						■	■	■	■	■	■	■												
<b>TASK 4 REPORTING</b>																								
Well Inventory Report						1																		
Quarterly Groundwater Monitoring Reports					2				2			2			2			2			2			
Aquifer Characterization Report															3									
<b>POTENTIAL INTERIM ACTIONS</b>																								
Interim Action Implementation (if needed)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
<b>FEASIBILITY STUDY FOR SULFATE MITIGATION PLAN</b>																								
Identification and Screening of Mitigation Actions			■	■	■	■	■	■	■	■	■	■	■	■										
Development and Screening of Mitigation Alternatives								■	■	■	■	■	■	■										
Detailed Analysis of Mitigation Alternatives												■	■	■	■	■								
Feasibility Study Report																	4							
Mitigation Plan Report																					5			
Treatability Studies (if needed)																	■	■	■	■	■	■		

Notes:  
<sup>1</sup> Start and end times are highly dependent on the ability and timing to access sampling and drill sites through agreements with private parties and public entities.

EXPLANATION OF REPORTING SCHEDULE

- 1 - Well Inventory Report (Task 1)
- 2 - Quarterly Groundwater Monitoring Report (Task 2.2)
- 3 - Final Aquifer Characterization Report (Task 4)
- 4 - Feasibility Study Report
- 5 - Mitigation Plan Report