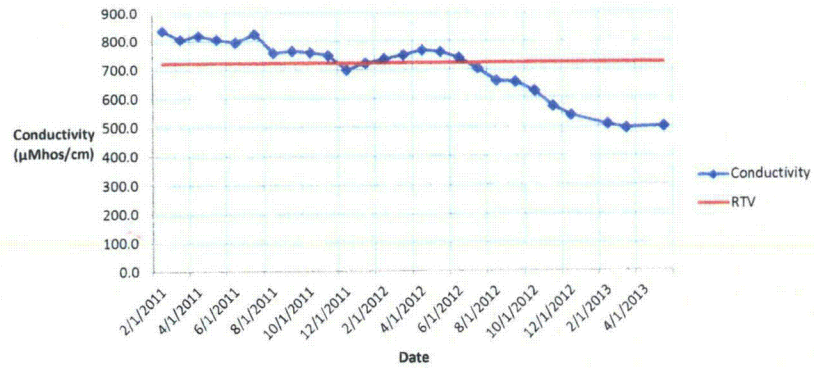
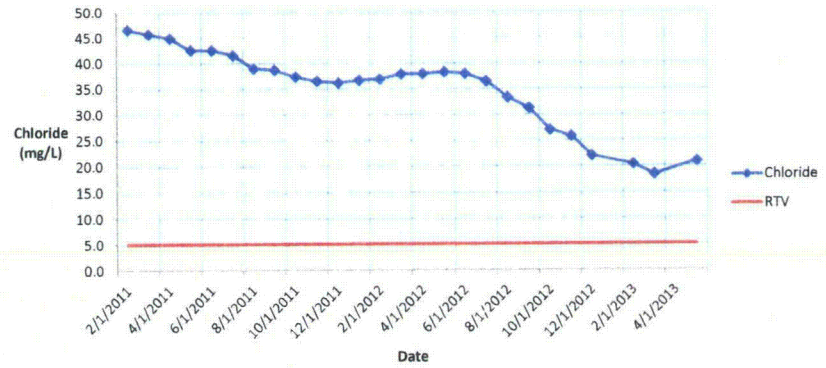


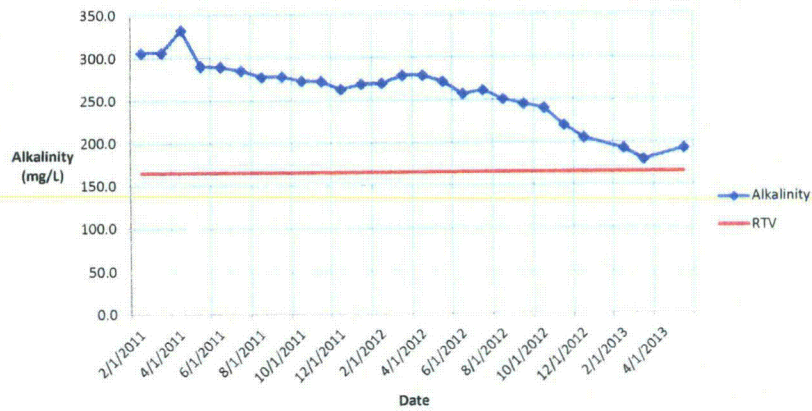
**Mine Unit C Monitor Well  
Conductivity Averages Over Time**



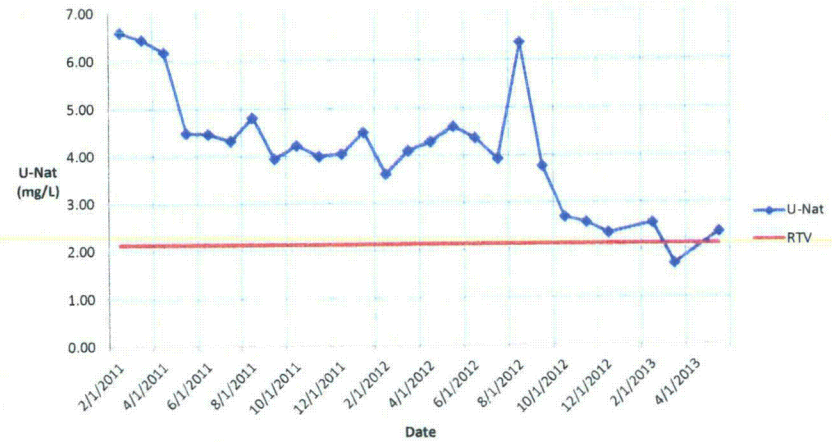
**Mine Unit C Monitor Well  
Chloride Concentration Averages Over Time**

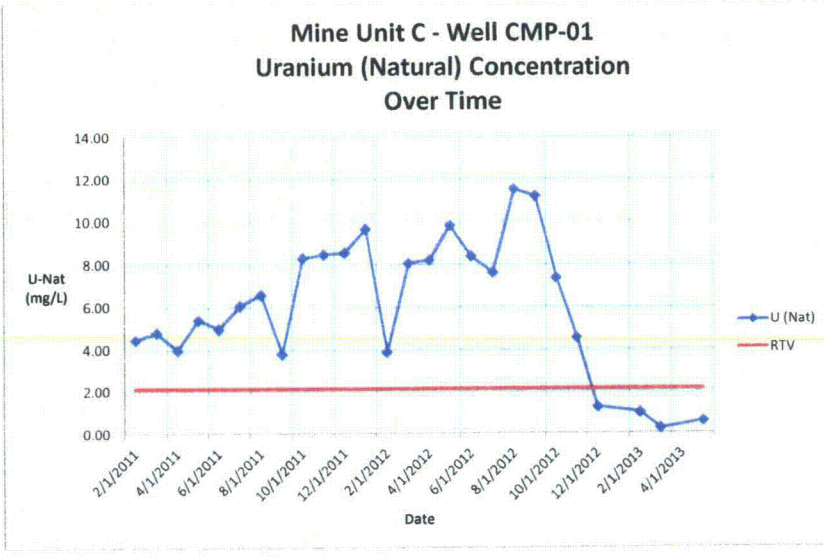
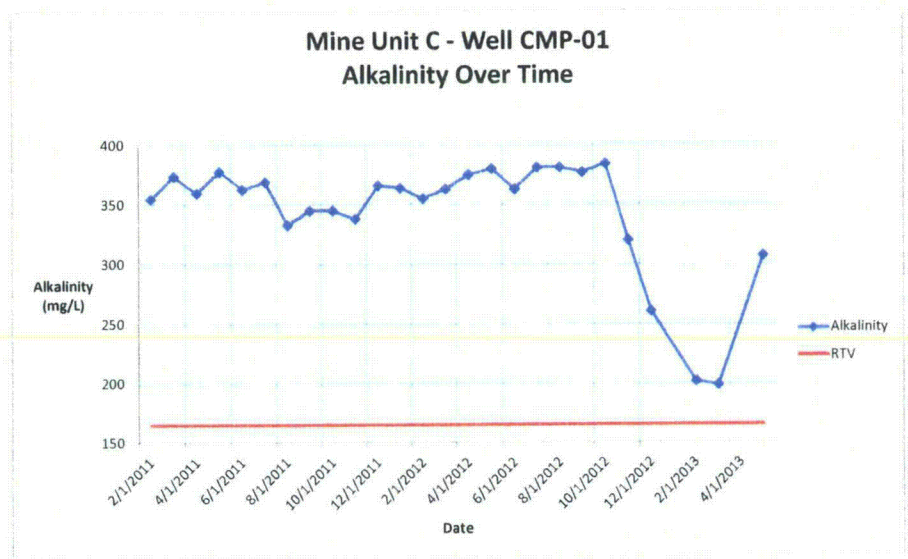
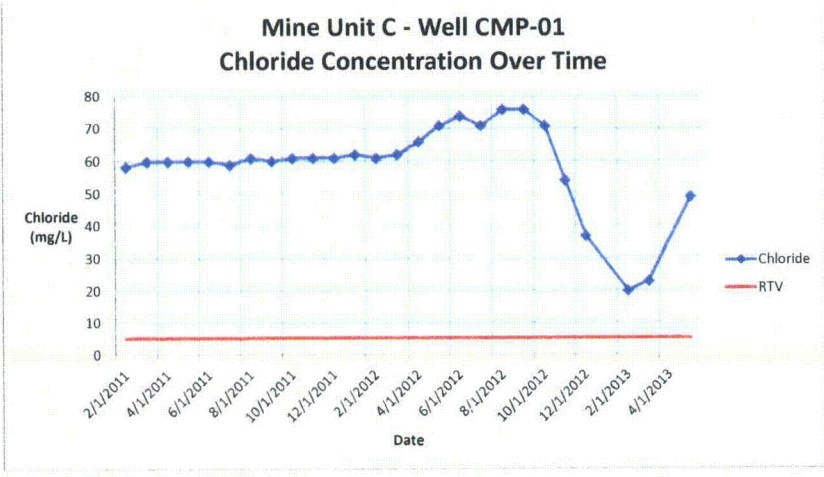
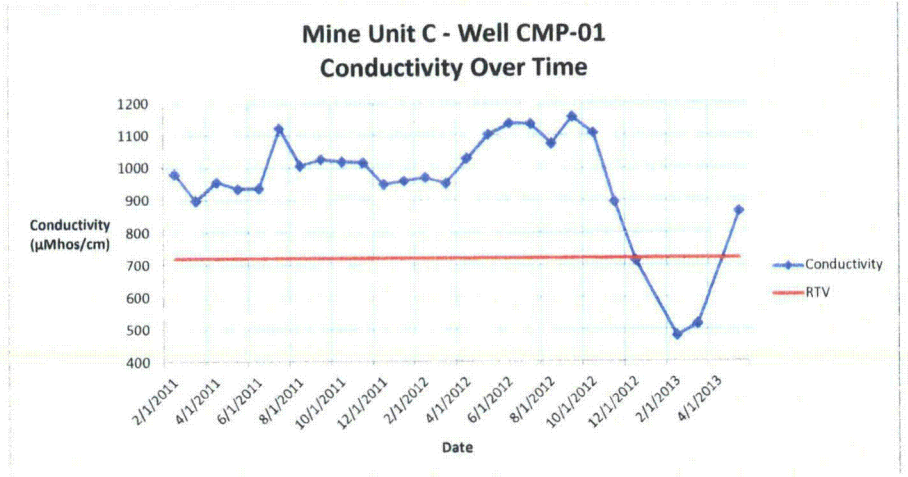


**Mine Unit C Monitor Well  
Alkalinity Averages Over Time**



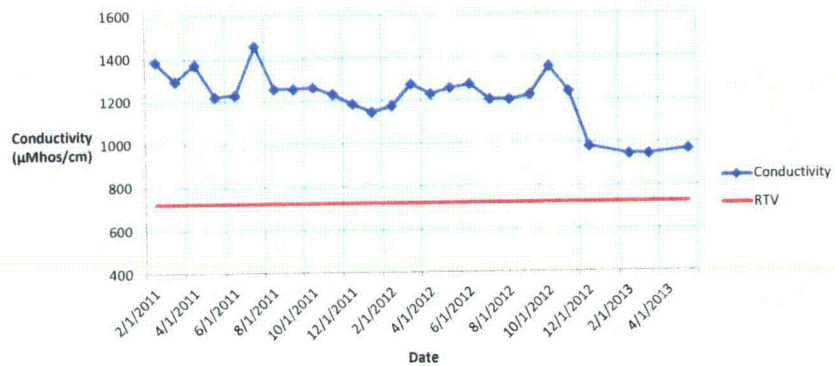
**Mine Unit C Monitor Well  
Uranium (Natural) Concentration Averages Over Time**



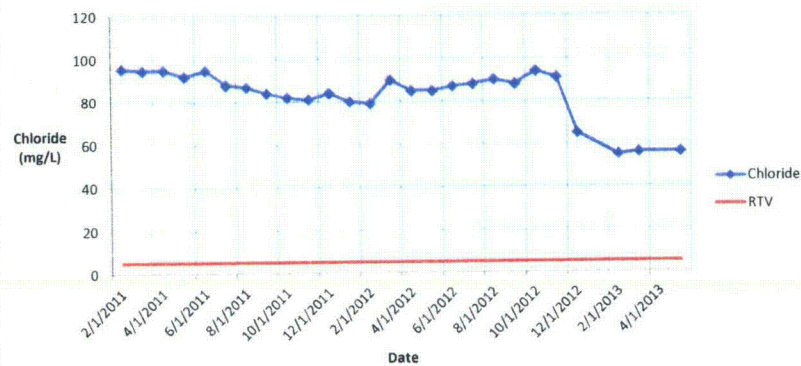




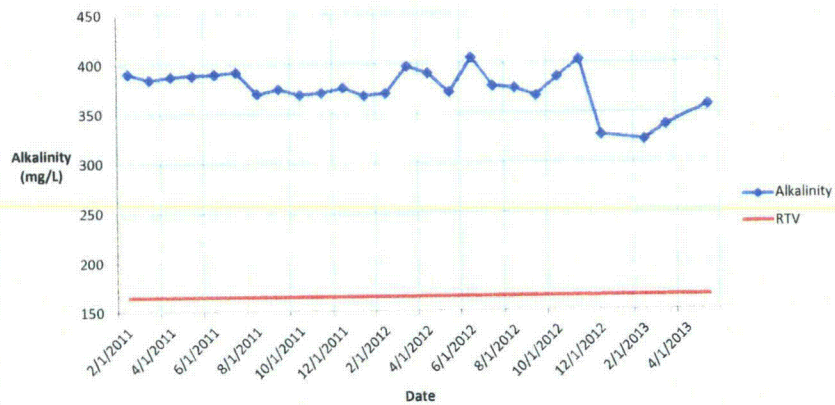
Mine Unit C - Well CMP-02  
Conductivity Over Time



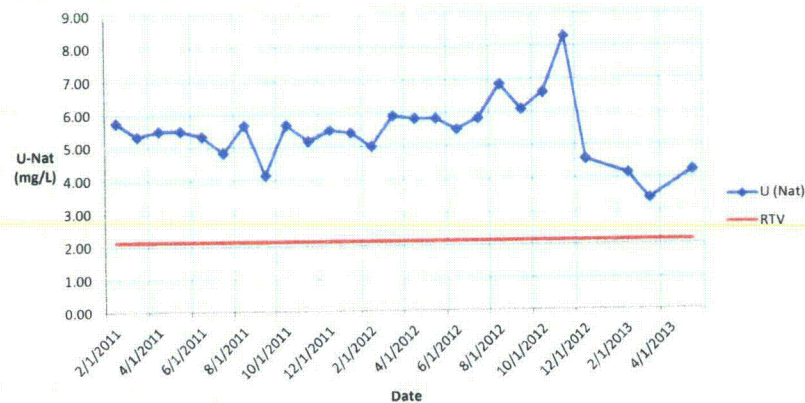
Mine Unit C - Well CMP-02  
Chloride Concentration Over Time

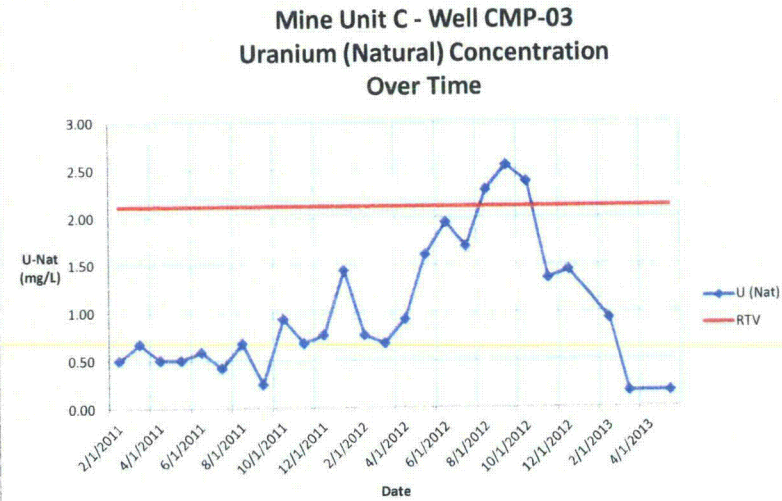
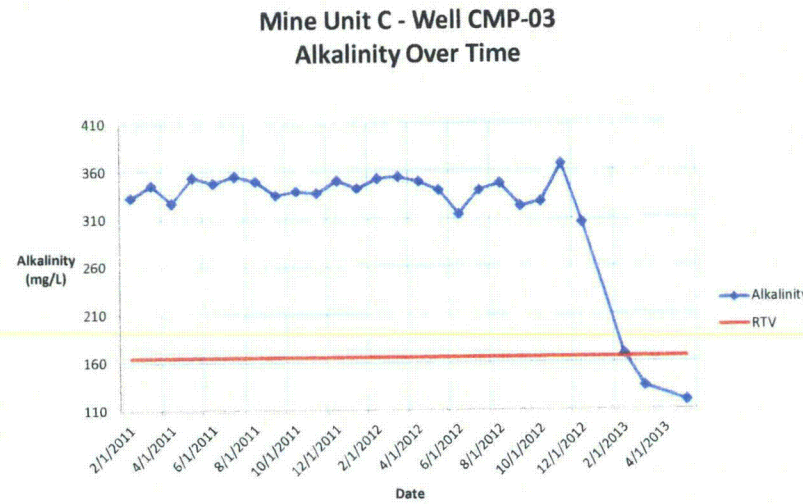
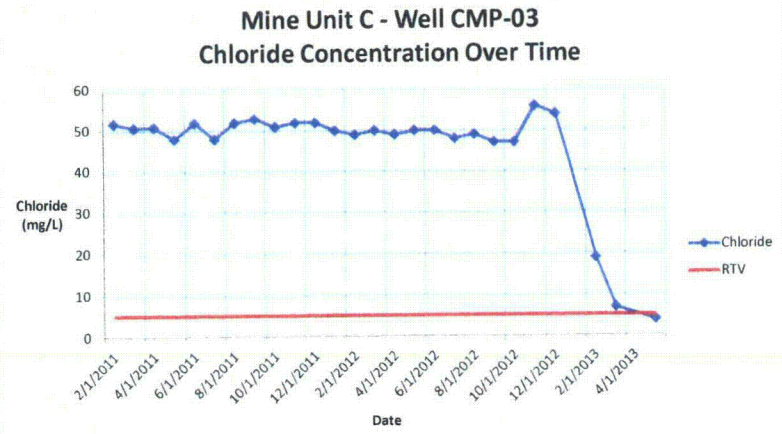
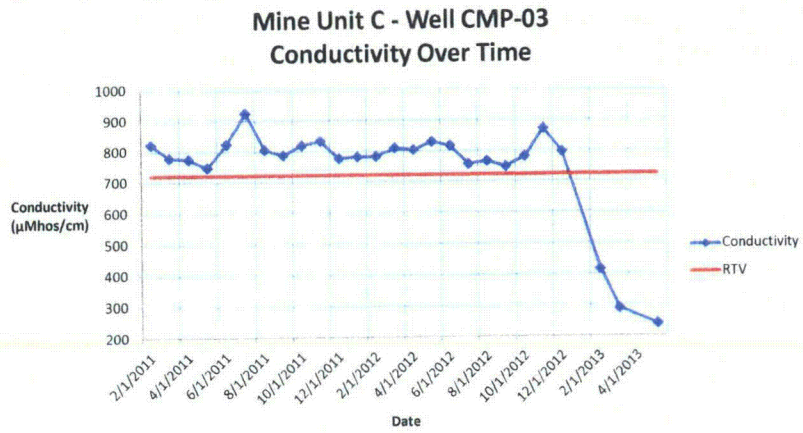


Mine Unit C - Well CMP-02  
Alkalinity Over Time

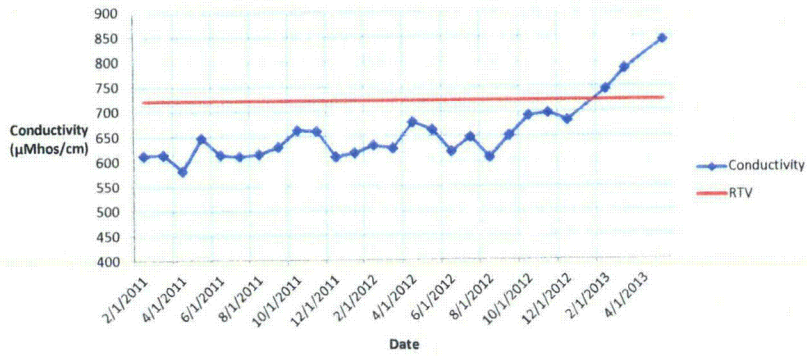


Mine Unit C - Well CMP-02  
Uranium (Natural) Concentration  
Over Time

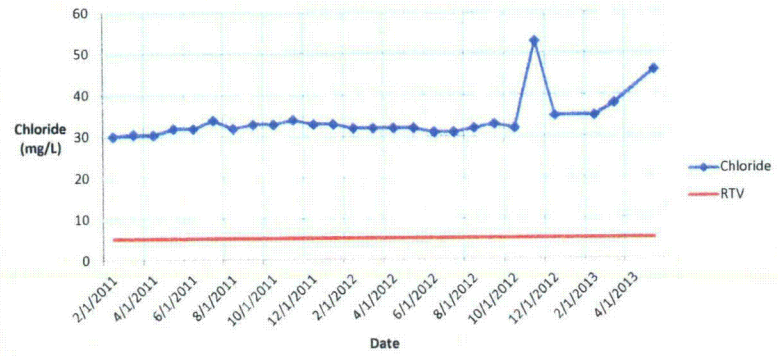




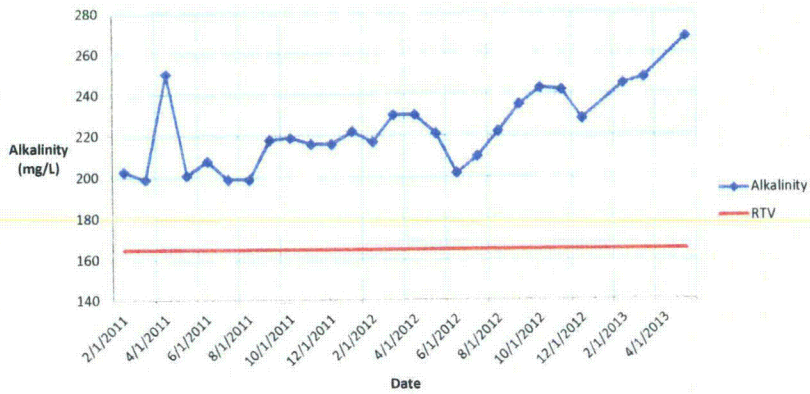
**Mine Unit C - Well CMP-04  
Conductivity Over Time**



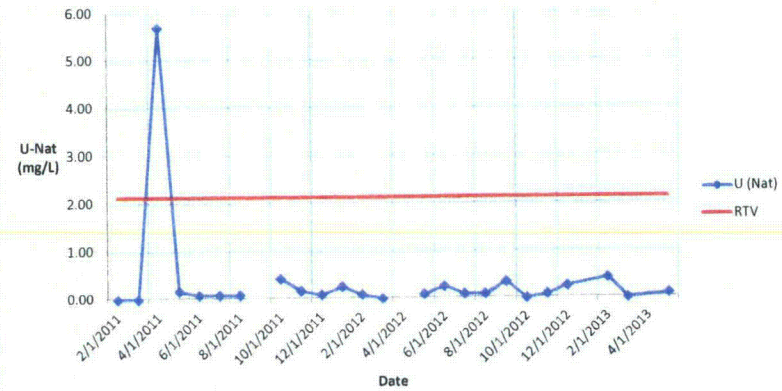
**Mine Unit C - Well CMP-04  
Chloride Concentration Over Time**



**Mine Unit C - Well CMP-04  
Alkalinity Over Time**

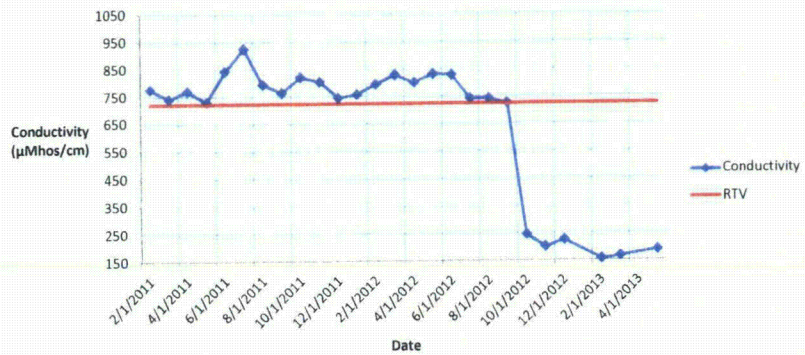


**Mine Unit C - Well CMP-04  
Uranium (Natural) Concentration Over Time**

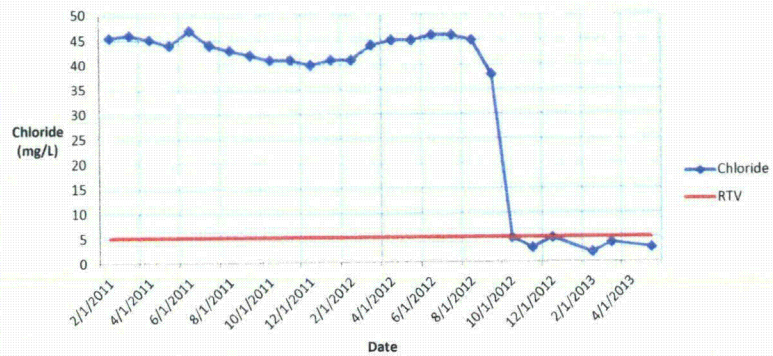




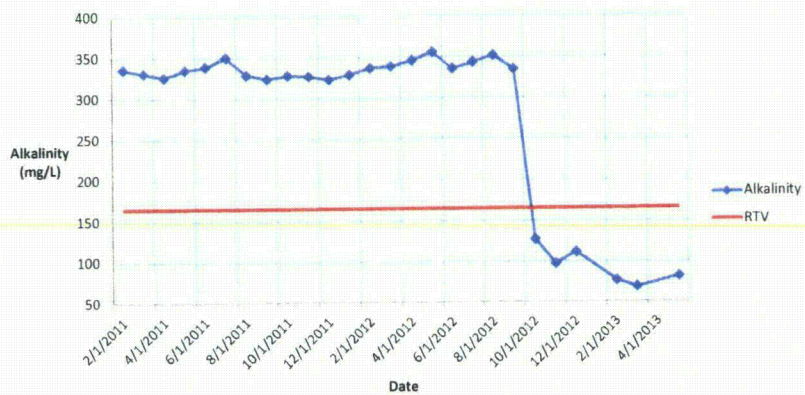
Mine Unit C - Well CMP-05  
Conductivity Over Time



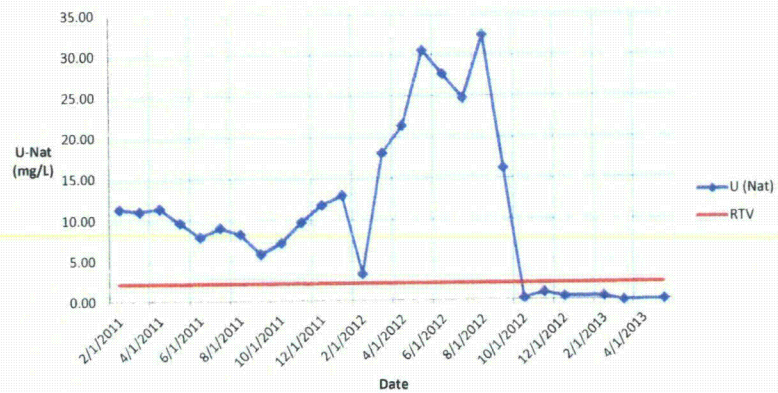
Mine Unit C - Well CMP-05  
Chloride Concentration Over Time

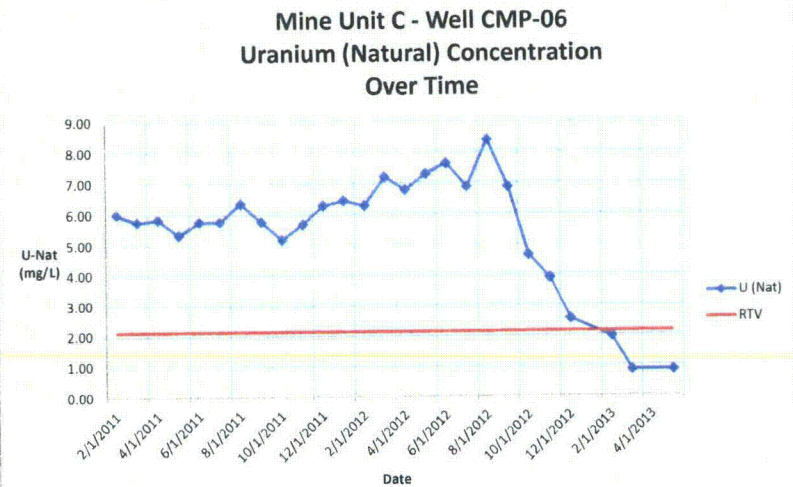
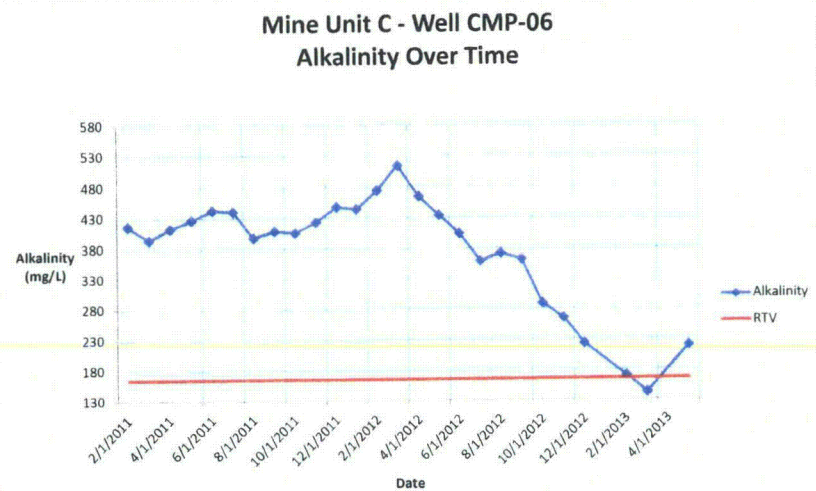
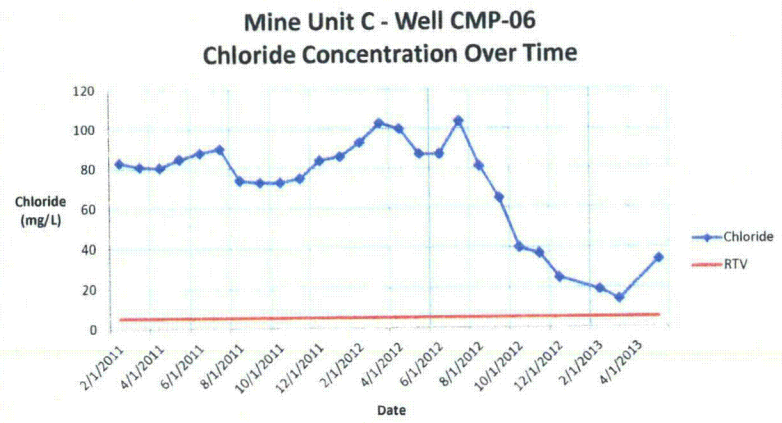
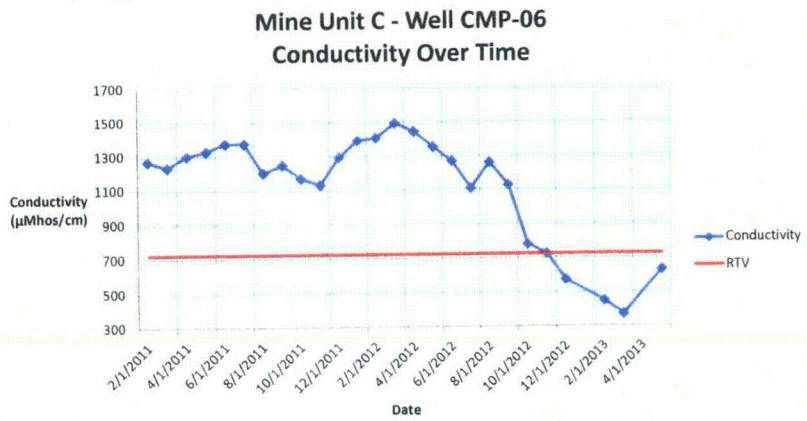


Mine Unit C - Well CMP-05  
Alkalinity Over Time



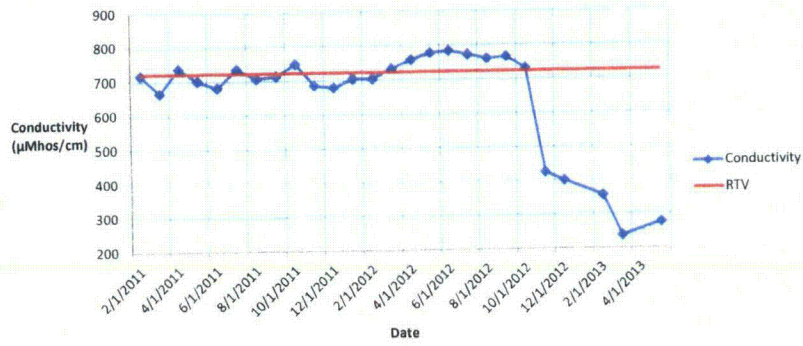
Mine Unit C - Well CMP-05  
Uranium (Natural) Concentration  
Over Time



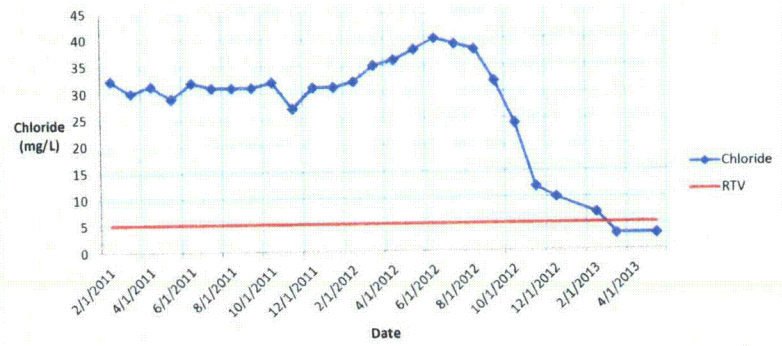




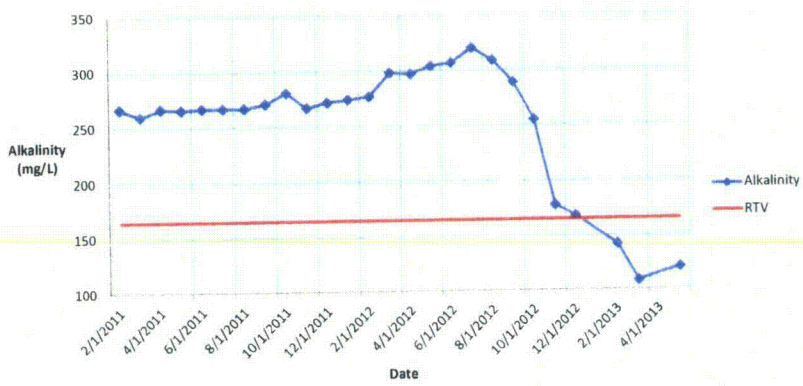
**Mine Unit C - Well CMP-07  
Conductivity Over Time**



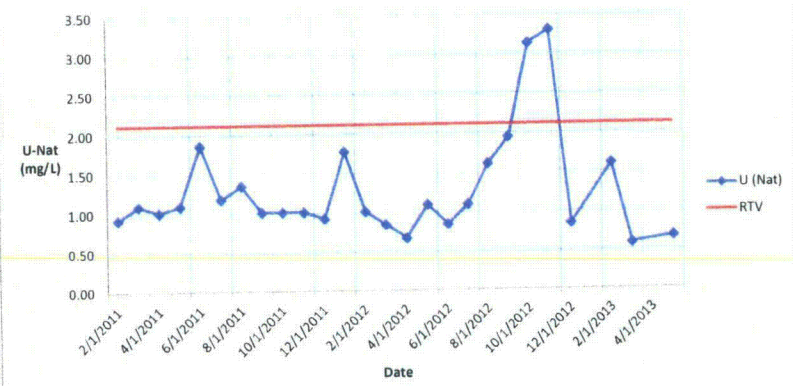
**Mine Unit C - Well CMP-07  
Chloride Concentration Over Time**



**Mine Unit C - Well CMP-07  
Alkalinity Over Time**

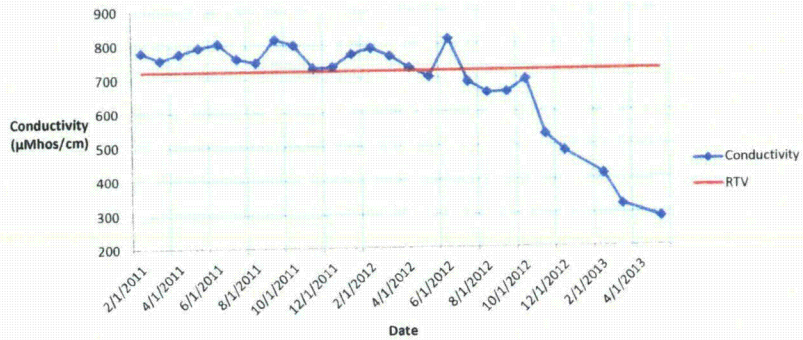


**Mine Unit C - Well CMP-07  
Uranium (Natural) Concentration  
Over Time**

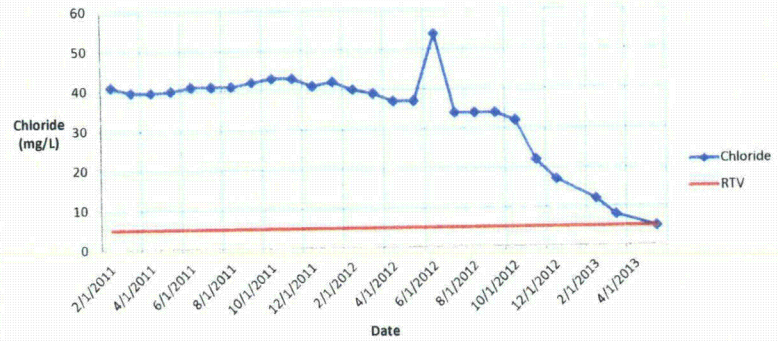




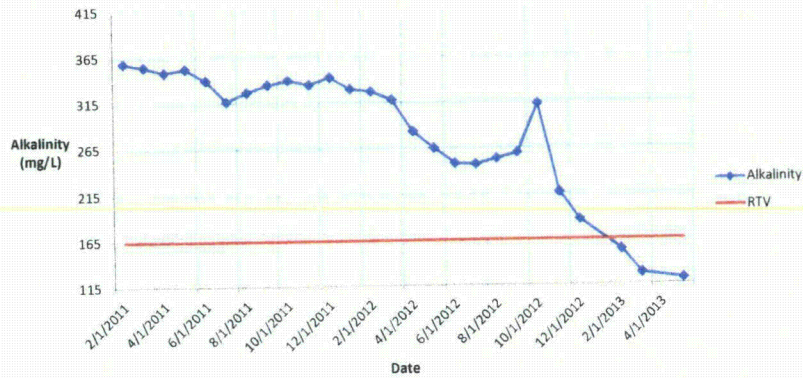
**Mine Unit C - Well CMP-08  
Conductivity Over Time**



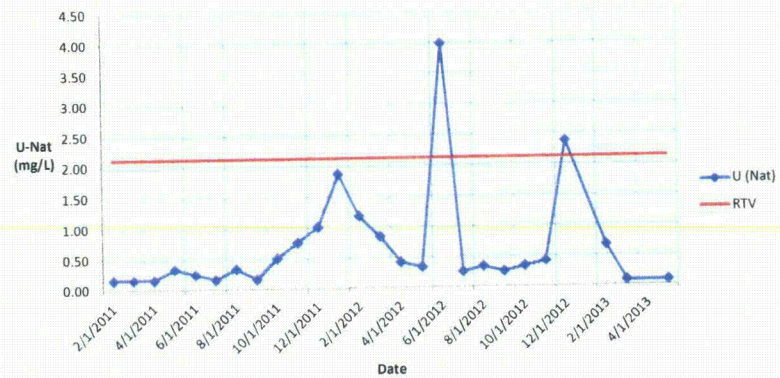
**Mine Unit C - Well CMP-08  
Chloride Concentration Over Time**

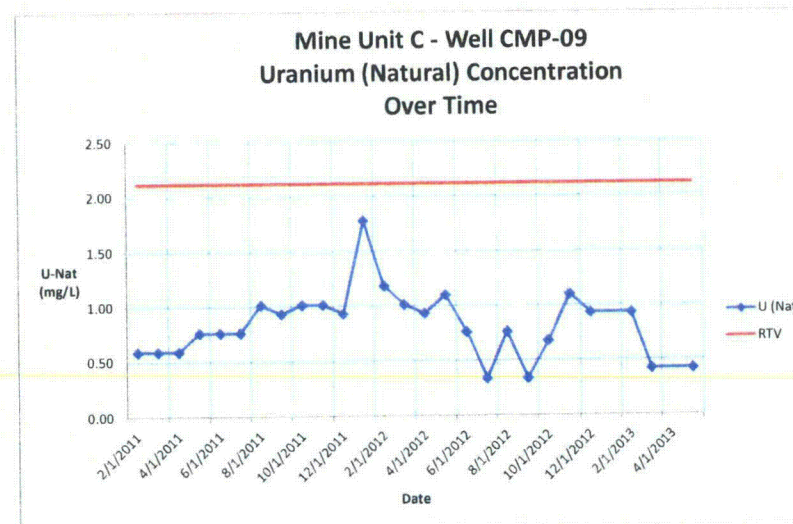
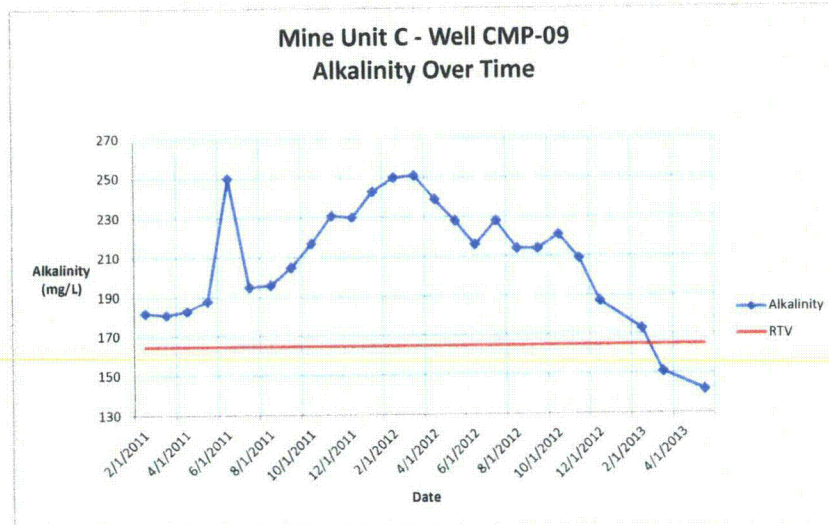
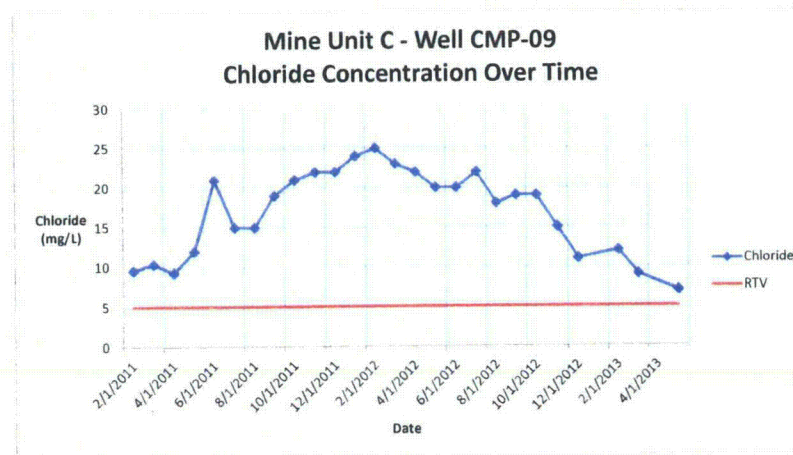
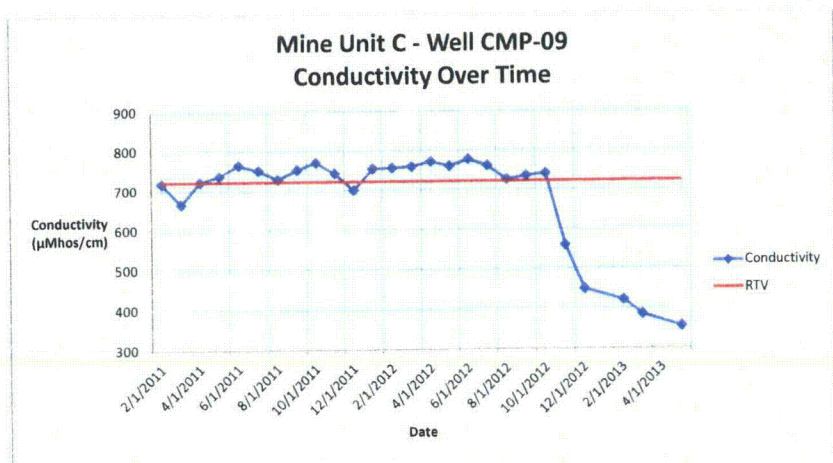


**Mine Unit C - Well CMP-08  
Alkalinity Over Time**



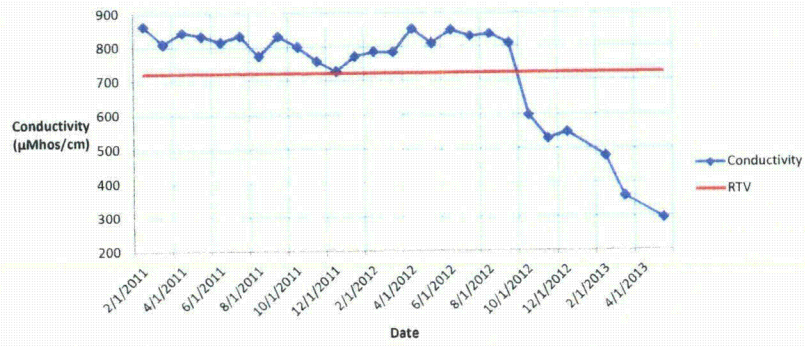
**Mine Unit C - Well CMP-08  
Uranium (Natural) Concentration  
Over Time**



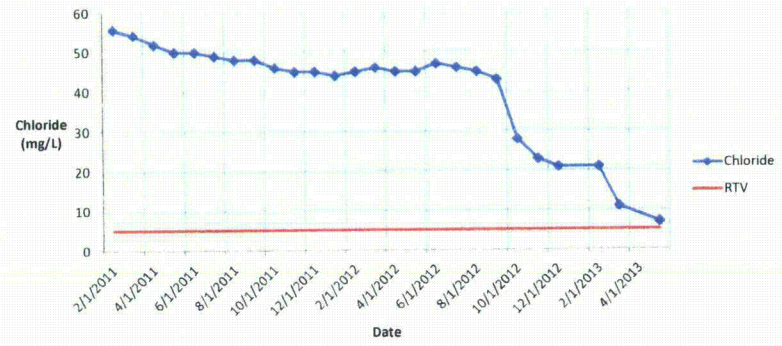




**Mine Unit C - Well CMP-10  
Conductivity Over Time**



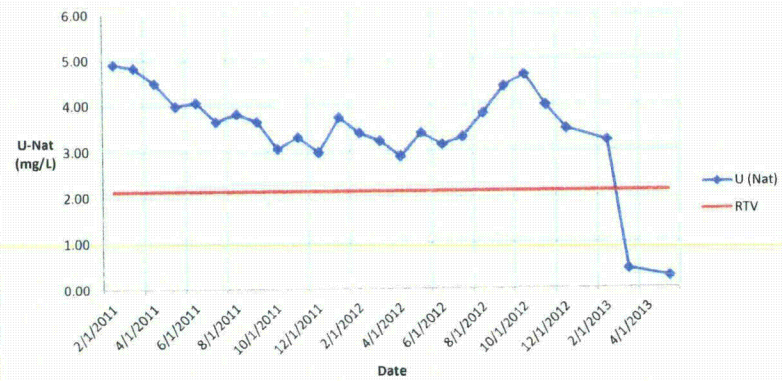
**Mine Unit C - Well CMP-10  
Chloride Concentration Over Time**



**Mine Unit C - Well CMP-10  
Alkalinity Over Time**

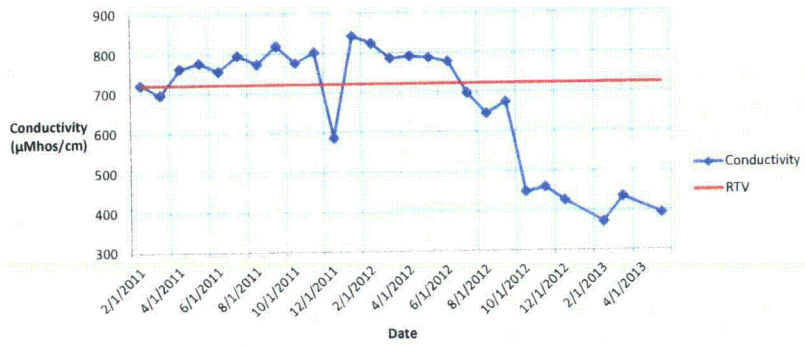


**Mine Unit C - Well CMP-10  
Uranium (Natural) Concentration Over Time**

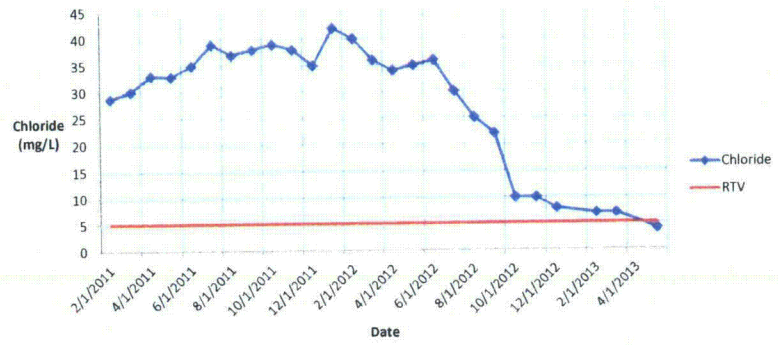




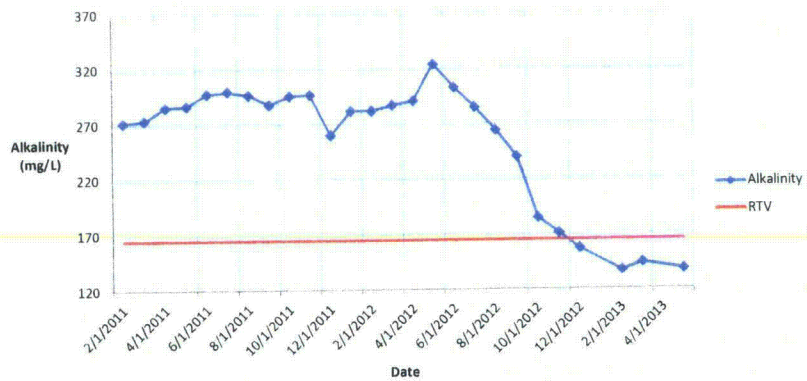
**Mine Unit C - Well CMP-11  
Conductivity Over Time**



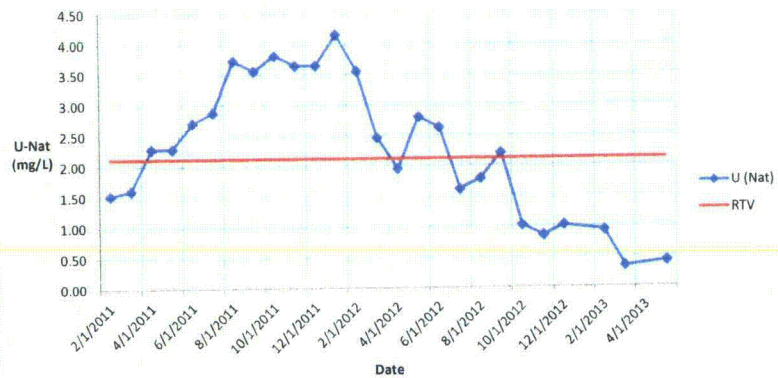
**Mine Unit C - Well CMP-11  
Chloride Concentration Over Time**



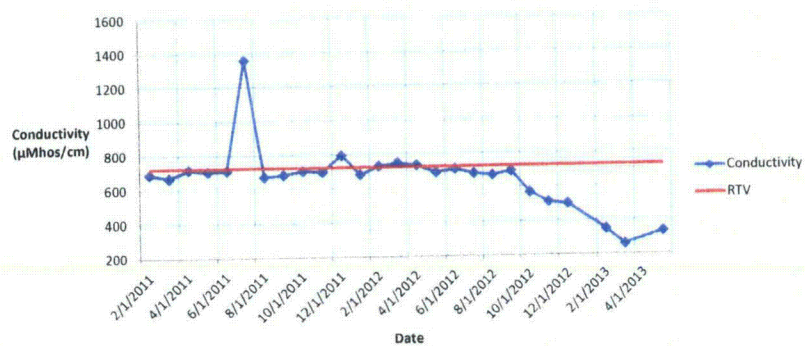
**Mine Unit C - Well CMP-11  
Alkalinity Over Time**



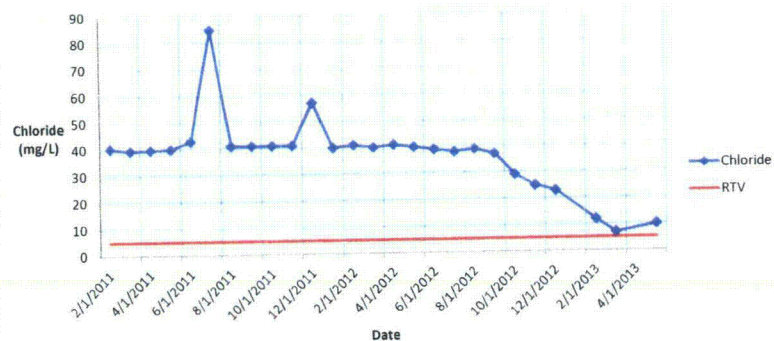
**Mine Unit C - Well CMP-11  
Uranium (Natural) Concentration  
Over Time**



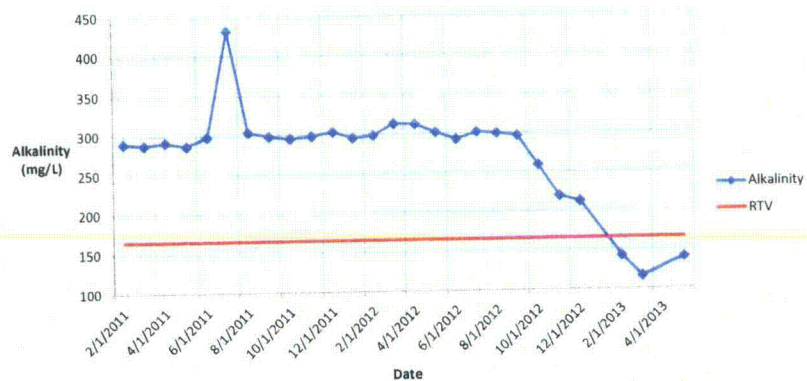
**Mine Unit C - Well CMP-12  
Conductivity Over Time**



**Mine Unit C - Well CMP-12  
Chloride Concentration Over Time**



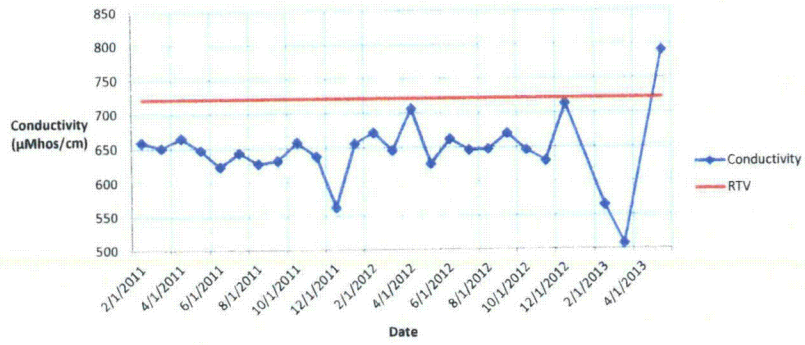
**Mine Unit C - Well CMP-12  
Alkalinity Over Time**



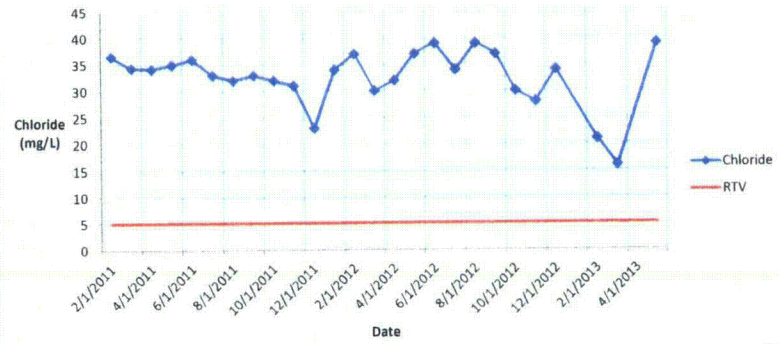
**Mine Unit C - Well CMP-12  
Uranium (Natural) Concentration  
Over Time**



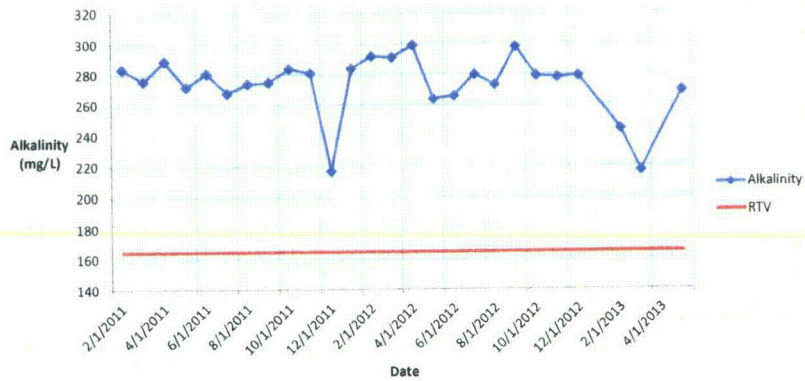
**Mine Unit C - Well CMP-13  
Conductivity Over Time**



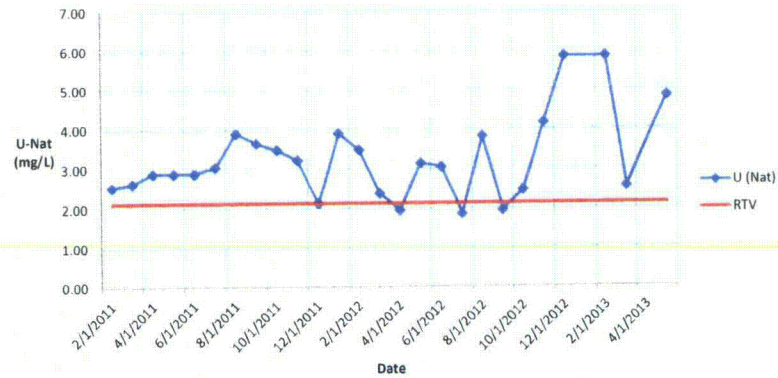
**Mine Unit C - Well CMP-13  
Chloride Concentration Over Time**



**Mine Unit C - Well CMP-13  
Alkalinity Over Time**

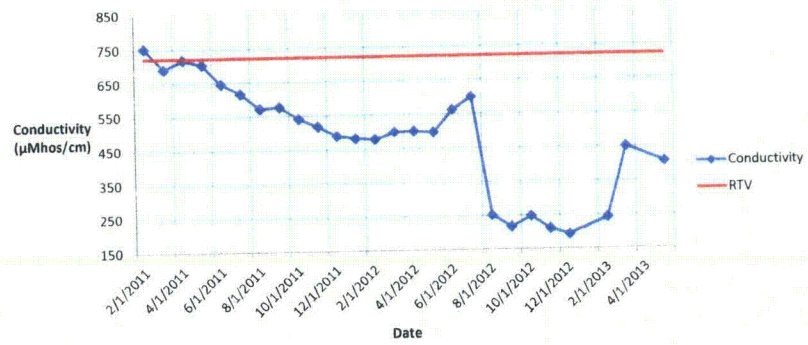


**Mine Unit C - Well CMP-13  
Uranium (Natural) Concentration  
Over Time**

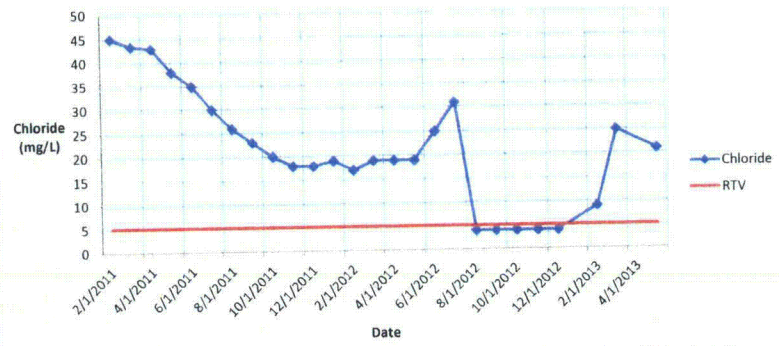




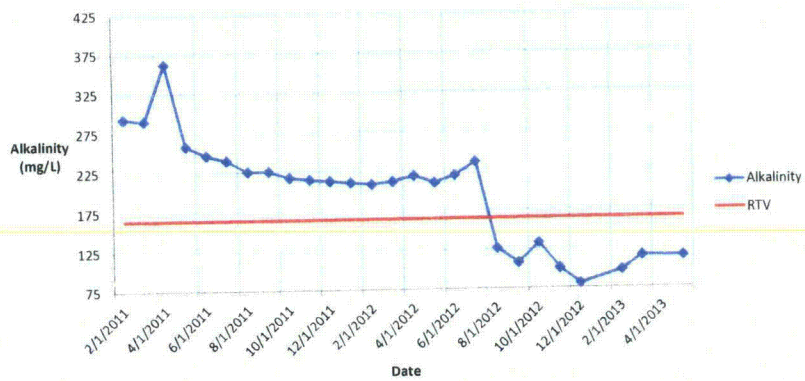
**Mine Unit C - Well CMP-14  
Conductivity Over Time**



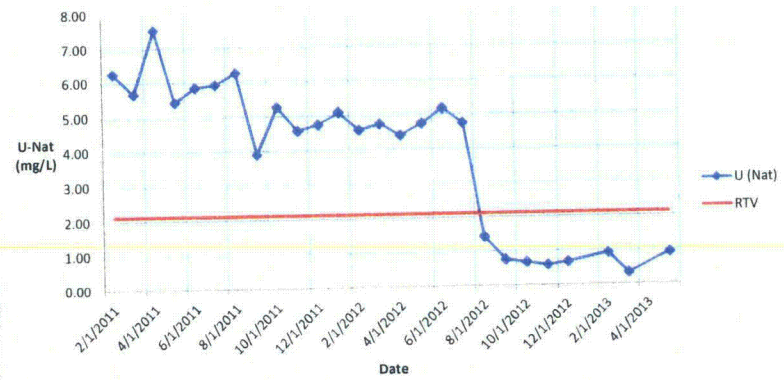
**Mine Unit C - Well CMP-14  
Chloride Concentration Over Time**



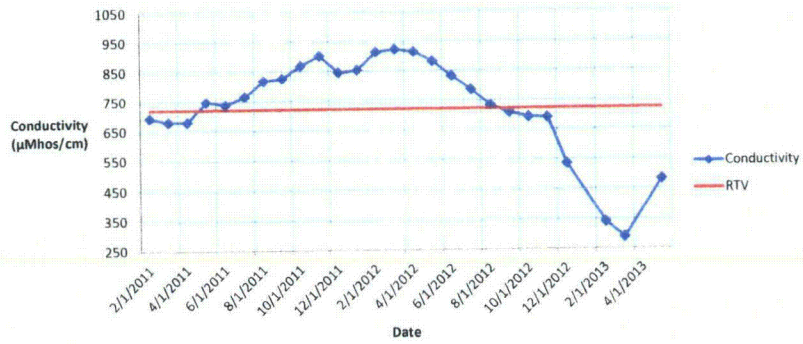
**Mine Unit C - Well CMP-14  
Alkalinity Over Time**



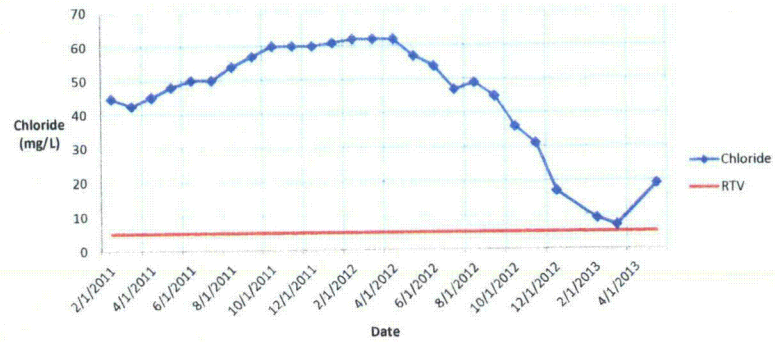
**Mine Unit C - Well CMP-14  
Uranium (Natural) Concentration  
Over Time**



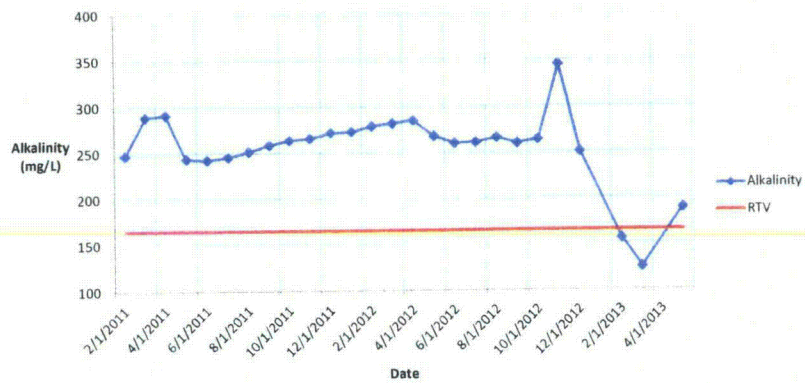
**Mine Unit C - Well CMP-15A  
Conductivity Over Time**



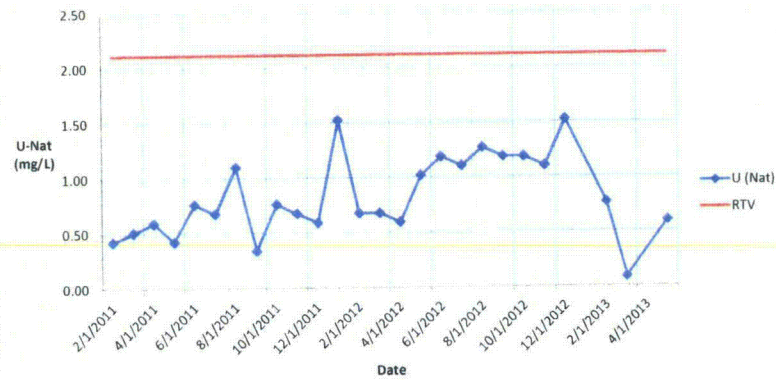
**Mine Unit C - Well CMP-15A  
Chloride Concentration Over Time**



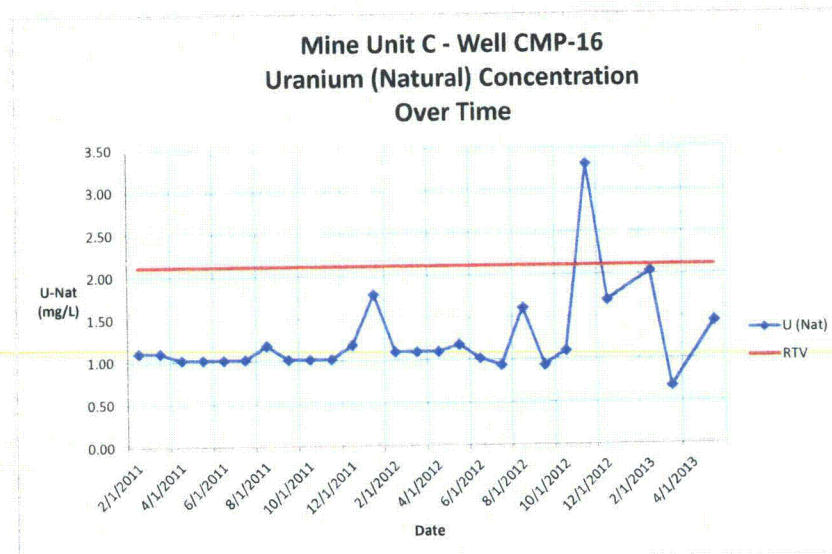
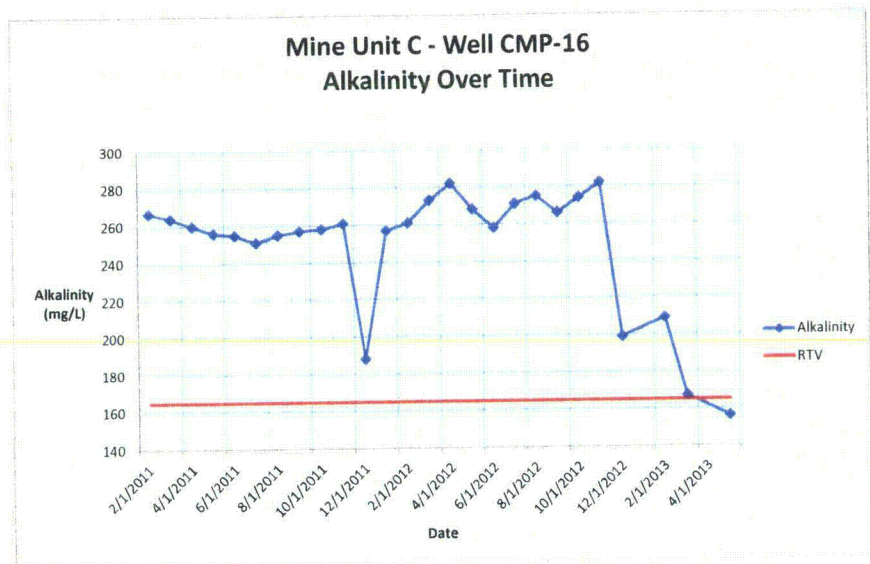
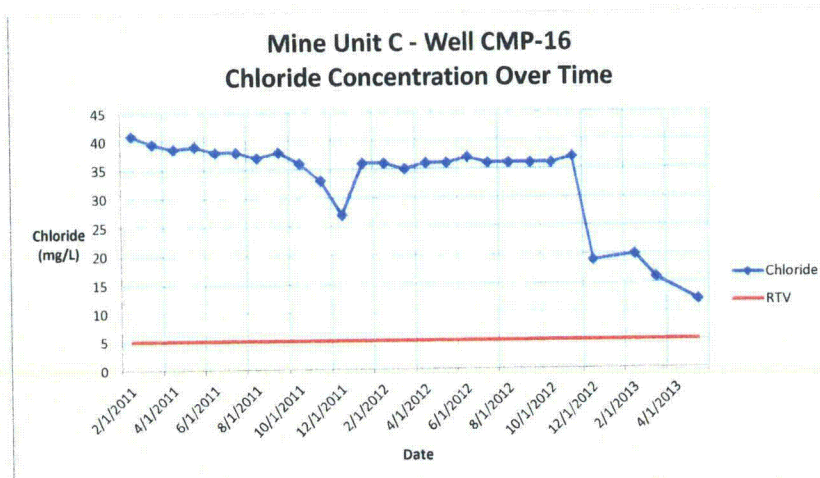
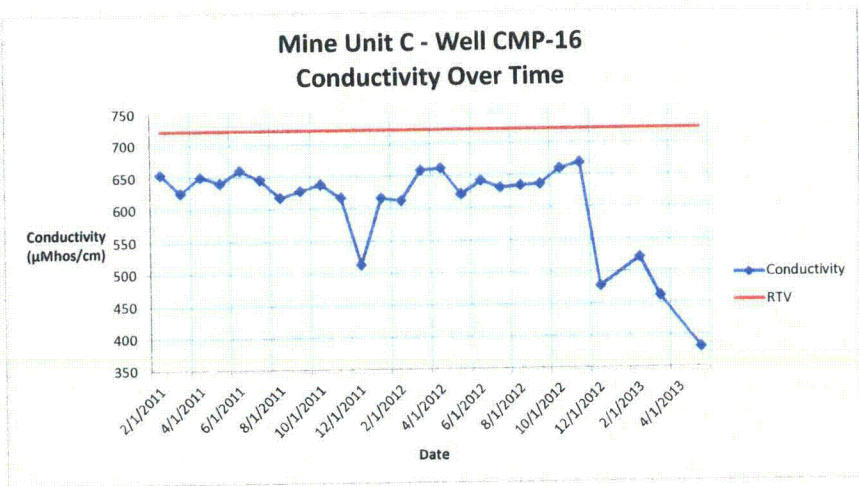
**Mine Unit C - Well CMP-15A  
Alkalinity Over Time**



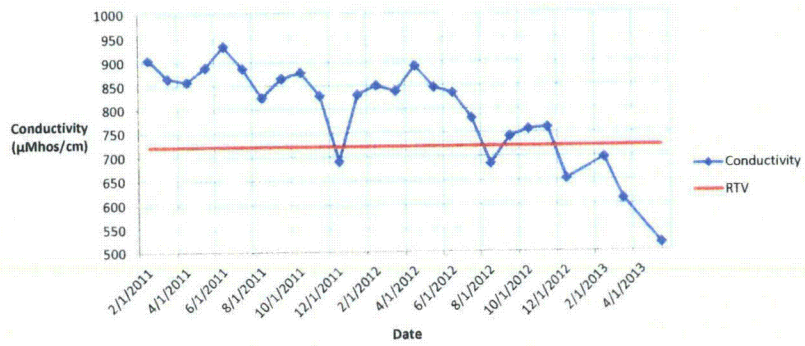
**Mine Unit C - Well CMP-15A  
Uranium (Natural) Concentration  
Over Time**



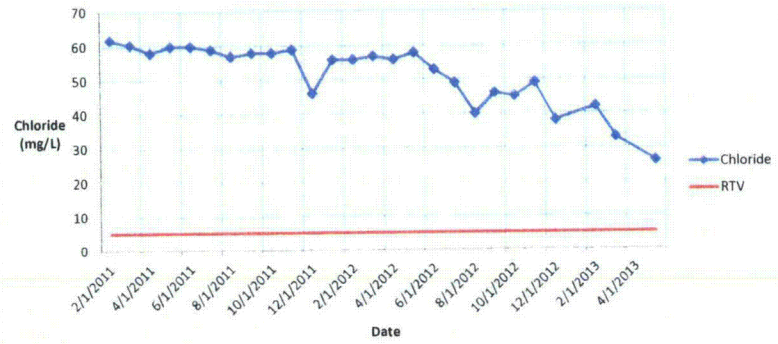




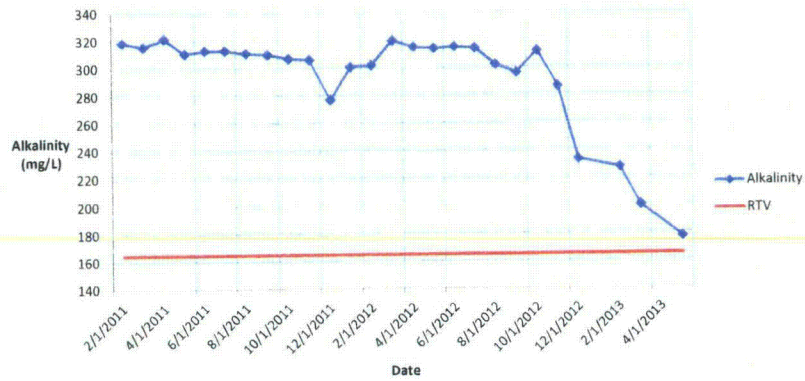
**Mine Unit C - Well CMP-17  
Conductivity Over Time**



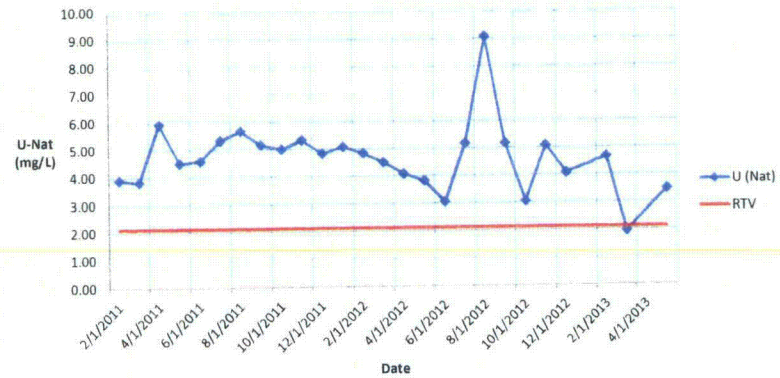
**Mine Unit C - Well CMP-17  
Chloride Concentration Over Time**



**Mine Unit C - Well CMP-17  
Alkalinity Over Time**

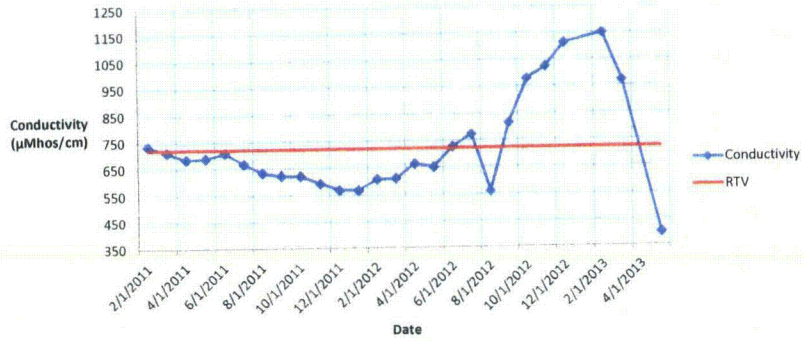


**Mine Unit C - Well CMP-17  
Uranium (Natural) Concentration  
Over Time**

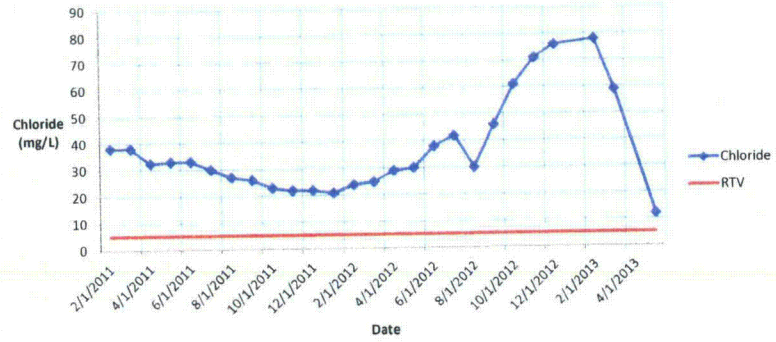




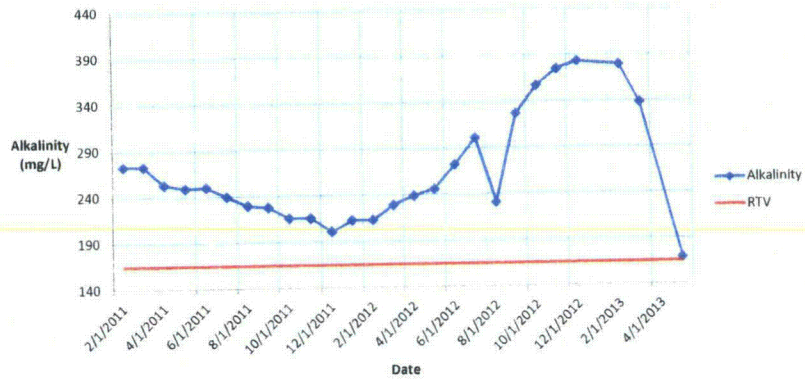
Mine Unit C - Well CMP-18  
Conductivity Over Time



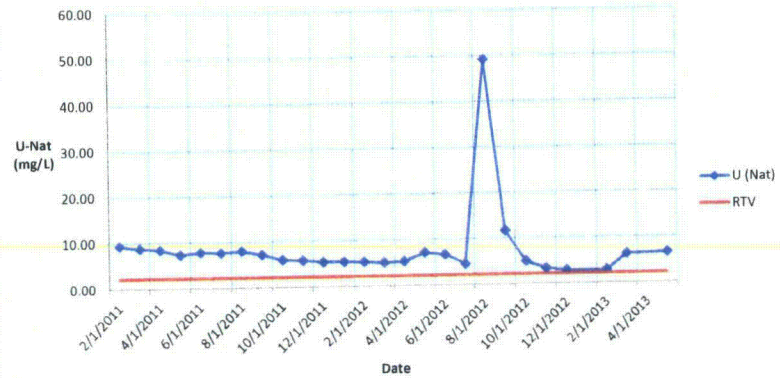
Mine Unit C - Well CMP-18  
Chloride Concentration Over Time



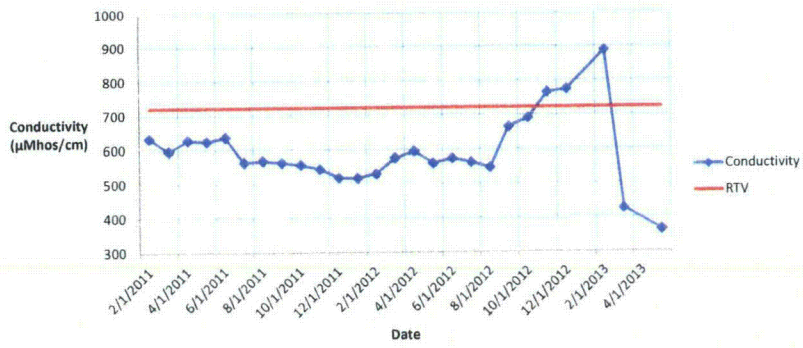
Mine Unit C - Well CMP-18  
Alkalinity Over Time



Mine Unit C - Well CMP-18  
Uranium (Natural) Concentration Over Time



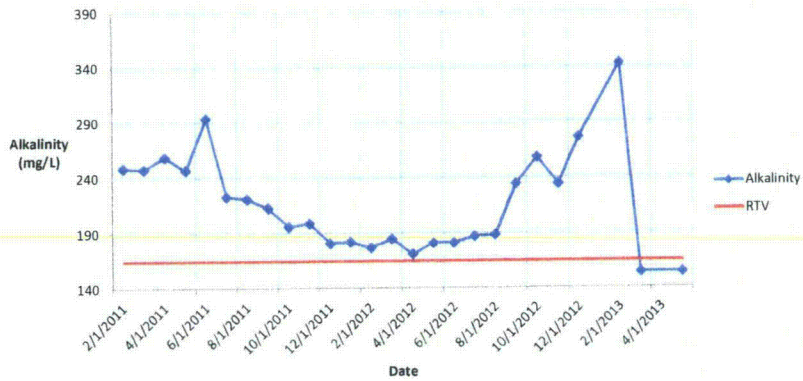
**Mine Unit C - Well CMP-19  
Conductivity Over Time**



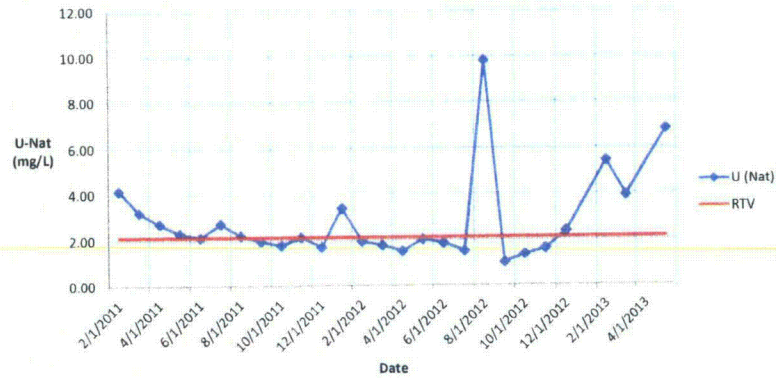
**Mine Unit C - Well CMP-19  
Chloride Concentration Over Time**



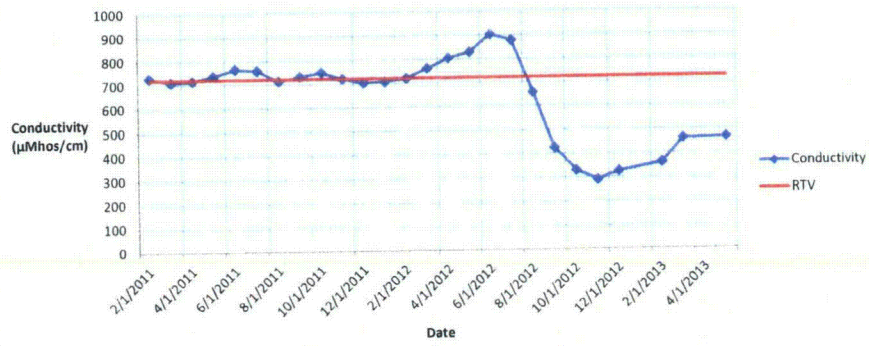
**Mine Unit C - Well CMP-19  
Alkalinity Over Time**



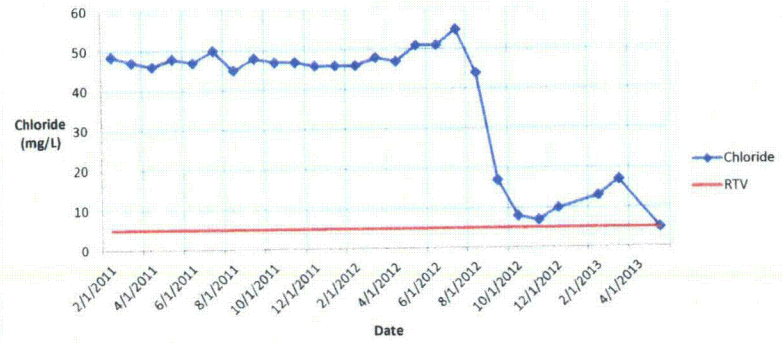
**Mine Unit C - Well CMP-19  
Uranium (Natural) Concentration  
Over Time**



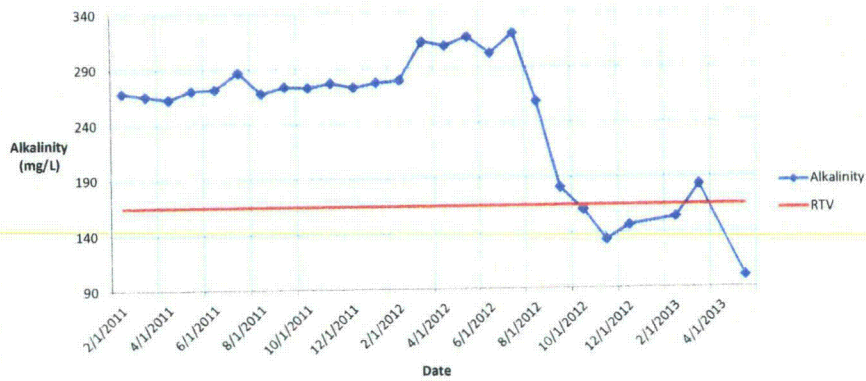
Mine Unit C - Well CMP-20  
Conductivity Over Time



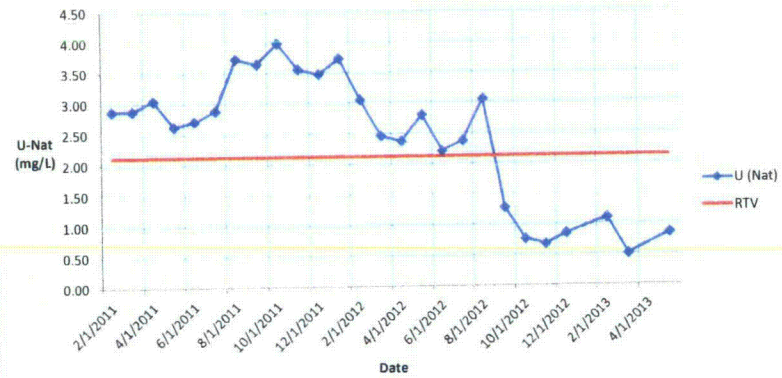
Mine Unit C - Well CMP-20  
Chloride Concentration Over Time



Mine Unit C - Well CMP-20  
Alkalinity Over Time

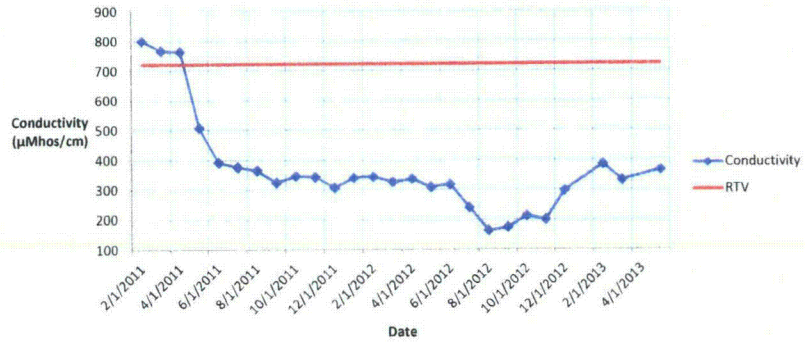


Mine Unit C - Well CMP-20  
Uranium (Natural) Concentration  
Over Time

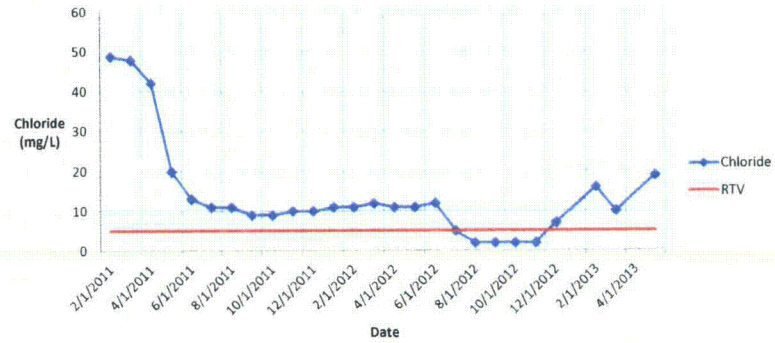




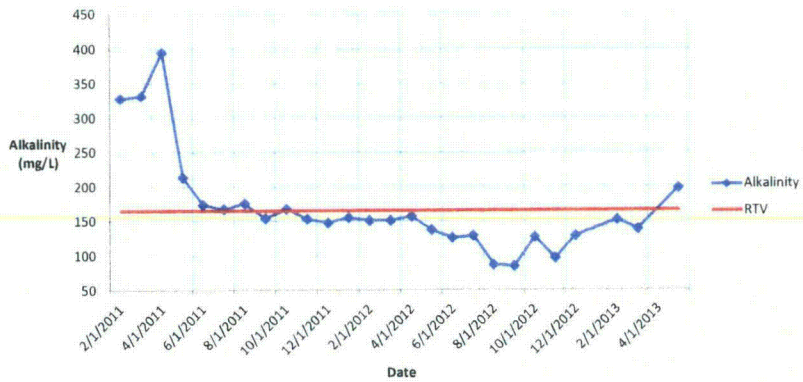
**Mine Unit C - Well CMP-21  
Conductivity Over Time**



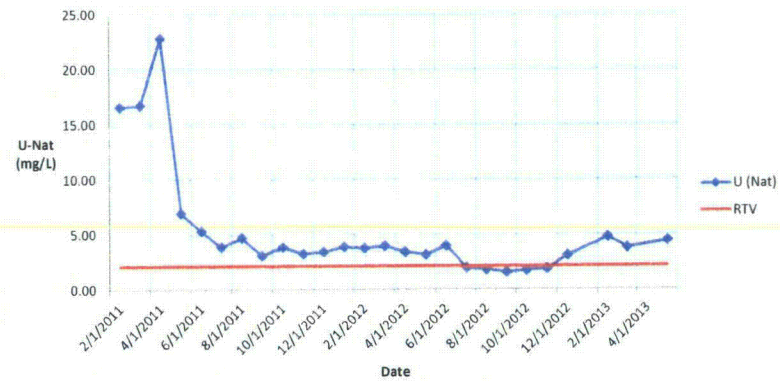
**Mine Unit C - Well CMP-21  
Chloride Concentration Over Time**



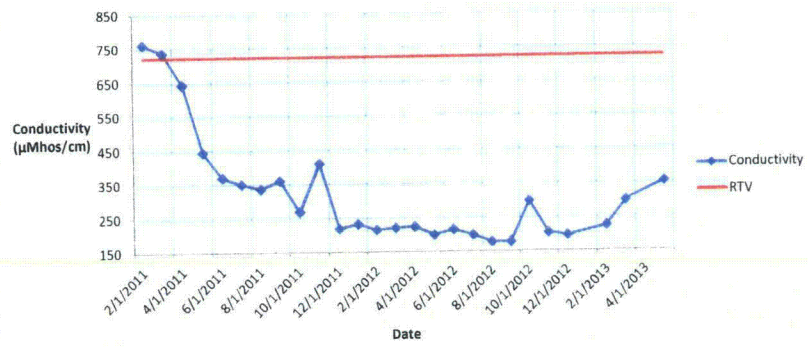
**Mine Unit C - Well CMP-21  
Alkalinity Over Time**



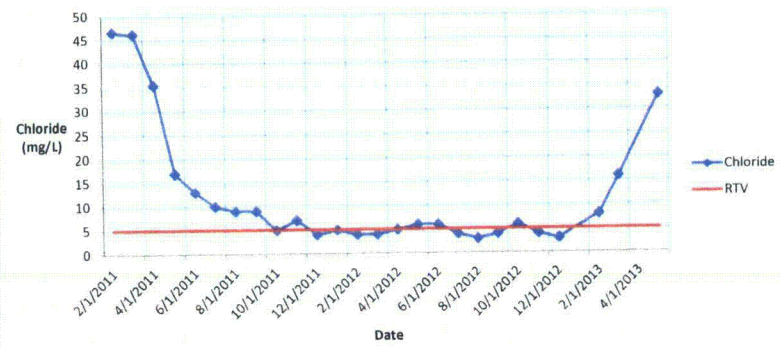
**Mine Unit C - Well CMP-21  
Uranium (Natural) Concentration  
Over Time**



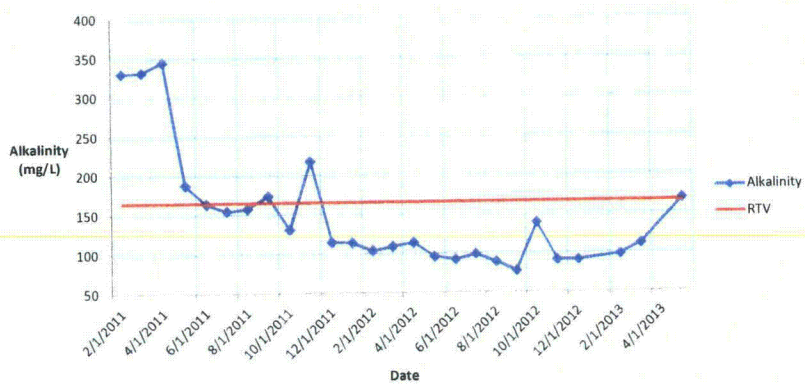
Mine Unit C - Well CMP-22  
Conductivity Over Time



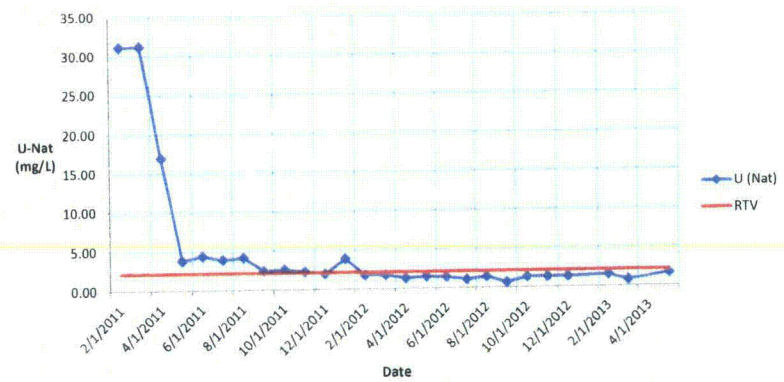
Mine Unit C - Well CMP-22  
Chloride Concentration Over Time

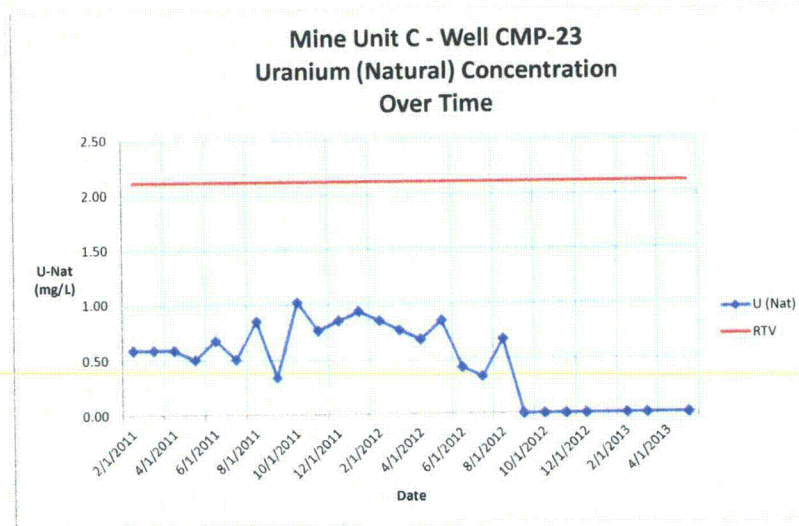
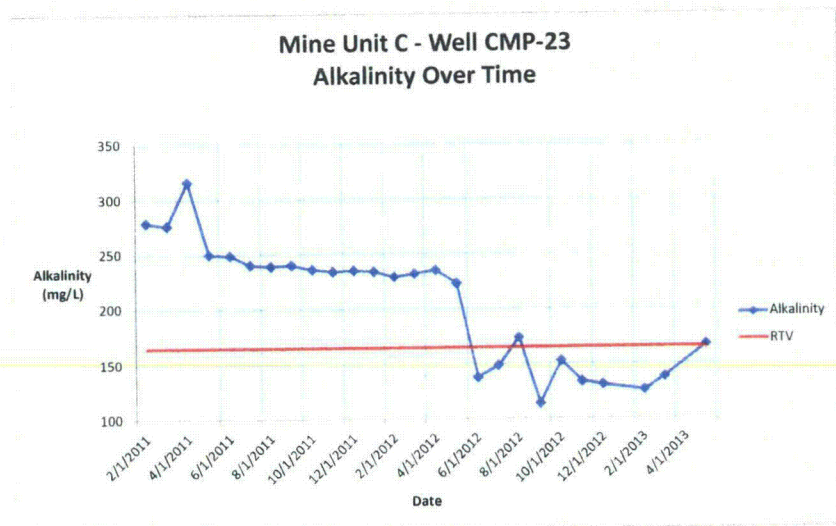
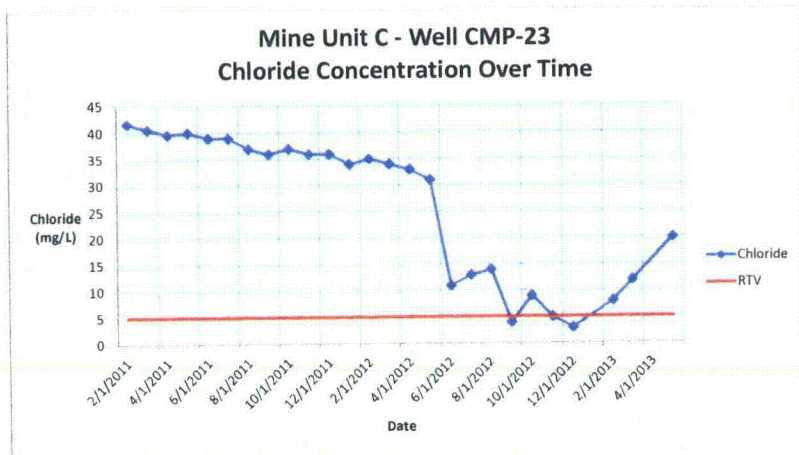
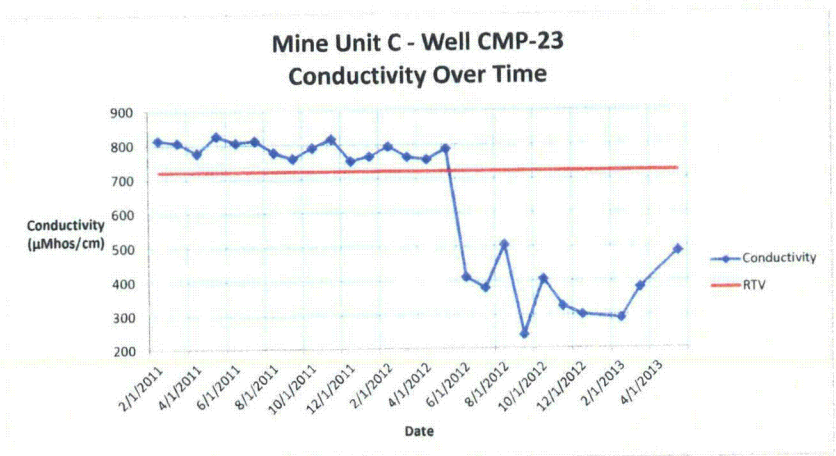


Mine Unit C - Well CMP-22  
Alkalinity Over Time



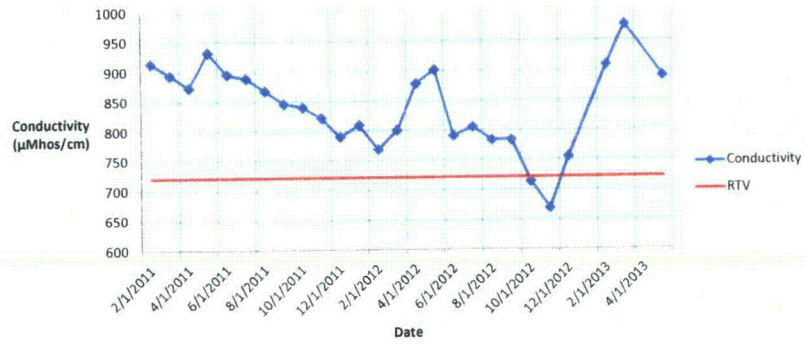
Mine Unit C - Well CMP-22  
Uranium (Natural) Concentration Over Time



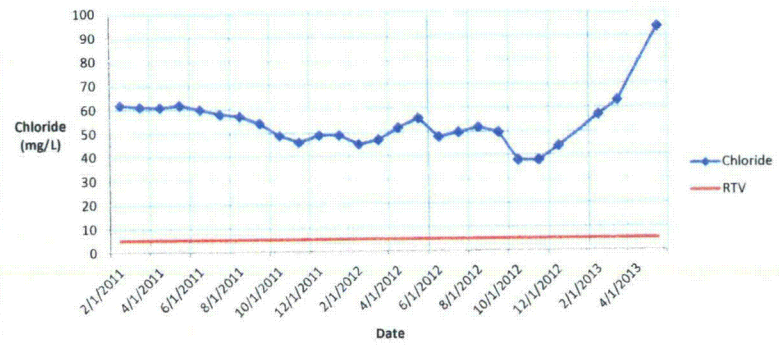




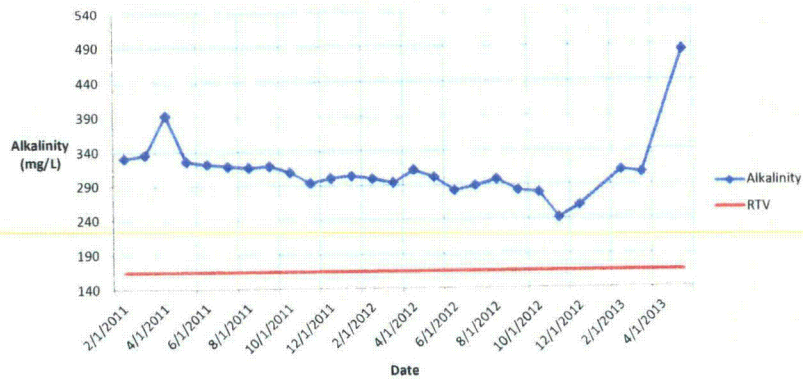
**Mine Unit C - Well CMP-24  
Conductivity Over Time**



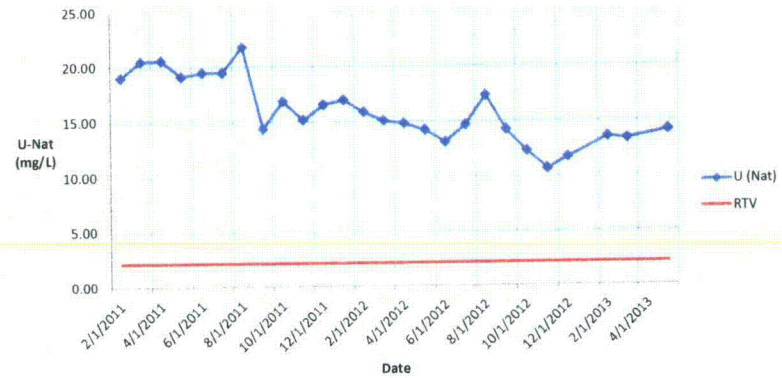
**Mine Unit C - Well CMP-24  
Chloride Concentration Over Time**

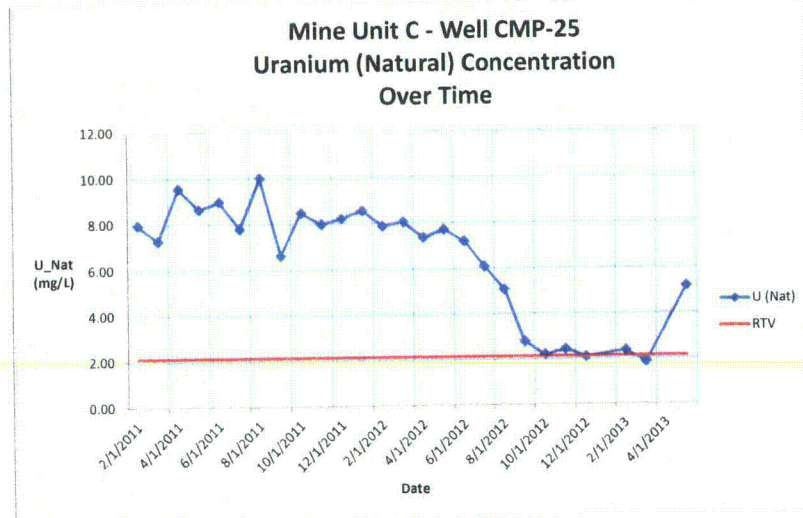
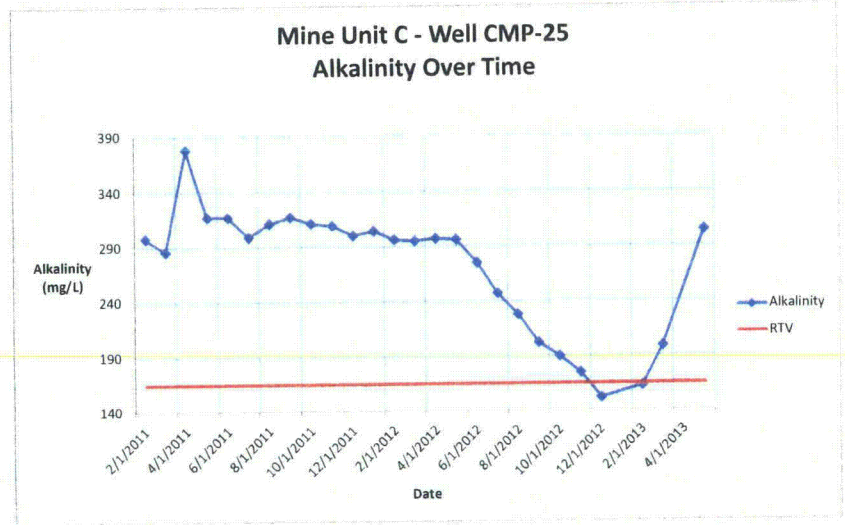
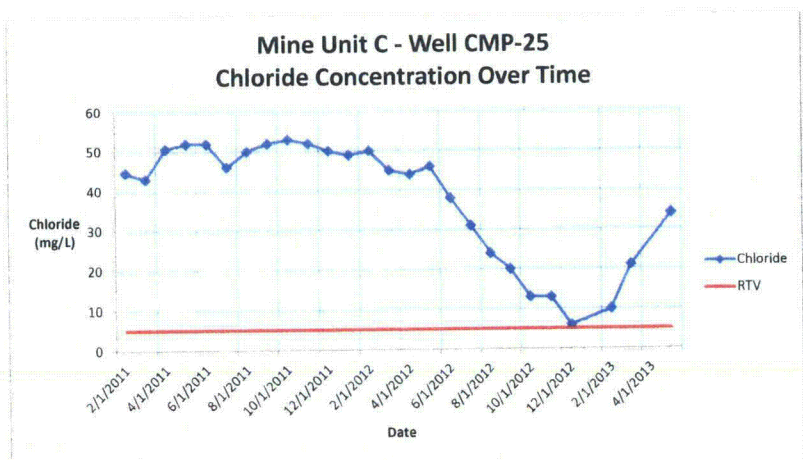
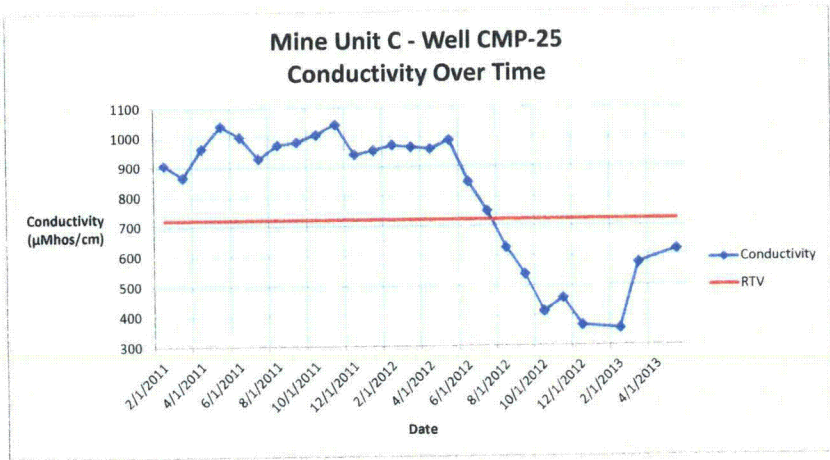


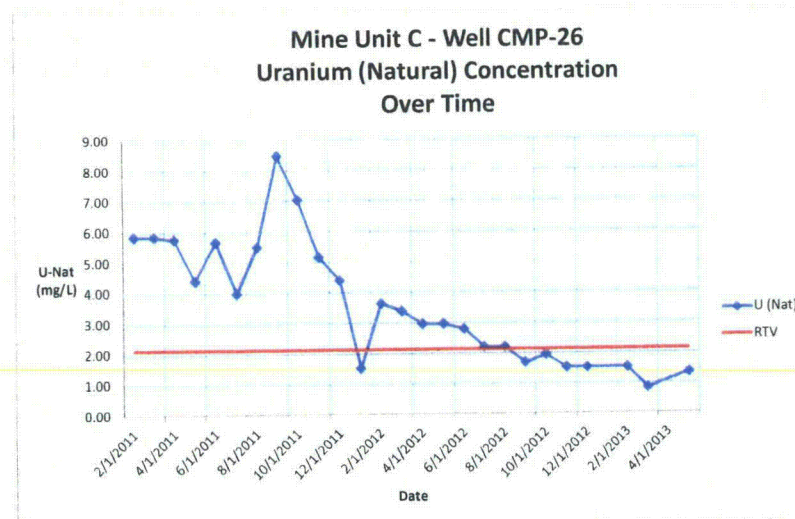
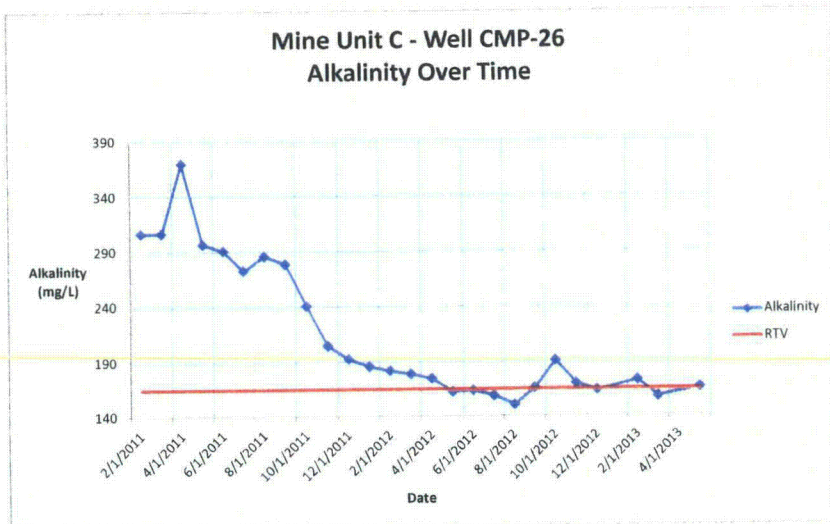
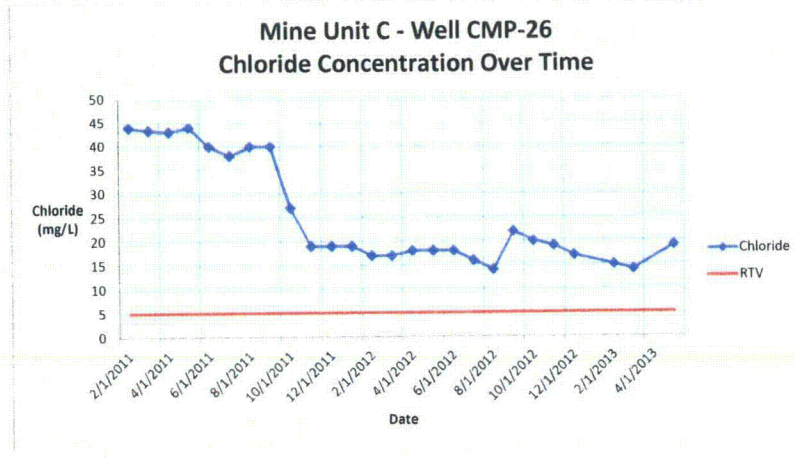
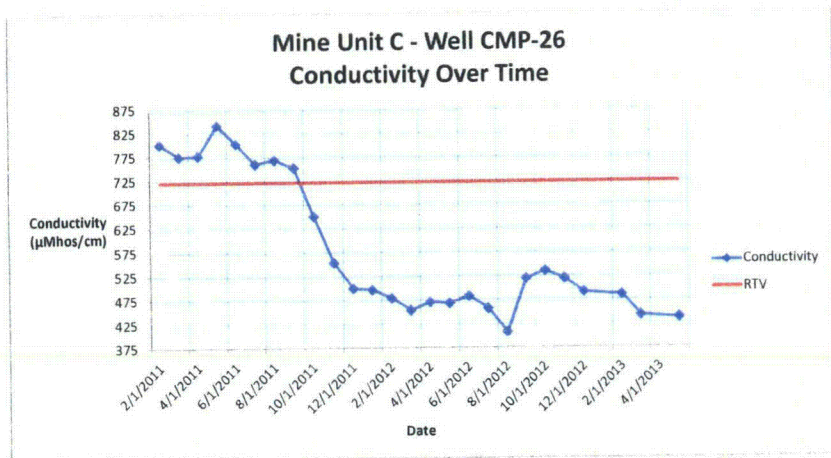
**Mine Unit C - Well CMP-24  
Alkalinity Over Time**



**Mine Unit C - Well CMP-24  
Uranium (Natural) Concentration  
Over Time**

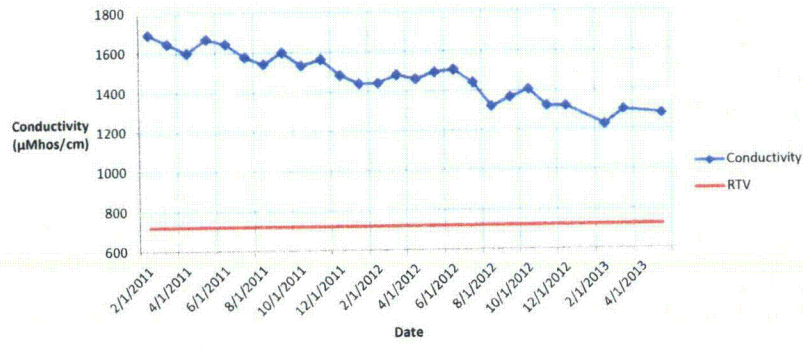




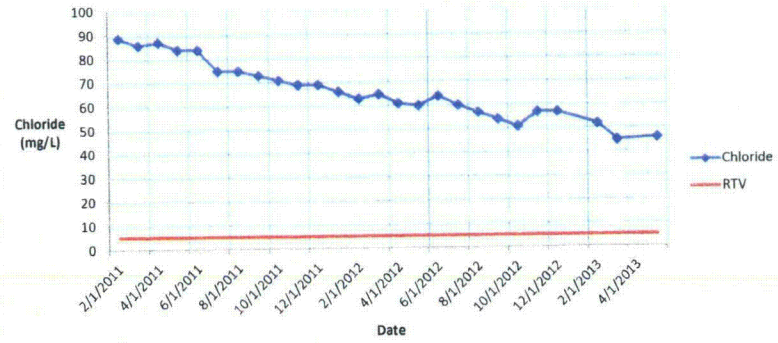




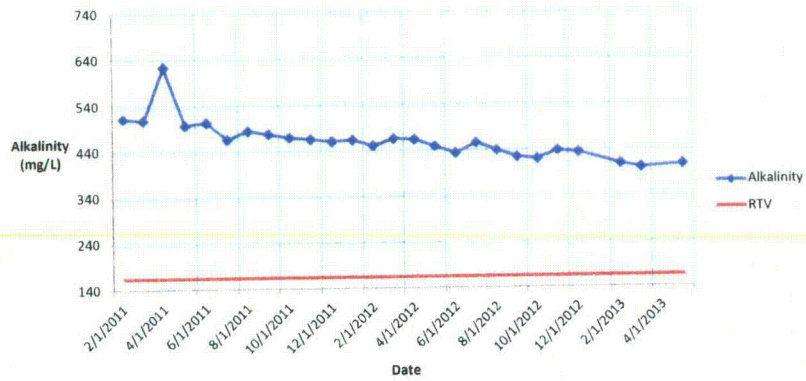
**Mine Unit C - Well CMP-27  
Conductivity Over Time**



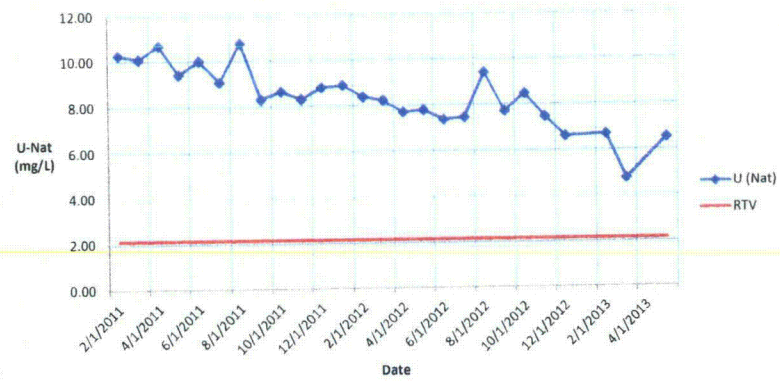
**Mine Unit C - Well CMP-27  
Chloride Concentration Over Time**

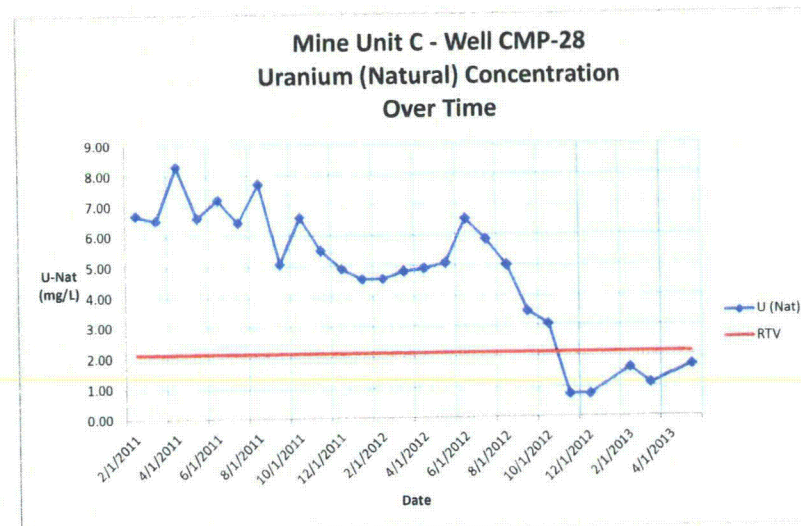
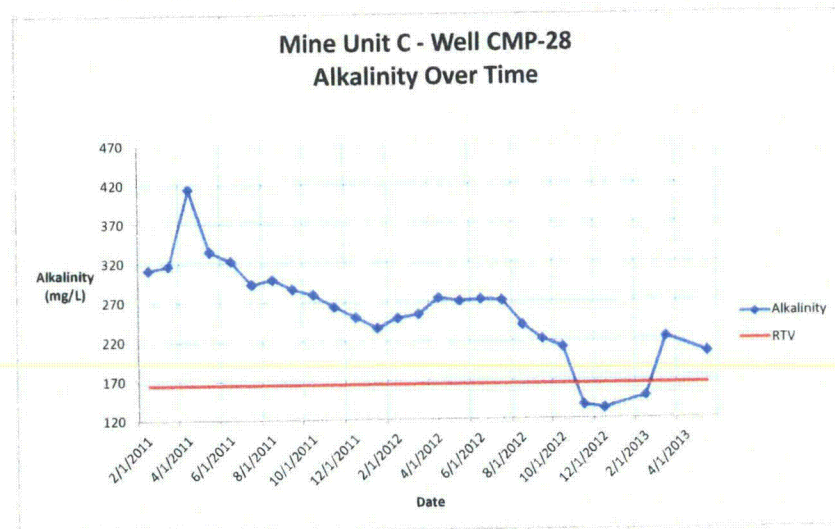
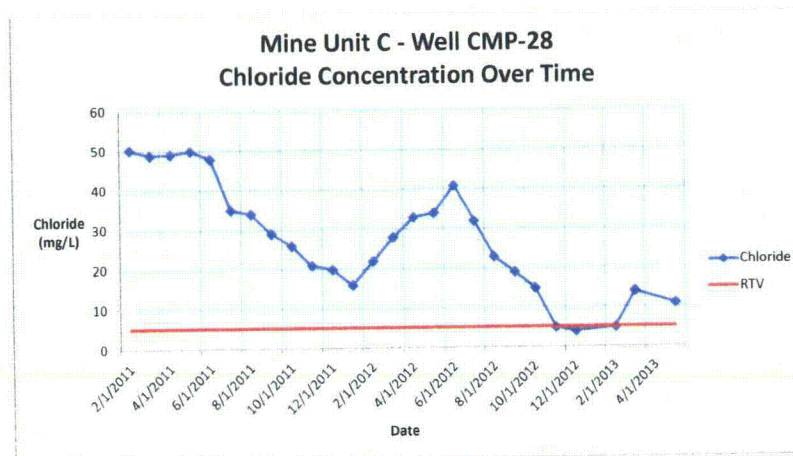
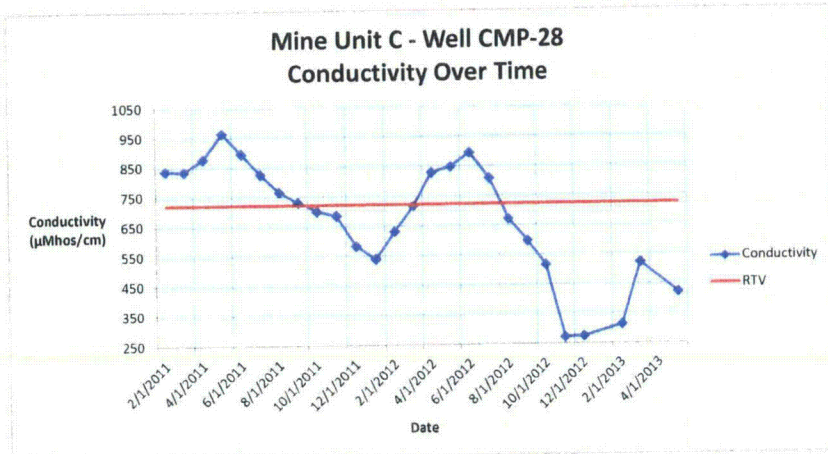


**Mine Unit C - Well CMP-27  
Alkalinity Over Time**

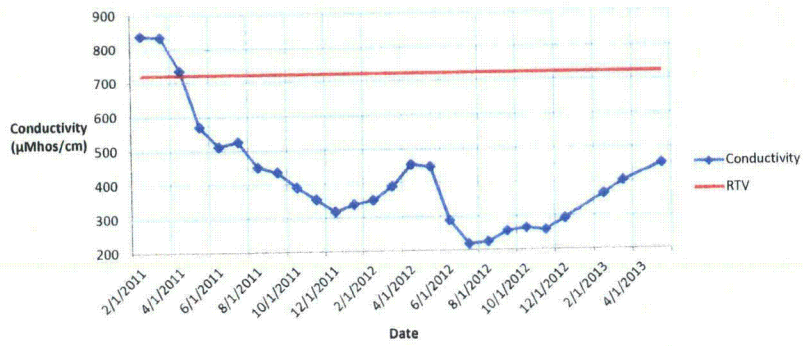


**Mine Unit C - Well CMP-27  
Uranium (Natural) Concentration  
Over Time**

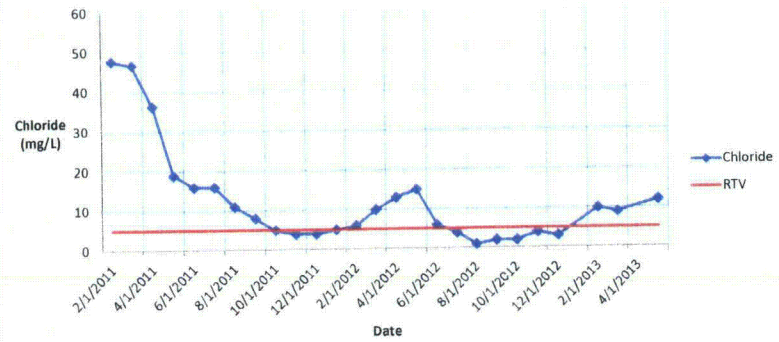




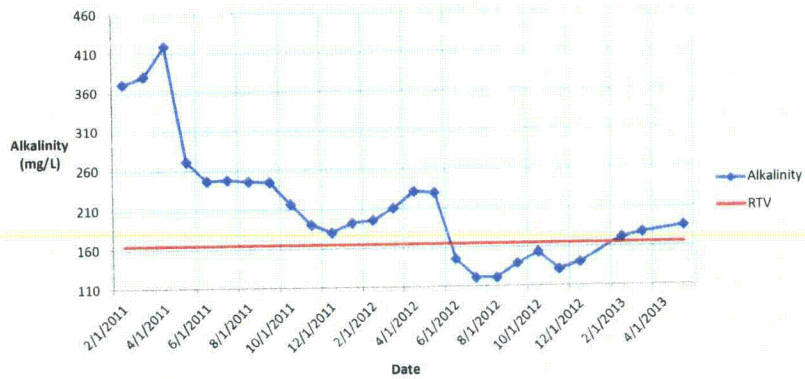
**Mine Unit C - Well CMP-29  
Conductivity Over Time**



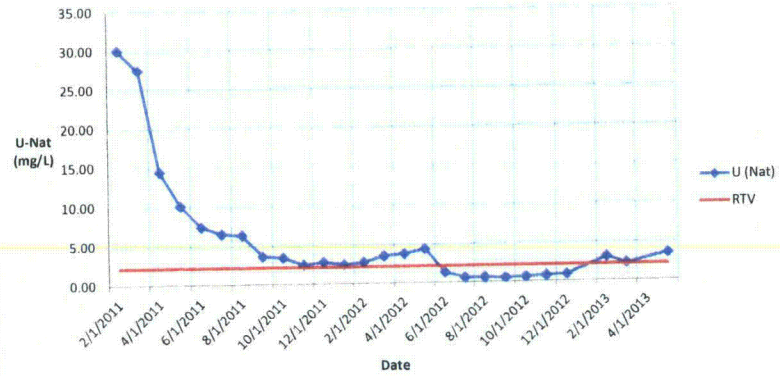
**Mine Unit C - Well CMP-29  
Chloride Concentration Over Time**



**Mine Unit C - Well CMP-29  
Alkalinity Over Time**

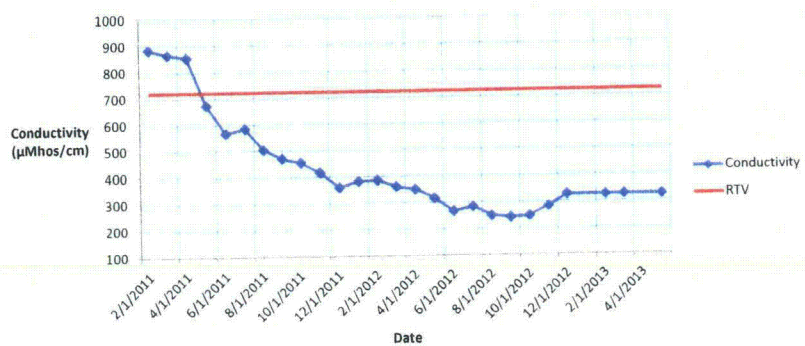


**Mine Unit C - Well CMP-29  
Uranium (Natural) Concentration  
Over Time**

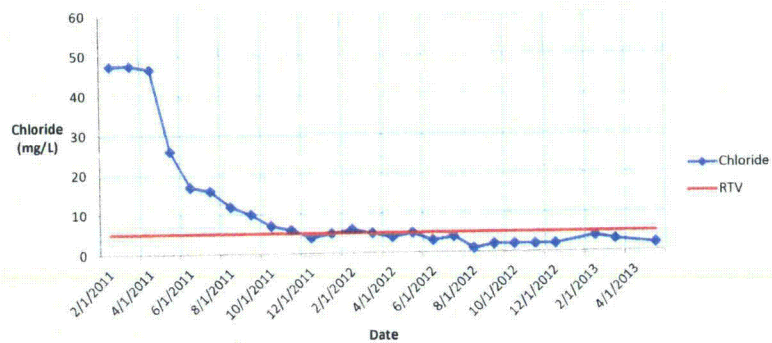




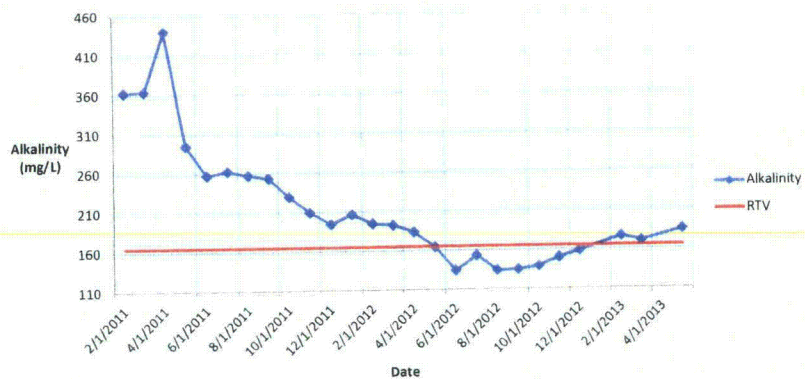
**Mine Unit C - Well CMP-30  
Conductivity Over Time**



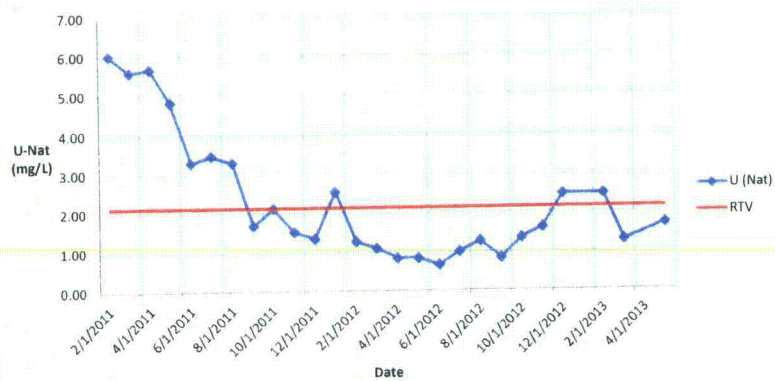
**Mine Unit C - Well CMP-30  
Chloride Concentration Over Time**



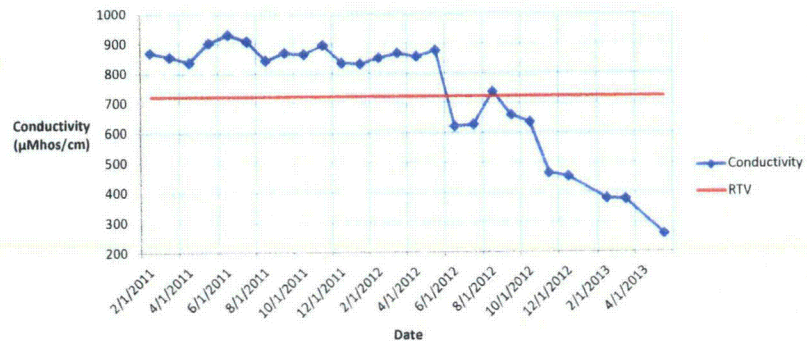
**Mine Unit C - Well CMP-30  
Alkalinity Over Time**



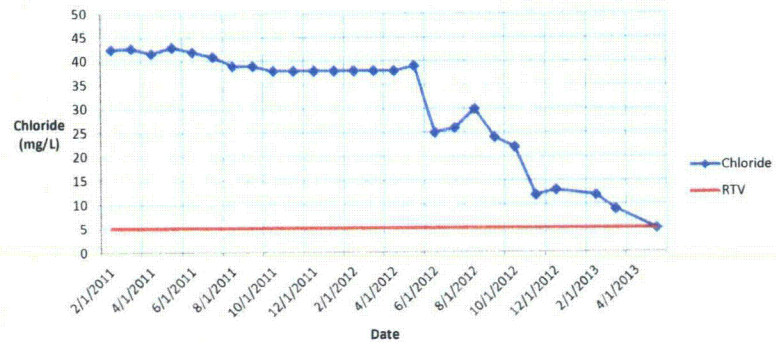
**Mine Unit C - Well CMP-30  
Uranium (Natural) Concentration Over Time**



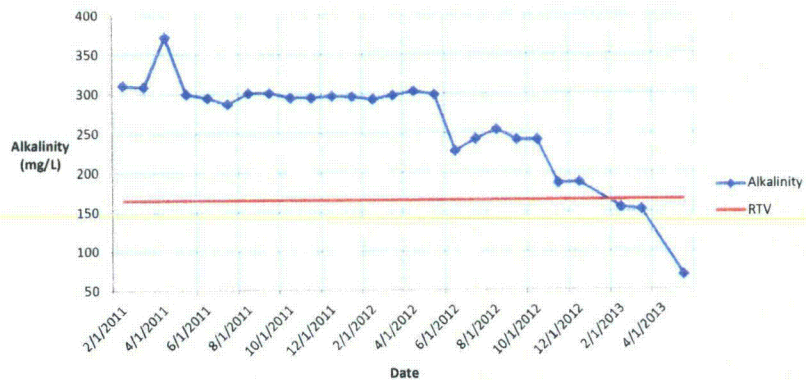
**Mine Unit C - Well CMP-31  
Conductivity Over Time**



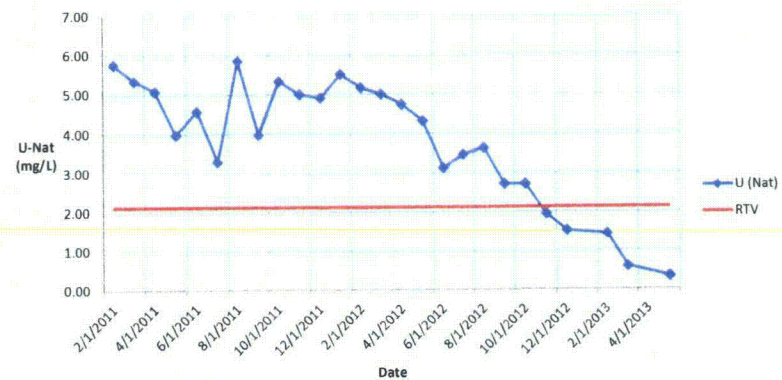
**Mine Unit C - Well CMP-31  
Chloride Concentration Over Time**



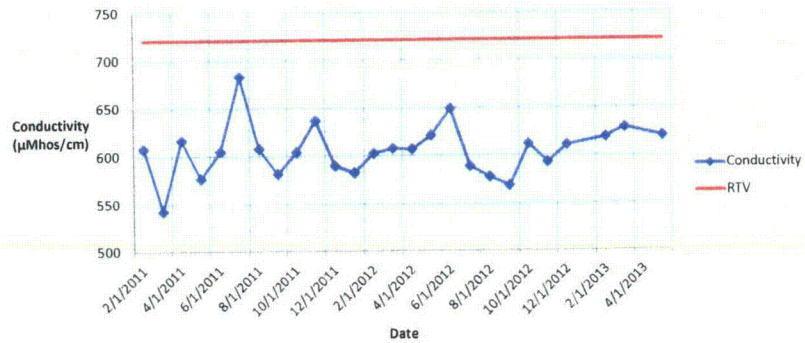
**Mine Unit C - Well CMP-31  
Alkalinity Over Time**



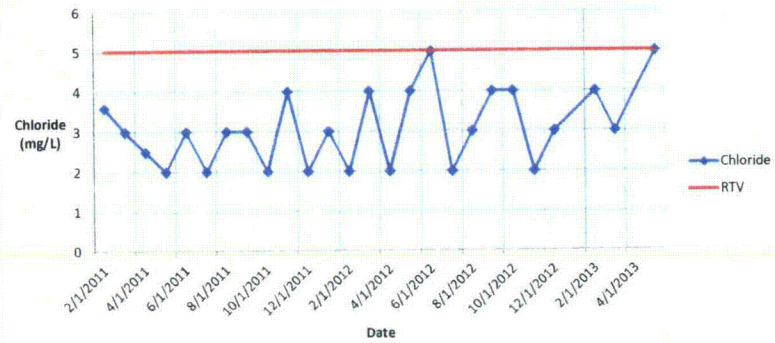
**Mine Unit C - Well CMP-31  
Uranium (Natural) Concentration  
Over Time**



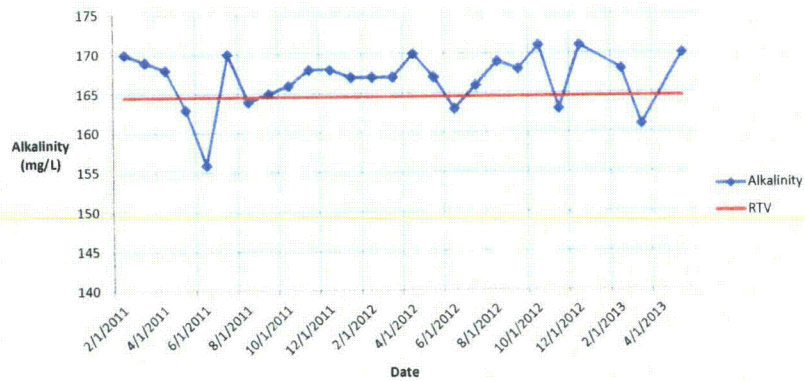
Mine Unit C - Well CMP-32  
Conductivity Over Time



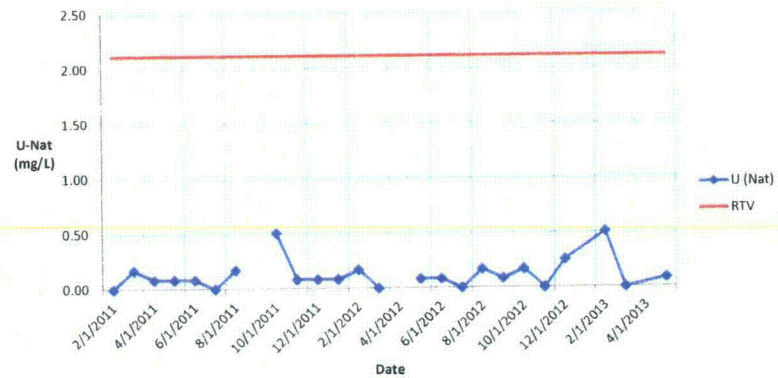
Mine Unit C - Well CMP-32  
Chloride Concentration Over Time



Mine Unit C - Well CMP-32  
Alkalinity Over Time

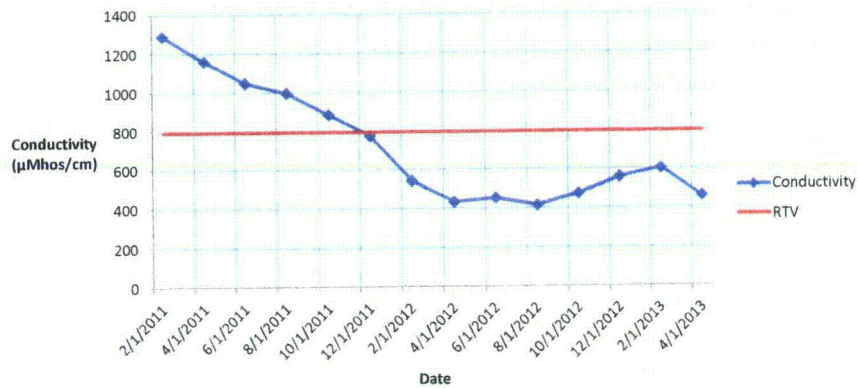


Mine Unit C - Well CMP-32  
Uranium (Natural) Concentration  
Over Time

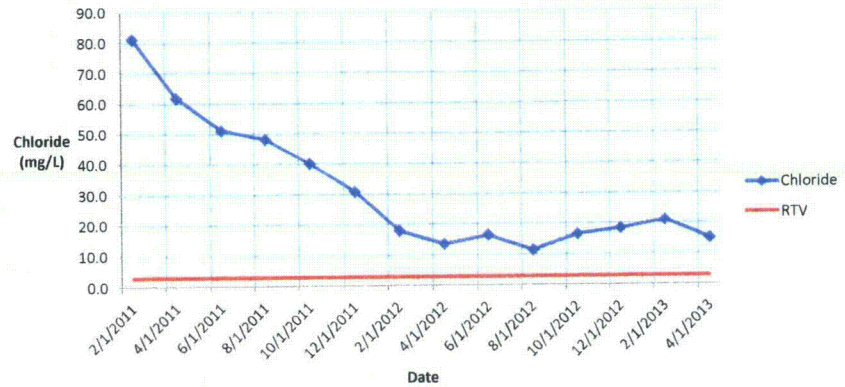




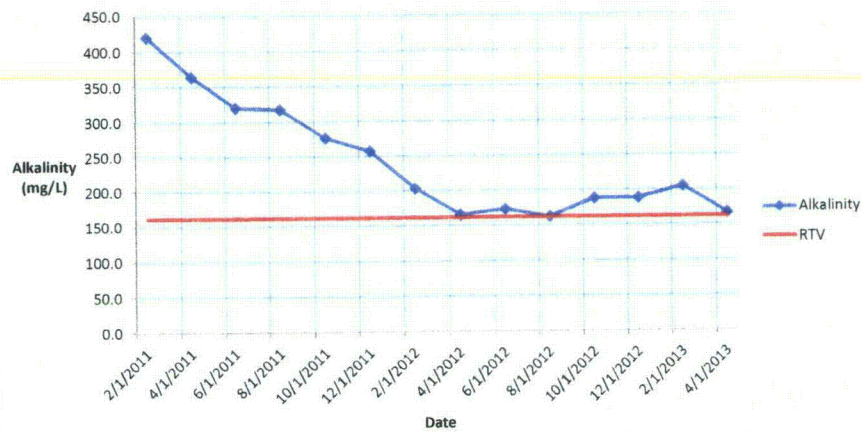
**Mine Unit D Monitor Well  
Conductivity Averages Over Time**



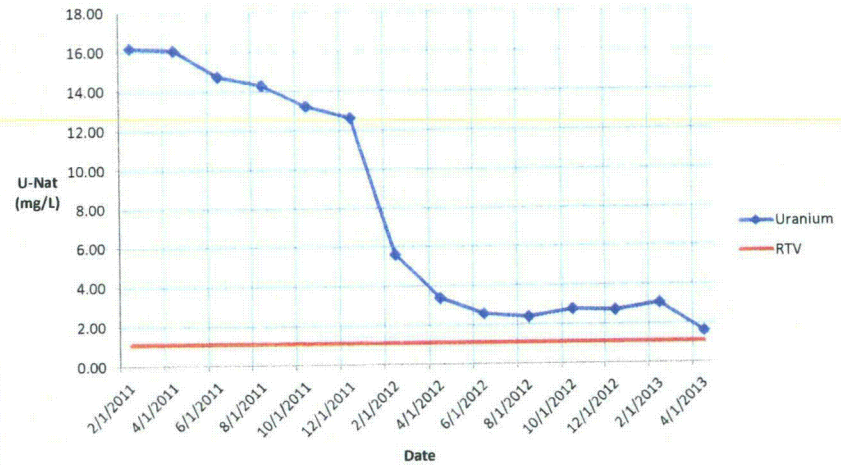
**Mine Unit Monitor Well  
Chloride Concentration Averages Over Time**



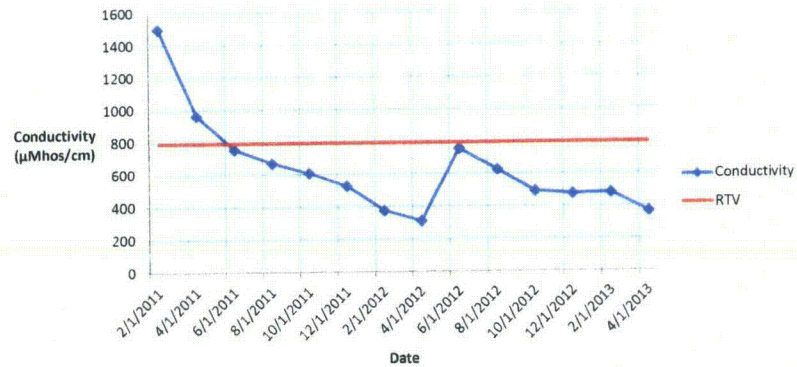
**Mine Unit D Monitor Well  
Alkalinity Averages Over Time**



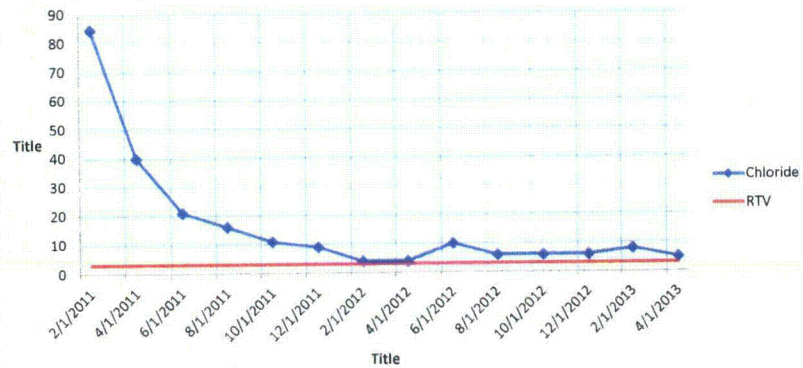
**Mine Unit D Monitor Well  
Uranium (Nat) Concentration Averages Over Time**



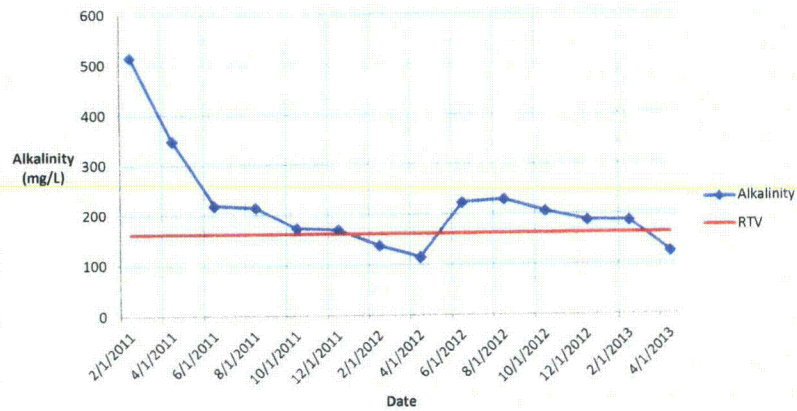
Mine Unit D - Well DMP-01  
Conductivity Over Time



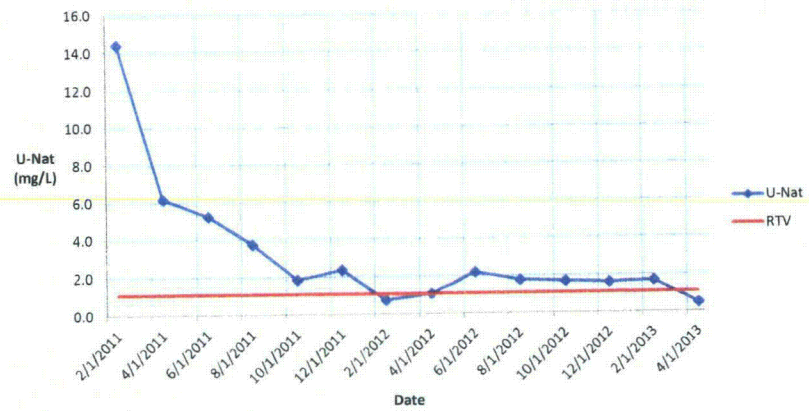
Mine Unit D - Well DMP-01  
Chloride Concentration Over Time



Mine Unit D - Well DMP-01  
Alkalinity Over Time

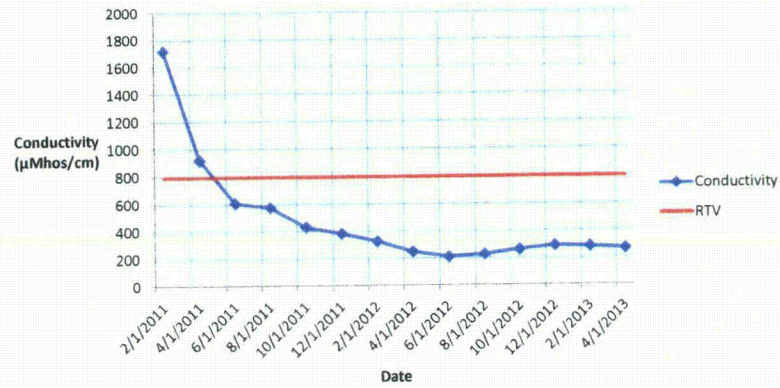


Mine Unit D - Well DMP-01  
Uranium (Nat) Concentration  
Over Time

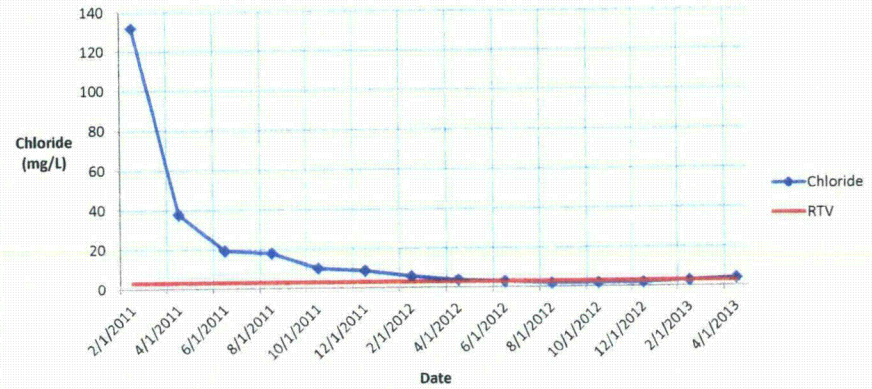




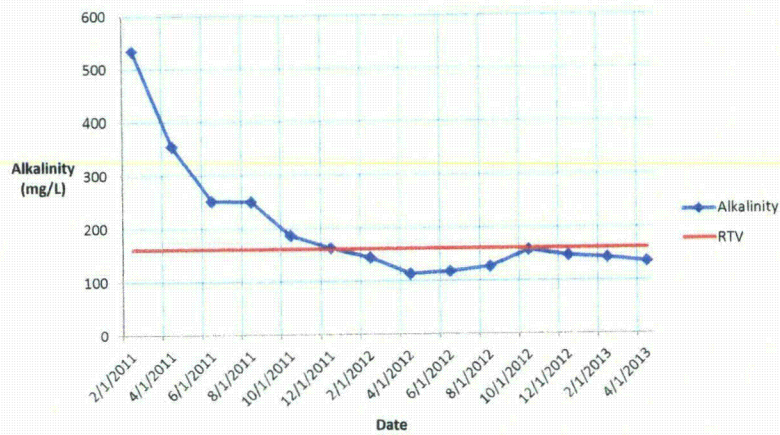
Mine Unit D - Well DMP-02  
Conductivity Over Time



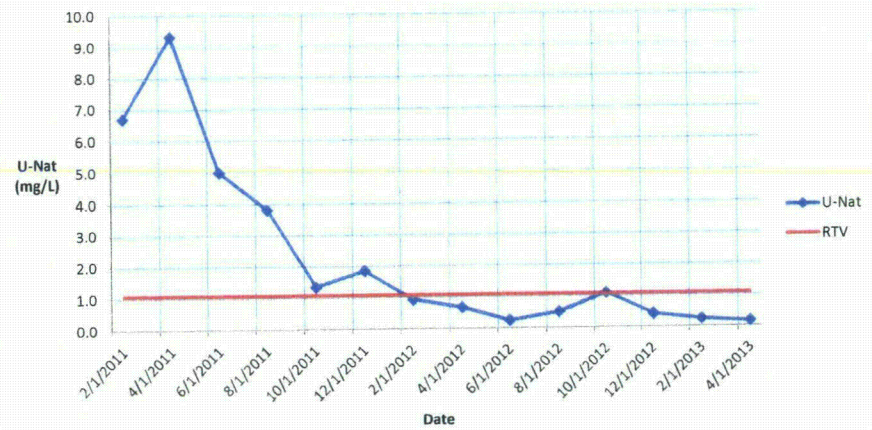
Mine Unit D - Well DMP-02  
Chloride Concentration Over Time



Mine Unit D - Well DMP-02  
Alkalinity Over Time

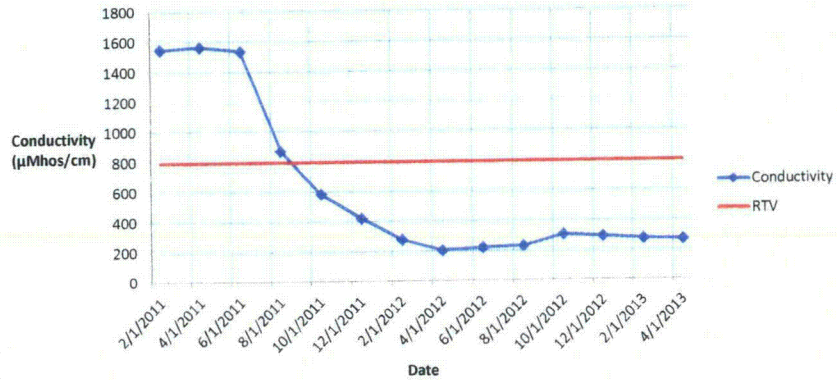


Mine Unit D - Well DMP-02  
Uranium (Nat) Concentration Over Time

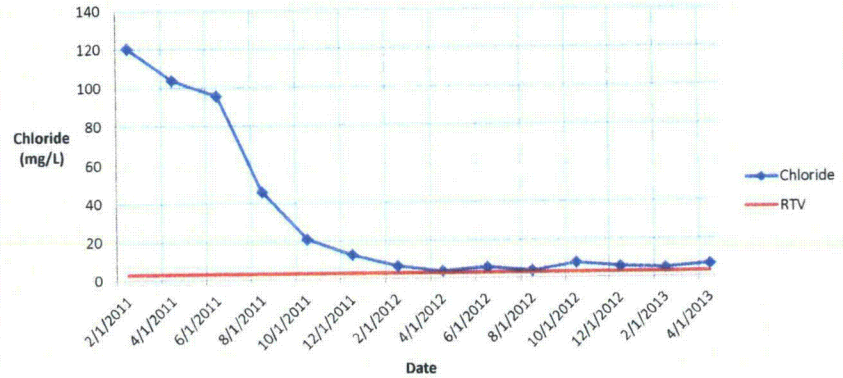




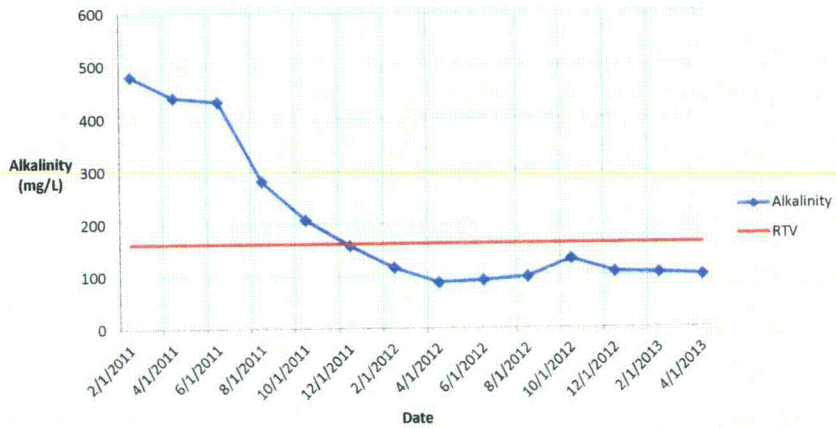
**Mine Unit D - Well DMP-03  
Conductivity Over Time**



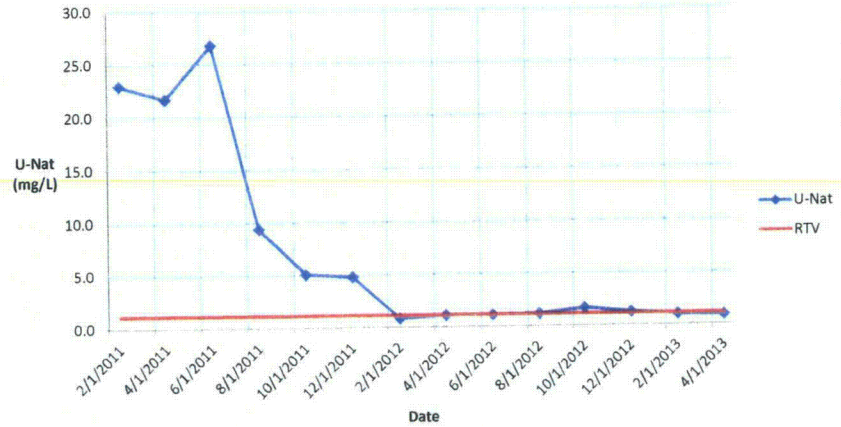
**Mine Unit D - Well DMP-03  
Chloride Concentration Over Time**



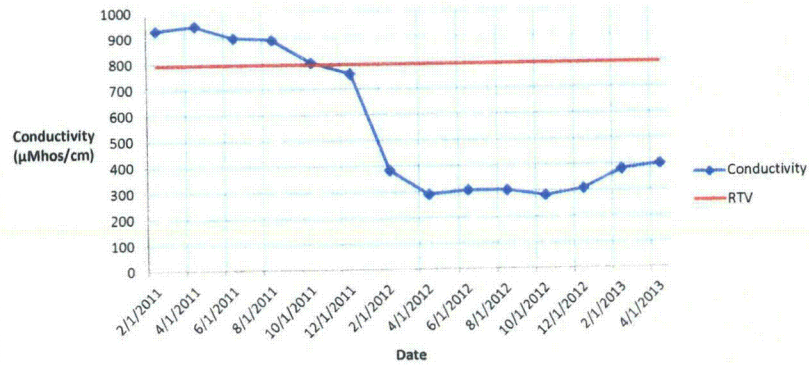
**Mine Unit D - Well DMP-03  
Alkalinity Over Time**



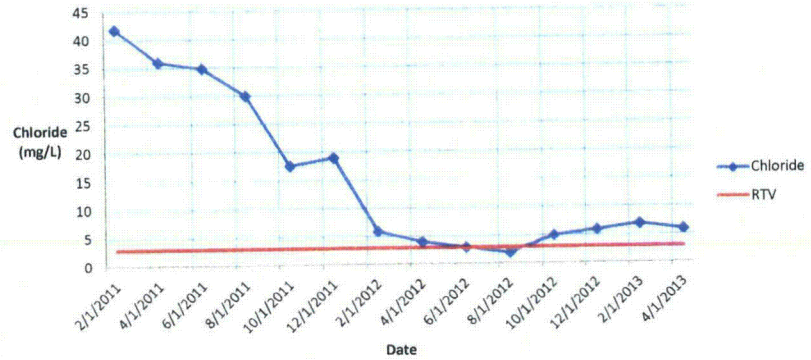
**Mine Unit D - Well DMP-03  
Uranium (Nat) Concentration Over Time**



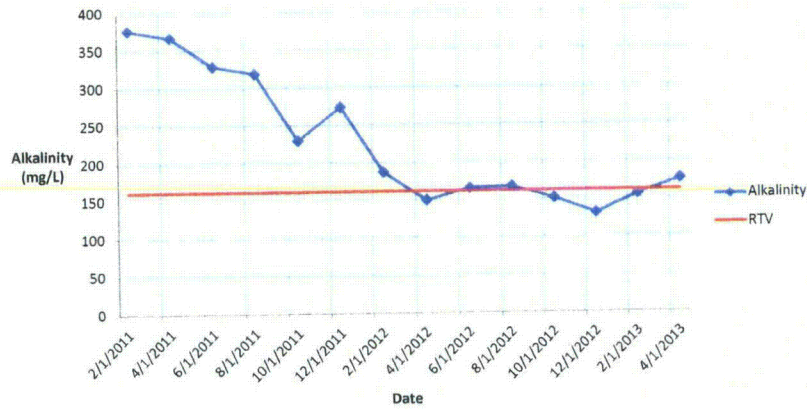
**Mine Unit D - Well DMP-04  
Conductivity Over Time**



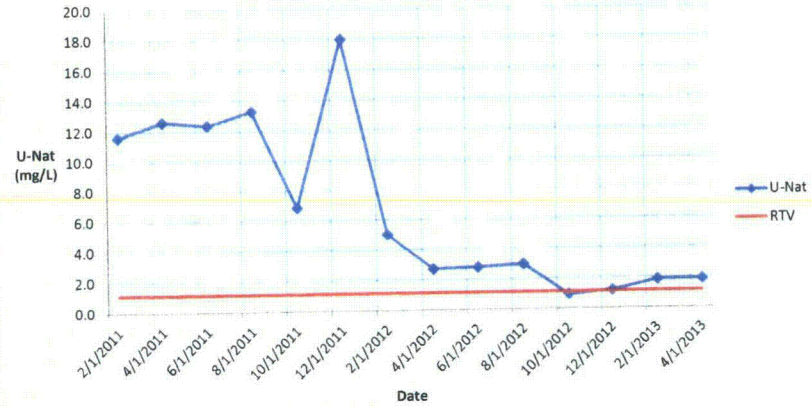
**Mine Unit D - Well DMP-04  
Chloride Concentration Over Time**



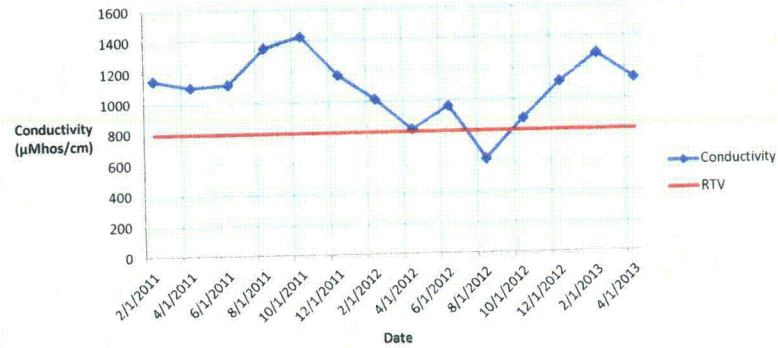
**Mine Unit D - Well DMP-04  
Alkalinity Over Time**



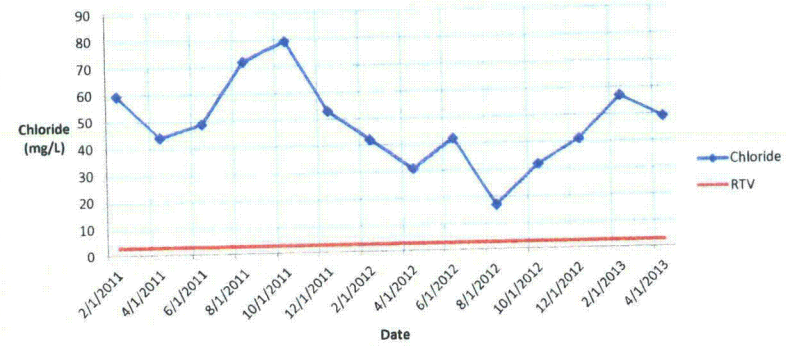
**Mine Unit D - Well DMP-04  
Uranium (Nat) Concentration Over Time**



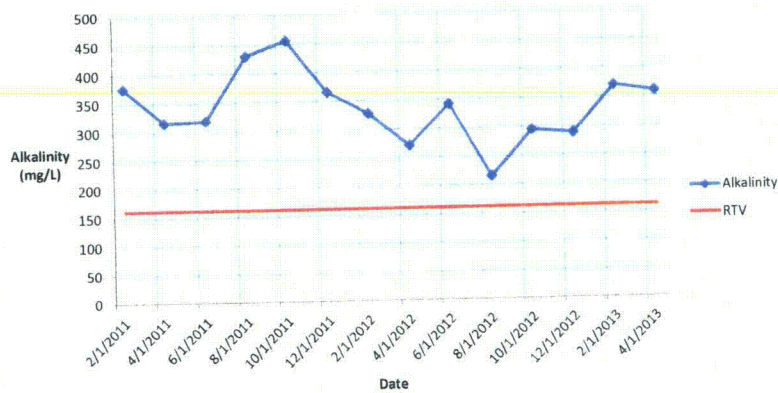
**Mine Unit D - Well DMP-05  
Conductivity Over Time**



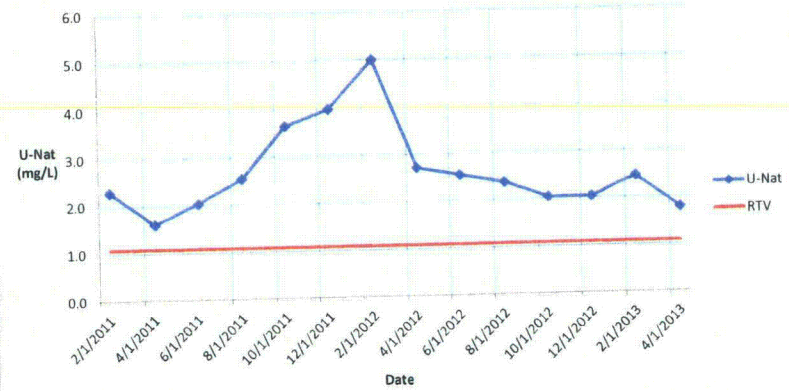
**Mine Unit D - Well DMP-05  
Chloride Concentration Over Time**



**Mine Unit D - Well DMP-05  
Alkalinity Over Time**

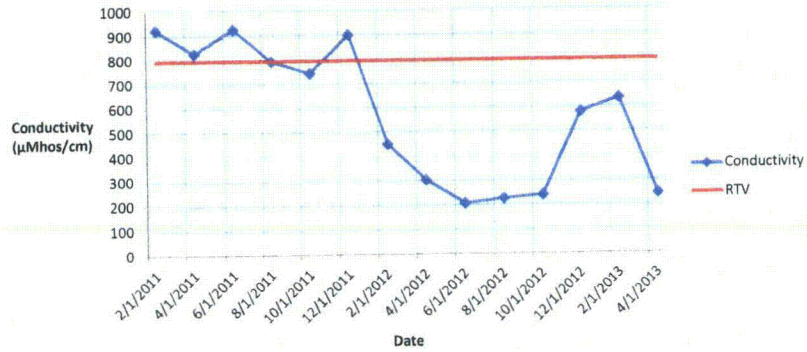


**Mine Unit D - Well DMP-05  
Uranium (Nat) Concentration Over Time**

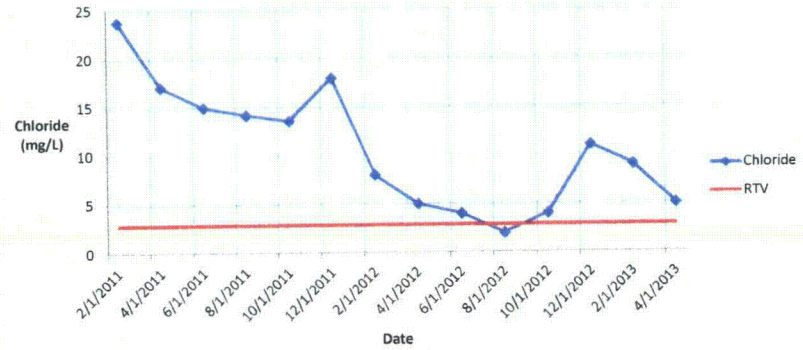




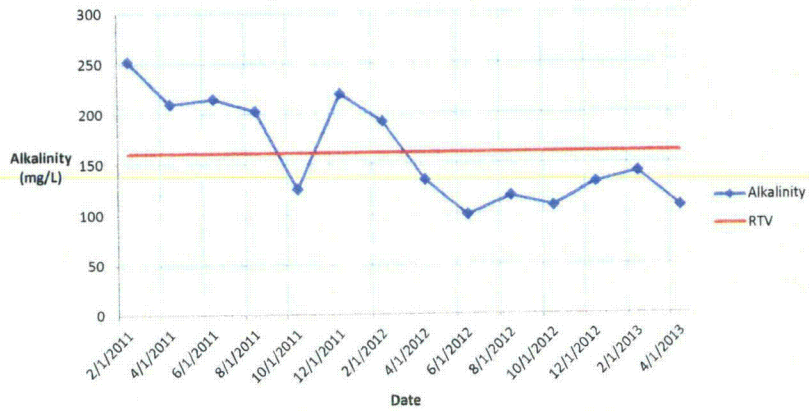
**Mine Unit D - Well DMP-06  
Conductivity Over Time**



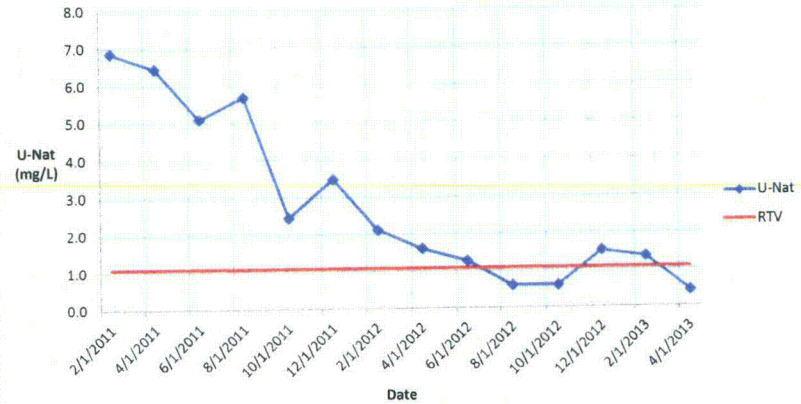
**Mine Unit D - Well DMP-06  
Chloride Concentration Over Time**



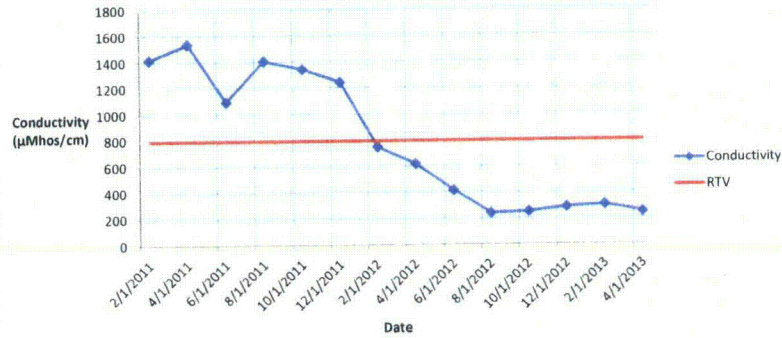
**Mine Unit D - Well DMP-06  
Alkalinity Over Time**



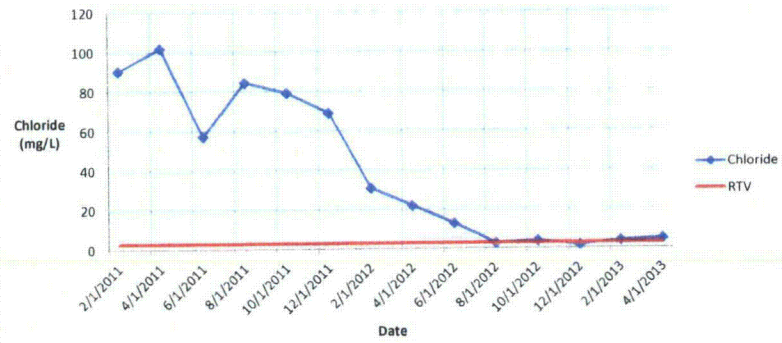
**Mine Unit D - Well DMP-06  
Uranium (Nat) Concentration Over Time**



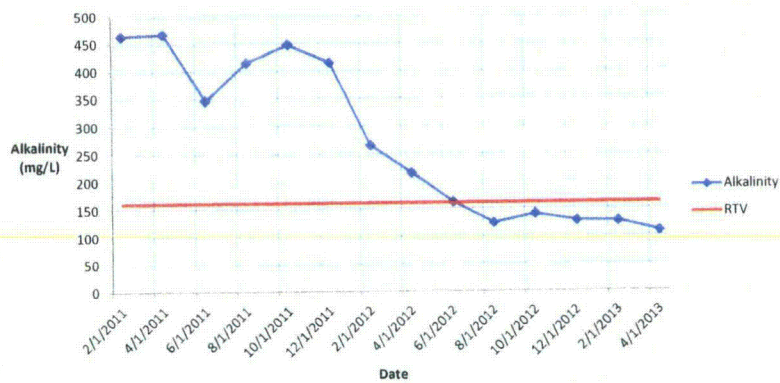
Mine Unit D - Well DMP-07  
Conductivity Over Time



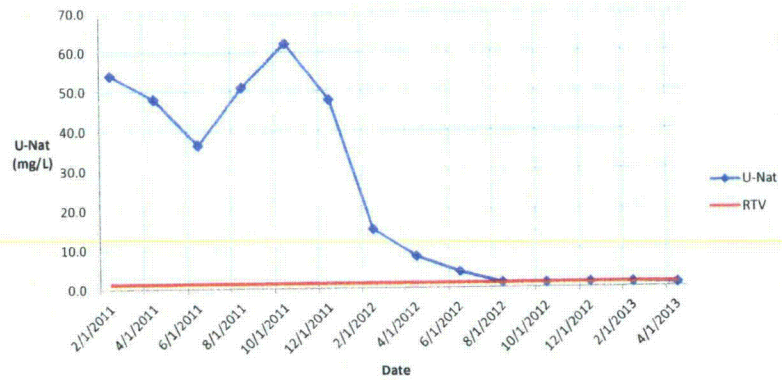
Mine Unit D - Well DMP-07  
Chloride Concentration Over Time



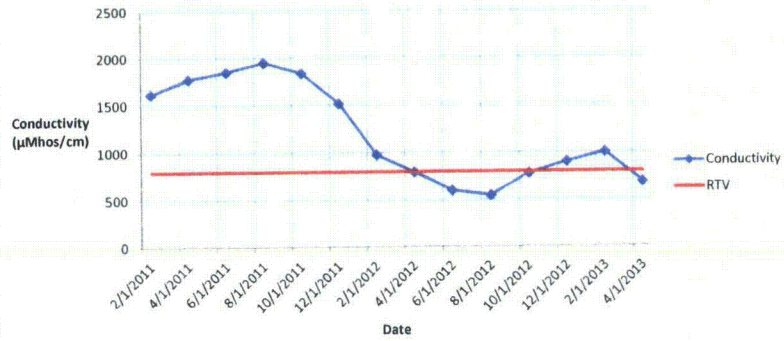
Mine Unit D - Well DMP-07  
Alkalinity Over Time



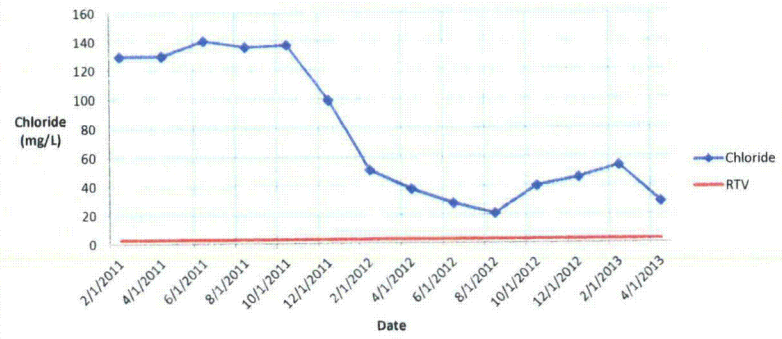
Mine Unit D - Well DMP-07  
Uranium (Nat) Concentration Over Time



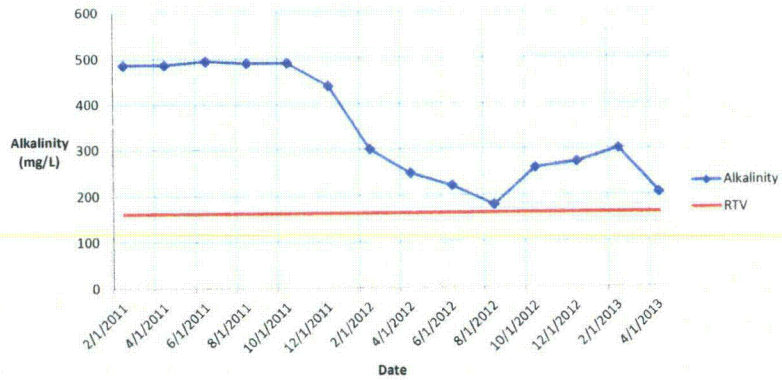
**Mine Unit D - Well DMP-08  
Conductivity Over Time**



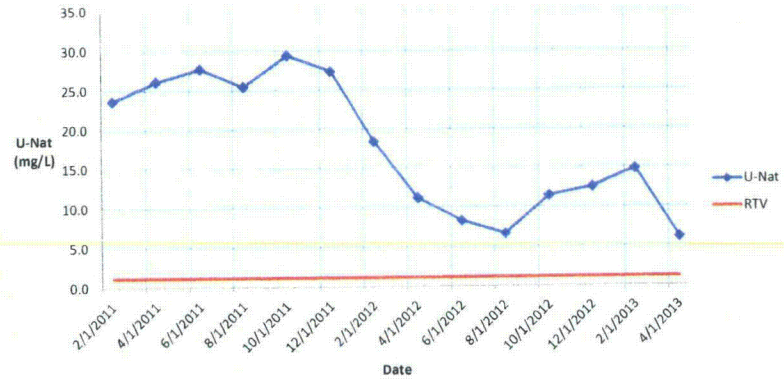
**Mine Unit D - Well DMP-08  
Chloride Concentration Over Time**



**Mine Unit D - Well DMP-08  
Alkalinity Over Time**

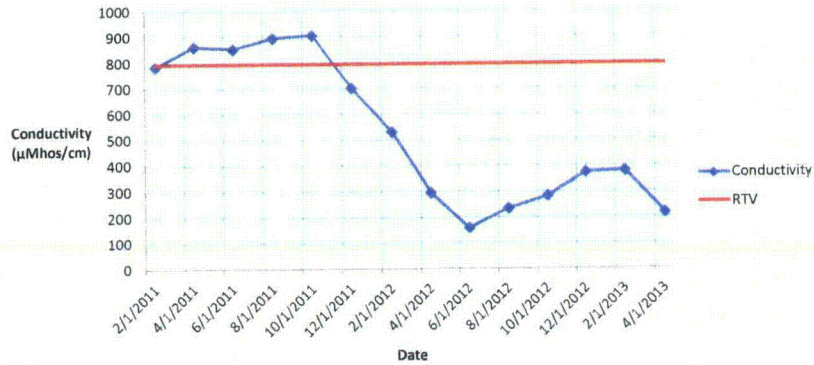


**Mine Unit D - Well DMP-08  
Uranium (Nat) Concentration Over Time**

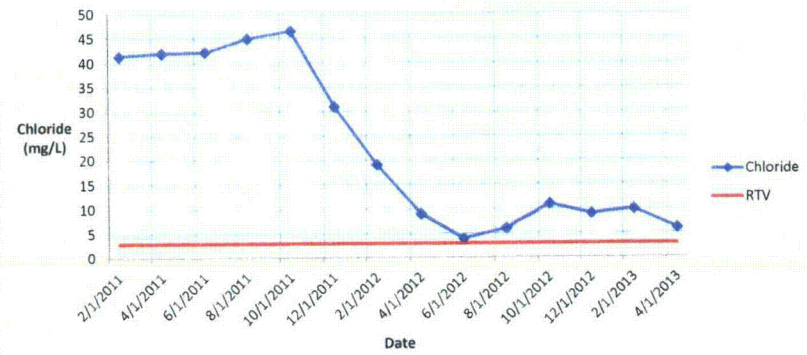




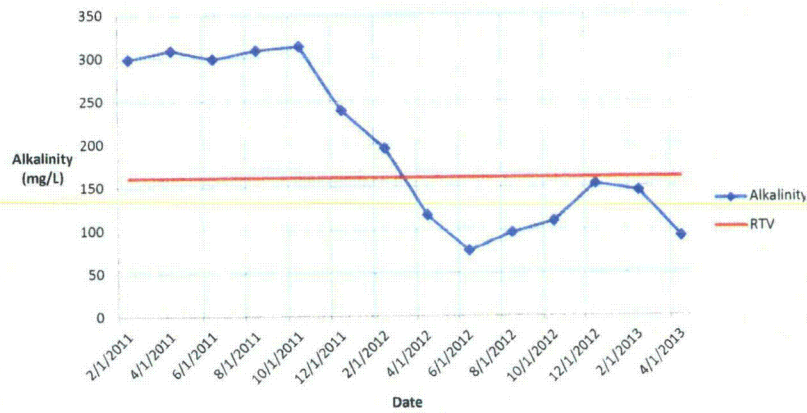
**Mine Unit D - Well DMP-09  
Conductivity Over Time**



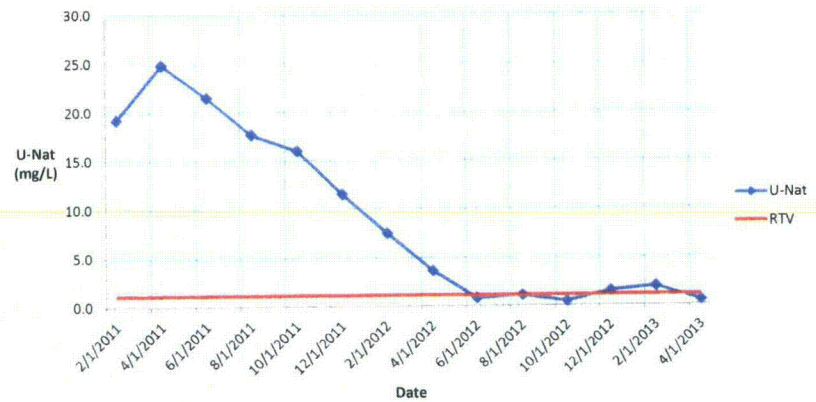
**Mine Unit D - Well DMP-09  
Chloride Concentration Over Time**



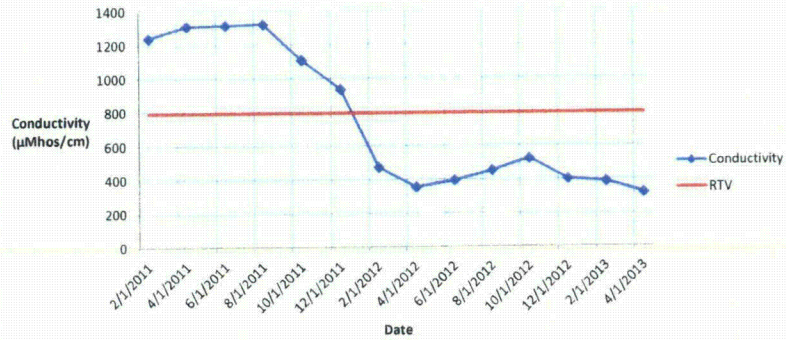
**Mine Unit D - Well DMP-09  
Alkalinity Over Time**



**Mine Unit D - Well DMP-09  
Uranium (Nat) Concentration Over Time**



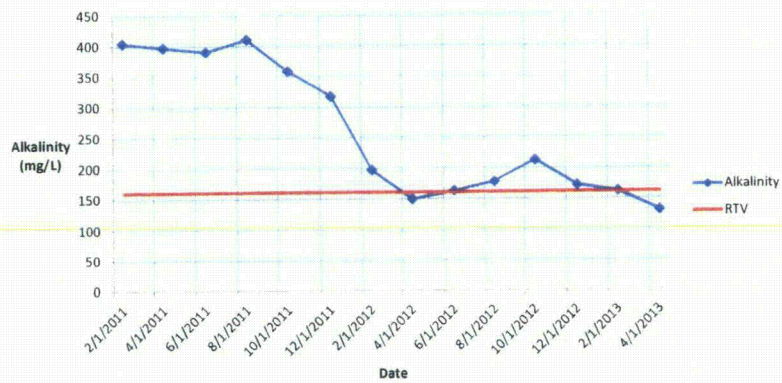
Mine Unit D - Well DMP-10  
Conductivity Over Time



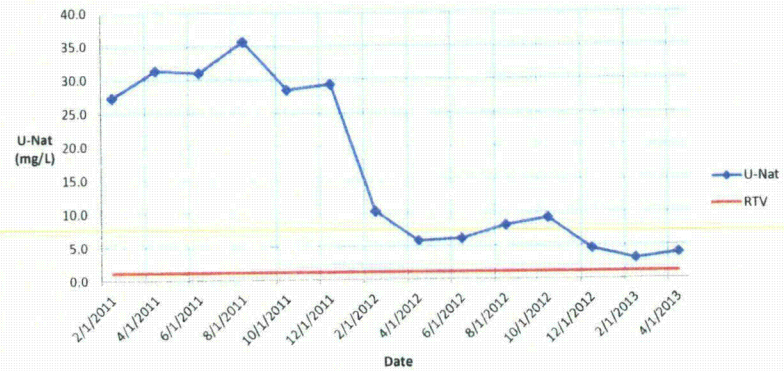
Mine Unit D - Well DMP-10  
Chloride Concentration Over Time



Mine Unit D - Well DMP-10  
Alkalinity Over Time

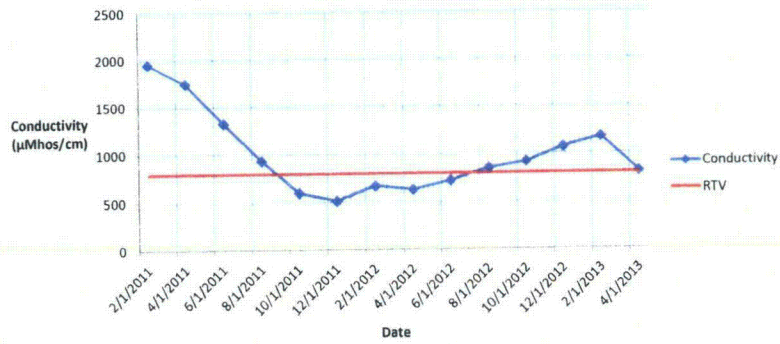


Mine Unit D - Well DMP-10  
Uranium (Nat) Concentration Over Time

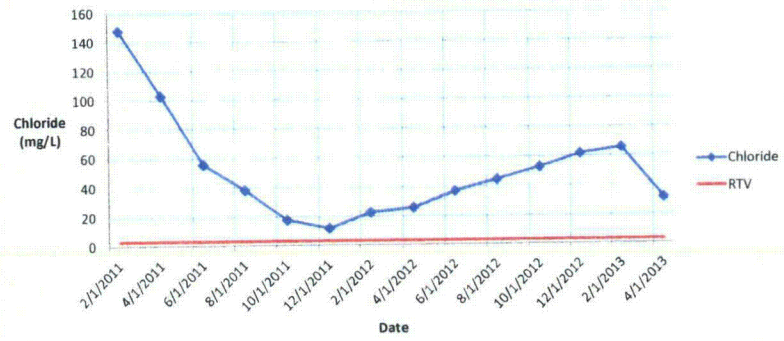




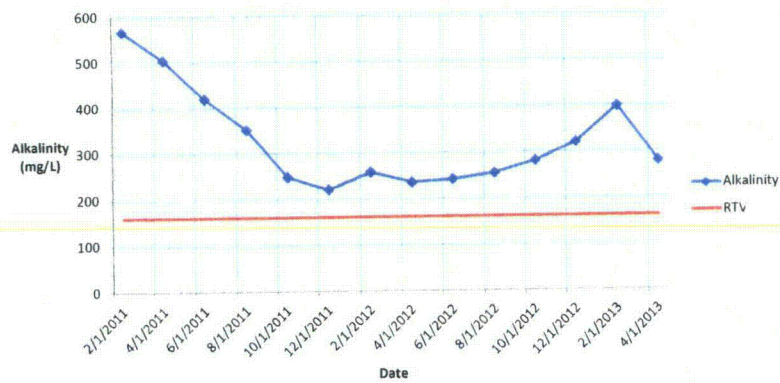
**Mine Unit D - Well DMP-11  
Conductivity Over Time**



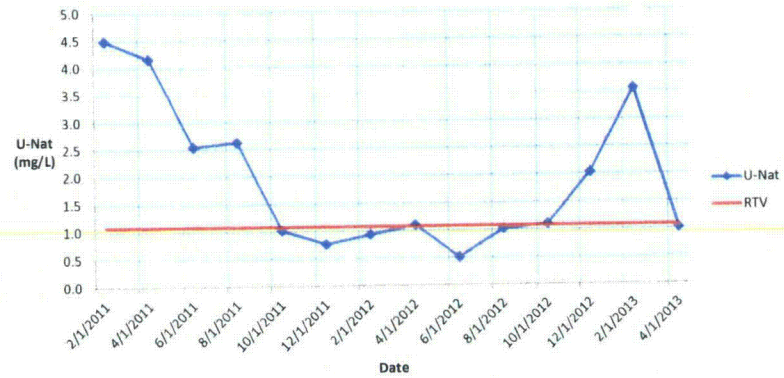
**Mine Unit D - Well DMP-11  
Chloride Concentration Over Time**



**Mine Unit D - Well DMP-11  
Alkalinity Over Time**

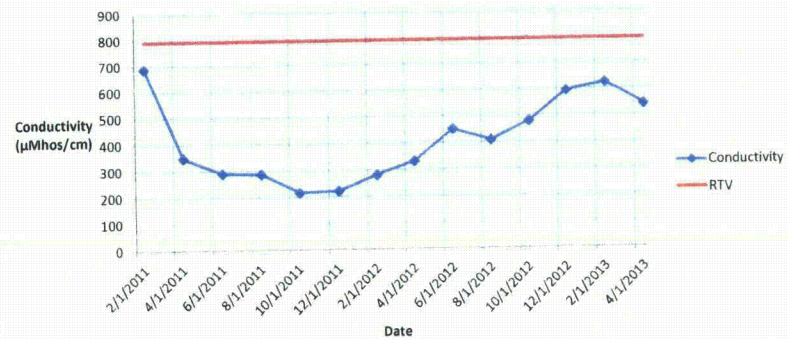


**Mine Unit D - Well DMP-11  
Uranium (Nat) Concentration  
Over Time**

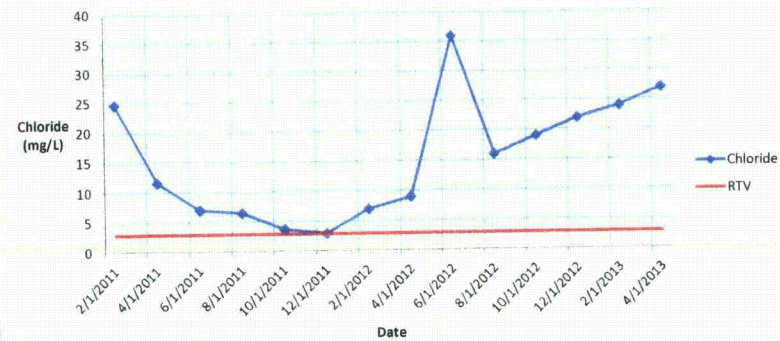




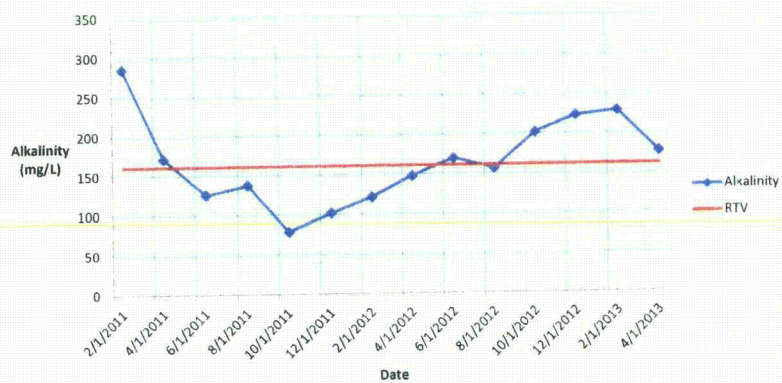
**Mine Unit D - Well DMP-12  
Conductivity Over Time**



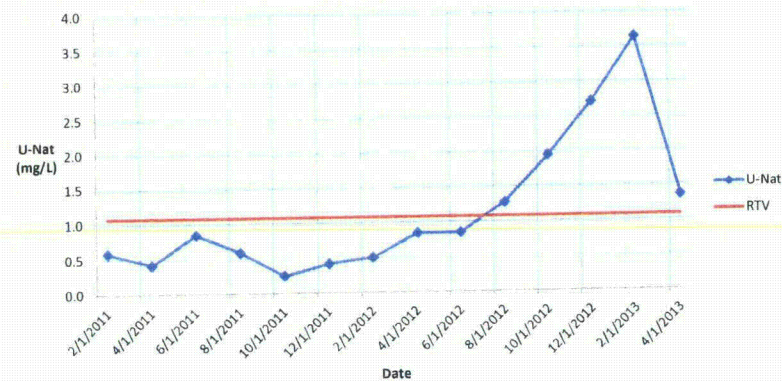
**Mine Unit D - Well DMP-12  
Chloride Concentration Over Time**



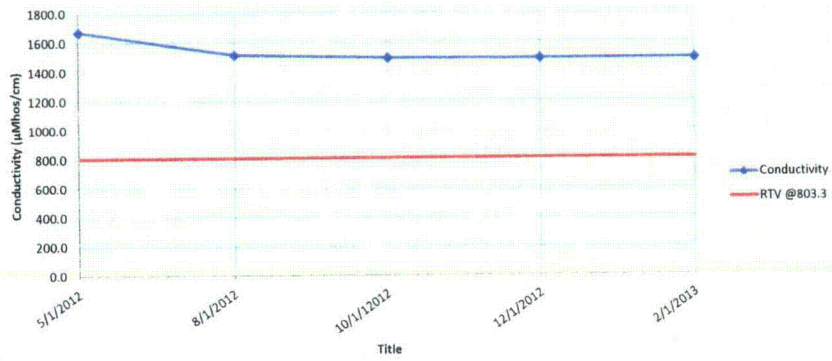
**Mine Unit D - Well DMP-12  
Alkalinity Over Time**



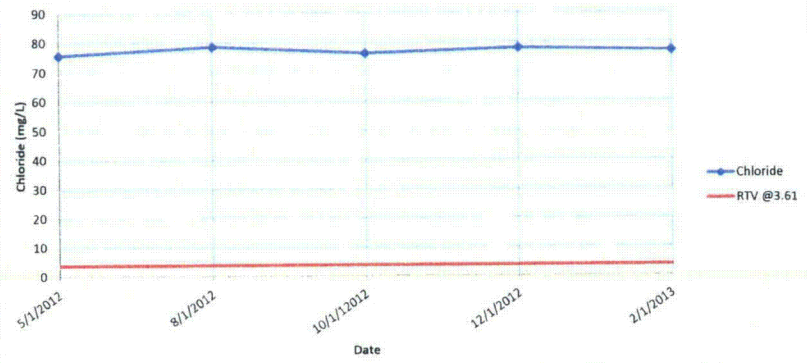
**Mine Unit D - Well DMP-12  
Uranium (Nat) Concentration Over Time**



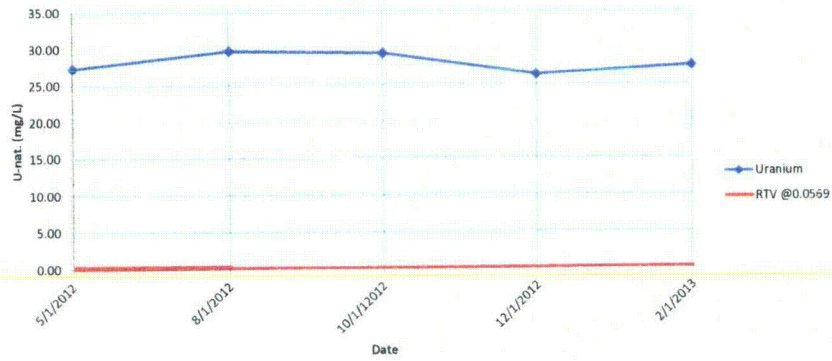
Mine Unit E NORTH - (EMP-001 - EMP-016)  
Average Conductivity Over Time



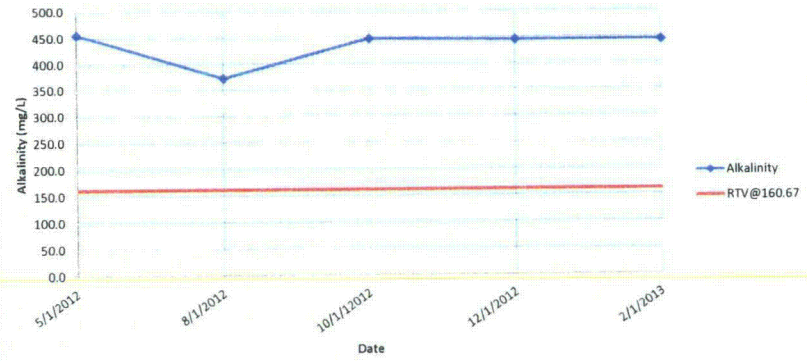
Mine Unit E NORTH - (EMP-001 - EMP-016)  
Average Chloride Over Time



Mine Unit E NORTH - (EMP-001 - EMP-016)  
Average Uranium Over Time

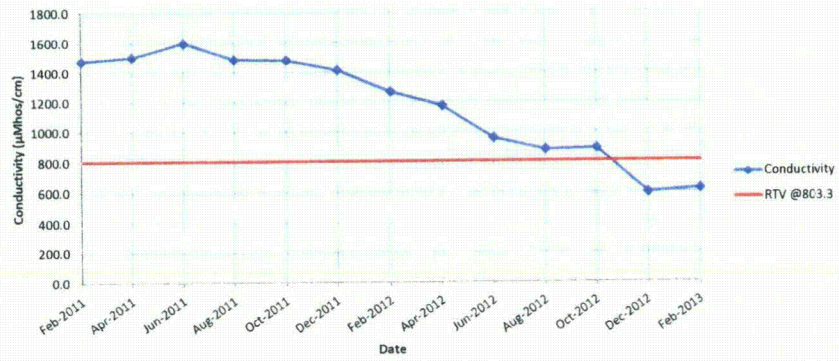


Mine Unit E NORTH - (EMP-001 - EMP-016)  
Average Alkalinity Over Time

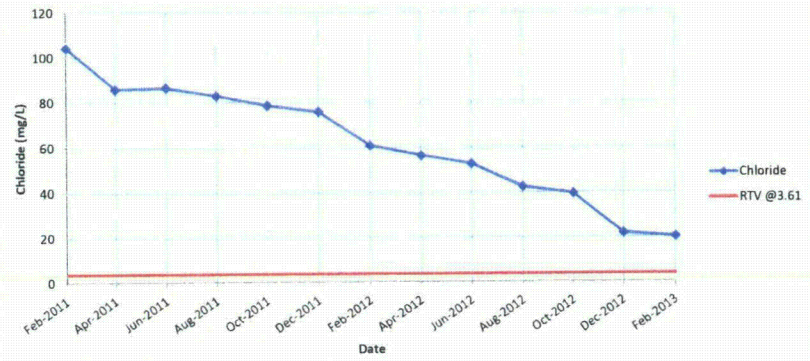




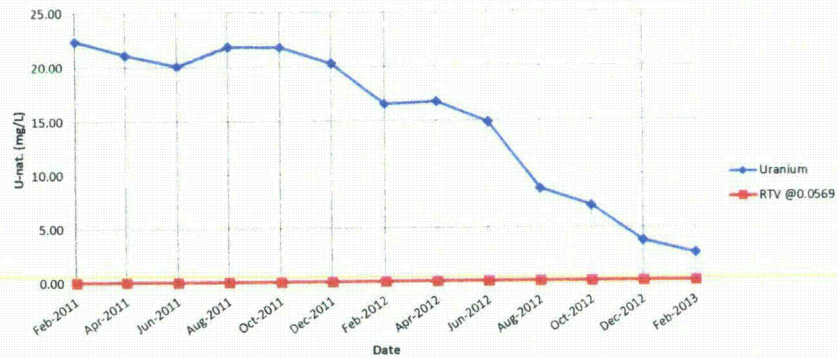
Mine Unit E *SOUTH*- (EMP-018 - EMP-031)  
Average Conductivity Over Time



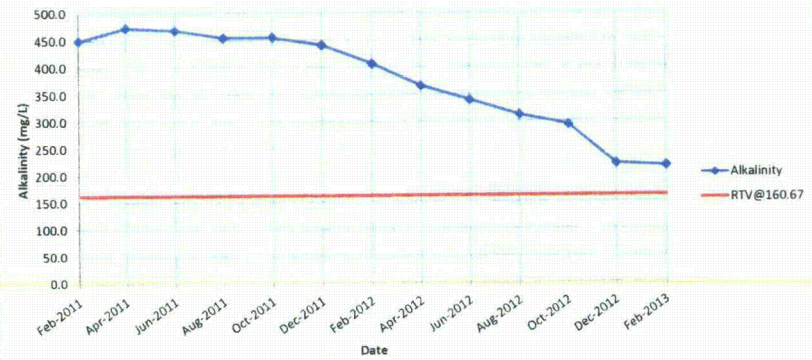
Mine Unit E *SOUTH*- (EMP-018 - EMP-031)  
Average Chloride Over Time



Mine Unit E *SOUTH*- (EMP-018 - EMP-031)  
Average Uranium Over Time

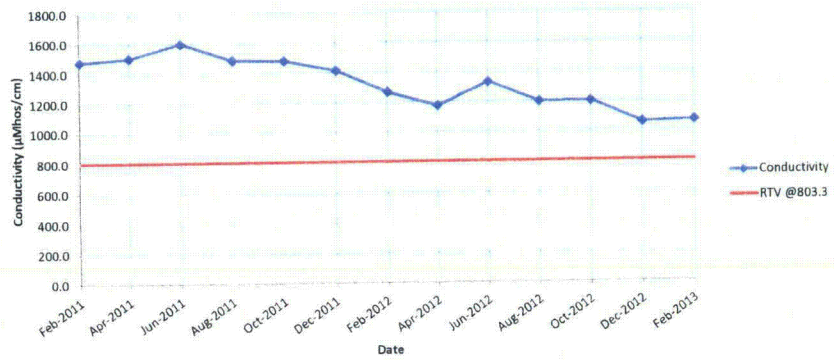


Mine Unit E *SOUTH*- (EMP-018 - EMP-031)  
Average Alkalinity Over Time

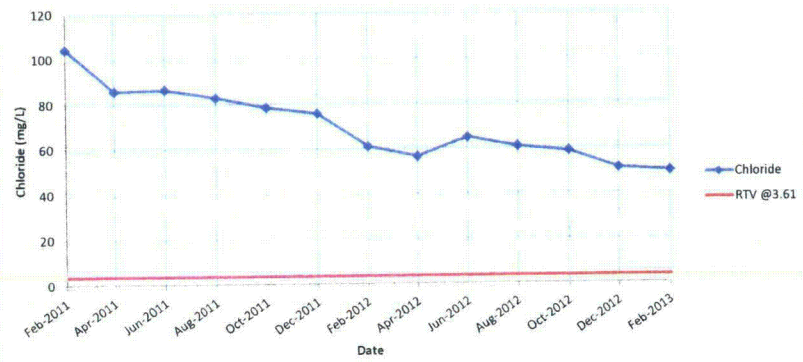




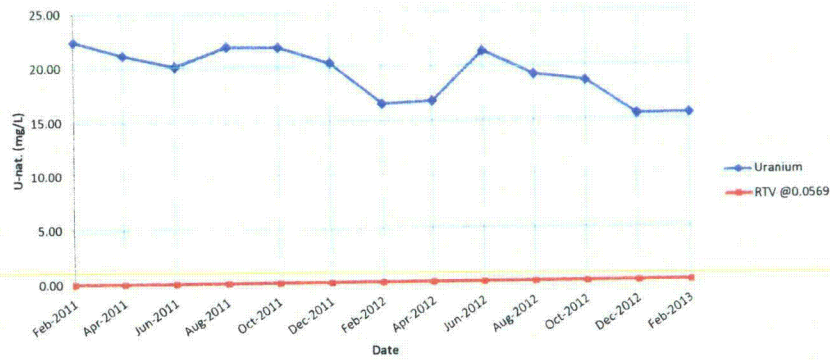
**Mine Unit E  
Average Conductivity Over Time**



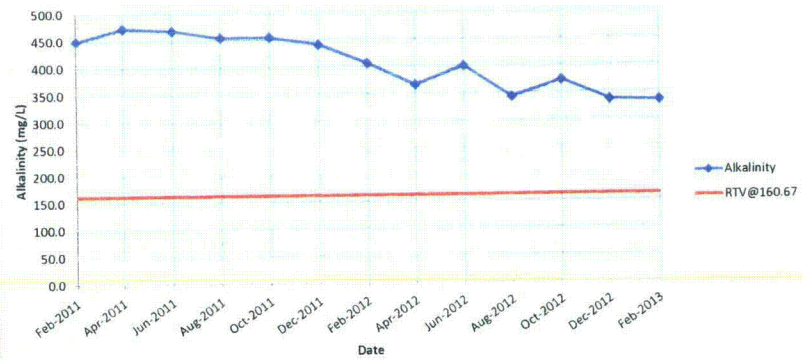
**Mine Unit E  
Average Chloride Over Time**



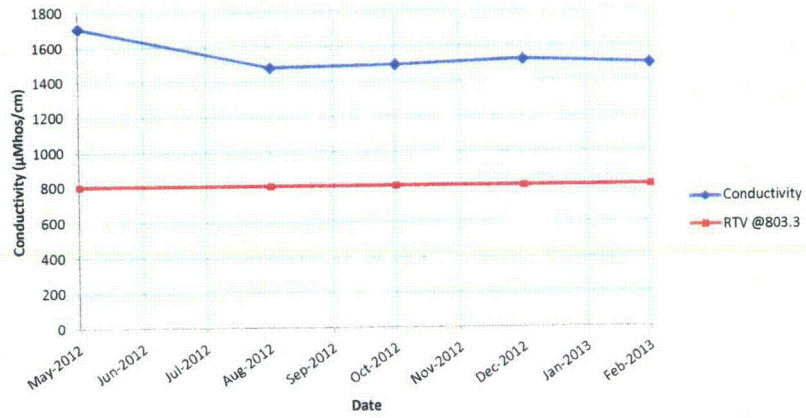
**Mine Unit E  
Average Uranium Over Time**



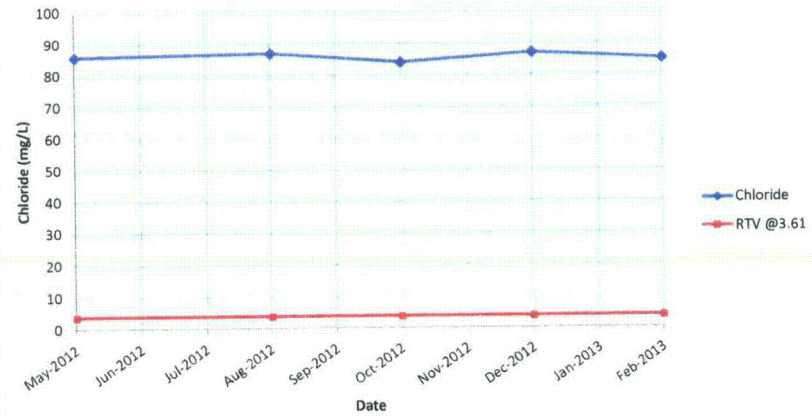
**Mine Unit E  
Average Alkalinity Over Time**



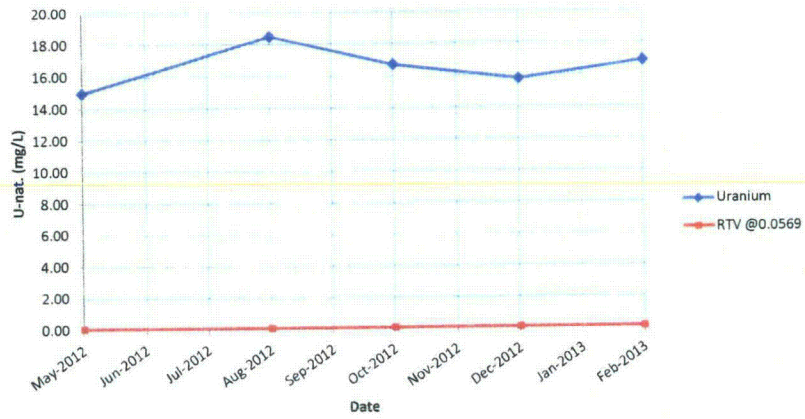
Mine Unit E - Well EMP-001  
Conductivity Over Time



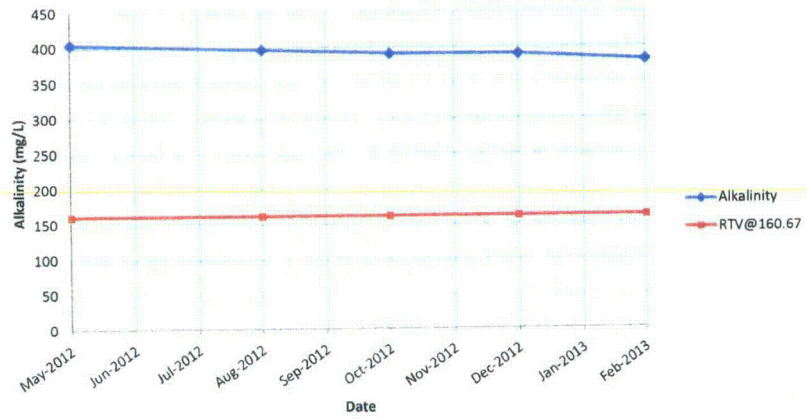
Mine Unit E - Well EMP-001  
Chloride Over Time



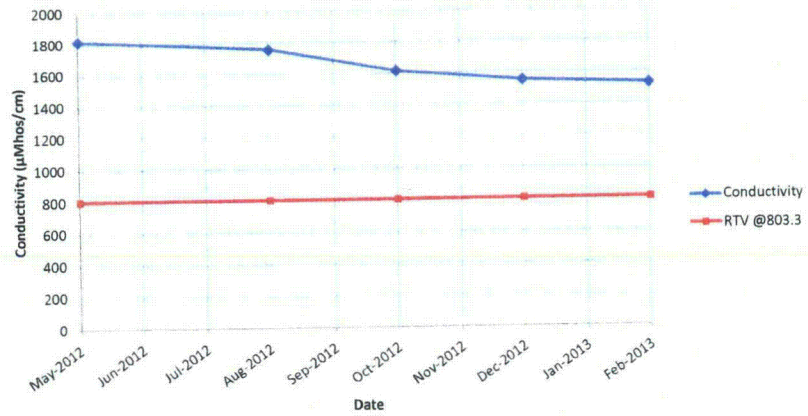
Mine Unit E - Well EMP-001  
Uranium Over Time



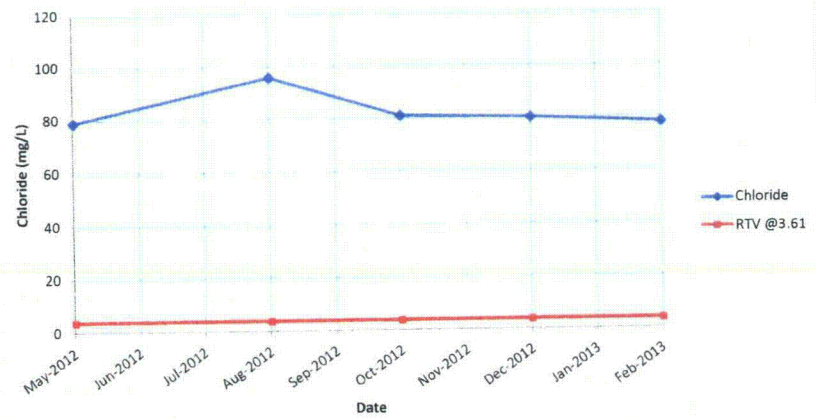
Mine Unit E - Well EMP-001  
Alkalinity Over Time



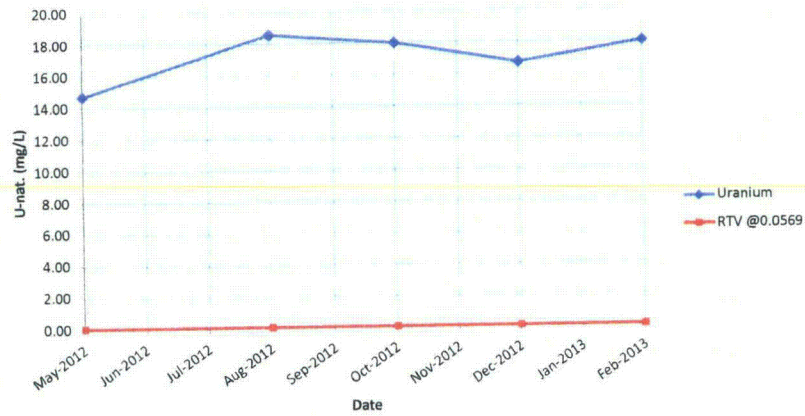
Mine Unit E - Well EMP-002  
Conductivity Over Time



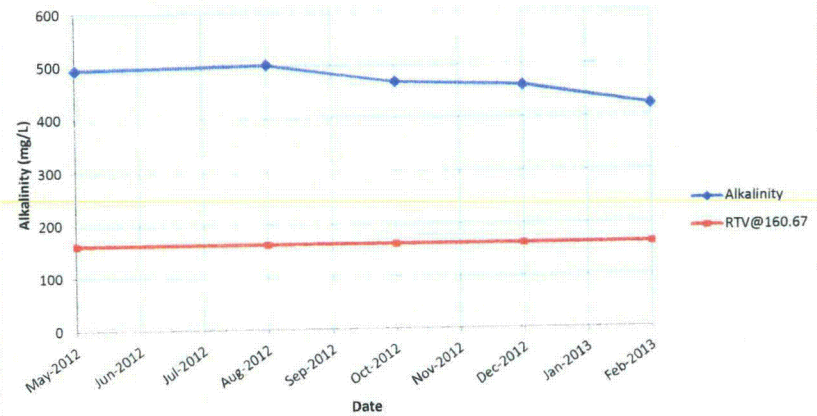
Mine Unit E - Well EMP-002  
Chloride Over Time



Mine Unit E - Well EMP-002  
Uranium Over Time

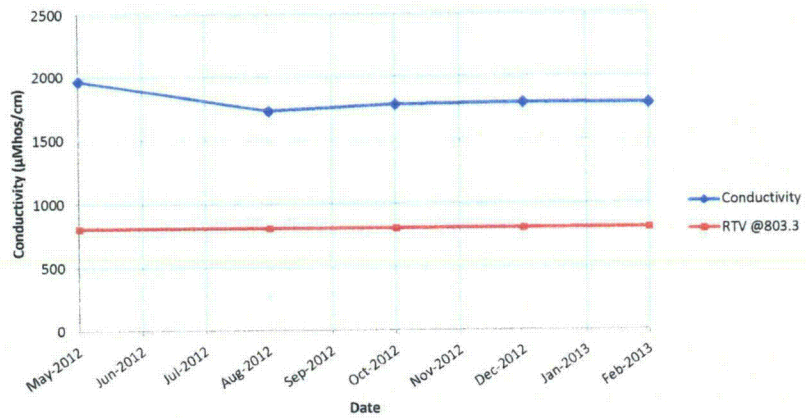


Mine Unit E - Well EMP-002  
Alkalinity Over Time

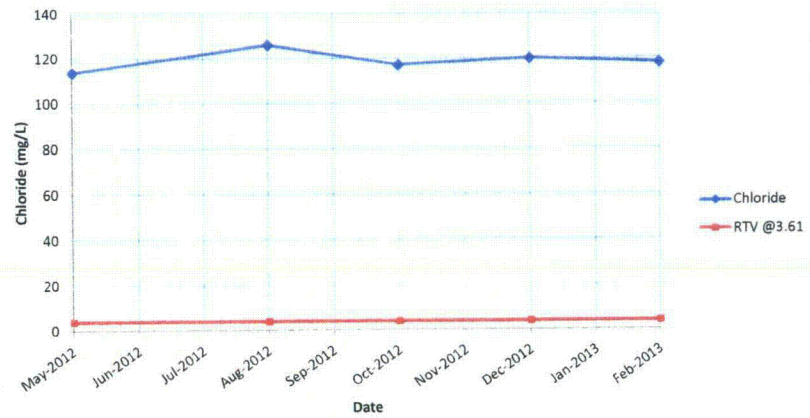




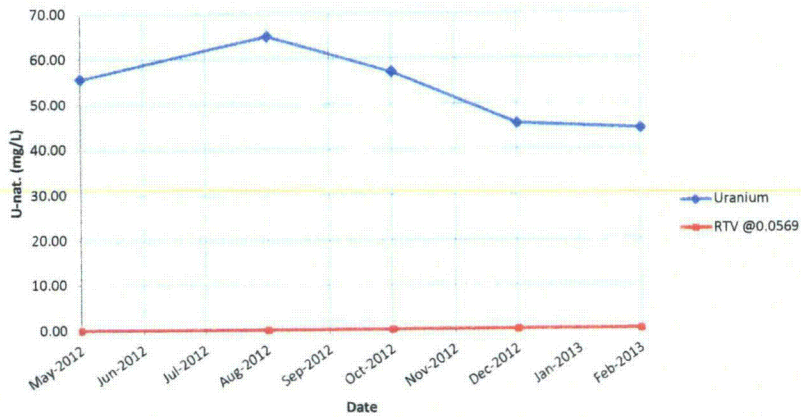
**Mine Unit E - Well EMP-003  
Conductivity Over Time**



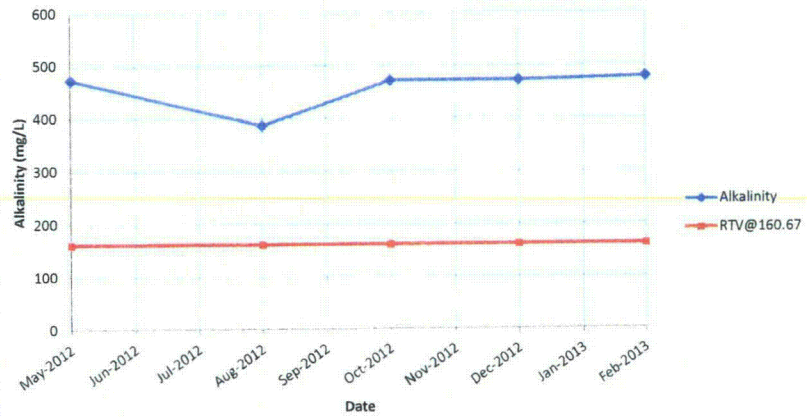
**Mine Unit E - Well EMP-003  
Chloride Over Time**



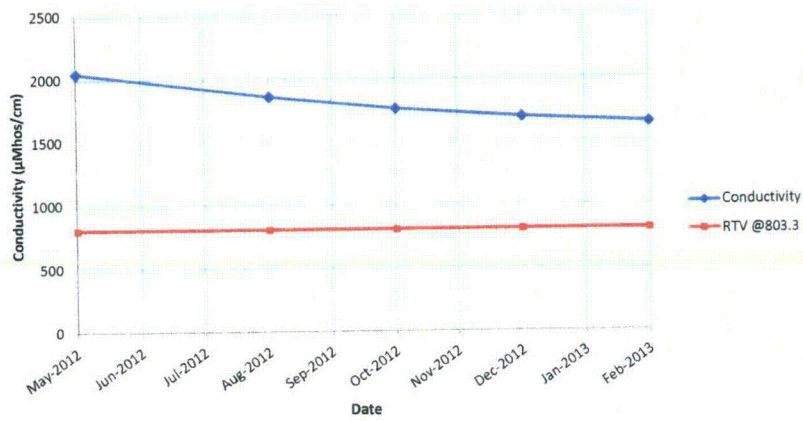
**Mine Unit E - Well EMP-003  
Uranium Over Time**



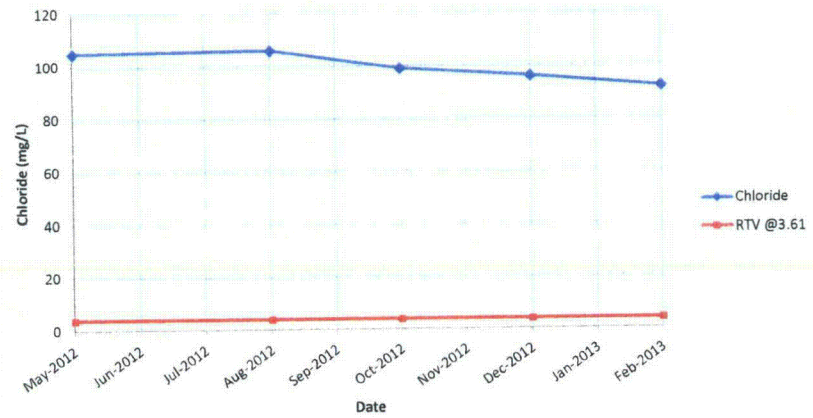
**Mine Unit E - Well EMP-003  
Alkalinity Over Time**



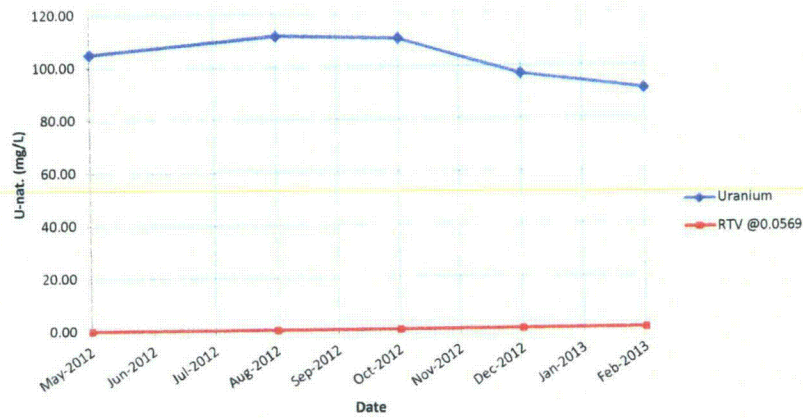
**Mine Unit E - Well EMP-004  
Conductivity Over Time**



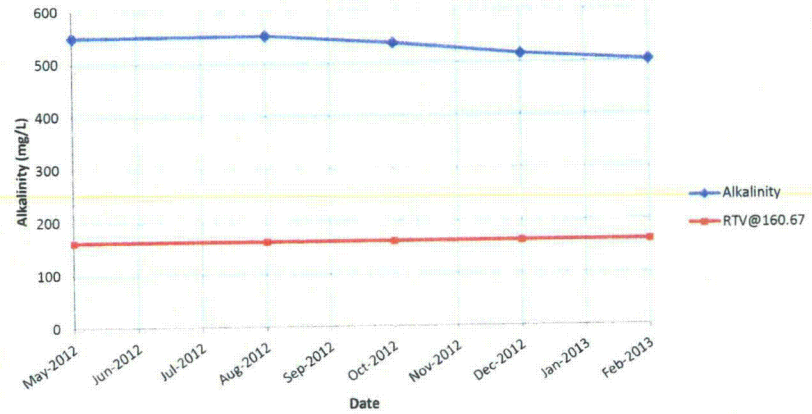
**Mine Unit E - Well EMP-004  
Chloride Over Time**



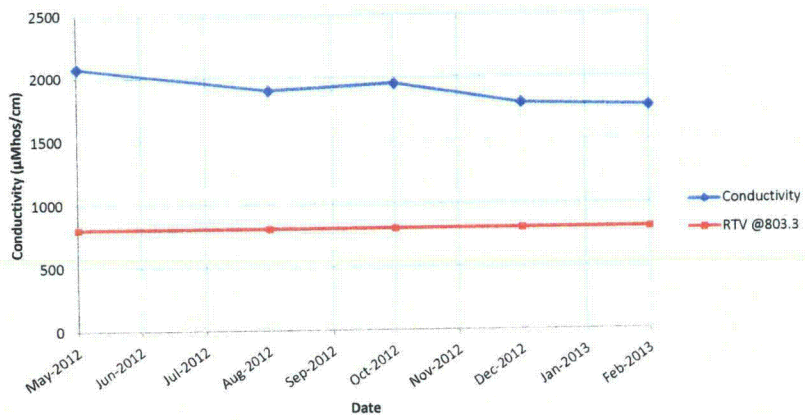
**Mine Unit E - Well EMP-004  
Uranium Over Time**



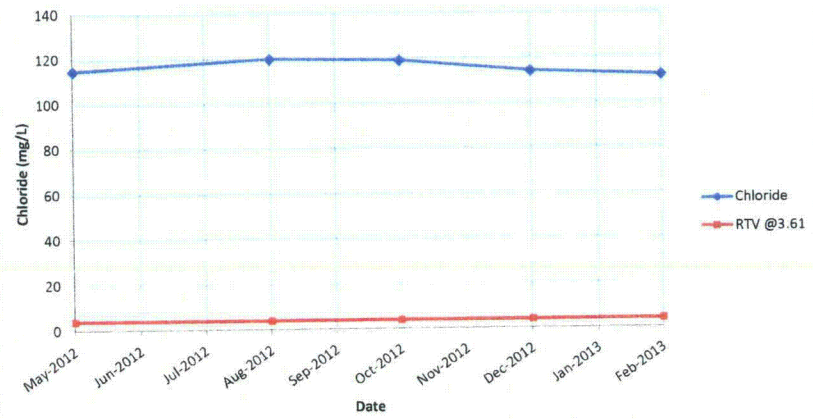
**Mine Unit E - Well EMP-004  
Alkalinity Over Time**



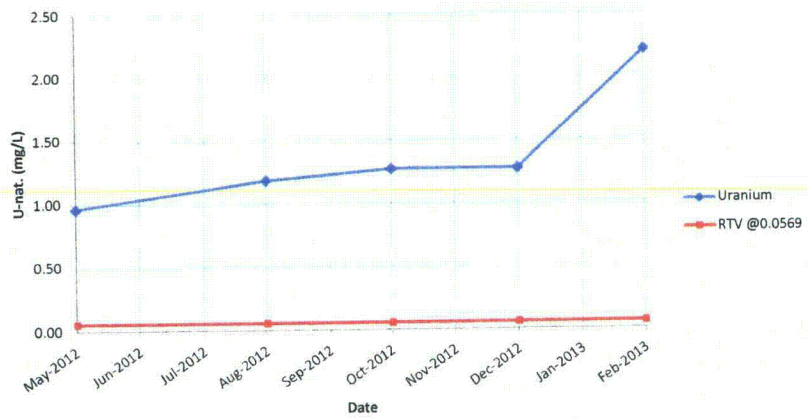
**Mine Unit E - Well EMP-006  
Conductivity Over Time**



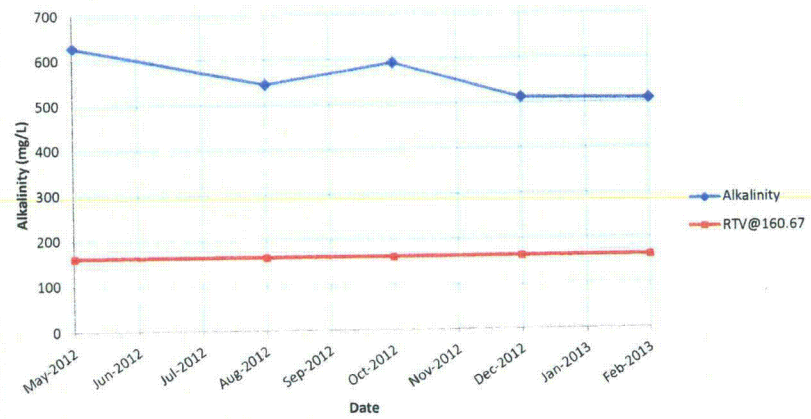
**Mine Unit E - Well EMP-006  
Chloride Over Time**



**Mine Unit E - Well EMP-006  
Uranium Over Time**

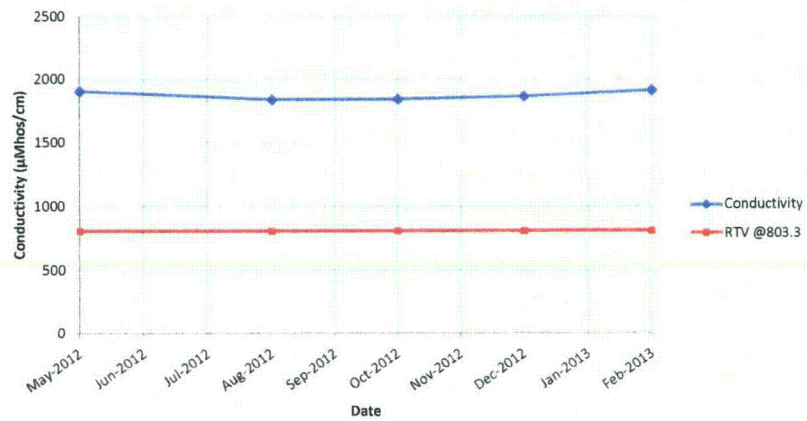


**Mine Unit E - Well EMP-006  
Alkalinity Over Time**

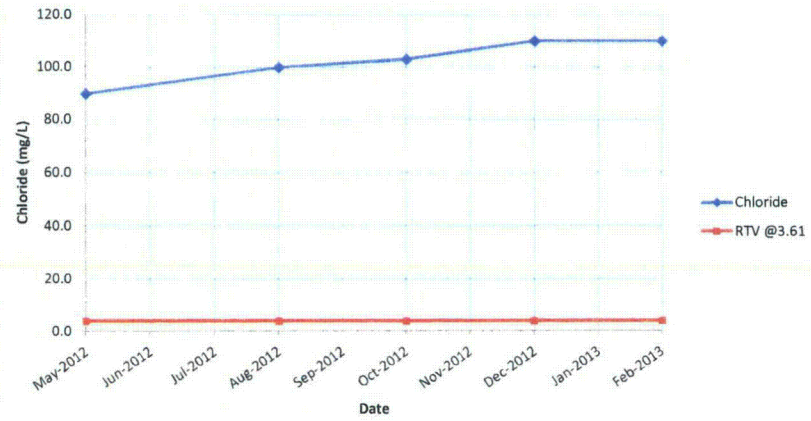




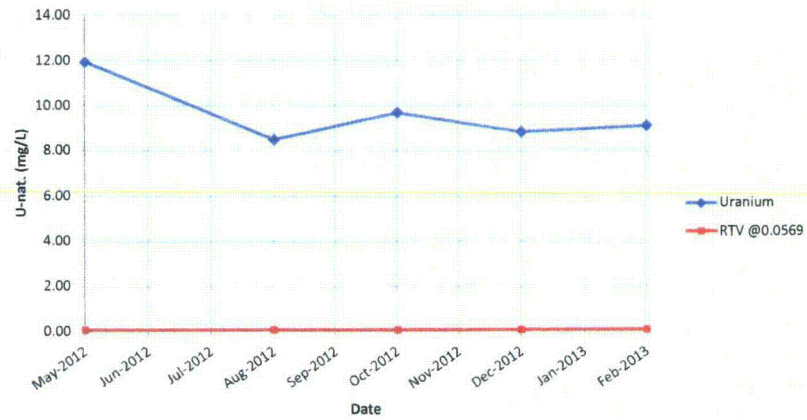
**Mine Unit E - Well EMP-007  
Conductivity Over Time**



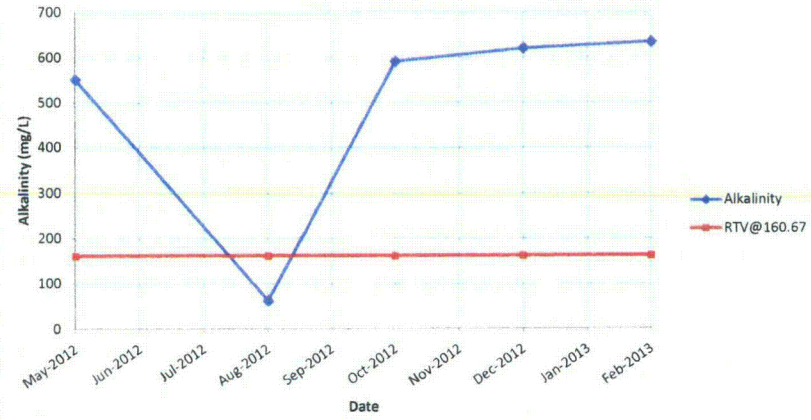
**Mine Unit E - Well EMP-007  
Chloride Over Time**



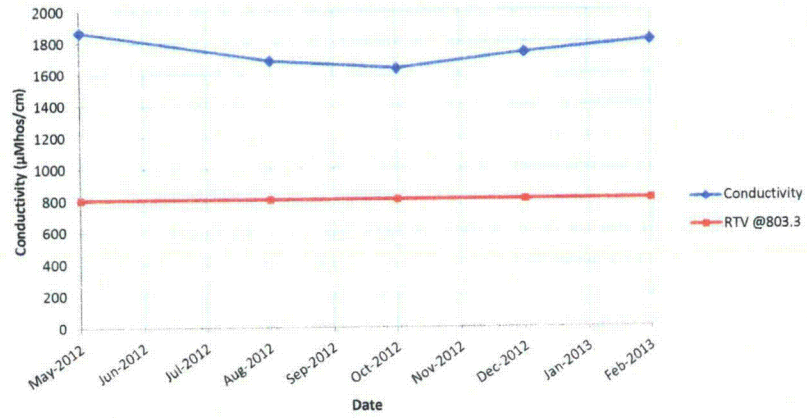
**Mine Unit E - Well EMP-007  
Uranium Over Time**



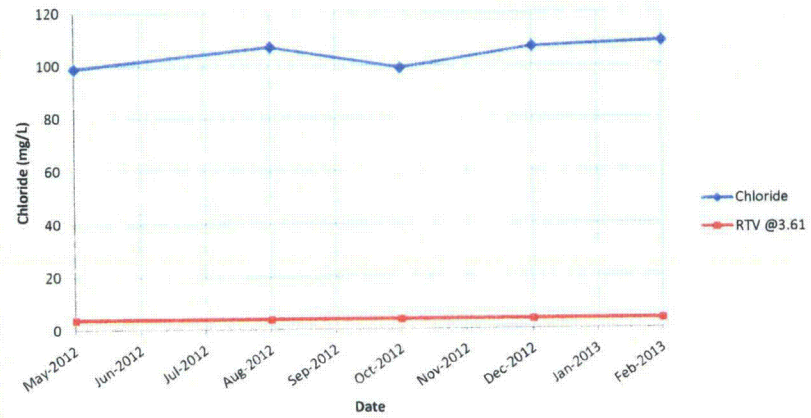
**Mine Unit E - Well EMP-007  
Alkalinity Over Time**



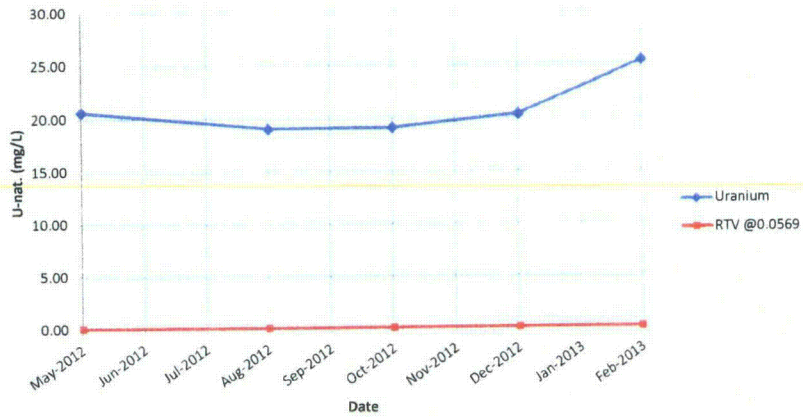
Mine Unit E - Well EMP-008  
Conductivity Over Time



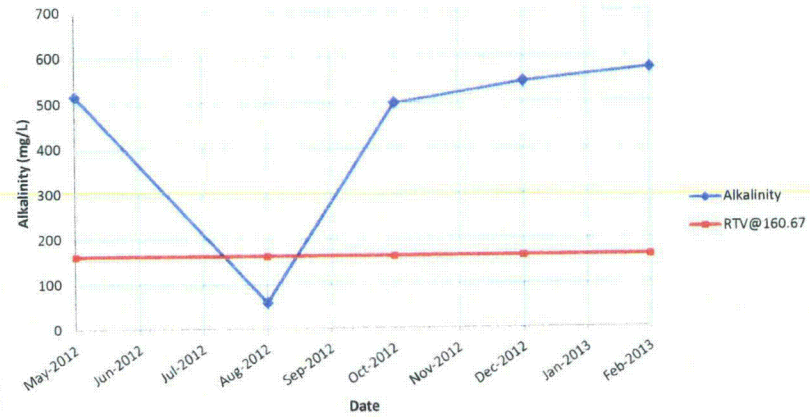
Mine Unit E - Well EMP-008  
Chloride Over Time



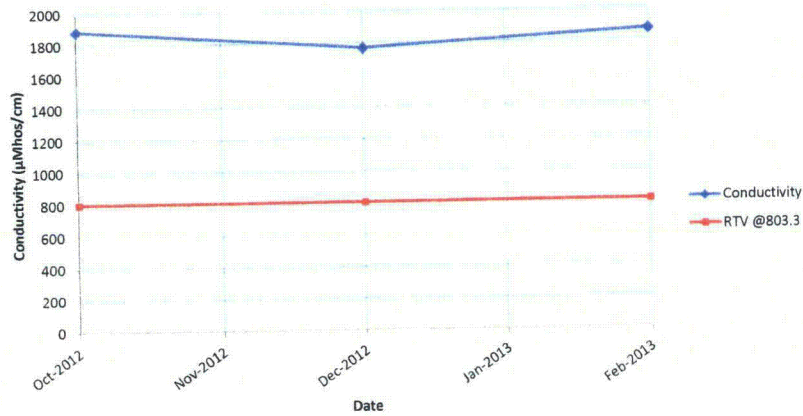
Mine Unit E - Well EMP-008  
Uranium Over Time



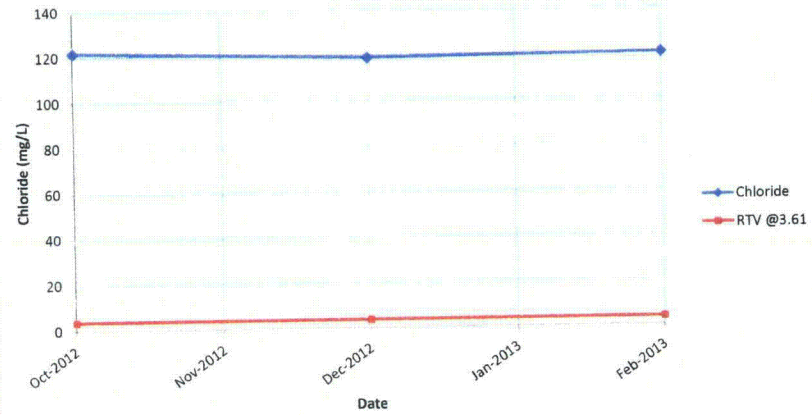
Mine Unit E - Well EMP-008  
Alkalinity Over Time



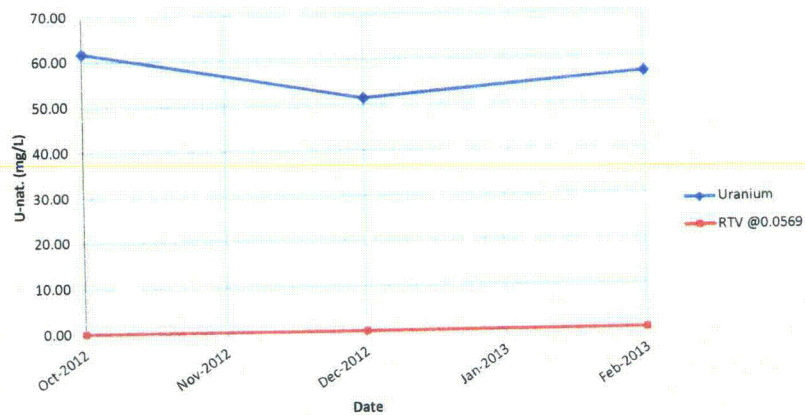
Mine Unit E - Well EMP-009  
Conductivity Over Time



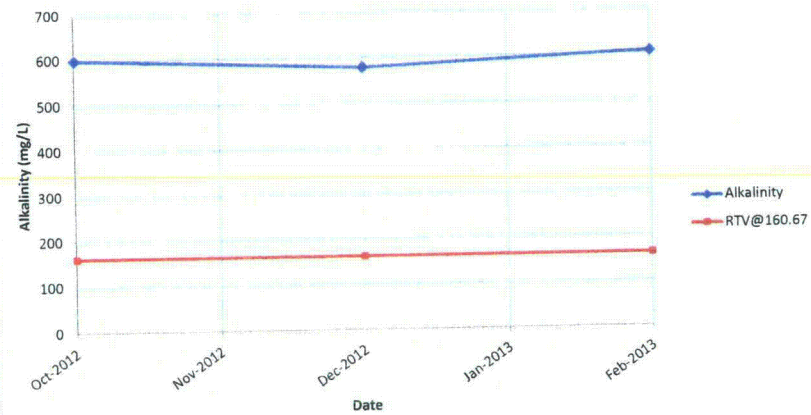
Mine Unit E - Well EMP-009  
Chloride Over Time



Mine Unit E - Well EMP-009  
Uranium Over Time

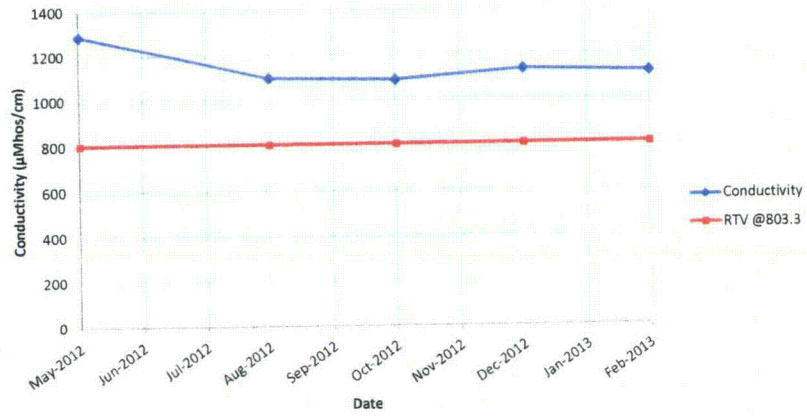


Mine Unit E - Well EMP-009  
Alkalinity Over Time

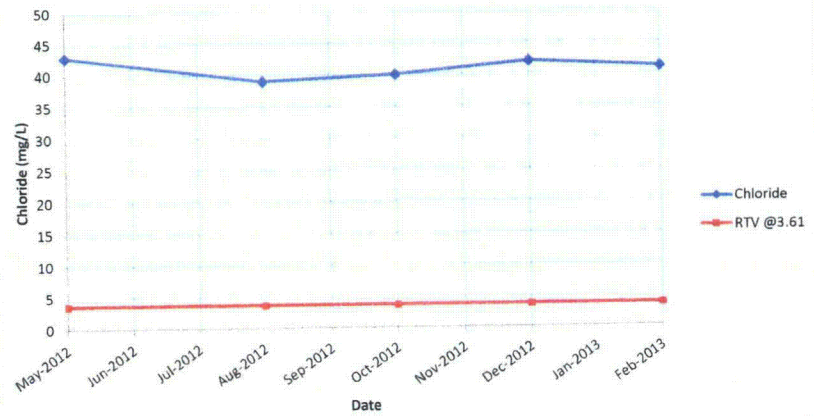




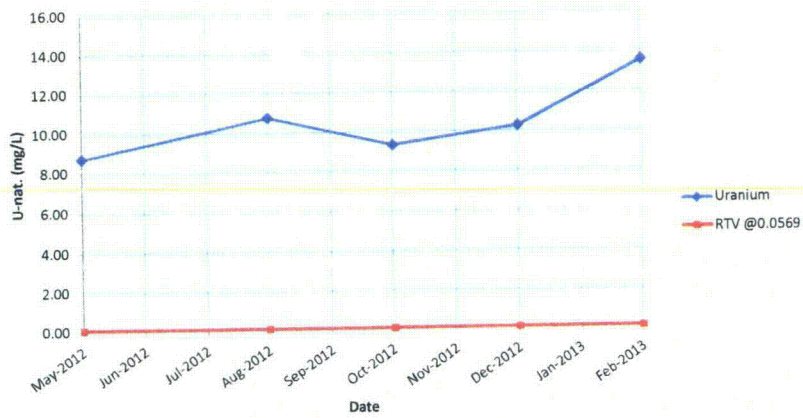
Mine Unit E - Well EMP-010  
Conductivity Over Time



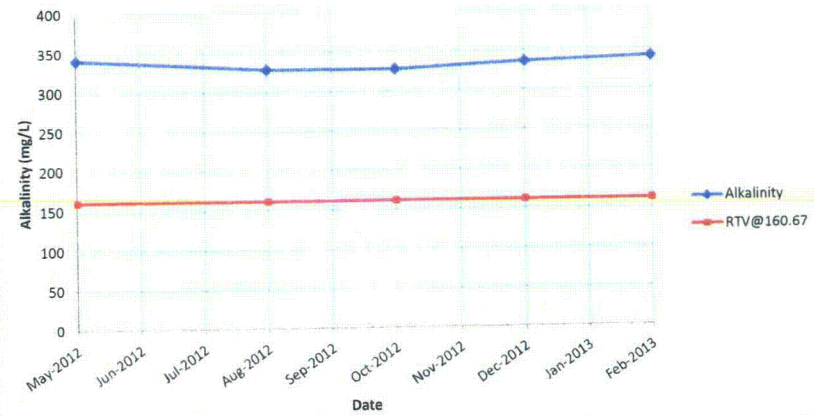
Mine Unit E - Well EMP-010  
Chloride Over Time



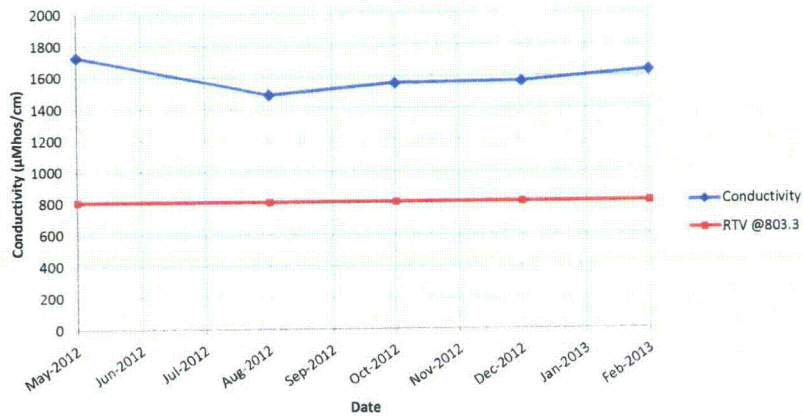
Mine Unit E - Well EMP-010  
Uranium Over Time



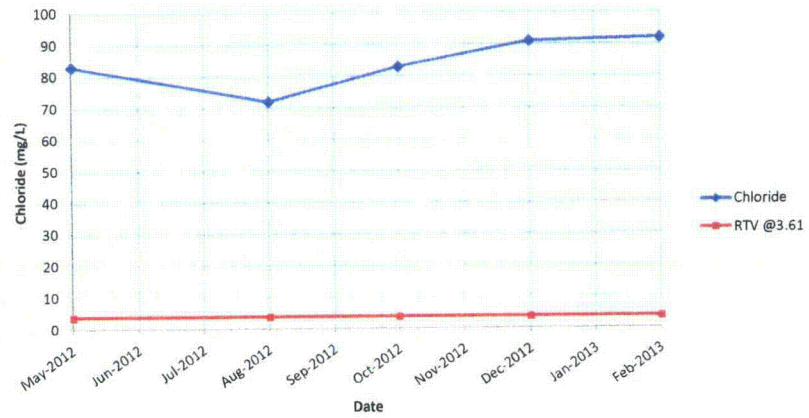
Mine Unit E - Well EMP-010  
Alkalinity Over Time



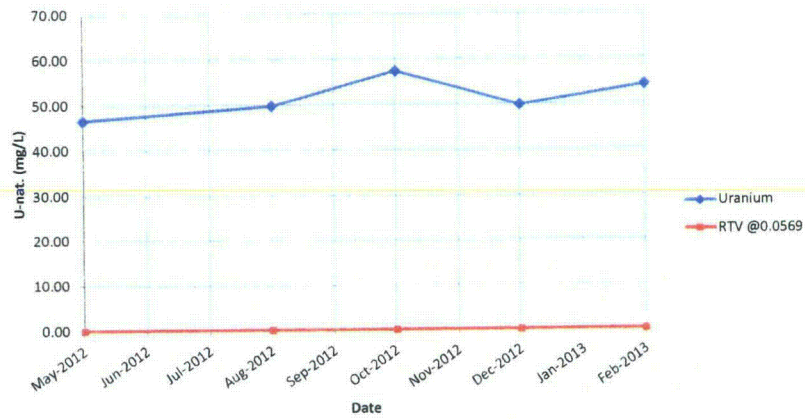
**Mine Unit E - Well EMP-011  
Conductivity Over Time**



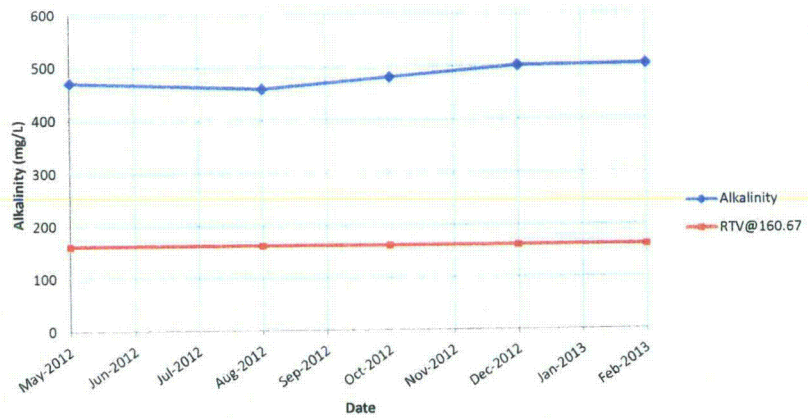
**Mine Unit E - Well EMP-011  
Chloride Over Time**



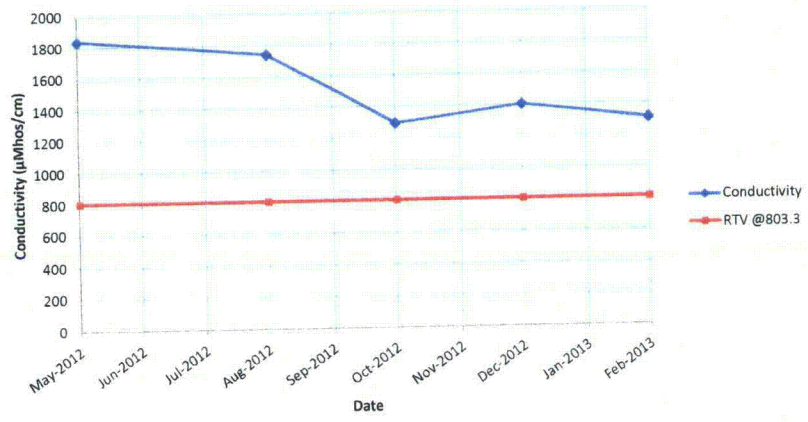
**Mine Unit E - Well EMP-011  
Uranium Over Time**



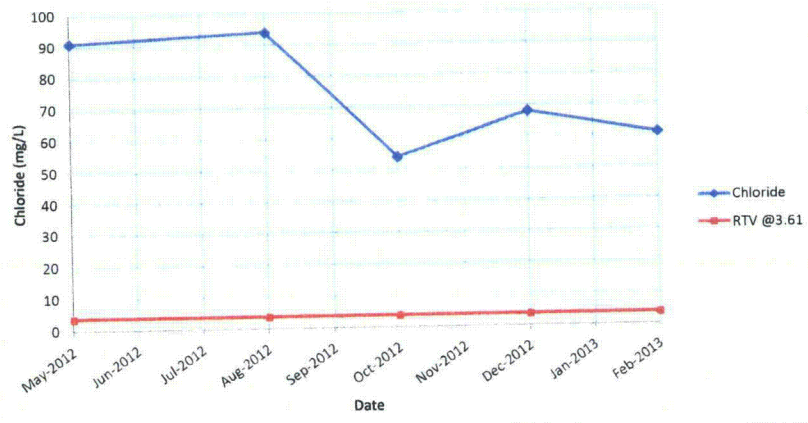
**Mine Unit E - Well EMP-011  
Alkalinity Over Time**



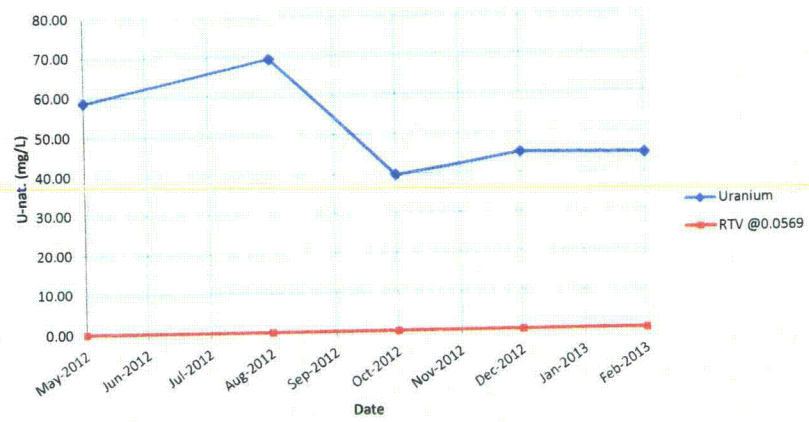
**Mine Unit E - Well EMP-012  
Conductivity Over Time**



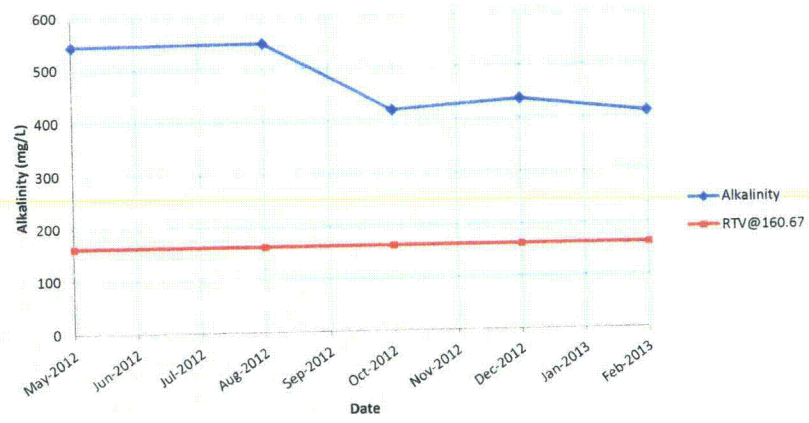
**Mine Unit E - Well EMP-012  
Chloride Over Time**



**Mine Unit E - Well EMP-012  
Uranium Over Time**

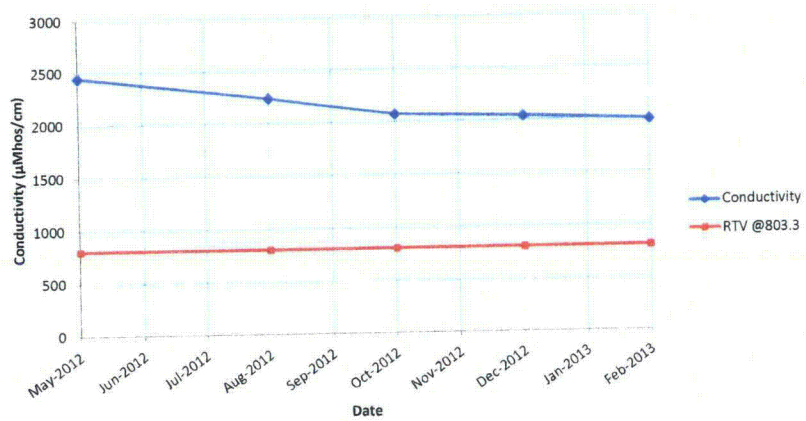


**Mine Unit E - Well EMP-012  
Alkalinity Over Time**

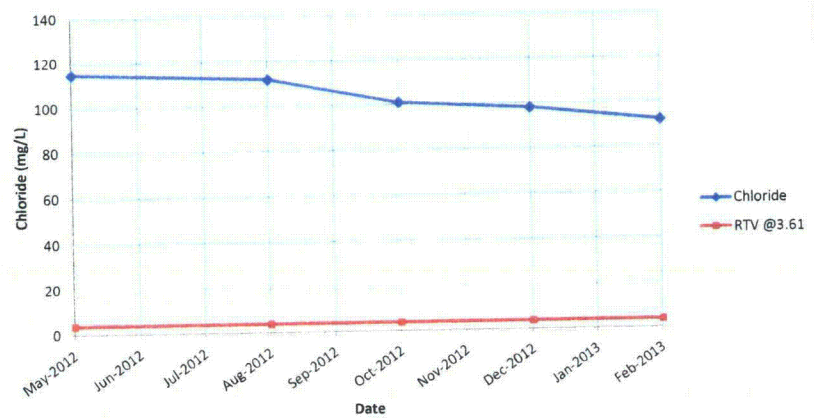




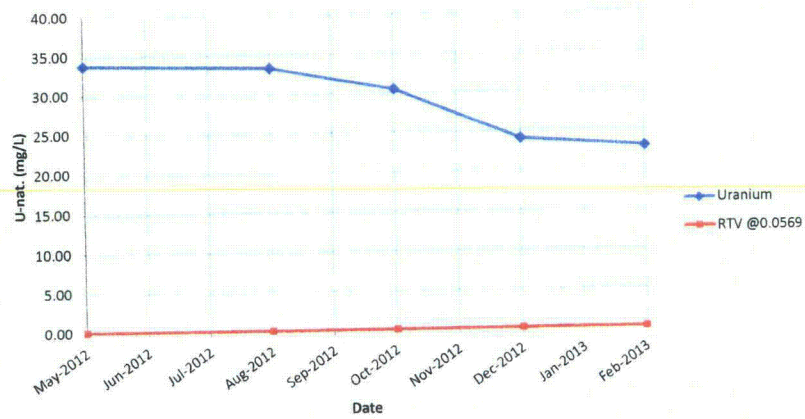
**Mine Unit E - Well EMP-013  
Conductivity Over Time**



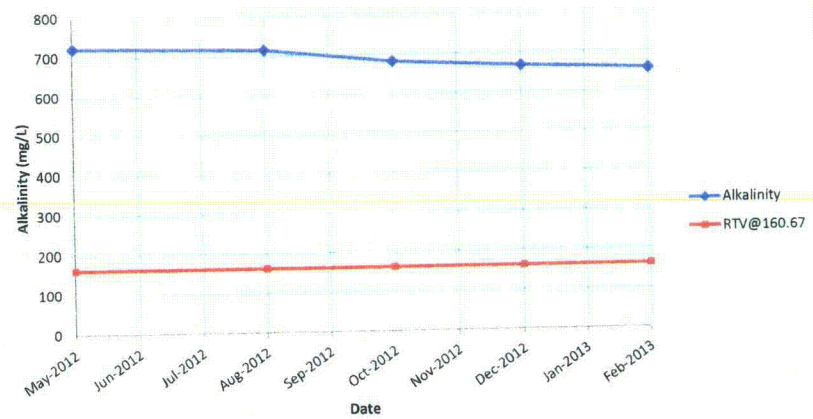
**Mine Unit E - Well EMP-013  
Chloride Over Time**



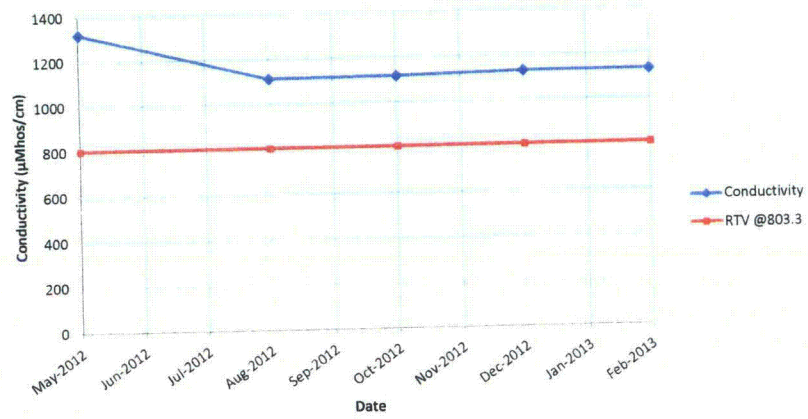
**Mine Unit E - Well EMP-013  
Uranium Over Time**



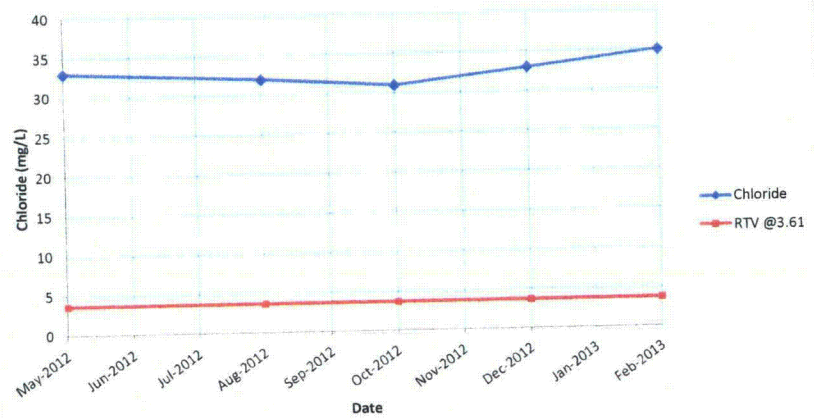
**Mine Unit E - Well EMP-013  
Alkalinity Over Time**



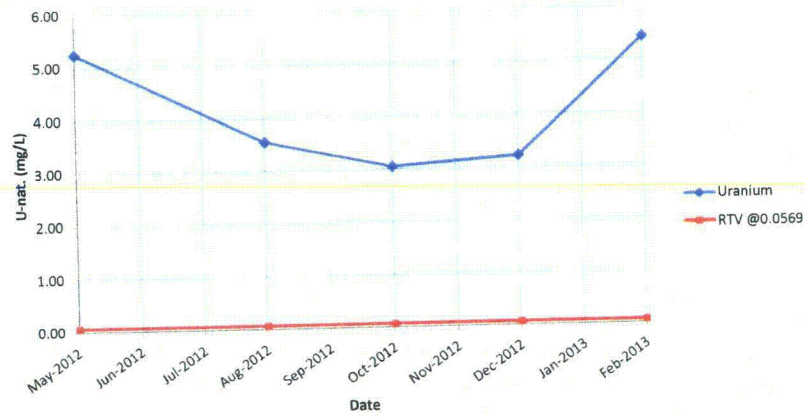
**Mine Unit E - Well EMP-014  
Conductivity Over Time**



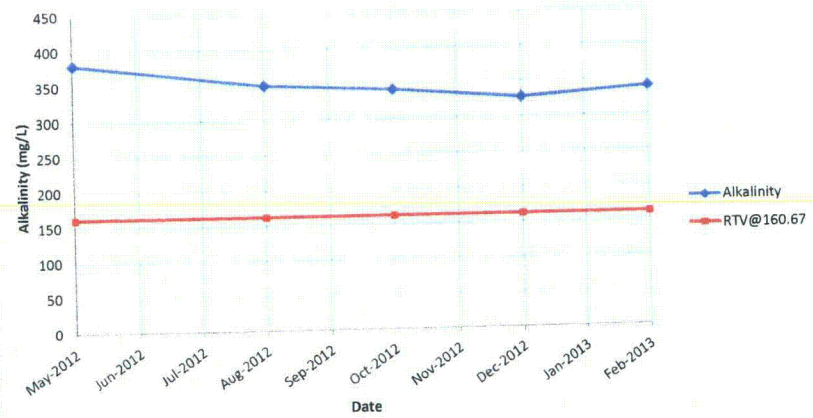
**Mine Unit E - Well EMP-014  
Chloride Over Time**



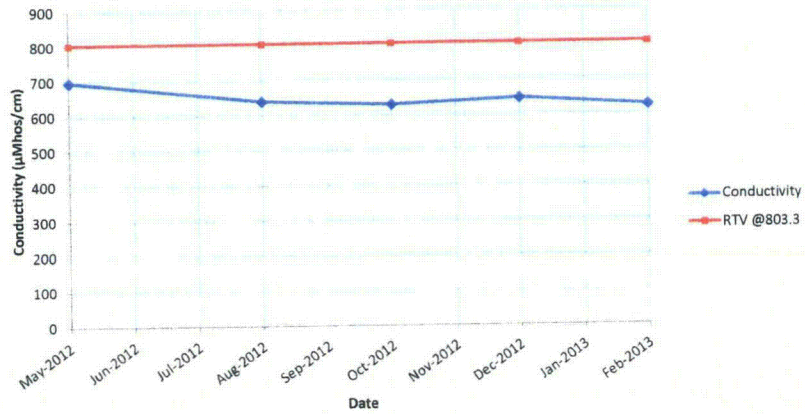
**Mine Unit E - Well EMP-014  
Uranium Over Time**



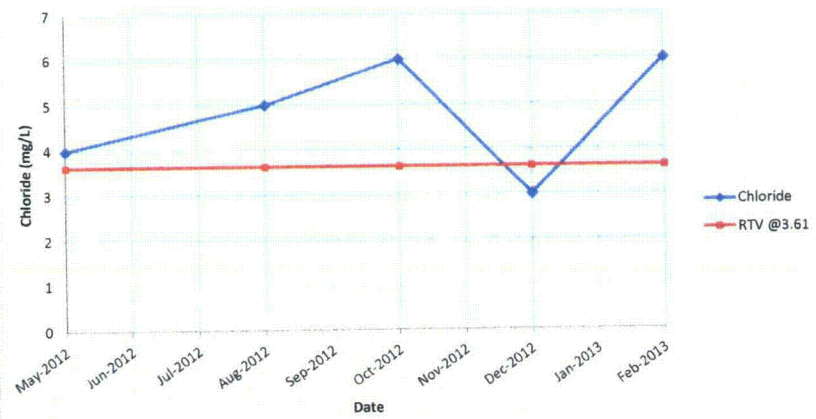
**Mine Unit E - Well EMP-014  
Alkalinity Over Time**



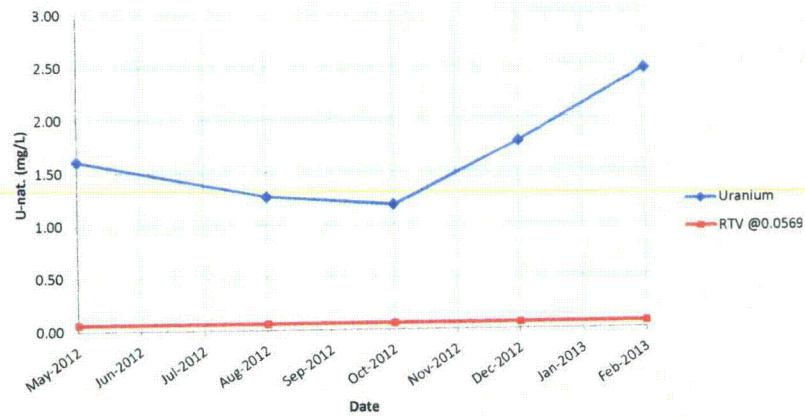
Mine Unit E - Well EMP-015  
Conductivity Over Time



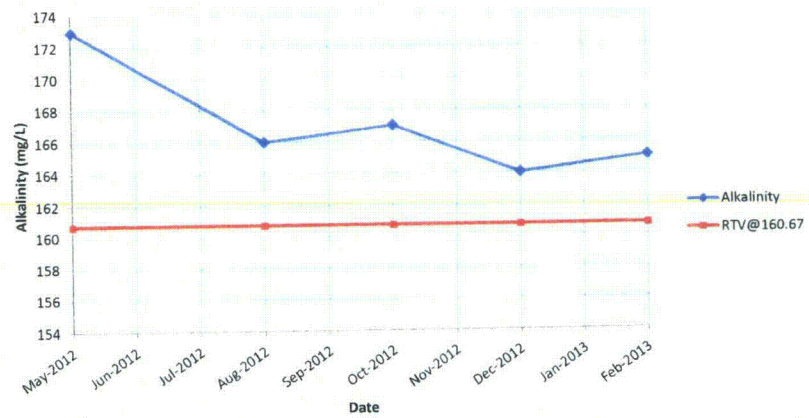
Mine Unit E - Well EMP-015  
Chloride Over Time



Mine Unit E - Well EMP-015  
Uranium Over Time

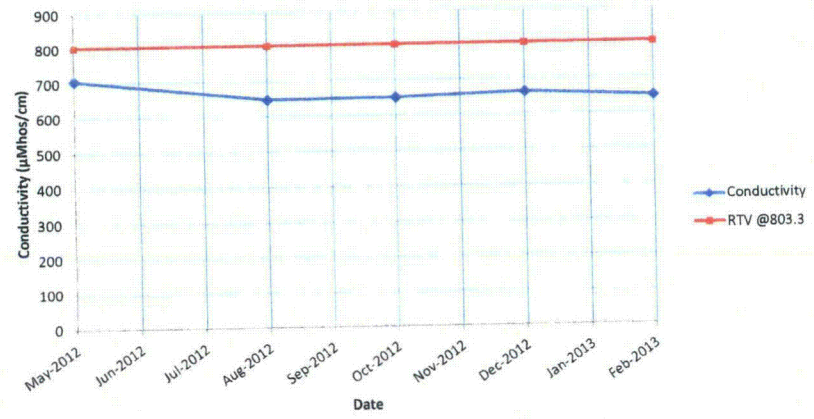


Mine Unit E - Well EMP-015  
Alkalinity Over Time

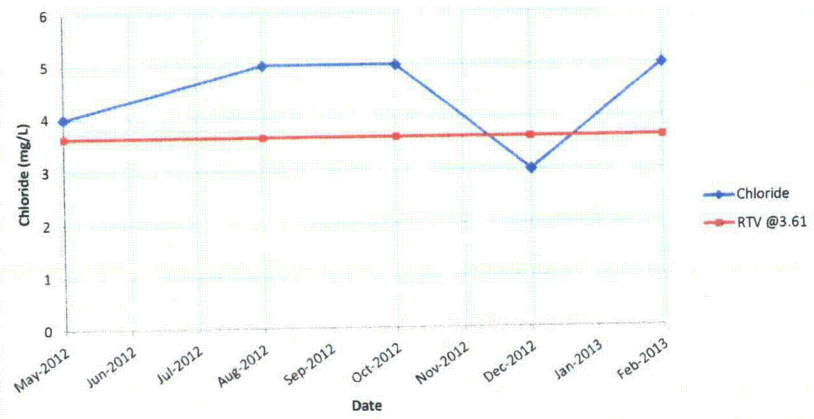




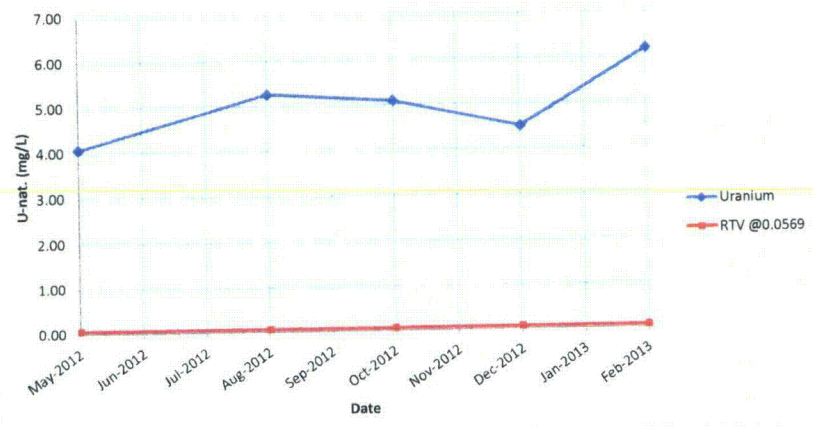
**Mine Unit E - Well EMP-016  
Conductivity Over Time**



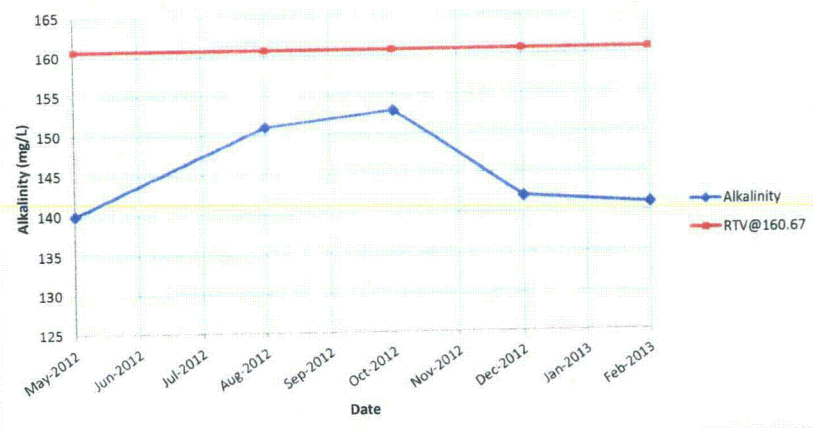
**Mine Unit E - Well EMP-016  
Chloride Over Time**



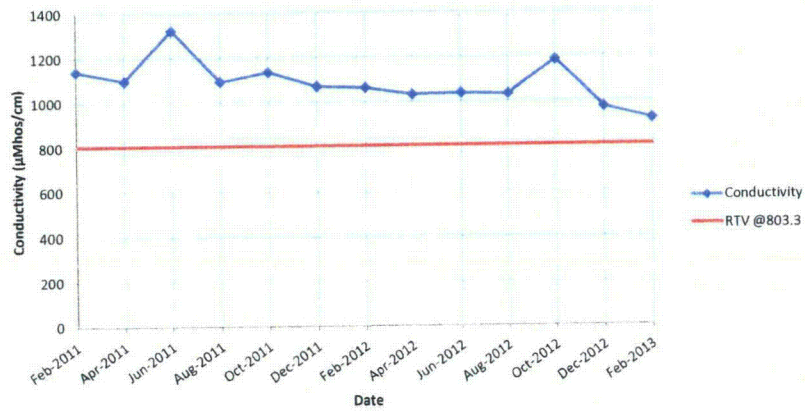
**Mine Unit E - Well EMP-016  
Uranium Over Time**



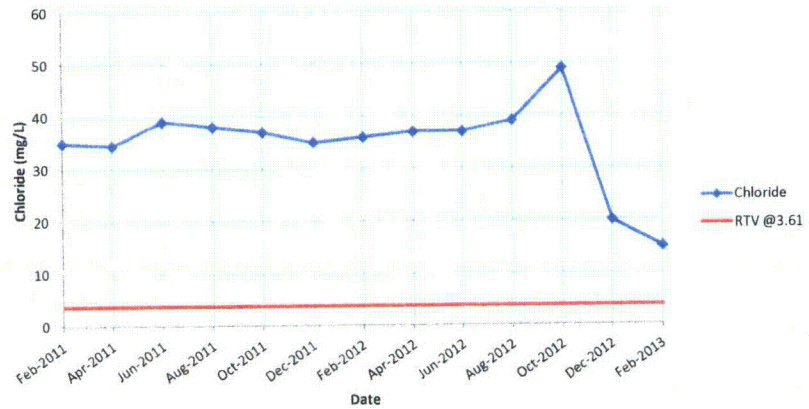
**Mine Unit E - Well EMP-016  
Alkalinity Over Time**



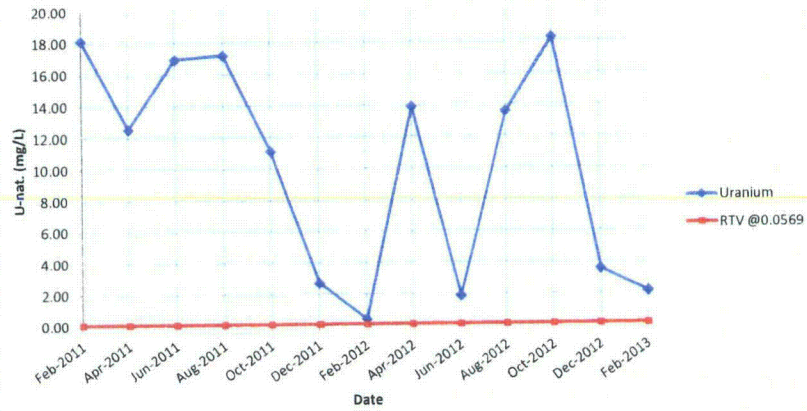
**Mine Unit E - Well EMP-018  
Conductivity Over Time**



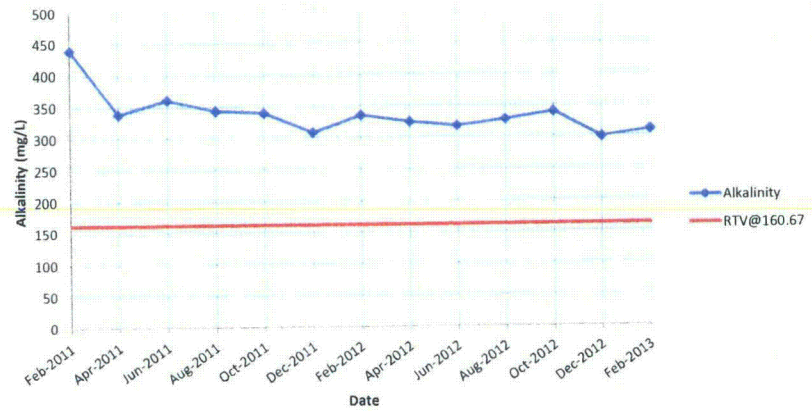
**Mine Unit E - Well EMP-018  
Chloride Over Time**



**Mine Unit E - Well EMP-018  
Uranium Over Time**

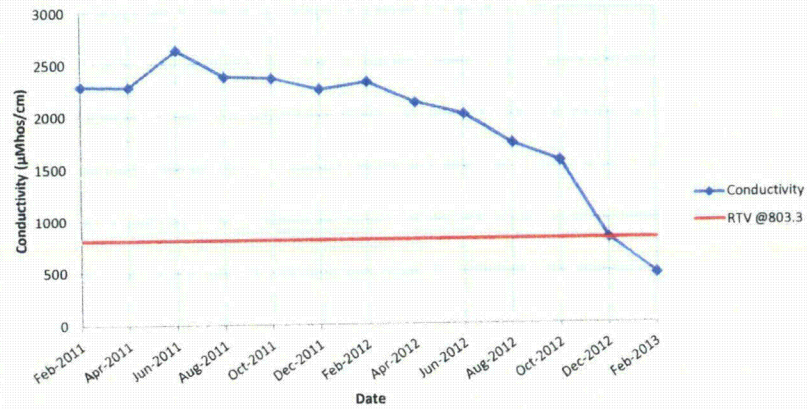


**Mine Unit E - Well EMP-018  
Alkalinity Over Time**

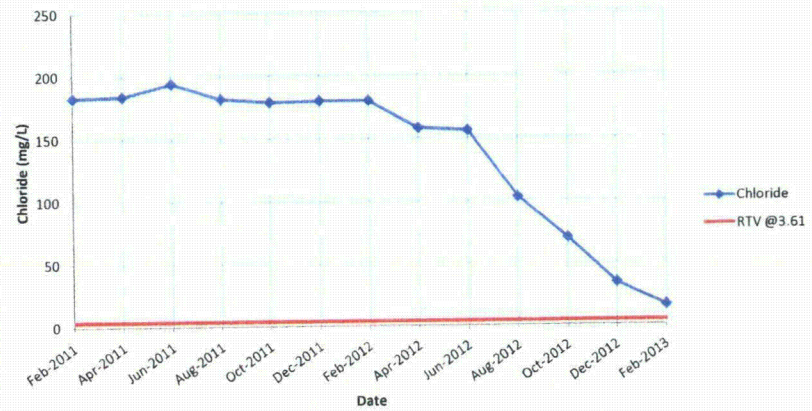




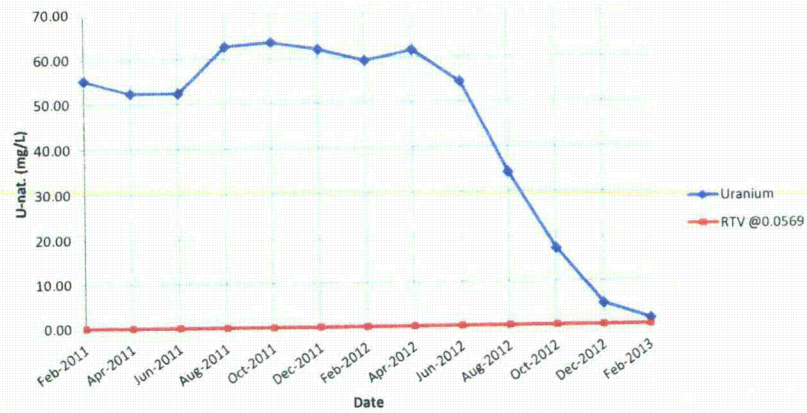
Mine Unit E - Well EMP-019  
Conductivity Over Time



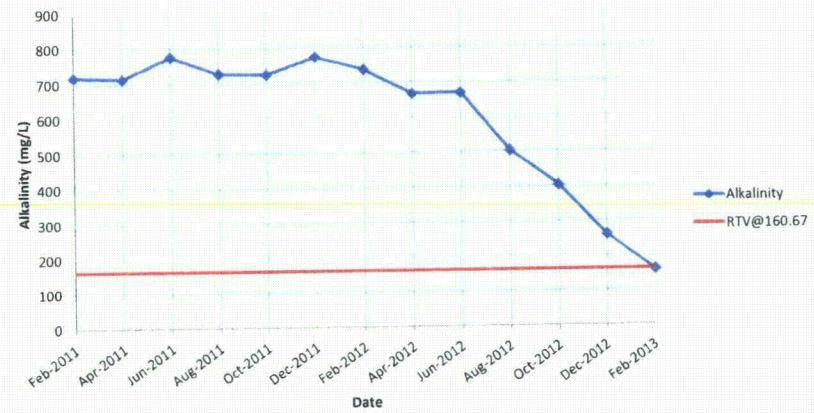
Mine Unit E - Well EMP-019  
Chloride Over Time



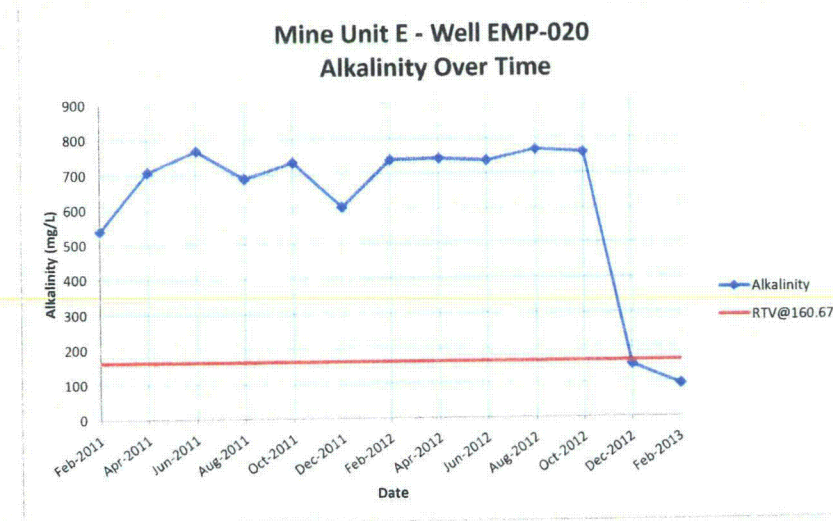
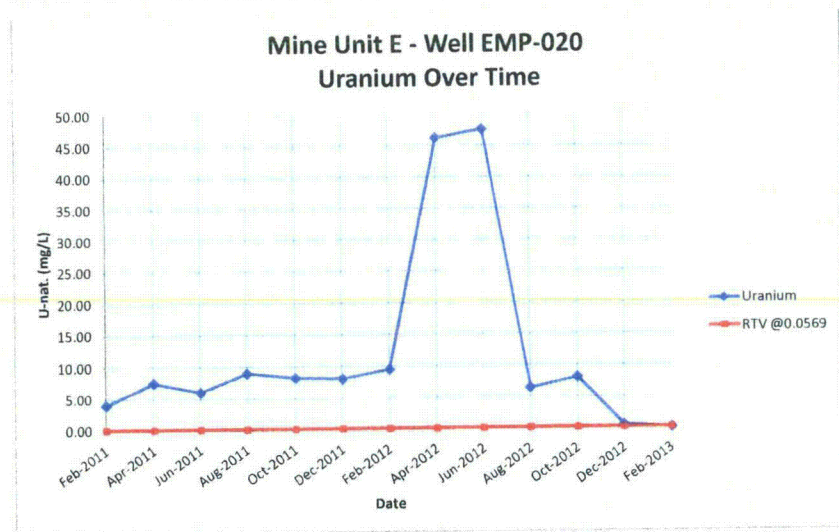
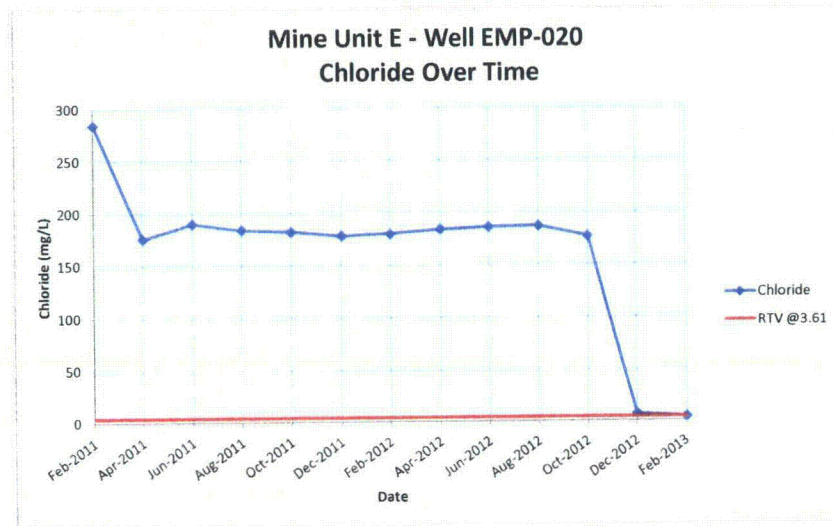
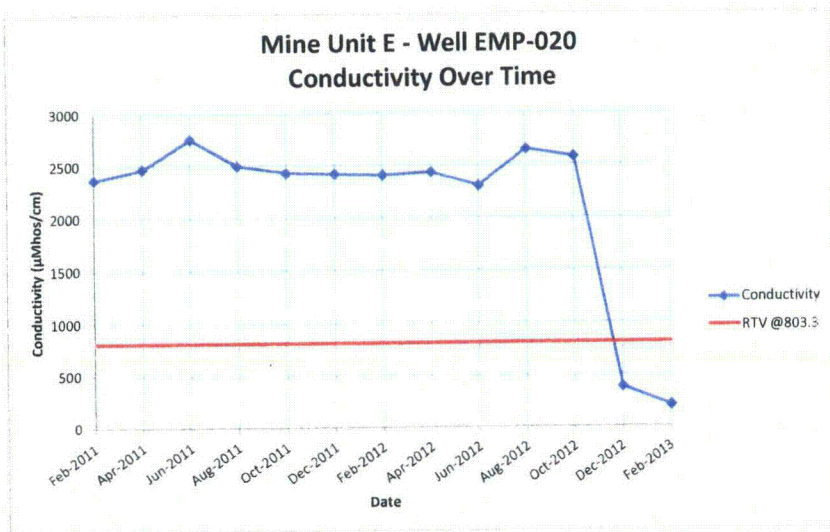
Mine Unit E - Well EMP-019  
Uranium Over Time



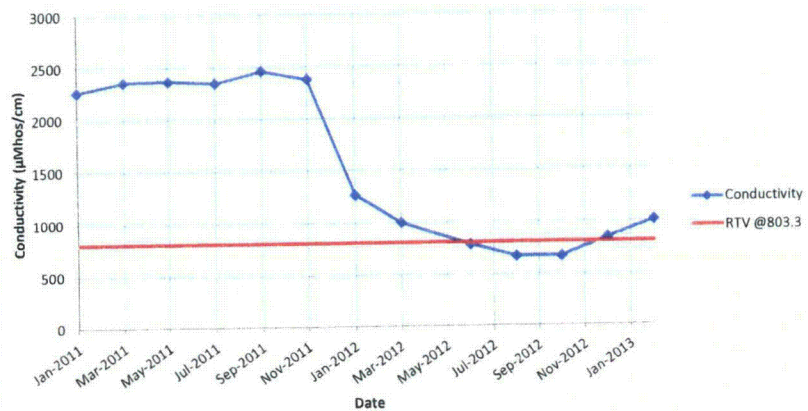
Mine Unit E - Well EMP-019  
Alkalinity Over Time



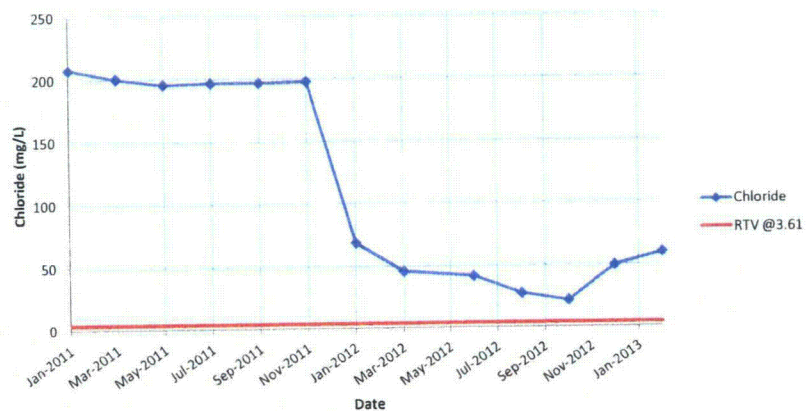




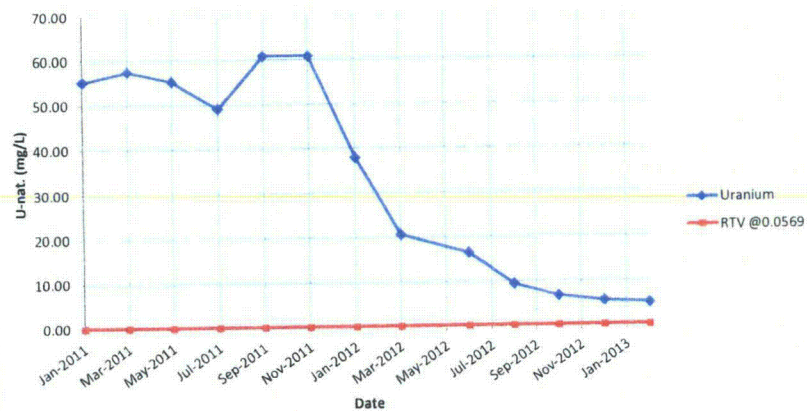
Mine Unit E - Well EMP-021A  
Conductivity Over Time



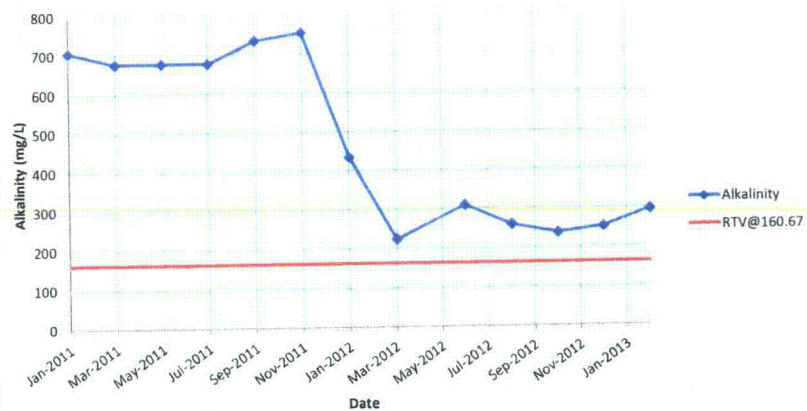
Mine Unit E - Well EMP-021A  
Chloride Over Time



Mine Unit E - Well EMP-021A  
Uranium Over Time

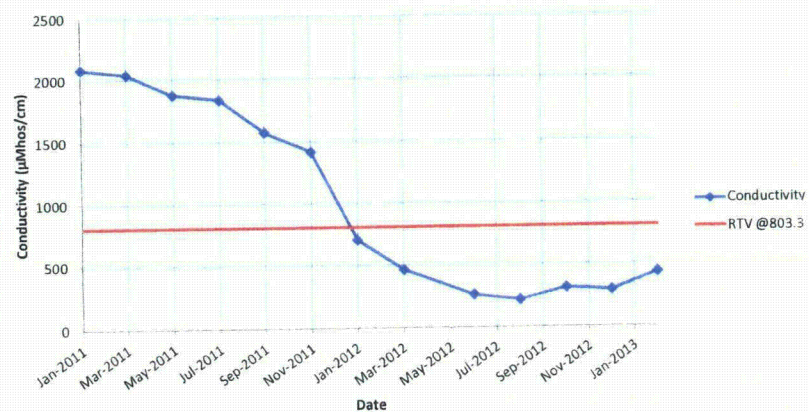


Mine Unit E - Well EMP-021A  
Alkalinity Over Time

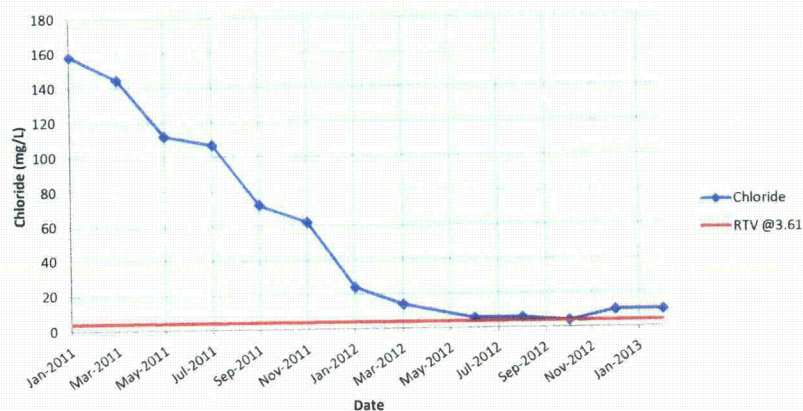




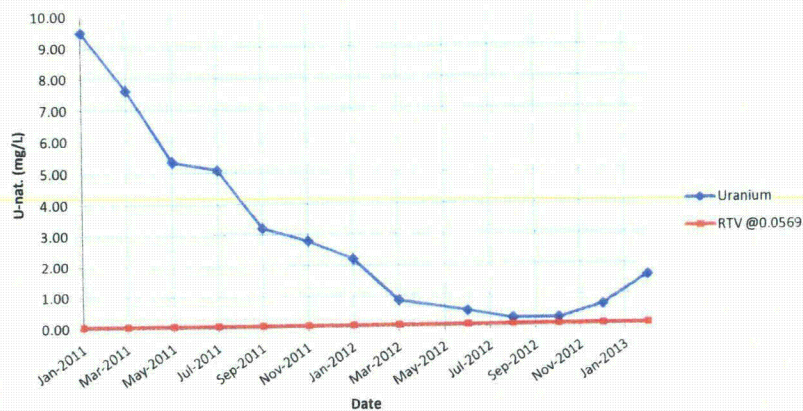
**Mine Unit E - Well EMP-022  
Conductivity Over Time**



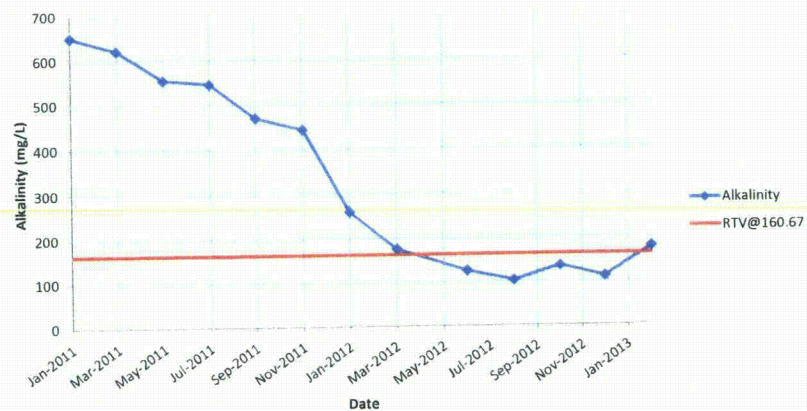
**Mine Unit E - Well EMP-022  
Chloride Over Time**



**Mine Unit E - Well EMP-022  
Uranium Over Time**

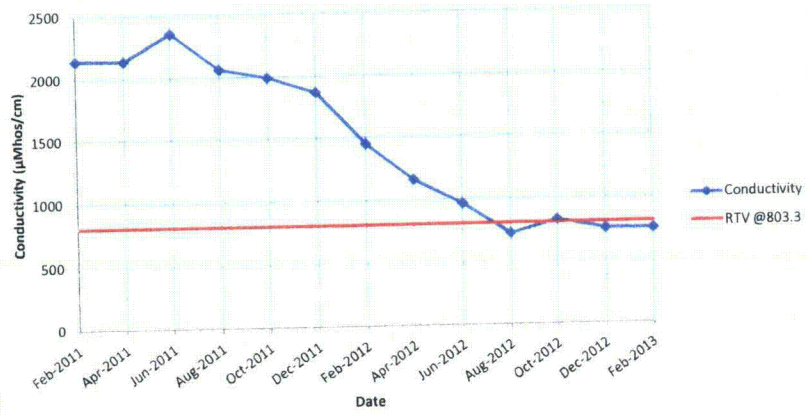


**Mine Unit E - Well EMP-022  
Alkalinity Over Time**

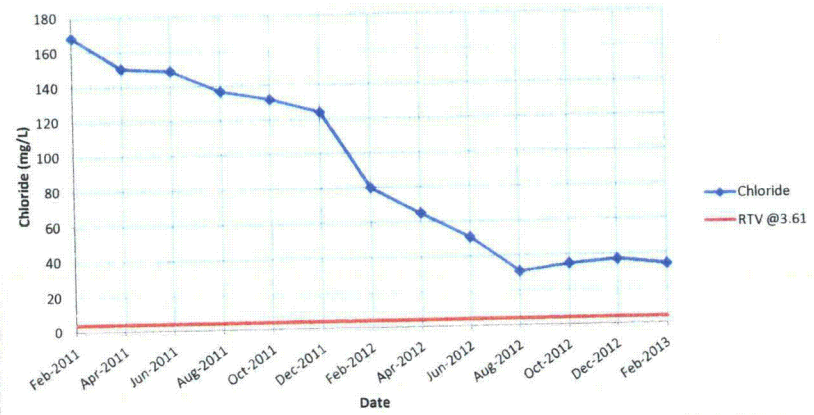




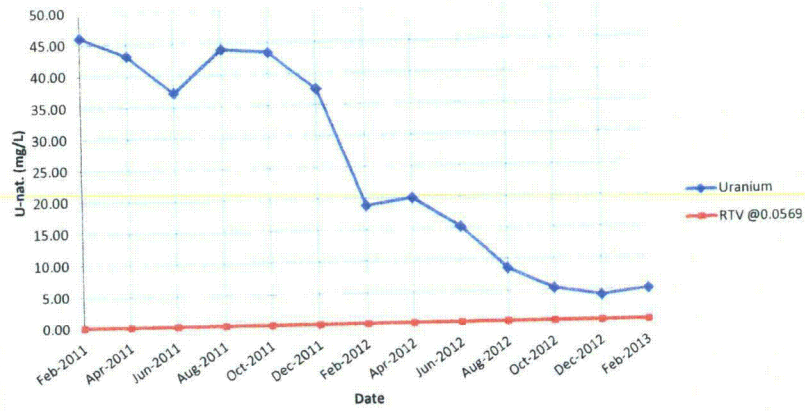
**Mine Unit E - Well EMP-023  
Conductivity Over Time**



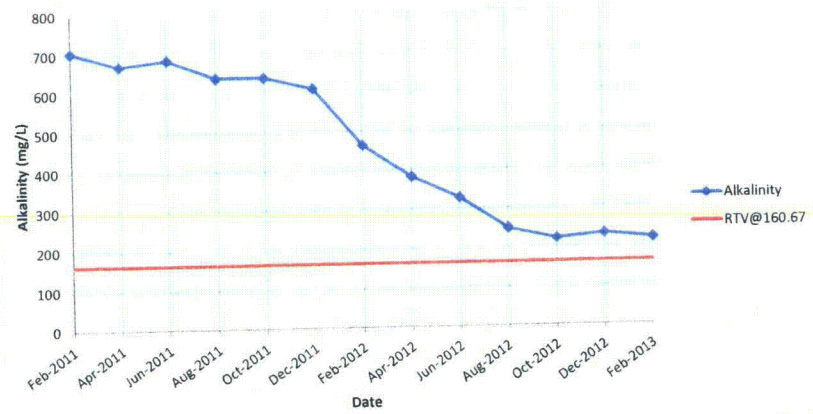
**Mine Unit E - Well EMP-023  
Chloride Over Time**



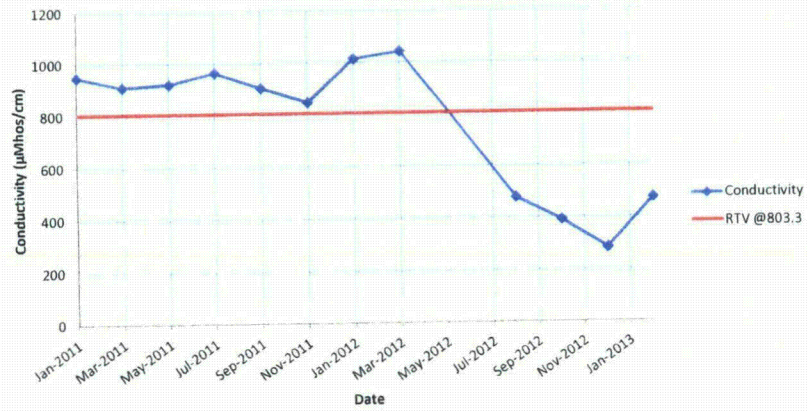
**Mine Unit E - Well EMP-023  
Uranium Over Time**



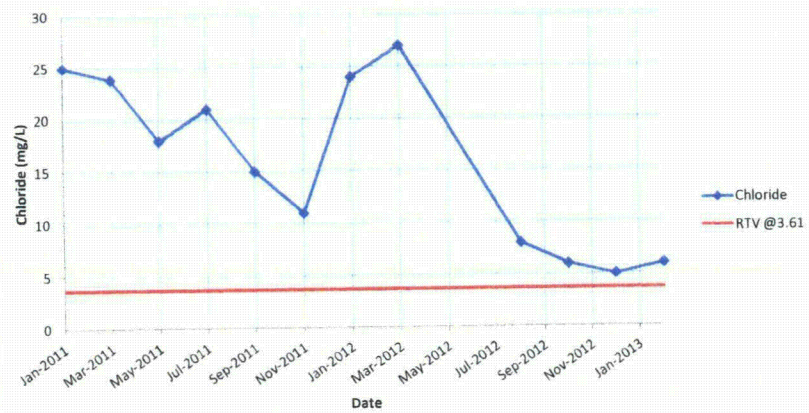
**Mine Unit E - Well EMP-023  
Alkalinity Over Time**



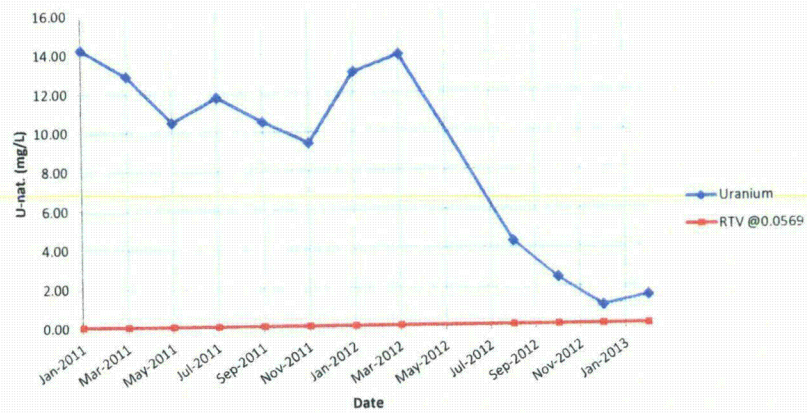
**Mine Unit E - Well EMP-024  
Conductivity Over Time**



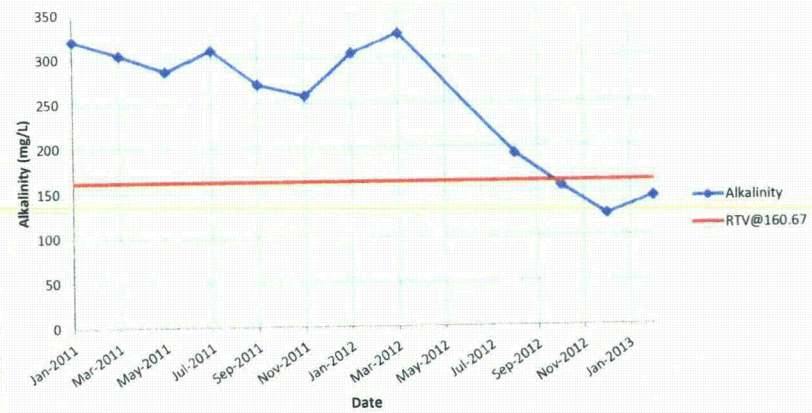
**Mine Unit E - Well EMP-024  
Chloride Over Time**



**Mine Unit E - Well EMP-024  
Uranium Over Time**

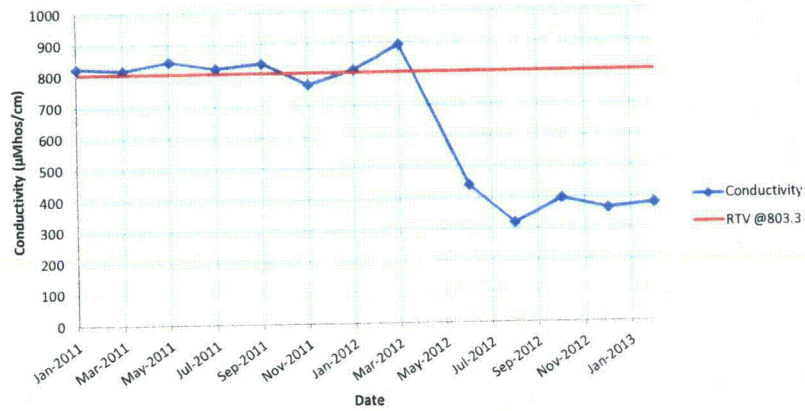


**Mine Unit E - Well EMP-024  
Alkalinity Over Time**

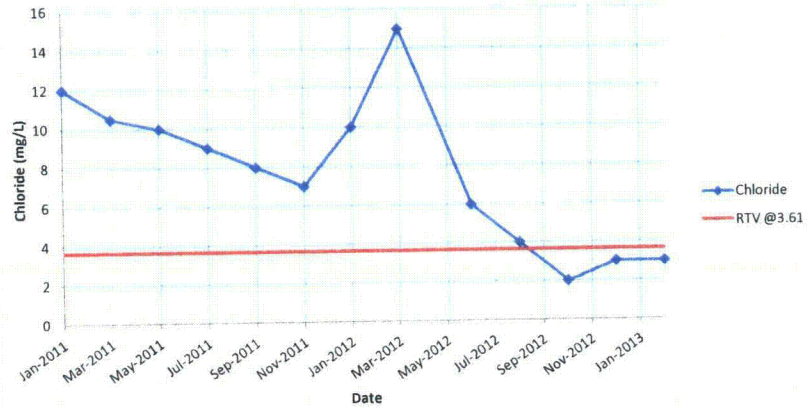




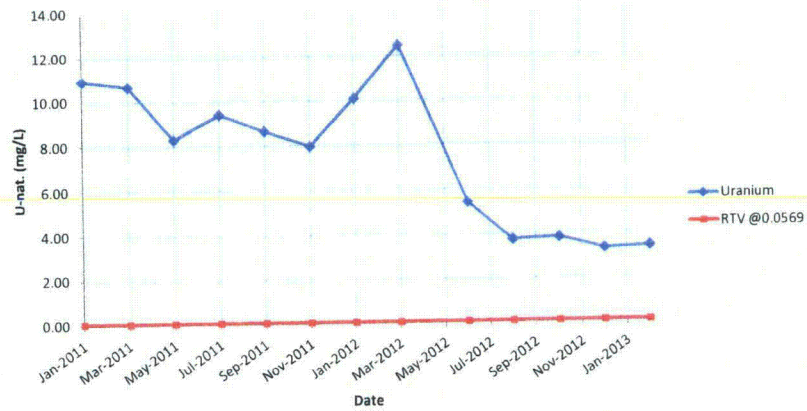
**Mine Unit E - Well EMP-025  
Conductivity Over Time**



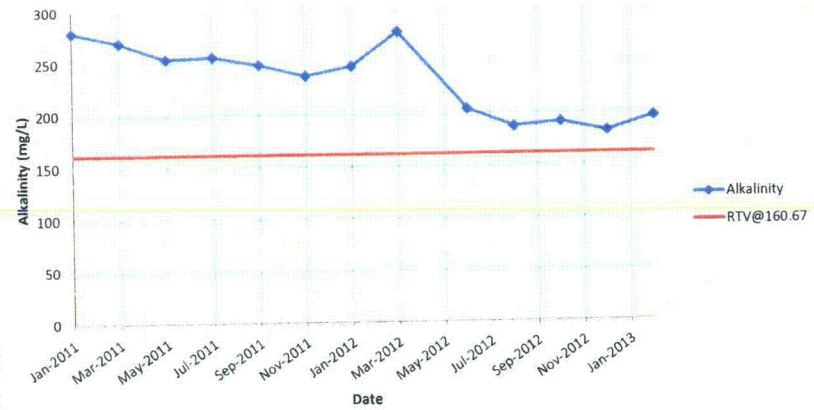
**Mine Unit E - Well EMP-025  
Chloride Over Time**



**Mine Unit E - Well EMP-025  
Uranium Over Time**

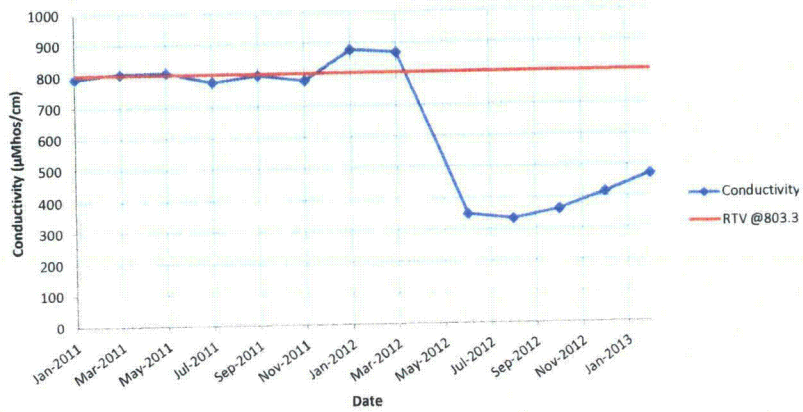


**Mine Unit E - Well EMP-025  
Alkalinity Over Time**

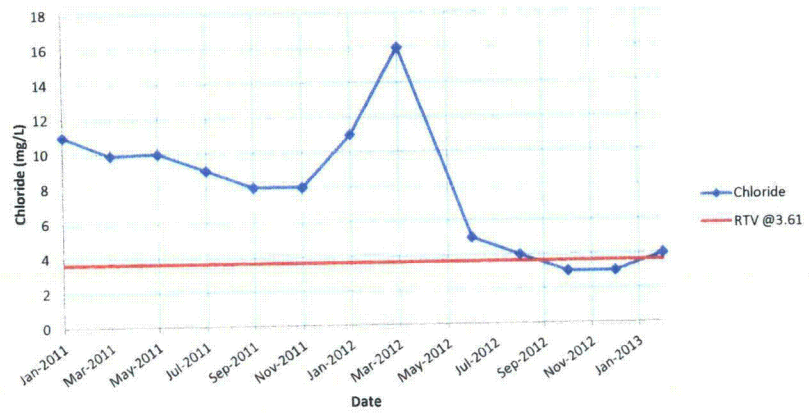




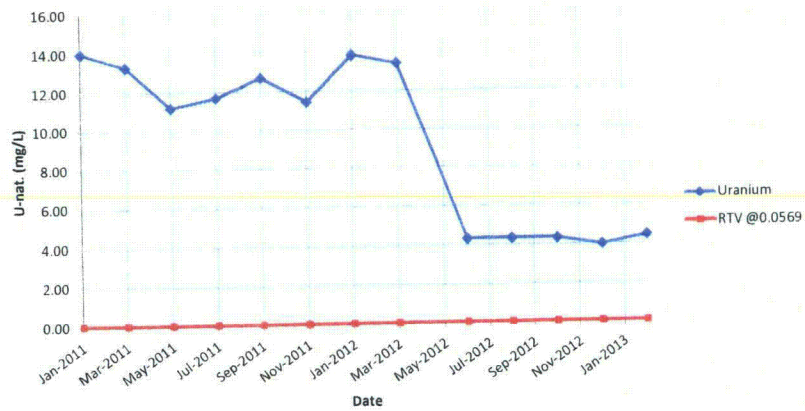
Mine Unit E - Well EMP-026  
Conductivity Over Time



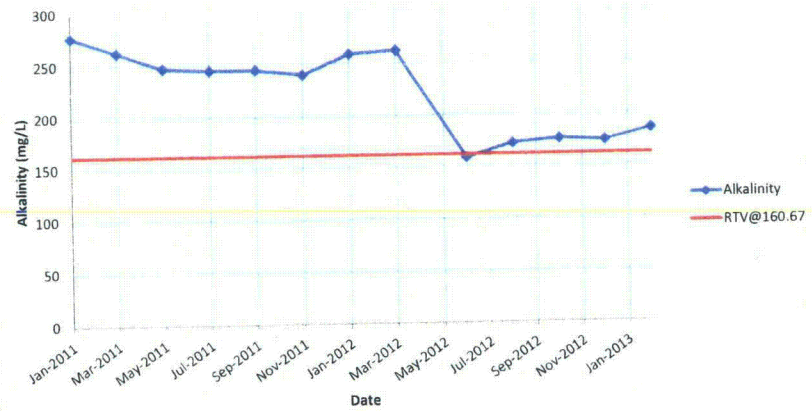
Mine Unit E - Well EMP-026  
Chloride Over Time



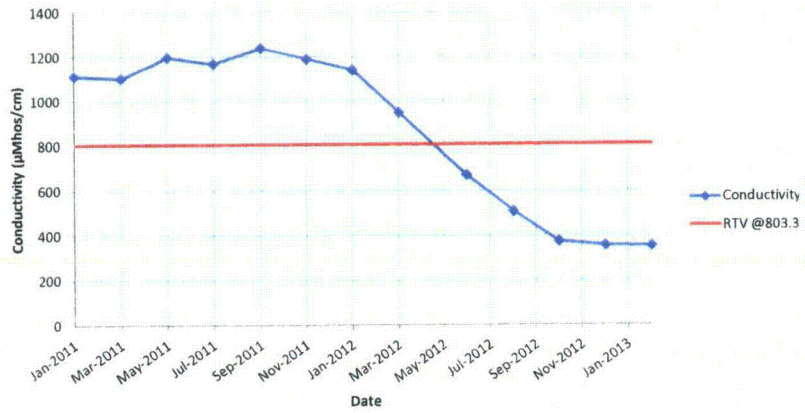
Mine Unit E - Well EMP-026  
Uranium Over Time



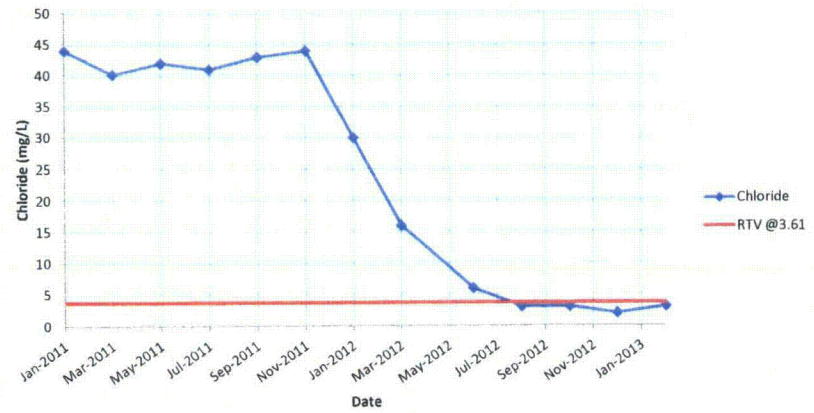
Mine Unit E - Well EMP-026  
Alkalinity Over Time



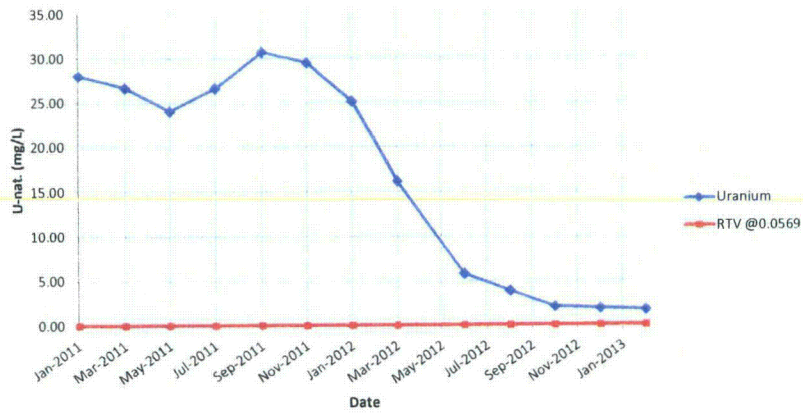
Mine Unit E - Well EMP-027  
Conductivity Over Time



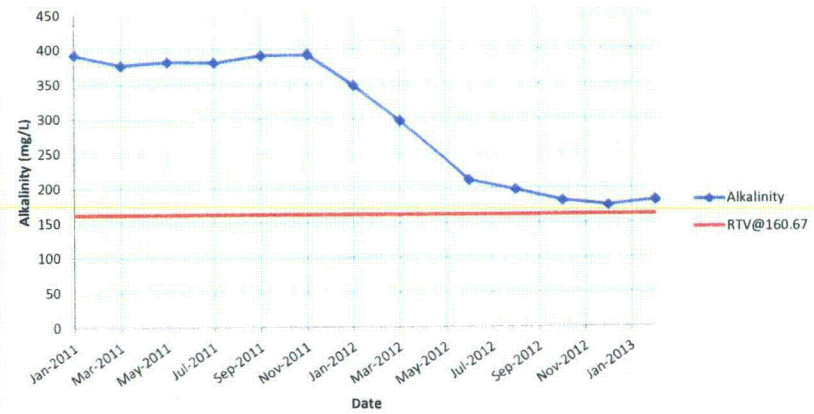
Mine Unit E - Well EMP-027  
Chloride Over Time

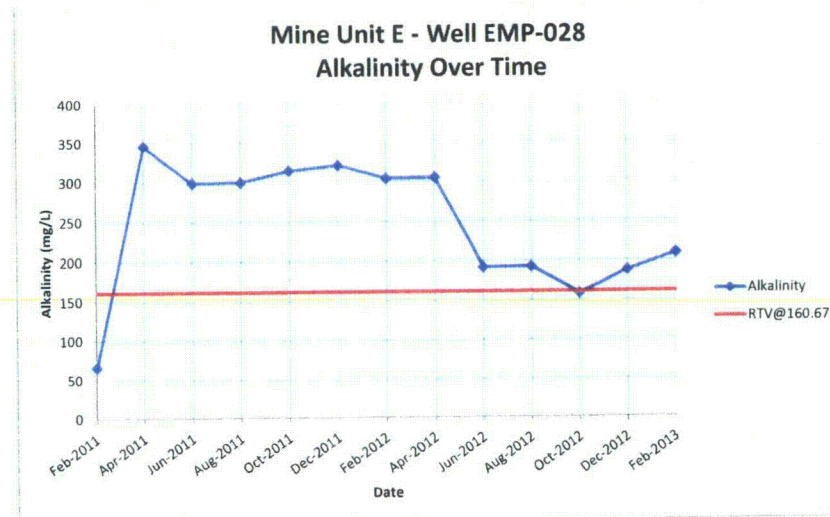
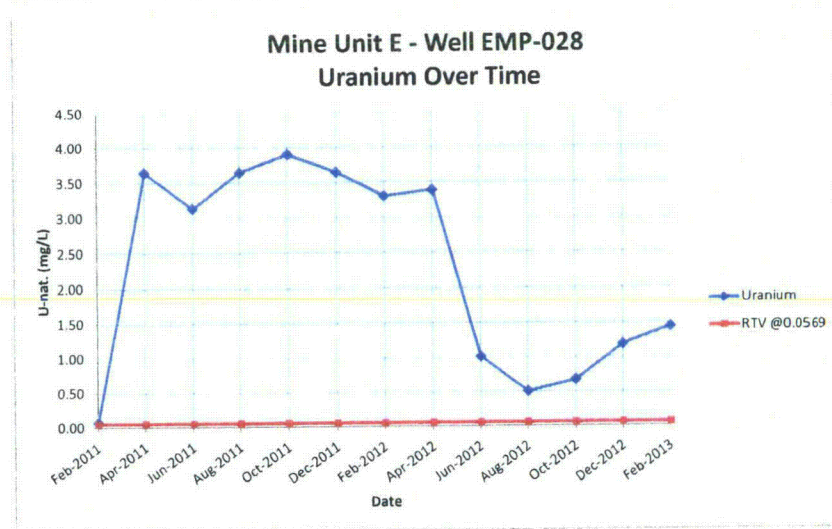
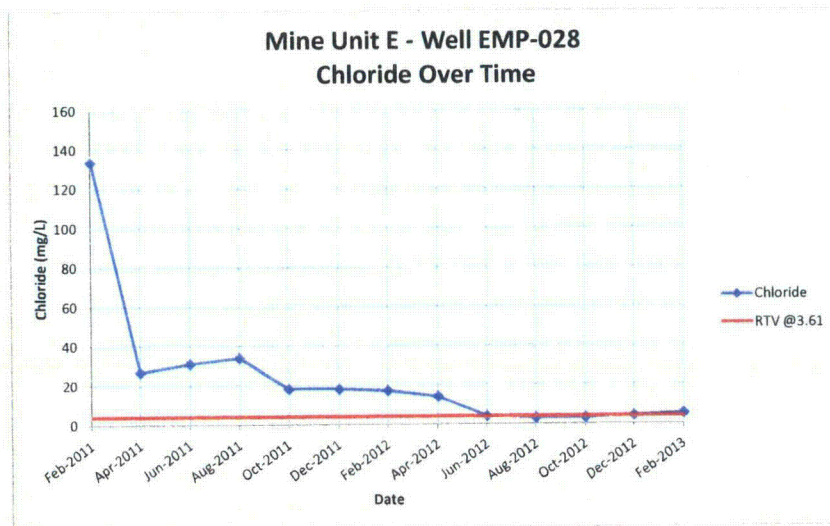
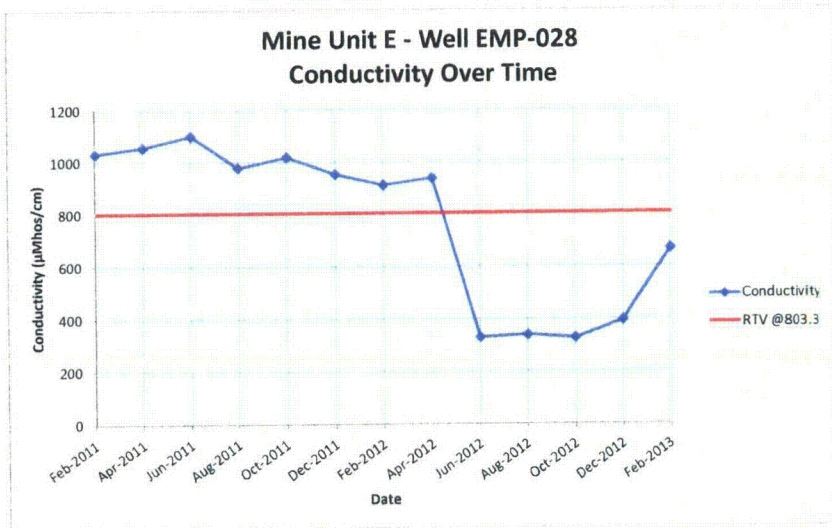


Mine Unit E - Well EMP-027  
Uranium Over Time



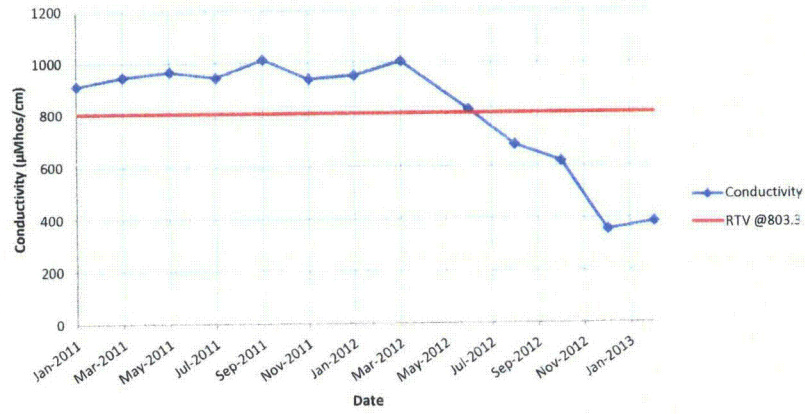
Mine Unit E - Well EMP-027  
Alkalinity Over Time



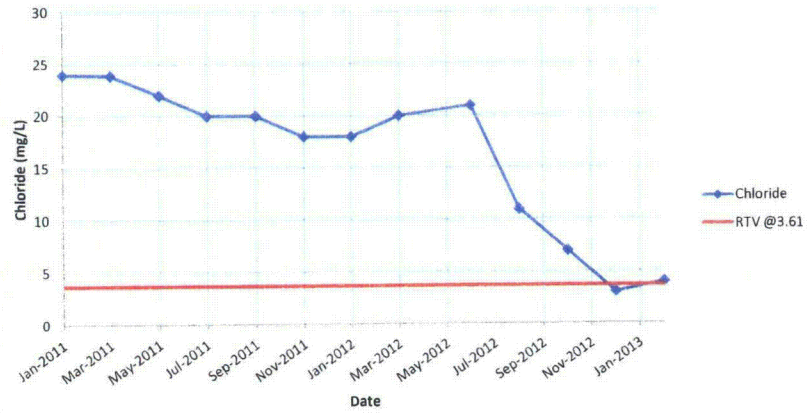




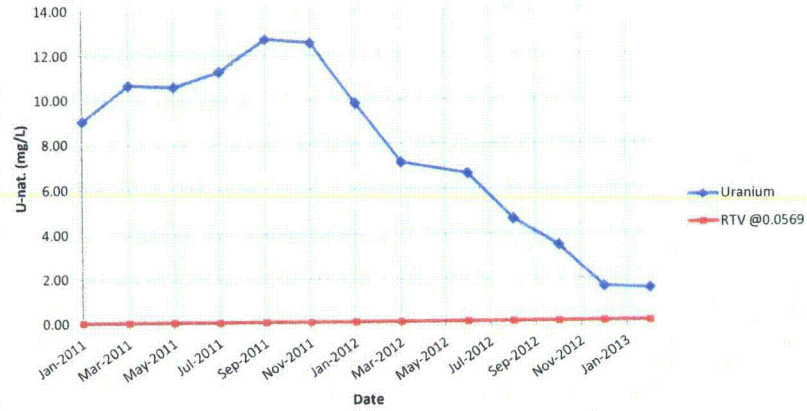
**Mine Unit E - Well EMP-029  
Conductivity Over Time**



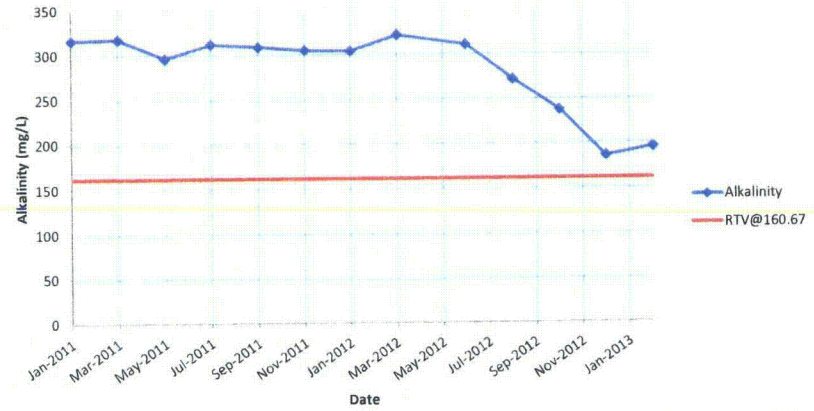
**Mine Unit E - Well EMP-029  
Chloride Over Time**



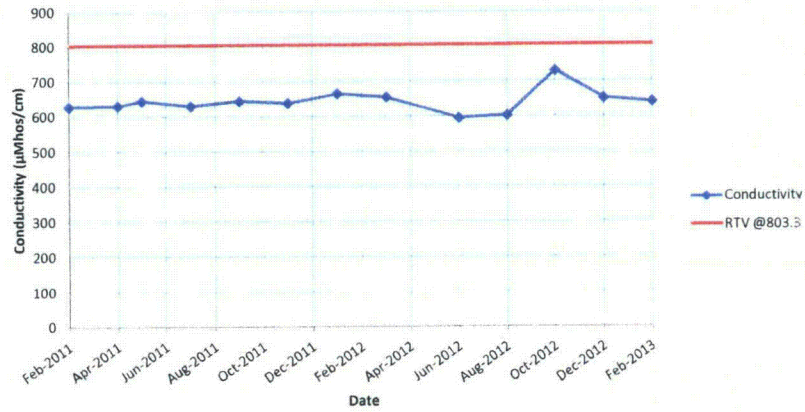
**Mine Unit E - Well EMP-029  
Uranium Over Time**



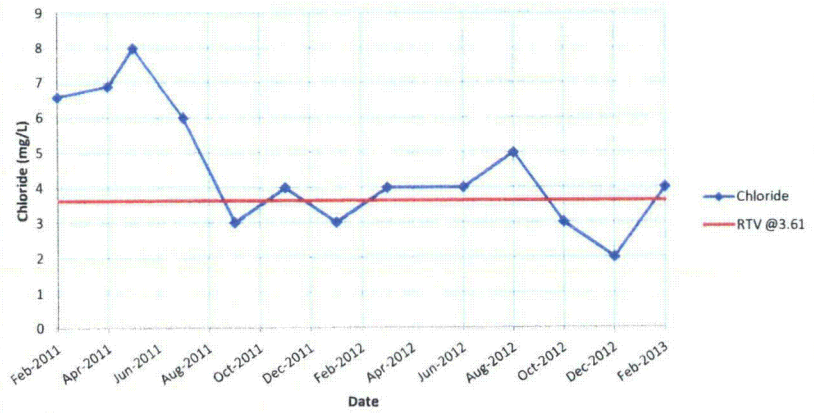
**Mine Unit E - Well EMP-029  
Alkalinity Over Time**



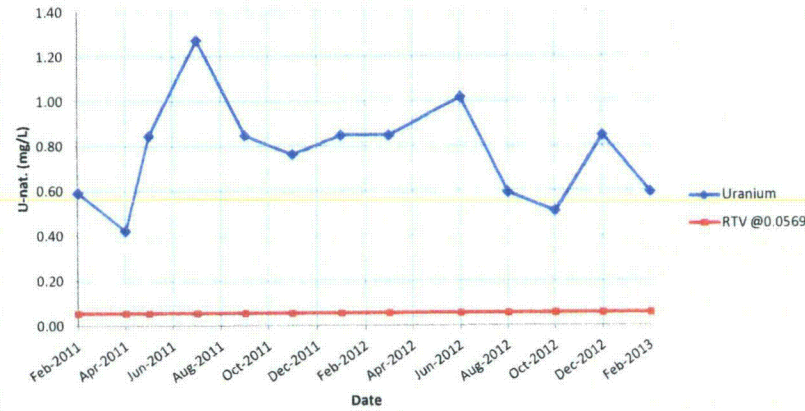
**Mine Unit E - Well EMP-030A  
Conductivity Over Time**



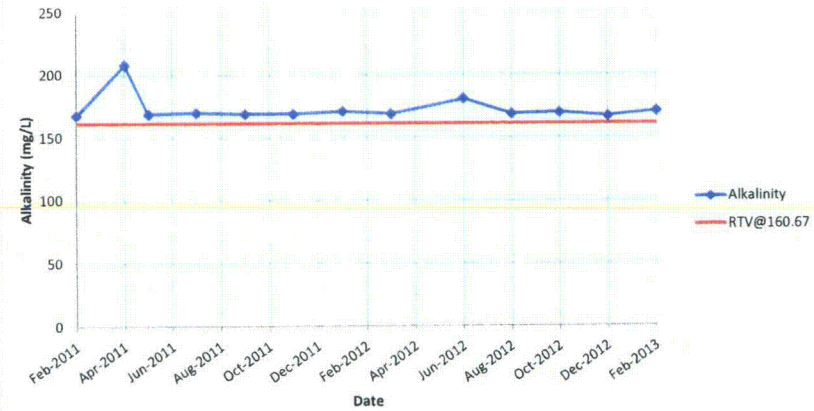
**Mine Unit E - Well EMP-030A  
Chloride Over Time**



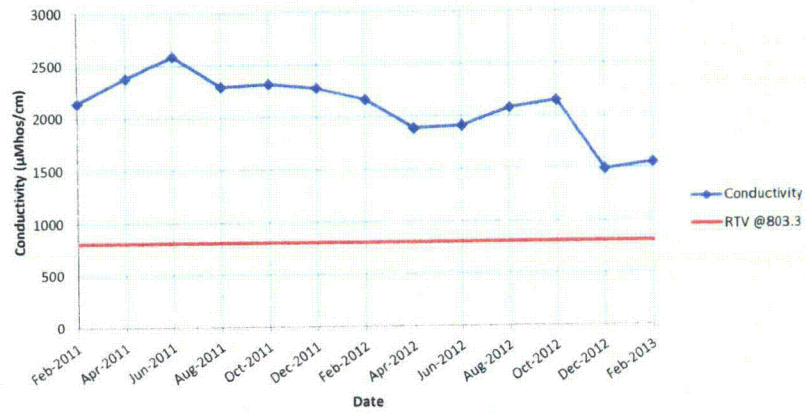
**Mine Unit E - Well EMP-030A  
Uranium Over Time**



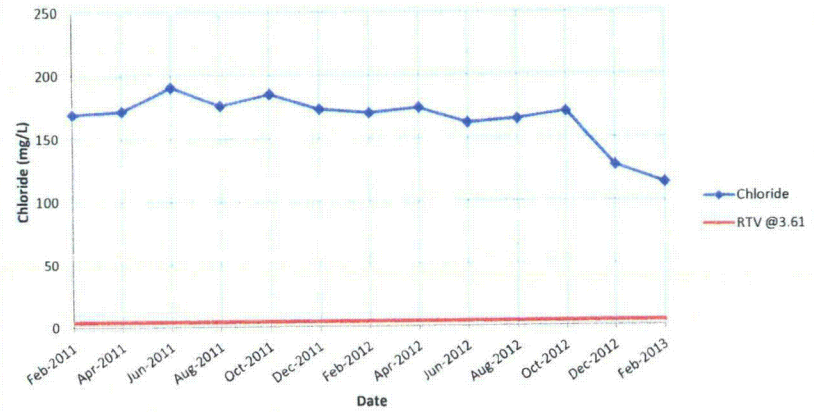
**Mine Unit E - Well EMP-030A  
Alkalinity Over Time**



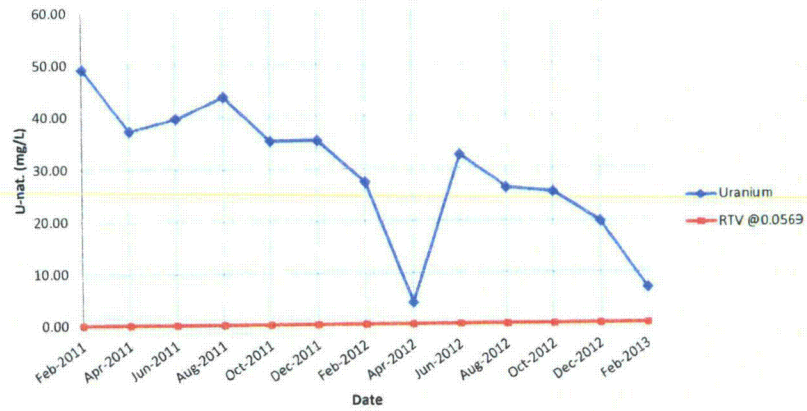
**Mine Unit E - Well EMP-031  
Conductivity Over Time**



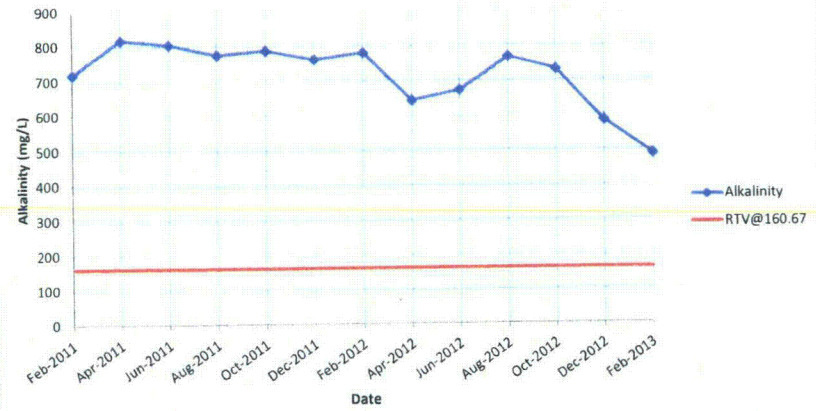
**Mine Unit E - Well EMP-031  
Chloride Over Time**



**Mine Unit E - Well EMP-031  
Uranium Over Time**



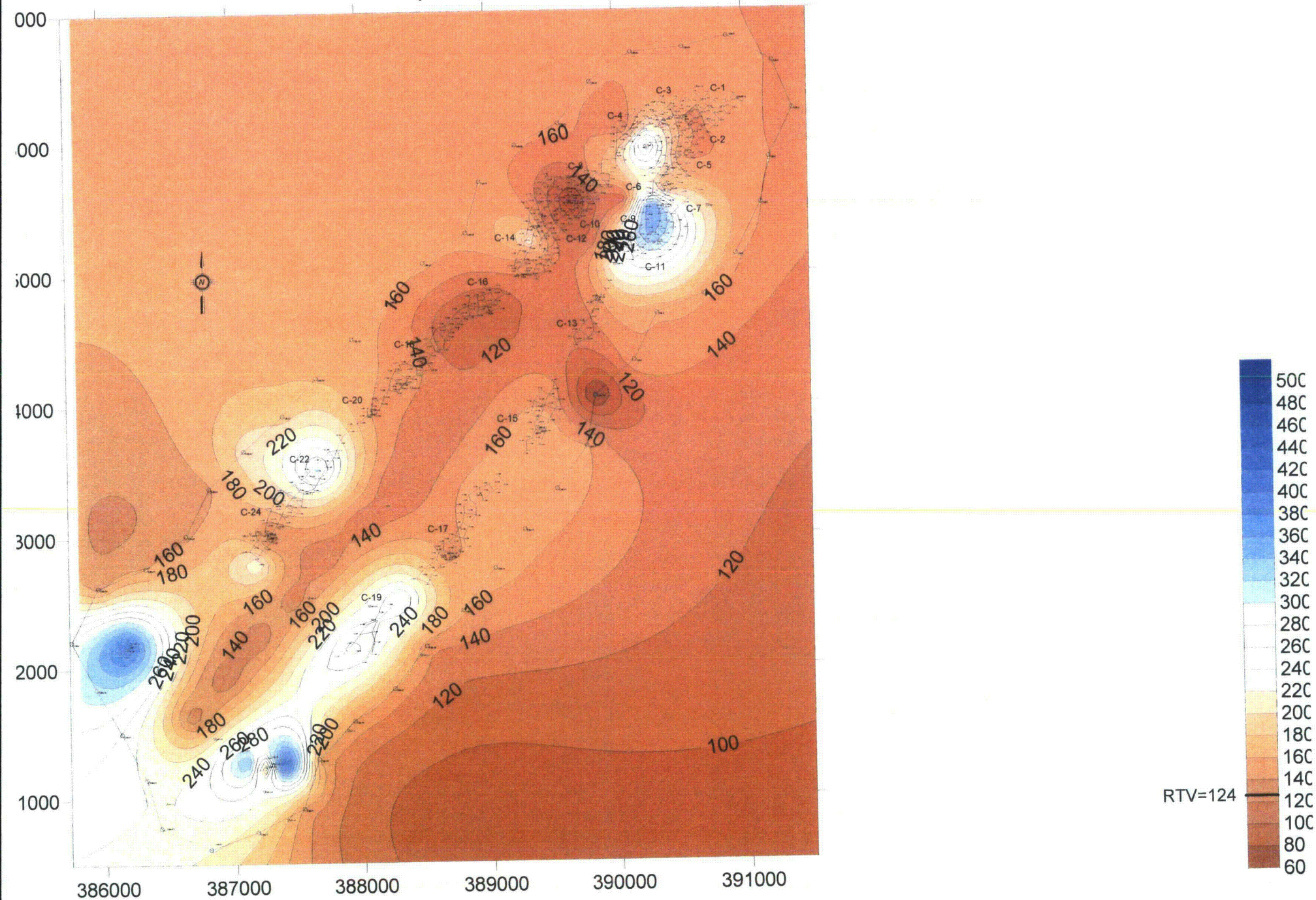
**Mine Unit E - Well EMP-031  
Alkalinity Over Time**





# Mine Unit C Alkalinity (March 2013)

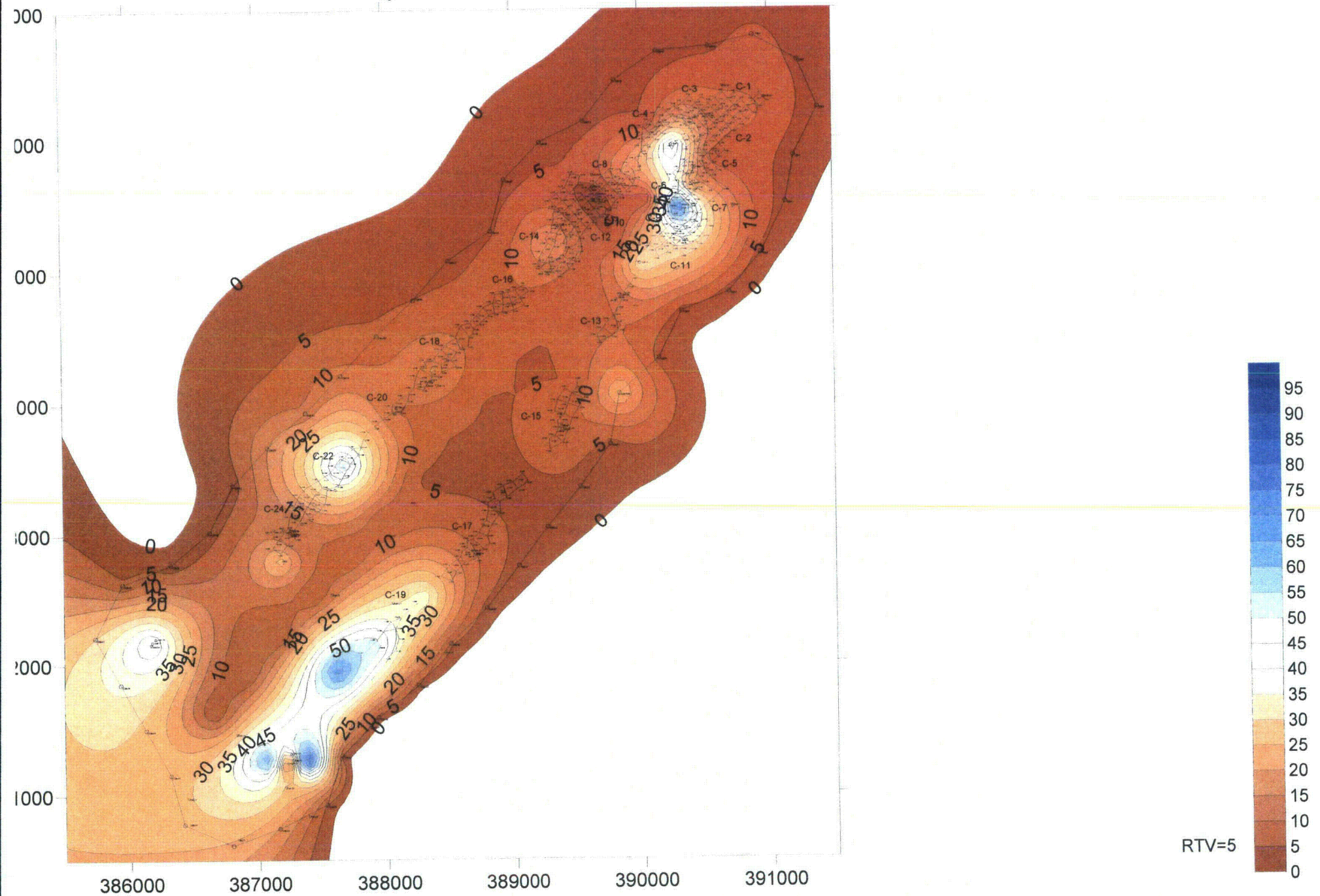
(M, MP and CRMW Wells)





# Mine Unit C Chloride (November 2012)

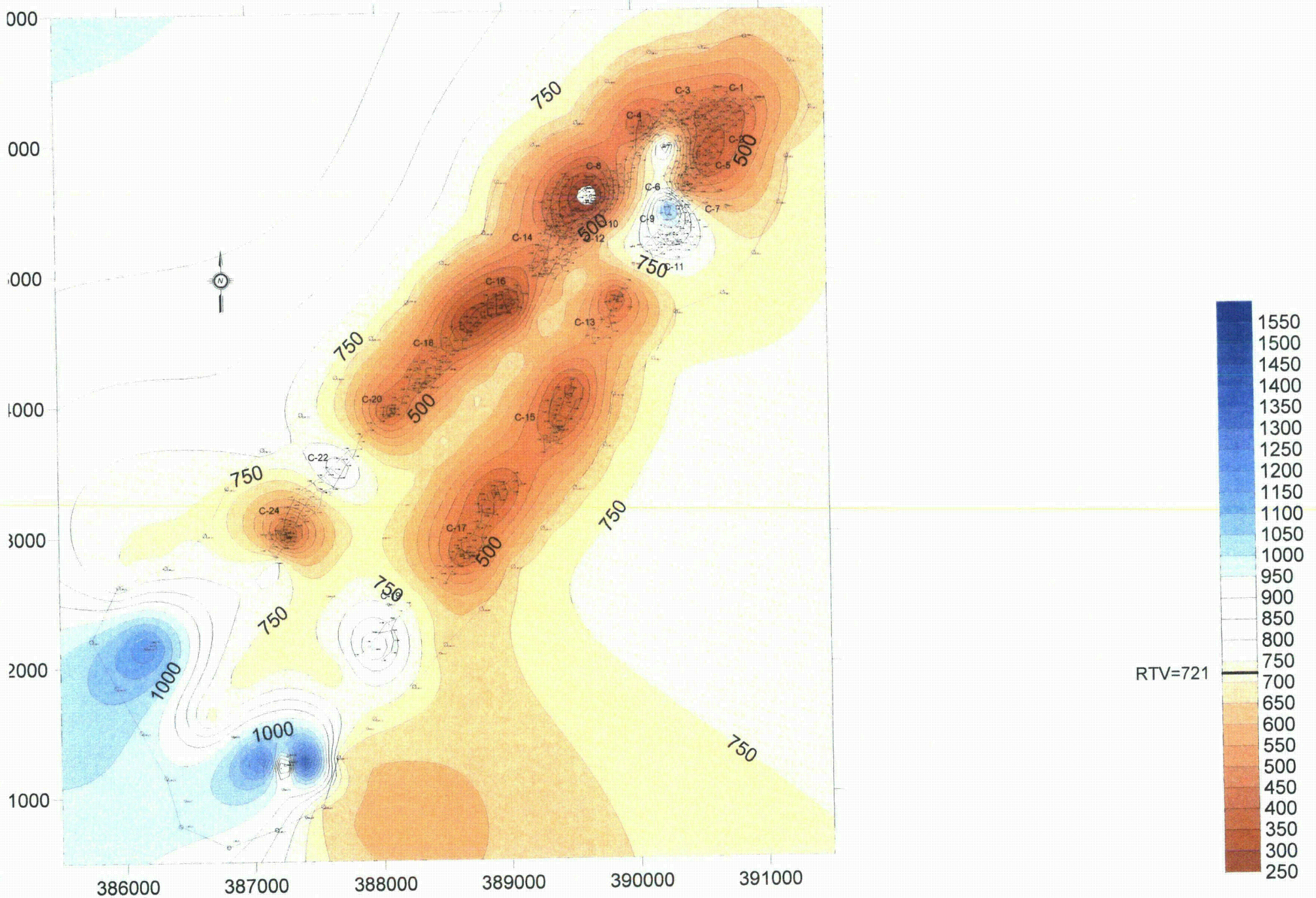
(M, MP and CRMW wells)





# Mine Unit C Conductivity (March 2013)

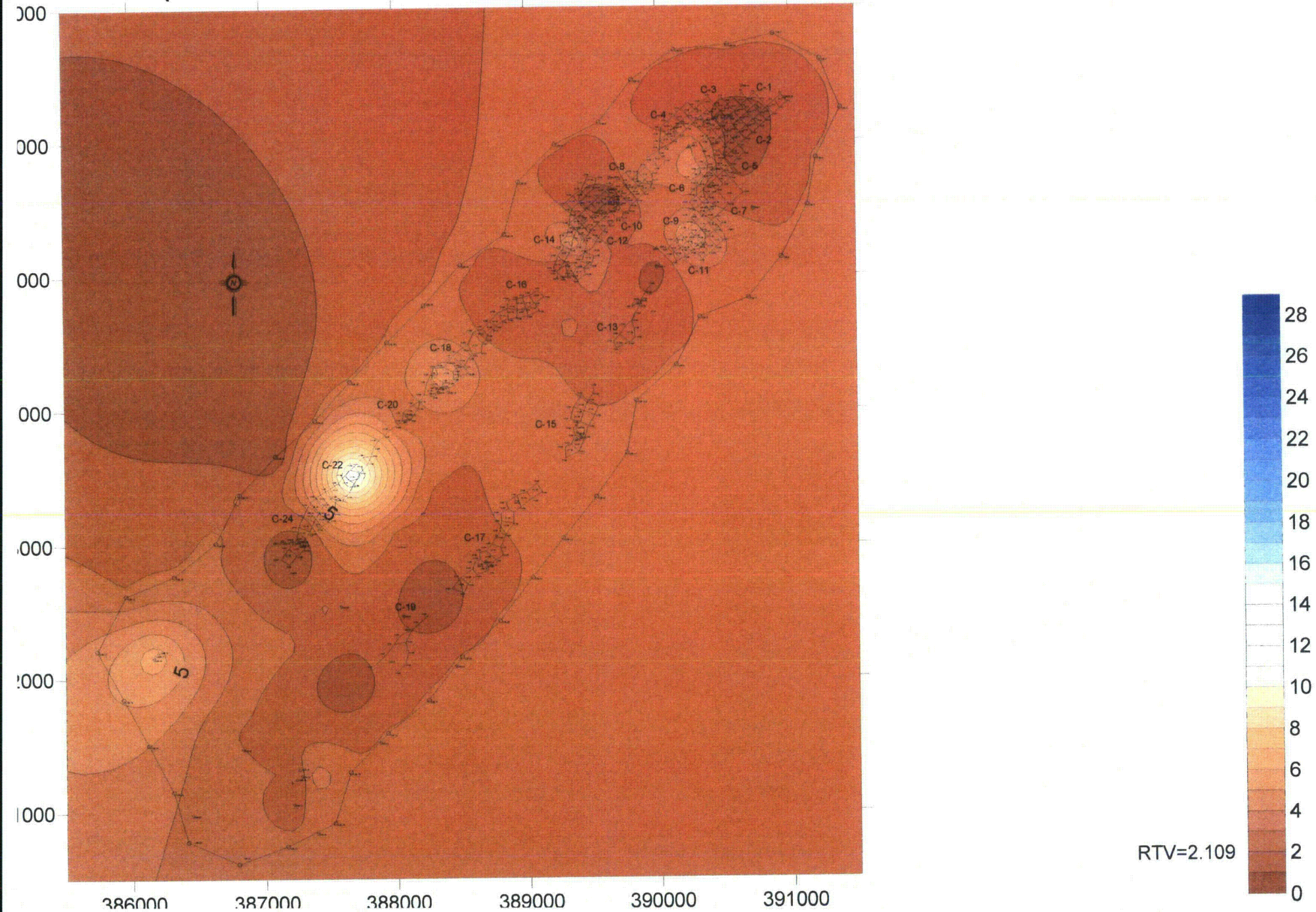
(M, MP and CRMW wells)





# Mine Unit C U-Nat (March 2013)

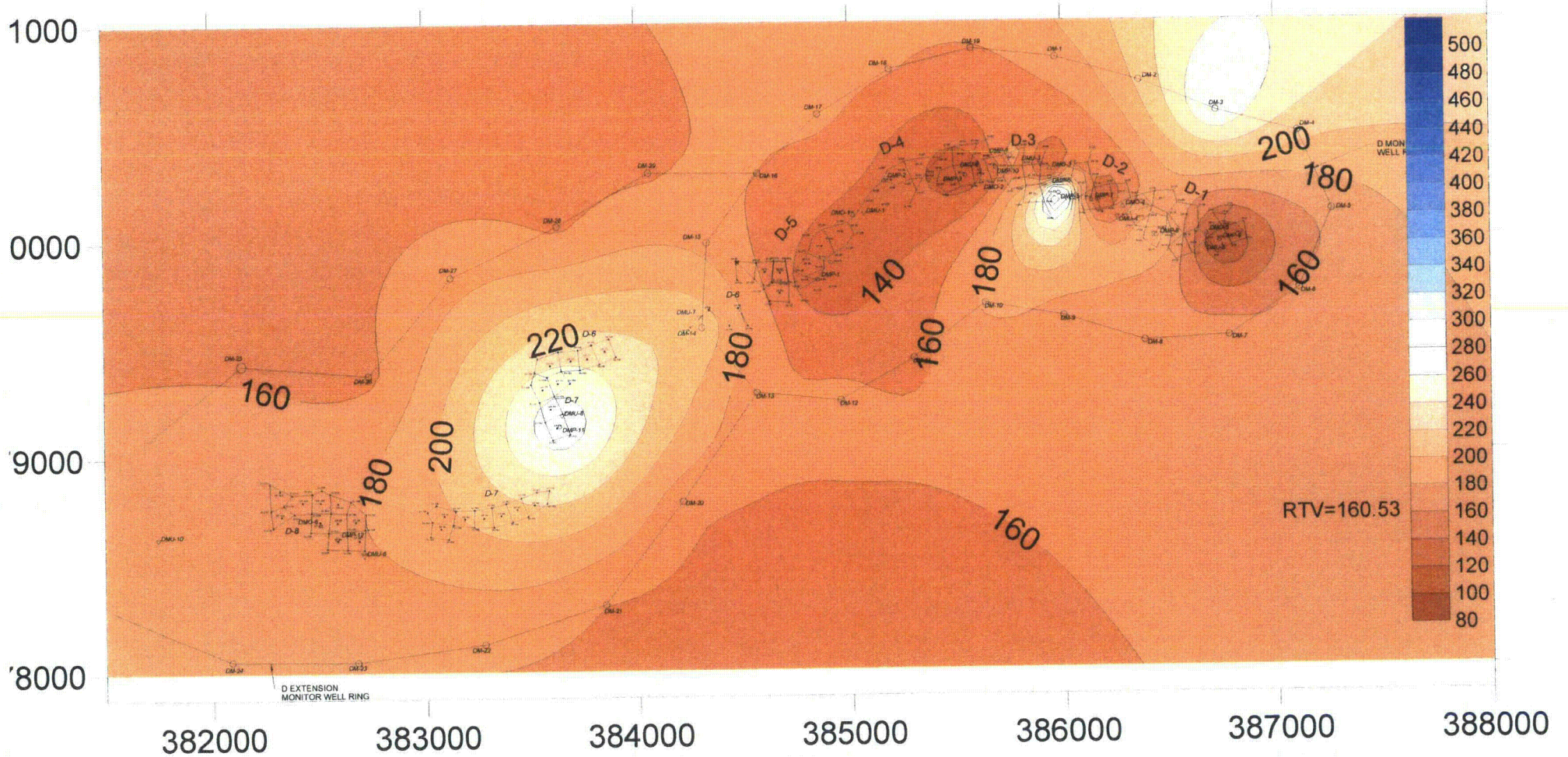
(MP and CRMW wells. M wells set to RTV if no data avail.)





# Mine Unit D Alkalinity (April 2013)

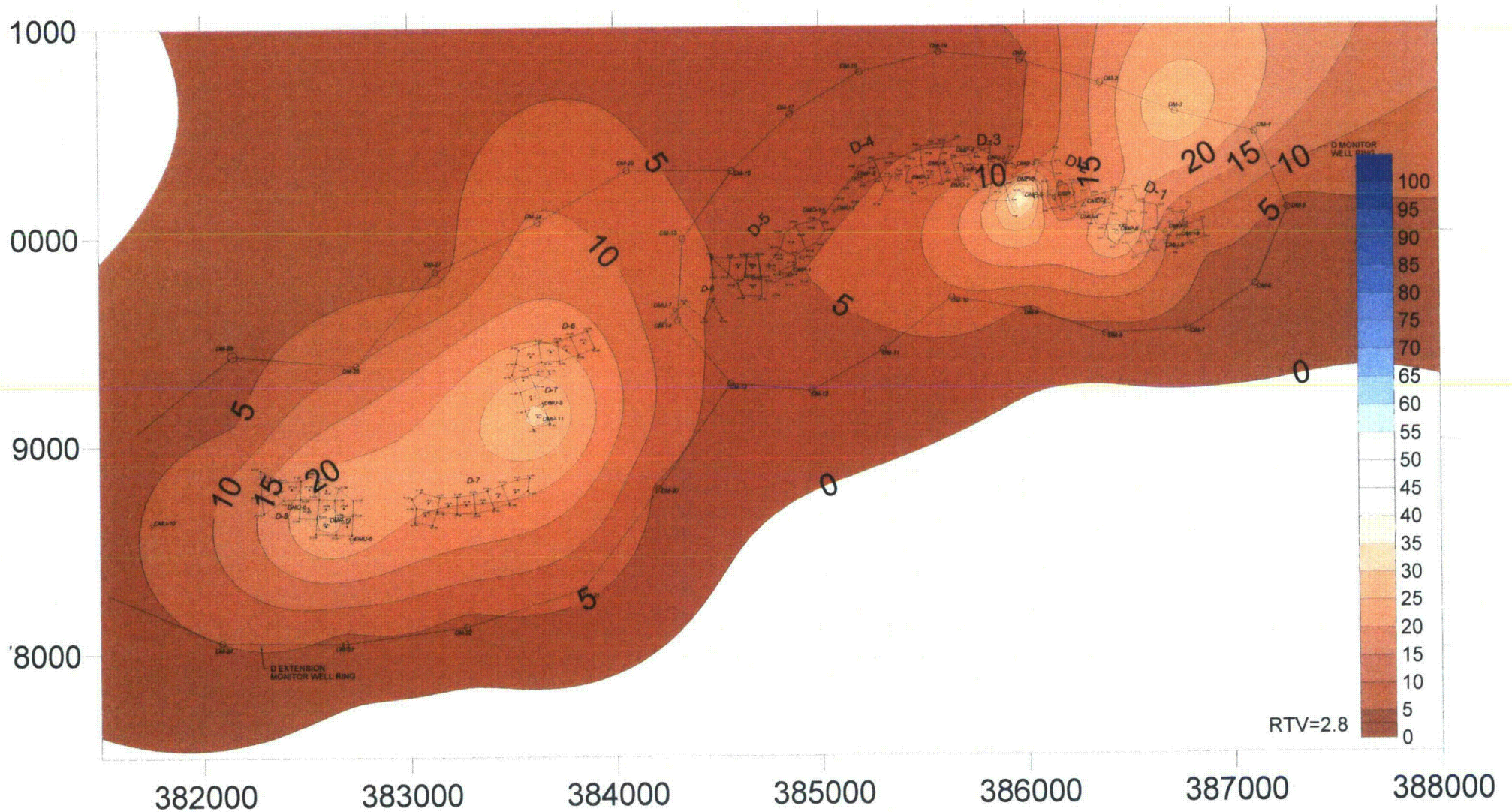
DMP and Monitor Ring wells





# Mine Unit D Chloride (April 2013)

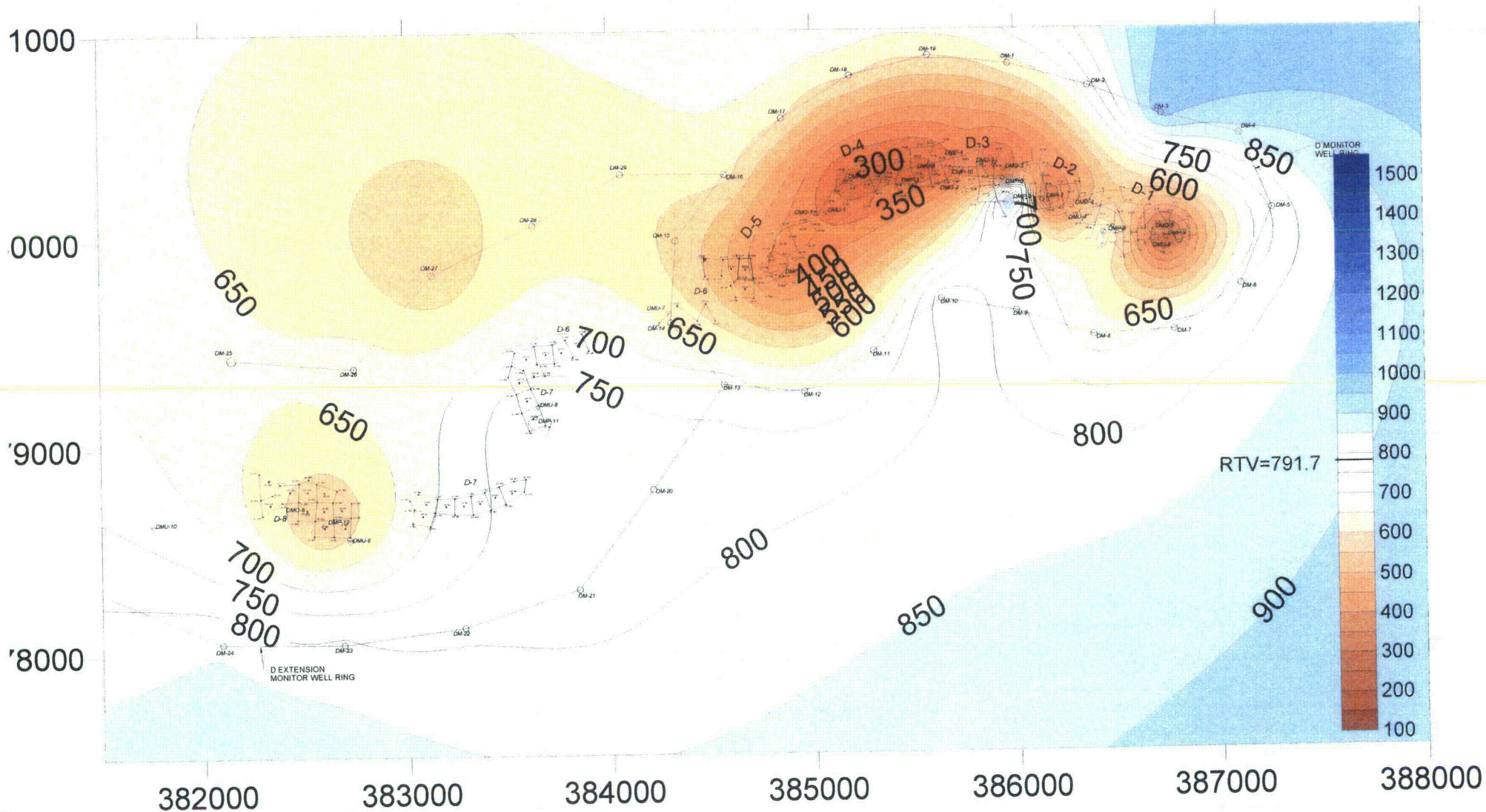
DMP and Monitor Ring wells





# Mine Unit D Conductivity (April 2013)

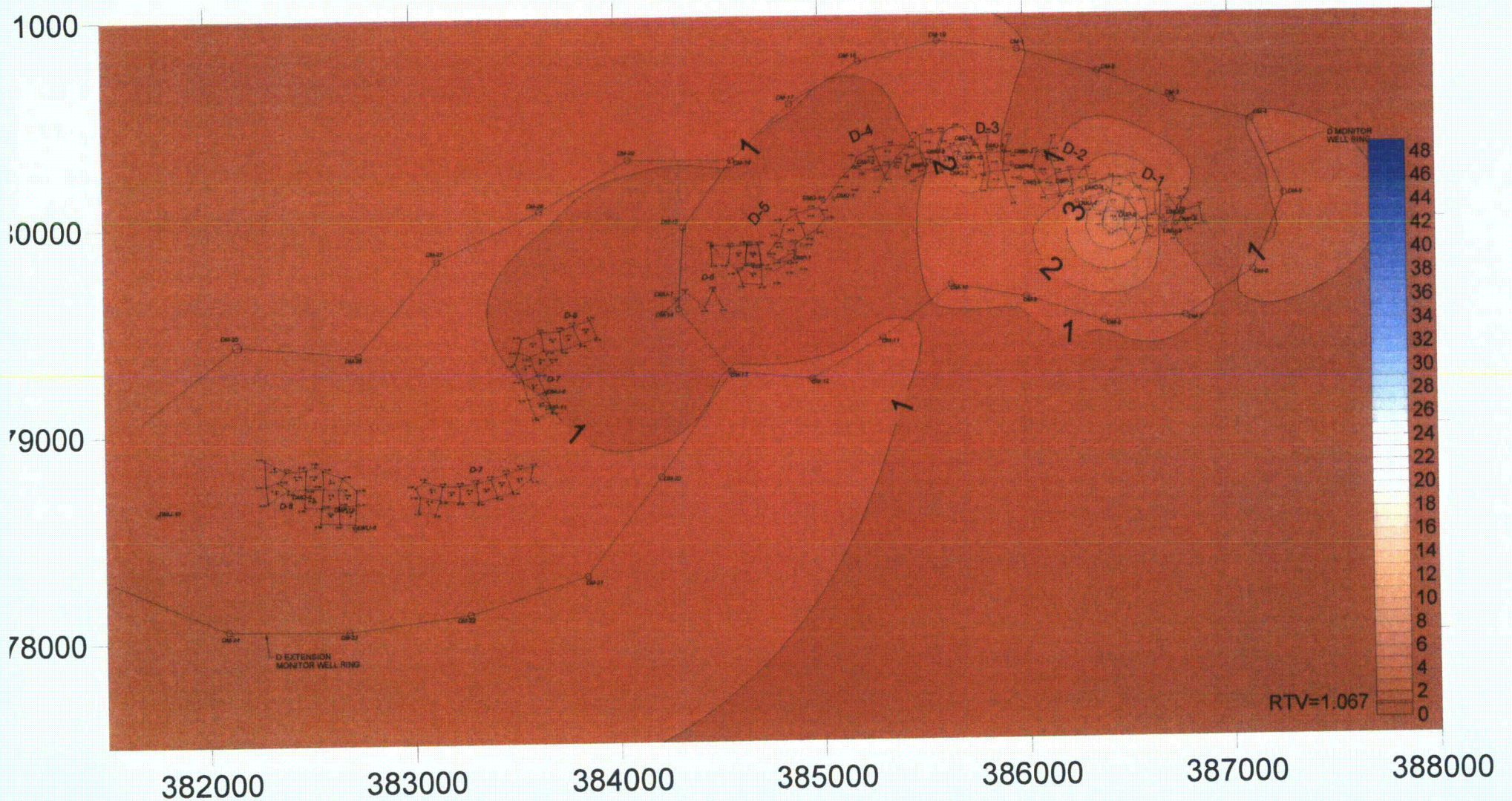
DMP and Monitor Ring wells





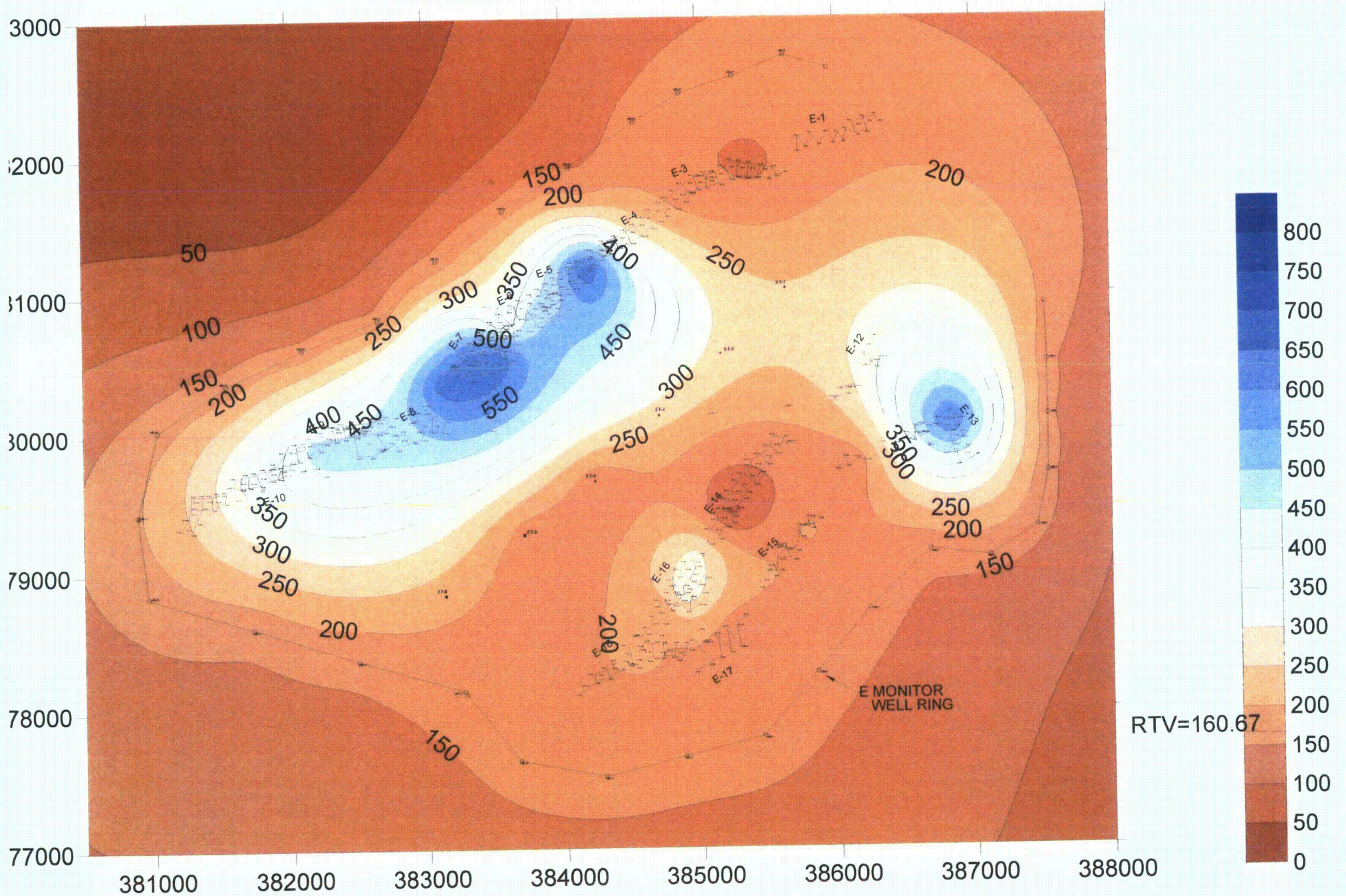
# Mine Unit D U-Nat (April 2013)

DMP and Monitor Ring wells  
(Monitor Ring set to RTV if not reported)



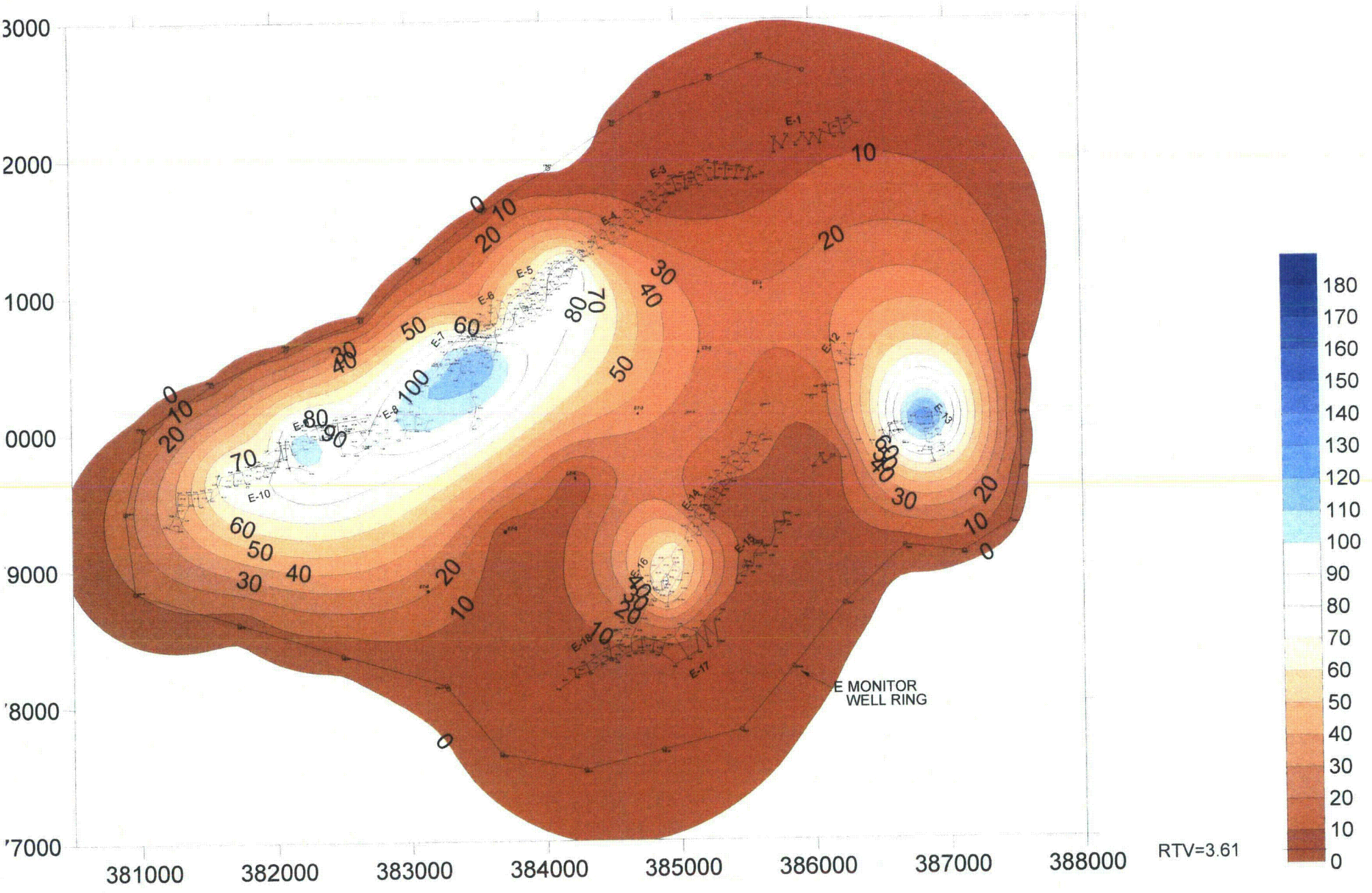


# Mine Unit E Alkalinity (April 2013)



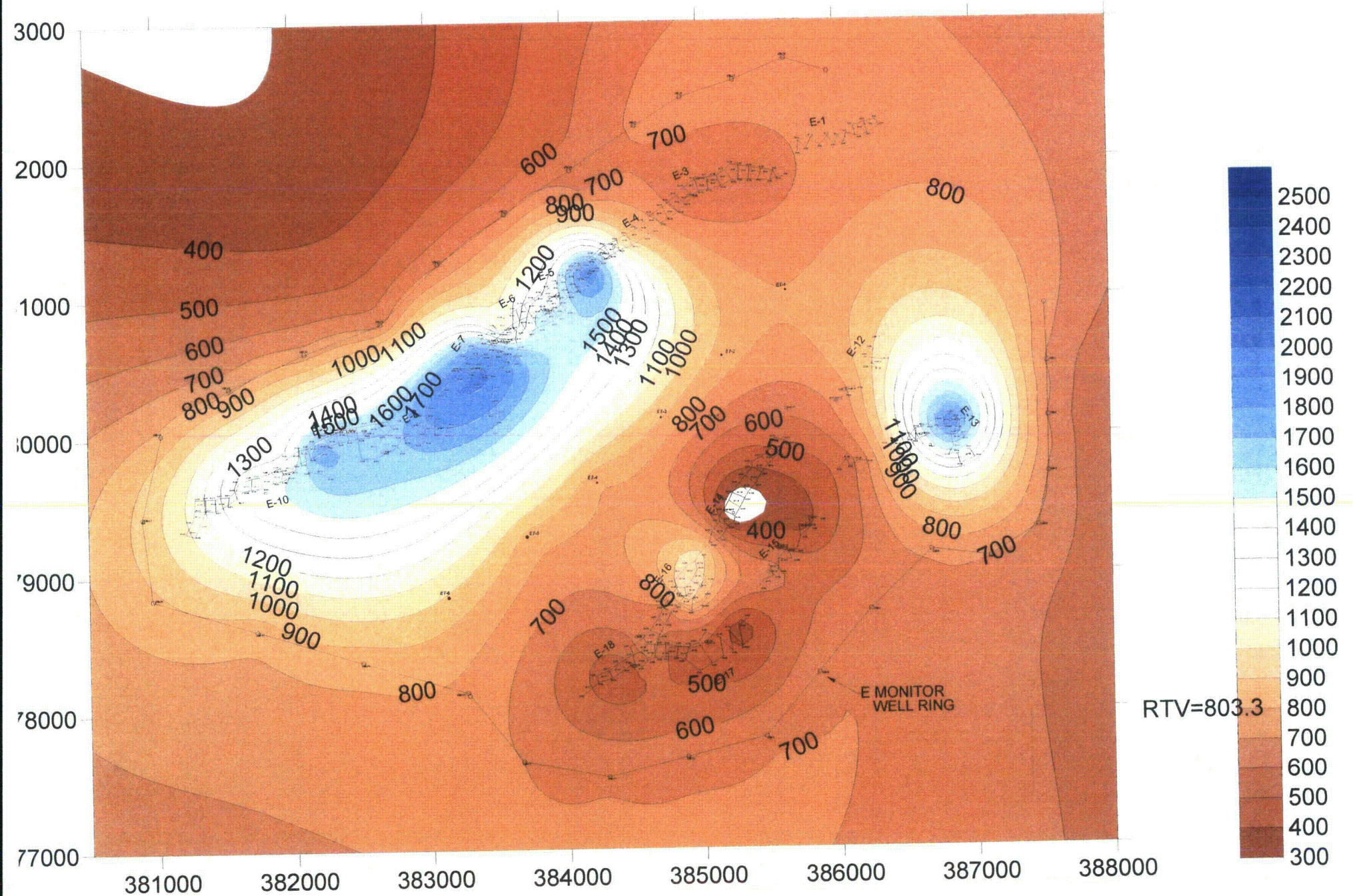


# Mine Unit E Chloride (April 2013)



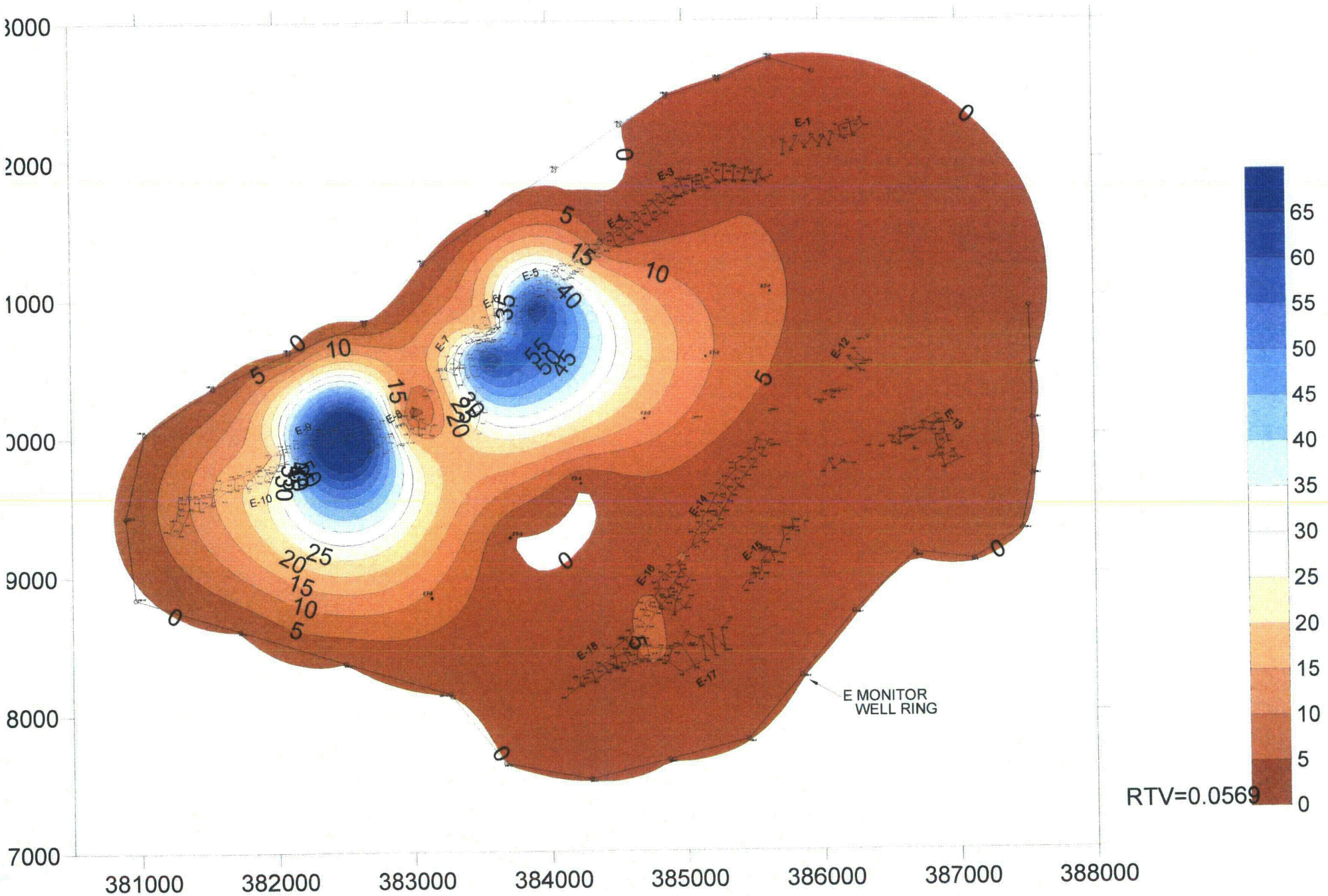


# Mine Unit E Conductivity (April 2013)





# Mine Unit E U-Nat (April 2013)





**Smith Ranch-Highland/Reynolds Ranch In-Situ Uranium  
Recovery Project**

**2012 Wildlife Survey Report**



Cameco Resources  
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## INTRODUCTION

Power Resources, Incorporated (d.b.a. Cameco Resources (Cameco)) is proposing to continue development of their in-situ uranium extraction operation in Converse County, Wyoming. The Smith Ranch-Highland/Reynolds Ranch In-Situ Recovery Project will consist of areas covered by Wyoming Department of Environmental Quality-Land Quality Division (WDEQ-LQD) permits #603 and #633. The 633 permit is currently being amended to include the area covered by Permit 603 and the addition of Reynold's Ranch. Surveys conducted in 2012 were for the whole area encompassed by the proposed Combined Permit boundary. In order to comply with federal and state regulations, prior to continued development, the United States Fish and Wildlife Service (USFWS) and Wyoming Game and Fish Department (WGFD) have requested that the following wildlife surveys be conducted: Three aerial bald eagle (*Haliaeetus leucocephalus*) winter roost surveys; Three ground count surveys of greater sage-grouse (*Centrocercus urophasianus*) on the known leks and any new leks discovered; One aerial survey to search for new sage-grouse leks once every three years; Three ground surveys for raptor nests within one mile of the project area; Two of spotlight surveys for swift fox (*Vulpes velox*) in proposed disturbance areas and black-tailed prairie dog (*Cynomys ludovicianus*) presence/activity surveys and mapping. In addition to these surveys, monthly wetland/pond monitoring will be conducted to monitor presence and use of waste water disposal areas by wildlife, especially associated waterfowl and shorebirds. In addition to these surveys, Cameco will document any opportunistic observations of animals occurring on the following lists.

- 1) Species designated as Threatened or Endangered, Proposed Species, Candidate Species, or Wyoming Species of Concern by the USFWS (USFWS 2011, USFWS); and
- 2) Species designated as Species of Greatest Conservation Need by the WGFD (WGFD 2010).

## PROJECT AREA

The 39,870-acre Smith Ranch Highland/Reynolds Permit Area of Cameco is located in the Highland Flats area of the southern Powder River Basin in Converse County, Wyoming. The combined Permit Area is located approximately 25 miles north-northwest of Douglas and 22 miles northeast of Glenrock, Wyoming (T37N:R74W, Sections 25, 26, 35, 36; T37N:R73W, Sections 30-32; T36N:R74W, Sections 1, 2, 11-14, 22-27, 33-36; T36N:R73W, Sections 5-7, 10-31, 34-36; T36N:R72W, Sections 7, 16-22, 29, 30; T35N:R75W, Sections 13, 24; T35N:R74W, Sections 2-5, 8-11, 14-19, 21). Elevation across the combined Permit Area ranges from approximately 5,000 to 5,800 feet and is gently sloping sagebrush and grassland range with shallow drainages and rolling hills. This area has characteristically cold winters and correspondingly hot summers. Average annual precipitation is about 12 inches per year, with most of that coming in late spring to early summer. The combined Permit Area is located



primarily on private land holdings, but the area is a combination of federal, private, and state lands with federal and state lands occupying less than 10 percent of the total acreage.

This area is a part of the Northwestern Great Plains and is classified as a mixed-grass prairie with a mix of species from both the short and tall grass prairies, additionally influenced by the northern desert shrub system. The dominant vegetation types in the combined Permit Area are mixed sagebrush/grassland and grassland, with disturbed land, hay meadows, impoundments, cottonwood/willow stands, playas, shelterbelts and reclaimed lands.

## **SURVEY METHODS**

Wildlife data collected by Grouse Mountain Environmental Consulting (GMEC) and Hayden-wing Associates (HWA) along with WGFD database records were used to help perform surveys. Wildlife surveys were conducted following USFWS, BLM and WGFD survey protocols (BLM 2011, and WGFD 2007). Surveys were performed from 4x4 truck, ATV, or foot, depending on the species monitored. Data was collected using a handheld Trimble® Juno SB facilitated with ArcPad® GIS software. Binoculars, spotting scope, topographic maps and varied field guides assisted in the observation and identification of wildlife in the area.

## **BALD EAGLE**

Bald eagle winter roost surveys were performed by GMEC in January and February of 2012. Survey methods and results for the bald eagle winter roost surveys can be found in Appendix A.

## **GREATER SAGE-GROUSE**

### **Methods**

Ground surveys were conducted on the six documented leks that occur within the two mile buffer of the Permit Area. Five of which are occupied; Sand Creek 2, North 95, North 95 East, Highland and Suicide Hill. The Turner Divide lek has unknown status but it suspected to be unoccupied or abandoned. Three ground count surveys were conducted at each of the lek locations to determine the maximum number of birds using the leks. Surveys were conducted seven to ten days apart between 0600 and 0800 hours. Leks were observed with binoculars or spotting scopes from a truck for approximately 15 minutes. Data collected during surveys at each lek location included maximum number of birds, activity, and sex of observed birds.

Leks were classified as “active” if strutting males or sign (feathers, scat, or prints) were observed during any of the surveys. In addition to ground surveys, one aerial survey was performed by GMEC for Cameco earlier in the survey season.

## **Results**

The Sand Creek 2, North 95 and Suicide hill leks were confirmed to be active during the 2012 ground surveys as sage-grouse were observed strutting during all three surveys. The Highland lek was confirmed active during the 2012 ground surveys as sage-grouse were observed strutting during two of the three surveys. The North 95 East lek was determined to be inactive during the 2012 season as no strutting birds or sign was observed during all three surveys. The Turner Divide lek was documented as inactive during the 2012 ground surveys, the coordinates for the Turner Divide lek place the lek location in typically unsuitable sage-grouse habitat and an unsuitable lek location. Additionally, notes made in 2008 indicate that the lek may not exist anymore. Survey results for ground surveys are listed in Table 3. Survey results for the aerial survey can be found in Appendix B.

## **RAPTORS**

### **Methods**

Three ground surveys for raptors were conducted in and within one mile of the Permit Area. A ground survey was conducted May 10 and May 15, 2012 to determine the productivity of early nesting raptors and to determine the activity of all nests. A second ground survey was conducted June 11, 13 and 14, 2012 to determine the productivity of documented active nests and to determine activity of late nesting raptor species. A third ground survey was conducted July 9 and July 11, 2012 to determine the productivity of late nesting raptor species. The locations of raptor nests were recorded and located using a handheld Trimble® Juno SB facilitated with ArcPad® GIS software. The nest status, condition, substrate, and species of raptor using the nest were documented.

Nests were observed from a distance, using binoculars or spotting scopes to avoid disturbing nesting birds. Surveys determined whether or not an adult bird was on or in the vicinity of the nest. If an adult was present, the biologist remained at a distance and attempted to determine the age and number of young in the nest. If it was determined that no adult birds were present, the areas under, around, and if possible in, the nests were searched for signs of recent activity (fresh mite, regurgitated pellets, eggs, eggshell fragments, prey remains, etc.).



## Results

There are 71 raptor nest sites documented in and within one mile of the Smith Ranch-Highland/Reynolds Ranch Permit Area (Table 2, Figure 1). These included nine red-tailed hawk (*Buteo jamaicensis*) nests, one golden eagle (*Aquila chrysaetos*) nest, 32 ferruginous hawk (*Buteo regalis*) nests, 13 Swainson's hawk (*Buteo swainsoni*) nests, four great horned owl (*Bubo virginianus*) nests, one American kestrel (*Falco sparverius*) nest and 11 nests of unknown raptor species. Three of these nests had deteriorated beyond use and were confirmed gone during 2012 surveys; nest 23, 24 and 26.

Of the 68 nests present within the one mile buffer of the permit area, 19 nests were found to be active and 49 nests were inactive. Ten of the identified active nests produced young (3, 11, 15, 18, 19, 27, 31, 43, 45 and 52). Seven nests failed (5, 6, 13, 21, 32, 38, and 67). The productivity of nest 69 and 70 was unknown. Results for the 2012 raptor survey are described below and can also be found in Table 2.

Failed nest #6 was observed with nest building activity from a Swainson's hawk on the initial May 10, 2012 survey and incubating during the June 11, 2012 follow up survey. On the July 9, 2012 production survey a backhoe was seen performing earthwork approximately 100 yards away from the nest. The disturbance was not mine related and is believed to be a landowner performing earthwork on their land. The disturbance close to the nest is believed to have caused the failure or abandonment of the nest.

Failed nest #13 was seen with a red-tailed hawk incubating on the initial May 15, 2012 survey. On the June 13, 2012 follow up survey it was determined that there was no adult activity or chicks observed at or near the nest. The nest was confirmed failed due to the lack of adult presence, whitewash, prey remnants and feathers. Further investigation revealed broken egg shells below the nest.

Failed nest #21 was inactive during the initial May 15, 2012 survey and later observed with a Swainson's hawk incubating during the June 13, 2012 follow up survey. On the July 11, 2012 production survey it was discovered that the majority of nest had fallen out the tree.

Failed nest #32 was seen with a Swainson's hawk perched on the nest showing strong nest defense during the initial May 10, 2012 survey and incubating during the June 11, 2012 follow up survey. On the July 9, 2012 production survey no adults were seen on the nest or in the vicinity, upon further investigation two class-I chicks were found dead below the nest.

Failed nest #38 was seen active with ferruginous hawks on the initial May 15, 2012 survey and observed with one class I chick on the nest during the June 13, 2012 follow up survey. On the July 11, 2012 production survey it was discovered that the nest was no longer active and found with a dead class-II chick below the nest.

Failed nest #67 was active with ferruginous hawks during the initial May 15, 2012 survey and June 13, 2012 follow up survey but was found to be inactive during the July 11, 2012 production survey. Upon further investigation one class-II chick was found dead approximately 35 yards away in the drainage below the nest.

Nest #5 was seen with adult Swainson's hawks in the area of the nest that were displaying nest defense behavior on the initial May 10, 2012 survey. The nest was discovered abandoned on the June 16, 2012 follow up survey due to the lack of adult presence and lack of active nest identifiers.

The productivity of nest #69 was never determined as this nest was inactive for the first two surveys. The nest was first discovered active during the last survey on July 9, 2012 when a Swainson's hawk was observed incubating. It is believed that this was a secondary nesting effort or a frustration nest from a failed attempt earlier in the year from a nearby breeding pair.

The productivity of nest #70 was never determined. The nest was located in a tree cavity that was occupied by an American kestrel and due to the type and location of the nest, the activity and production of the nest was difficult to determine. The nest was active on the initial survey on May 10, 2012 as an adult was seen exiting the tree cavity. During the second survey on June 11, 2012 and adult was seen nearby. No birds were seen in the area during the third survey on July 9, 2012.

## **BLACK-TAILED PRAIRIE DOG**

### **Methods**

Previous wildlife survey reports and WGFD database inquiries were made in order to determine locations of black-tailed prairie dog colonies within the permit area. Prairie dog colonies were opportunistically searched for while performing other wildlife surveys. Also if landowner contacts were made, prairie dog colony presence and locations were discussed.

### **Results**

No black-tailed prairie dog colonies were determined to be present in the permit area through a review of previous wildlife reports and WGFD records. Landowner contacts and opportunistic observations also determined there is no black-tailed prairie dog colonies present in the permit area.



## **SWIFT FOX**

### **Methods**

The WGFD does not have a standard survey protocol for locating den sites, however, WGFD Non-game biologist Laurie Van Fleet recommended conducting a minimum of two spotlight surveys on consecutive nights before September 15th as the pups begin to disperse from the den sites around this time (personal communication). Due to the foxes mostly nocturnal behavior spotlight surveys were conducted one half hour after sunset until 3 AM. The surveys were conducted in proposed mine units to concentrate searches for den sites within proposed future development areas. Surveys were conducted by slowly driving improved and two-track roads while shining a 3,000,000 candle power spotlight in order to locate eye shine of any foxes present. If swift foxes were detected during spotlight surveys a ground survey would be conducted on foot during daylight hours to locate the swift fox den site.

### **Results**

Two consecutive spotlight surveys were conducted on the nights August 8 and 9, 2012. Three proposed mine units (#7, #27 and Mine Unit I-extension) were surveyed as they are located in potential and or suitable swift fox habitat. During the first spotlight survey, two swift foxes were observed about 100 yards off of Ross Road near mine unit #7. Follow up den site surveys during the day proved to be positive as an active den was located south of mine unit #7 (Figure 1) (Photograph 1). During the second spotlight survey a swift fox was spotted again near the active den site. Additionally, no swift foxes were observed at or near mine units #27 and I-extension during the two spotlight surveys.

## **WETLAND/POND MONITORING**

### **Methods**

The USFWS expressed concerns regarding selenium concentrations in wastewater produced during the in-situ uranium mining process. Mitigation efforts were set to monitor wildlife use of wastewater storage and disposal sites, more specifically waterfowl and shore bird use. A purge storage reservoir, pivot irrigation field and settling ponds were monitored for wildlife use. Wildlife observations were conducted monthly during daylight hours using binoculars and spotting scopes. Observation points were chosen based on access and visibility. Each location was systematically scanned until the entire visible area was thoroughly searched and all wildlife observations were documented. If necessary, multiple observation points were used to ensure that the entire location was scanned. The amount of time spent at each location varied and was dictated by the size of the location and the number of species present.

## Results

Three different locations within the permit area were monitored monthly; Purge storage reservoir 2 (PSR-2) PSR-2 pivot irrigation field and two lined settling ponds. Locations of these sites can be found in Figure 1. A total of 18 aquatic bird species, 19 other avian species and three mammalian species were observed during surveys. Wildlife observed during wetland/pond monitoring surveys is listed in Table 3.

PSR-2 is approximately 20 acres in size and was the only site where waterfowl and shore birds were observed. Waterfowl and shore birds were observed feeding on or near the bank and shallower portions of the reservoir. Although not a waterfowl or shorebird species, red-winged blackbirds (*Agelaius phoeniceus*) were observed frequently feeding and showing courtship displays during surveys. Other avian species were observed with little activity and quick intermittent visits. During the September survey four mule deer (*Odocoileus hemionus*) were observed feeding approximately 40 yards from the shore of the reservoir. During the January, February and December surveys no wildlife was observed, partially due to the time of year and the reservoir was frozen.

PSR-2 Irrigation Field is approximately 124 acres. No waterfowl or shorebird species were observed at this site during any of the monthly surveys. Other avian species were observed feeding on insects on two track roads. A northern harrier (*Circus cyaneus*) was observed flying low and hunting over the field during the March survey. Mule deer were observed feeding and bedded during May, June, July, August and September surveys. A bobcat (*Lynx rufus*) was observed running across the irrigation field in February and is believed to be living in the haystacks on the southern end of the irrigation field. No wildlife was observed during the January, October, November and December surveys.

The two settling ponds are approximately 0.8 acres and are fenced in and contain no aquatic vegetation. No waterfowl or shorebird species were observed at this site. Other avian species were observed feeding on insects around the edges and berms of the two ponds. One desert cottontail rabbit (*Sylvilagus audubonii*) was observed just inside the fenced area of the ponds in September. No wildlife was observed in January, February, March, April, October, November and December surveys. The west pond contained little to no water in the majority of the surveys. The east pond was frozen during the January February and December surveys.



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**Table 1.** Sage-grouse lek surveys conducted within 2 miles of the Smith Ranch-Highland/Reynolds Ranch Permit Area.

| <b>Highland</b> |             |               |      |       |         |      |      |     |     |         |          |
|-----------------|-------------|---------------|------|-------|---------|------|------|-----|-----|---------|----------|
| Lek Status      | Survey Date | Survey Method | Time | Males | Females | QQ   | Sec. | Twn | Rng | Easting | Northing |
| Active          | 3/22/2012   | Ground        | 0800 | 8     | 0       | SWSW | 28   | 36  | 73  | 448445  | 4767532  |
|                 | 3/29/2012   | Ground        | 0800 | 8     | 7       |      |      |     |     |         |          |
|                 | 4/9/2012    | Ground        | 0715 | 0     | 0       |      |      |     |     |         |          |

| <b>North 95</b> |             |               |      |       |         |      |      |     |     |         |          |
|-----------------|-------------|---------------|------|-------|---------|------|------|-----|-----|---------|----------|
| Lek Status      | Survey Date | Survey Method | Time | Males | Females | QQ   | Sec. | Twn | Rng | Easting | Northing |
| Active          | 3/26/2012   | Ground        | 0820 | 10    | 9       | SESW | 28   | 35  | 74  | 439119  | 4757724  |
|                 | 4/5/2012    | Ground        | 0740 | 9     | 0       |      |      |     |     |         |          |
|                 | 4/13/2012   | Ground        | 0600 | 7     | 1       |      |      |     |     |         |          |

| <b>North 95 East</b> |             |               |      |       |         |      |      |     |     |         |          |
|----------------------|-------------|---------------|------|-------|---------|------|------|-----|-----|---------|----------|
| Lek Status           | Survey Date | Survey Method | Time | Males | Females | QQ   | Sec. | Twn | Rng | Easting | Northing |
| Inactive             | 3/26/2012   | Ground        | 0800 | 0     | 0       | NWNW | 34   | 35  | 74  | 440565  | 4757474  |
|                      | 4/5/2012    | Ground        | 0730 | 0     | 0       |      |      |     |     |         |          |
|                      | 4/13/2012   | Ground        | 0610 | 0     | 0       |      |      |     |     |         |          |

| <b>Sand Creek 2</b> |             |               |      |       |         |      |      |     |     |         |          |
|---------------------|-------------|---------------|------|-------|---------|------|------|-----|-----|---------|----------|
| Lek Status          | Survey Date | Survey Method | Time | Males | Females | QQ   | Sec. | Twn | Rng | Easting | Northing |
| Active              | 3/26/2012   | Ground        | 0640 | 4     | 17      | SWSE | 15   | 35  | 75  | 431649  | 4761132  |
|                     | 4/5/2012    | Ground        | 0615 | 6     | 5       |      |      |     |     |         |          |
|                     | 4/13/2012   | Ground        | 0720 | 8     | 0       |      |      |     |     |         |          |

| <b>Suicide Hill</b> |             |               |      |       |         |      |      |     |     |         |          |
|---------------------|-------------|---------------|------|-------|---------|------|------|-----|-----|---------|----------|
| Lek Status          | Survey Date | Survey Method | Time | Males | Females | QQ   | Sec. | Twn | Rng | Easting | Northing |
| Active              | 3/29/2012   | Ground        | 0730 | 6     | 4       | SWSE | 24   | 37  | 74  | 444006  | 4778858  |
|                     | 4/9/2012    | Ground        | 0615 | 8     | 0       |      |      |     |     |         |          |
|                     | 4/17/2012   | Ground        | 0555 | 10    | 1       |      |      |     |     |         |          |



**Table 1. Continued.**

**Turner Divide**

| Lek Status | Survey Date | Survey Method | Time | Males | Females | QQ   | Sec. | Twn | Rng | Easting | Northing |
|------------|-------------|---------------|------|-------|---------|------|------|-----|-----|---------|----------|
| Inactive   | 3/29/2012   | Ground        | 0740 | 0     | 0       | SENW | 9    | 36  | 74  | 439500  | 4772900  |
|            | 4/9/2012    | Ground        | 0650 | 0     | 0       |      |      |     |     |         |          |
|            | 4/17/2012   | Ground        | 0620 | 0     | 0       |      |      |     |     |         |          |

**Table 2. Raptor nest surveys conducted within one mile of the Smith Ranch-Highland/Reynolds Ranch Permit Area.**

| Nest Number<br>(Cameco ID) | 2012<br>Nest Status <sup>1</sup> | Species<br>Code <sup>2</sup> | Nest<br>Structure <sup>3</sup> | Nest<br>Condition | Nest<br>Productivity <sup>4</sup> | Coordinates |         | Legal Location |    |    |    |
|----------------------------|----------------------------------|------------------------------|--------------------------------|-------------------|-----------------------------------|-------------|---------|----------------|----|----|----|
|                            |                                  |                              |                                |                   |                                   | UTM E       | UTM N   | QQ             | S  | T  | R  |
| 1                          | INAC                             | RETA                         | CTL                            | GOOD              |                                   | 440870      | 4763204 | NWSW           | 10 | 35 | 74 |
| 2                          | INAC                             | SWHA                         | BOX                            | POOR              |                                   | 443982      | 4766958 | NENW           | 36 | 36 | 74 |
| 3                          | ACTI                             | SWHA                         | ELM                            | GOOD              | 2-Class I young                   | 446519      | 4768488 | NENE           | 30 | 36 | 73 |
| 4                          | INAC                             | UNRA                         | ELM                            | FAIR              |                                   | 446589      | 4768510 | NENE           | 30 | 36 | 73 |
| 5                          | ACTF                             | SWHA                         | ELM                            | GOOD              | Abandoned                         | 449530      | 4769996 | SWNE           | 21 | 36 | 73 |
| 6                          | ACTF                             | UNRA                         | ELM                            | GOOD              | Failed                            | 452964      | 4770612 | SESE           | 14 | 36 | 73 |
| 7                          | INAC                             | SWHA                         | ELM                            | GOOD              |                                   | 452984      | 4770658 | SESE           | 14 | 36 | 73 |
| 8                          | INAC                             | UNRA                         | CTL                            | POOR              |                                   | 455777      | 4770085 | NENW           | 19 | 36 | 72 |
| 9                          | INAC                             | RETA                         | CTL                            | POOR              |                                   | 456413      | 4768616 | NENE           | 30 | 36 | 72 |
| 10                         | INAC                             | UNRA                         | WIL                            | REMNANTS          |                                   | 439613      | 4765853 | NWSE           | 33 | 36 | 74 |
| 11                         | ACTI                             | SWHA                         | WIL                            | GOOD              | 2-Class I young                   | 440796      | 4759986 | SESW           | 22 | 35 | 74 |
| 12                         | INAC                             | RETA                         | CTL                            | POOR              |                                   | 435893      | 4764673 | NWSW           | 6  | 35 | 74 |
| 13                         | ACTF                             | RETA                         | CTL                            | POOR              | Failed                            | 445148      | 4776529 | NENW           | 31 | 37 | 73 |
| 14                         | INAC                             | SWHA                         | CTL                            | FAIR              |                                   | 442042      | 4779441 | SESW           | 23 | 37 | 74 |
| 15                         | ACTI                             | SWHA                         | ELM                            | FAIR              | 3 Class I young                   | 441479      | 4777794 | SENE           | 27 | 37 | 74 |
| 16                         | INAC                             | FEHA                         | ROK                            | GOOD              |                                   | 443766      | 4776325 | SESW           | 36 | 37 | 74 |
| 17                         | INAC                             | FEHA                         | ROP                            | REMNANTS          |                                   | 443811      | 4775904 | NESW           | 36 | 37 | 74 |
| 18                         | ACTI                             | GRHO                         | CTL                            | EXCELLENT         | 2-Class III young                 | 451649      | 4773623 | NWNW           | 11 | 36 | 73 |
| 19                         | ACTI                             | FEHA                         | ROP                            | EXCELLENT         | 1-Class IV young                  | 445671      | 4773067 | SESW           | 7  | 36 | 73 |
| 20                         | INAC                             | FEHA                         | ROP                            | FAIR              |                                   | 448672      | 4772082 | SWSW           | 9  | 36 | 73 |
| 21                         | ACTF                             | SWHA                         | ELM                            | REMNANTS          | Failed                            | 446935      | 4771658 | NWNW           | 17 | 36 | 73 |
| 22                         | INAC                             | FEHA                         | GHS                            | POOR              |                                   | 445510      | 4770105 | NWNW           | 19 | 36 | 73 |
| 23                         | INAC                             | RETA                         | ELM                            | GONE              |                                   | 448290      | 4770708 | SESE           | 17 | 36 | 73 |
| 24                         | INAC                             | FEHA                         | ROK                            | GONE              |                                   | 443661      | 4773280 | NWNW           | 12 | 36 | 74 |
| 25                         | INAC                             | FEHA                         | ROK                            | REMNANTS          |                                   | 440987      | 4773027 | SESW           | 10 | 36 | 74 |



**Table 2. Continued.**

| Nest Number<br>(Cameco ID) | 2012<br>Nest Status <sup>1</sup> | Species<br>Code <sup>2</sup> | Nest<br>Structure <sup>3</sup> | Nest<br>Condition | Nest<br>Productivity <sup>4</sup> | Coordinates |         | Legal Location |    |    |    |
|----------------------------|----------------------------------|------------------------------|--------------------------------|-------------------|-----------------------------------|-------------|---------|----------------|----|----|----|
|                            |                                  |                              |                                |                   |                                   | UTM E       | UTM N   | QQ             | S  | T  | R  |
| 26                         | INAC                             | FEHA                         | ROK                            | GONE              |                                   | 439863      | 4769515 | NWSE           | 21 | 36 | 74 |
| 27                         | ACTI                             | SWHA                         | CHC                            | EXCELLENT         | 2-Class I young                   | 440692      | 4768407 | SWNW           | 27 | 36 | 74 |
| 28                         | INAC                             | FEHA                         | GHS                            | POOR              |                                   | 444250      | 4770425 | NENW           | 24 | 36 | 74 |
| 29                         | INAC                             | GOEA                         | CTL                            | EXCELLENT         |                                   | 451829      | 4772928 | SWNW           | 11 | 36 | 73 |
| 30                         | INAC                             | FEHA                         | GHS                            | REMNANTS          |                                   | 446050      | 4772786 | NWSE           | 7  | 36 | 73 |
| 31                         | ACTI                             | RETA                         | CTL                            | EXCELLENT         | 2-Class III young                 | 442819      | 4763569 | NENW           | 11 | 35 | 74 |
| 32                         | ACTF                             | SWHA                         | WIL                            | GOOD              | Failed                            | 441927      | 4764542 | NESE           | 3  | 35 | 74 |
| 33                         | INAC                             | UNRA                         | BOX                            | POOR              |                                   | 448256      | 4770779 | SESE           | 17 | 36 | 73 |
| 34                         | INAC                             | UNRA                         | BOX                            | REMNANTS          |                                   | 448243      | 4770778 | SESE           | 17 | 36 | 73 |
| 35                         | INAC                             | RETA                         | BOX                            | REMNANTS          |                                   | 448256      | 4770797 | SESE           | 17 | 36 | 73 |
| 36                         | INAC                             | UNRA                         | BOX                            | REMNANTS          |                                   | 448350      | 4770840 | NESE           | 17 | 36 | 73 |
| 37                         | INAC                             | UNRA                         | BOX                            | POOR              |                                   | 448415      | 4770843 | NWSW           | 16 | 36 | 73 |
| 38                         | ACTF                             | FEHA                         | GHS                            | GOOD              | Failed                            | 448411      | 4773051 | SWNW           | 9  | 36 | 73 |
| 39                         | INAC                             | FEHA                         | GHS                            | FAIR              |                                   | 445751      | 4772411 | SESW           | 7  | 36 | 73 |
| 40                         | INAC                             | FEHA                         | GHS                            | FAIR              |                                   | 445454      | 4771807 | NWNW           | 18 | 36 | 73 |
| 41                         | INAC                             | FEHA                         | GHS                            | REMNANTS          |                                   | 444833      | 4773505 | NENE           | 12 | 36 | 74 |
| 42                         | INAC                             | FEHA                         | GHS                            | POOR              |                                   | 443610      | 4773869 | SWSW           | 1  | 36 | 74 |
| 43                         | ACTI                             | GRHO                         | CTL                            | GOOD              | 3-Class IV young                  | 442955      | 4774033 | SWSE           | 2  | 36 | 74 |
| 44                         | INAC                             | FEHA                         | GHS                            | GOOD              |                                   | 445950      | 4776680 | NENE           | 31 | 37 | 73 |
| 45                         | ACTI                             | RETA                         | CTL                            | FAIR              | 1-Class IV young                  | 445615      | 4778584 | SWSE           | 19 | 37 | 73 |
| 46                         | INAC                             | UNRA                         | CTL                            | GOOD              |                                   | 459583      | 4769566 | NESE           | 21 | 36 | 72 |
| 47                         | INAC                             | UNRA                         | BOX                            | REMNANTS          |                                   | 460523      | 4770905 | NESW           | 15 | 36 | 72 |
| 48                         | INAC                             | FEHA                         | GHS                            | GOOD              |                                   | 441360      | 4768831 | NWNE           | 27 | 36 | 74 |
| 49                         | INAC                             | FEHA                         | GHS                            | GOOD              |                                   | 441273      | 4768847 | SWSE           | 22 | 36 | 74 |
| 50                         | INAC                             | FEHA                         | GHS                            | POOR              |                                   | 441403      | 4768712 | NWNE           | 27 | 36 | 74 |
| 51                         | INAC                             | FEHA                         | GHS                            | GOOD              |                                   | 441367      | 4768579 | NWNE           | 27 | 36 | 74 |

**Table 2. Continued.**

| Nest Number<br>(Cameco ID) | 2012<br>Nest Status <sup>1</sup> | Species<br>Code <sup>2</sup> | Nest<br>Structure <sup>3</sup> | Nest<br>Condition | Nest<br>Productivity <sup>4</sup> | Coordinates |         | Legal Location |    |    |    |
|----------------------------|----------------------------------|------------------------------|--------------------------------|-------------------|-----------------------------------|-------------|---------|----------------|----|----|----|
|                            |                                  |                              |                                |                   |                                   | UTM E       | UTM N   | QQ             | S  | T  | R  |
| 52                         | ACTI                             | SWHA                         | WIL                            | GOOD              | 1-Class I young                   | 450253      | 4769875 | SWNW           | 22 | 36 | 73 |
| 53                         | INAC                             | GRHO                         | CTL                            | GOOD              |                                   | 440842      | 4763216 | SENW           | 10 | 35 | 74 |
| 54                         | INAC                             | FEHA                         | JUN                            | GOOD              |                                   | 436015      | 4765685 | SESW           | 31 | 36 | 74 |
| 55                         | INAC                             | FEHA                         | GHS                            | FAIR              |                                   | 441643      | 4768070 | SENE           | 27 | 36 | 74 |
| 56                         | INAC                             | FEHA                         | GHS                            | POOR              |                                   | 441599      | 4768084 | SENE           | 27 | 36 | 74 |
| 57                         | INAC                             | FEHA                         | GHS                            | GOOD              |                                   | 442181      | 4768133 | SWNW           | 26 | 36 | 74 |
| 58                         | INAC                             | FEHA                         | GHS                            | POOR              |                                   | 441629      | 4768259 | SENE           | 27 | 36 | 74 |
| 59                         | INAC                             | SWHA                         | CHC                            | GOOD              |                                   | 440712      | 4768405 | SWNW           | 27 | 36 | 74 |
| 60                         | INAC                             | FEHA                         | ROK                            | GOOD              |                                   | 442847      | 4768882 | SWSE           | 23 | 36 | 74 |
| 61                         | INAC                             | FEHA                         | ROK                            | FAIR              |                                   | 439684      | 4769481 | NWSE           | 21 | 36 | 74 |
| 62                         | INAC                             | GRHO                         | WIL                            | POOR              |                                   | 438922      | 4770401 | NWNW           | 21 | 36 | 74 |
| 63                         | INAC                             | RETA                         | CTL                            | GOOD              |                                   | 461256      | 4771391 | SENE           | 15 | 36 | 72 |
| 64                         | INAC                             | FEHA                         | GHS                            | FAIR              |                                   | 441839      | 4776604 | NWNW           | 35 | 37 | 74 |
| 65                         | INAC                             | FEHA                         | GHS                            | POOR              |                                   | 445076      | 4779538 | SWNW           | 19 | 37 | 73 |
| 66                         | INAC                             | FEHA                         | GHS                            | REMNANTS          |                                   | 445506      | 4780003 | NENW           | 19 | 37 | 73 |
| 67                         | ACTF                             | FEHA                         | GHS                            | GOOD              | Failed                            | 444709      | 4778657 | SESE           | 24 | 37 | 74 |
| 68                         | INAC                             | UNRA                         | ELM                            | POOR              |                                   | 459596      | 4772384 | SESE           | 9  | 36 | 72 |
| 69                         | ACTI                             | SWHA                         | WIL                            | GOOD              | Unknown                           | 438730      | 4766120 | NWSW           | 33 | 36 | 74 |
| 70                         | ACTI                             | AMKE                         | CTL                            | UNKN              | Unknown                           | 436192      | 4764646 | NESW           | 6  | 35 | 74 |
| 71                         | INAC                             | FEHA                         | GHS                            | GOOD              |                                   | 456971      | 4769699 | SENW           | 20 | 36 | 72 |

<sup>1</sup> ACTI = Active; INAC = Inactive; ACTF = Active nest failed to produce young to fledgling age

<sup>2</sup> FEHA = Ferruginous Hawk; GOEA = Golden Eagle; RETA = Red-tailed Hawk; SWHA = Swainson's Hawk; UNRA = Unknown Raptor; GRHO = Great Horned Owl; AMKE = American Kestrel

<sup>3</sup> WIL = Willow; CTL = Cottonwood-Live; ELM = Elm; ROK = Rock Outcrop; ROP = Rock Pillar; GHS = Ground/Hill Side; CHC = Choke Cherry; BOX = Boxelder; JUN = Juniper

<sup>4</sup> Class I = All downy/no feathers; Class II = Feathers visible/downy patches on body or head; Class III = Completely feathered; Class IV = Fledged



**Table 3.** List of species observed during wetland/pond surveys within the Smith Ranch-Highland/Reynolds Ranch Permit Area.

**Purge Storage Reservoir-2**

| Survey Date | Species Observed  |
|-------------|---|
| 1/19/2012   | No Observations   |
| 2/16/2012   | No Observations   |
| 3/22/2012   | Ring-necked Duck (4-male, 2-female), Red-winged Blackbirds, Canada Goose (12), Northern Pintail (1-male, 1-female), American Wigeon (1-male), Northern Harrier (1-male, 1 female)   |
| 4/17/2012   | Red-winged Blackbirds, Eared Grebe (15), American Coot (8), Northern Shoveler (3-male, 3-female), Canada Goose (6), Green-winged Teal (1-male, 1-female), Northern Pintail (1-male, 1-female), Mallard (1-male, 1-female), Cinnamon Teal (1-male), Franklin's Gull (9)  |
| 5/17/2012   | Killdeer, Red-winged Blackbirds, Buffle Head (1-female), Green-winged Teal (5-males), Northern Harrier (1-male), Eared Grebe (2), American Coot (1), Western Meadowlarks, Yellow-headed Blackbirds, Cliff Swallows  |
| 6/14/2012   | American Coot (1), Killdeer, Red-winged Blackbirds, American Wigeon (1-male, 1-female), Blue-winged Teal (1-male, 1-female), Western Meadowlarks  |
| 7/17/2012   | Kill Deer, Greater Yellowlegs, Lark Buntings, Horned Larks, Vesper Sparrows, Eared Grebe (1), Cliff Swallows, Western Meadowlarks, Mallards (7-female), Redhead (1-male), American Coot (1), Yellow-headed Blackbird, Mourning Dove, American Wigeon (1-male), Say's Phoebe, Eastern Phoebe, Eastern Kingbird, Common Nighthawks, Barn Swallows |
| 8/20/2012   | Mourning Dove, American Coot (8), Mallard (6-females), Killdeer, American Wigeon (10-female, 2-male), Vesper Sparrows, Northern Shoveler (5-female, 5-male), Eared Grebe (2), Horned Grebe (2), Red-winged Blackbirds, Northern Pintail (1-female), Redhead (1-male, 1-female), Barn Swallows   |
| 9/18/2012   | American Coot (6), Mallard (6-female), Horned Grebe (6), Ruddy Duck (5-female), Northern Shoveler (3-male, 2-female), American Wigeon (1-male), Northern Pintail (1-female), Green-winged Teal (3-male, 7-female), Red-winged Blackbirds, Vesper Sparrows, Mule Deer (1-male, 1-female, 2-fawns), Western Meadowlarks                           |
| 10/19/2012  | Ring-necked Duck (2-male, 2-female), Horned Grebe (1), Green-winged Teal (1-male), Lesser Scaup (1-female), American Coot (1), Brewer's Blackbirds  |
| 11/15/2012  | Mallards (2-male), American Coot (1), Ruddy Duck (1-female), Lesser Scaup (5-female)  |
| 12/20/2012  | No Observations   |

**Table 3. Continued.**

**Purge Storage Reservoir-2 Irrigation Field**

| <b>Survey Date</b> | <b>Species Observed</b>   |
|--------------------|---|
| 1/19/2012          | No Observations   |
| 2/16/2012          | Bobcat  |
| 3/22/2012          | Western Meadowlarks, Northern Harrier (1-female)  |
| 4/17/2012          | Western Meadowlarks, Horned Larks   |
| 5/17/2012          | Western Meadowlarks, Killdeer, Mule Deer (4-female), Red-winged Blackbirds, Vesper Sparrows   |
| 6/14/2012          | Mule Deer (7-male, 6-female), Western Meadowlarks   |
| 7/17/2012          | Common Nighthawks, Cliff Swallows, Western Kingbird, Western Meadowlarks, Vesper Sparrows, Loggerhead Shrike, Say's Phoebe, Mule Deer (2-female), Chestnut-collared Longspur (1-male), Horned Larks |
| 8/20/2012          | Mule Deer (2-male, 2-female, 2-fawns), Loggerhead Shrike, Vesper Sparrows   |
| 9/18/2012          | Vesper Sparrows, Mule Deer (1-male, 1-female, 2-fawns), Western Meadowlarks, Horned Larks   |
| 10/19/2012         | No Observations   |
| 11/15/2012         | No Observations   |
| 12/20/2012         | No Observations   |

**Table 3. Continued.**

**Settling Ponds**

| <b>Survey Date</b> | <b>Species Observed</b>   |
|--------------------|---|
| 1/19/2012          | No Observations   |
| 2/16/2012          | No Observations   |
| 3/22/2012          | No Observations   |
| 4/17/2012          | No Observations   |
| 5/17/2012          | Lark Buntings   |
| 6/14/2012          | Red-winged Blackbirds, Lark Buntings, Horned Larks, Barn Swallows       |
| 7/17/2012          | Barn Swallows, Brewer's Blackbirds                                      |
| 8/20/2012          | Red-winged Blackbirds, Horned Larks, Western Meadowlarks, Barn Swallows |
| 9/18/2012          | Horned Larks, Brewer's Blackbirds, Desert Cottontail                    |
| 10/19/2012         | No Observations   |
| 11/15/2012         | No Observations   |
| 12/20/2012         | No Observations   |



**Photograph 1.** Photograph of active swift fox den.



**APPENDIX A**

**Bald Eagle Winter Roost Survey Report**



September 18, 2012

Mr. Dave Magee  
Cameco Resources  
550 North Poplar, Suite 100  
Casper, WY 82601

**RE: 2012 Bald Eagle Winter Roost Survey Results**

Mr. Magee,

Below are the results of the 2012 Bald Eagle Winter Roost Surveys for the Smith Ranch-Highland-Reynolds Ranch In-Situ Uranium Recovery Project.

**Bald Eagle Winter Roost Survey**

***Methods***

In order to locate areas bald eagles utilize for winter roosts, winter roost surveys are to be conducted from December 1 to February 28 in accordance with the Bureau of Land Management's *Bald eagle Winter Roost Site Survey Methodology* within and adjacent to the project area. Searches for winter roost sites were conducted within the project area and extended to a 1-mile buffer around the project area. The surveys were conducted on January 31 2011, February 14, 2012, and February 21, 2012 in suitable habitat, including coniferous and cottonwood stands. The aerial surveys were conducted in areas of suitable habitat and were flown on north-south transects with lines approximately 0.6-miles apart. The transects were flown at 300-450 feet above ground level and were started at the eastern most edge of the project and progressed to the west to minimize the possibility of the plane flying over roost sites prior to them being observed. Winter roost surveys were conducted from 1 hour before sunrise or sunset to 1 hour after sunrise or sunset. If a winter roost is located the roost will be recorded with a Trimble GeoXT GPS receiver, this data will be included in this report and will be made available to Cameco as shape files. Additionally, a count of the individuals at the roost location will be conducted and the information will be included in the body of this report.



**Results**

According to the available information there are no known winter roost locations that occur within the Combined Permit Area and associated 1-mile buffer. During the 2011-2012 Bald Eagle Winter Roost Surveys Grouse Mountain Environmental Consultants (GMEC) did not locate any previously undocumented roost locations (Table 1). In addition to no roost locations GMEC noted very little suitable roosting habitat to exist within the Combined Permit Area and associated survey buffer.

**Table 1. Results of Bald Eagle Surveys: Smith Ranch-Highland-Reynolds Ranch In-Situ Uranium Recovery Project: 2012 . (NAD 83, Z13N)**

| POD NAME       | SURVEY DATE | SURVEY NUMBER | EAGLES OBSERVED | NEST OBSERVED | COORDINATES |       | LEGAL LOCATION |   |   |   | COMMENTS                |
|----------------|-------------|---------------|-----------------|---------------|-------------|-------|----------------|---|---|---|-------------------------|
|                |             |               |                 |               | UTM E       | UTM N | QQ             | S | T | R |                         |
| Cameco Uranium | 1/31/2012   | 1             | 0               | 0             |             |       |                |   |   |   | No bald eagles observed |
|                | 2/14/2012   | 2             | 0               | 0             |             |       |                |   |   |   | No bald eagles observed |
|                | 2/21/2012   | 3             | 0               | 0             |             |       |                |   |   |   | No bald eagles observed |

If you have questions or comments please contact Zach Byram (307) 648-2112 (office) or (307) 217-2102 (cell).

**APPENDIX B**

Aerial Greater Sage-grouse Lek Survey Report



June 4, 2012

Mr. Dave Magee  
Cameco Resources  
550 North Poplar, Suite 100  
Casper, WY 82601

**RE: 2012 Greater Sage-Grouse Survey Results**

Mr. Magee,

Below are the results of the 2012 Greater-Sage Grouse Surveys for the Smith Ranch-Highland-Reynolds Ranch In-Situ Uranium Recovery Project.

**Greater Sage-grouse Breeding Survey**

***Methods***

In order to locate areas sage grouse utilize for breeding purposes, aerial lek surveys are to be conducted from April 1 to May 7 in accordance with the Bureau of Land Management's *Sage Grouse Lek Survey & Count Methodology* within and adjacent to the project area. Searches for new leks were conducted within the project area and extended to a 2-mile buffer around the project area. The aerial survey was conducted on April 23, 2012 within areas of suitable habitat including but limited to openings within sagebrush stands. The aerial survey was conducted in suspected breeding grounds and was flown on north-south transect lines approximately 0.6-miles apart. The transects were flown at 300-450 feet above ground level and were started at the eastern most edge of the project and progressed to the west to minimize the possibility of the plane flying over leks prior to them being observed. Special attention was given to old lake beds, stock-watering areas, and other relatively open sites surrounded by sagebrush with adequate canopy cover. Leks searched from an aircraft were conducted from  $\frac{1}{2}$  hour before to 1 hour after sunrise. All lek observations were recorded with a Trimble GeoXT GPS receiver and will include counts of males and females.

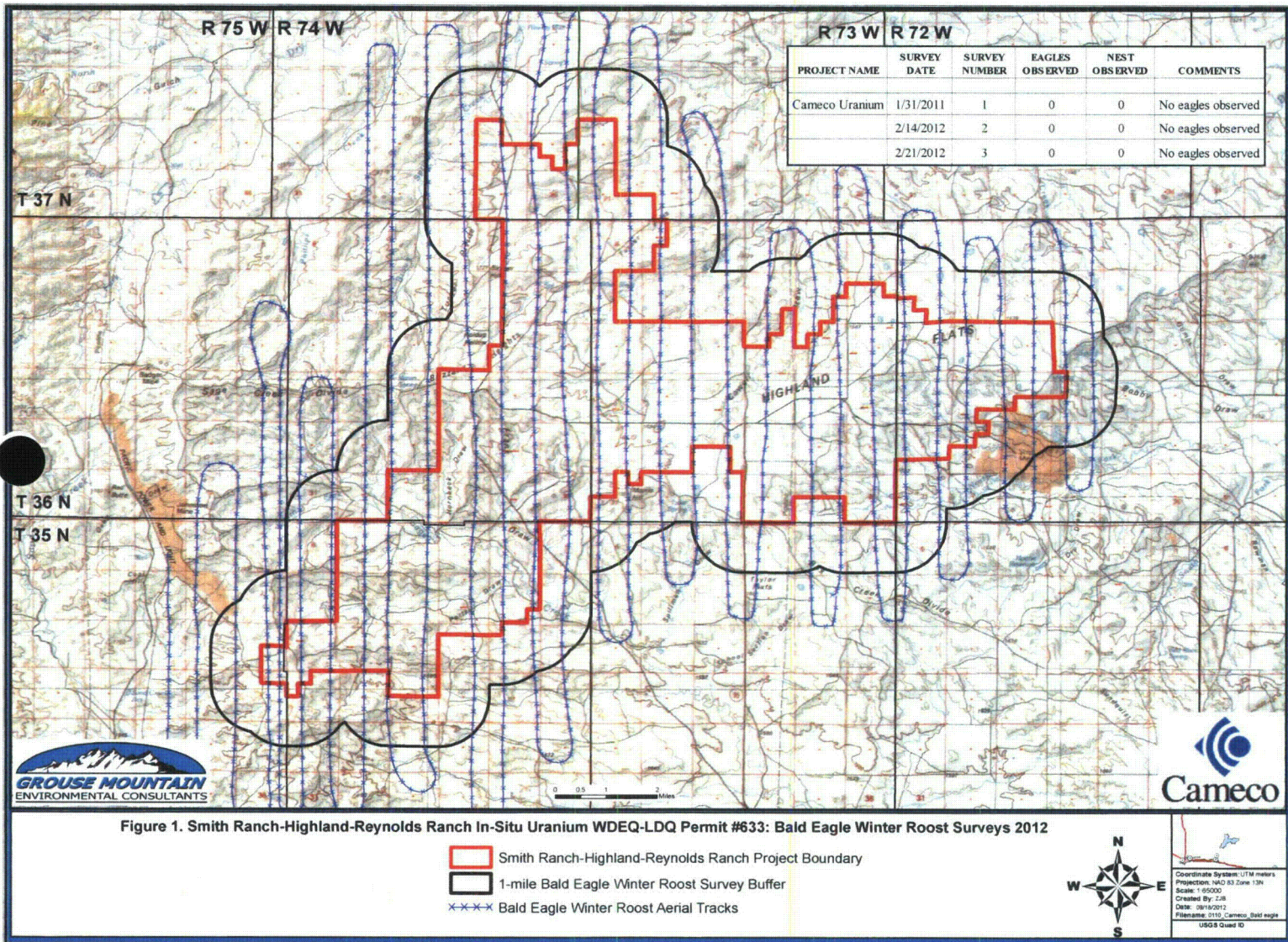


## Results

According to the available information there are four documented leks that occur within the Combined Permit Area and associated 2-mile buffer and two leks that were documented as new during the 2011 breeding season. The new leks from 2011, Suicide Hill and Highland, were observed to be active during the 2012 breeding season survey (Table 1 and Figure 1). Two consecutive years of lek attendance dictates that the leks will be classified as occupied leks. Occupied leks will be protected through management actions during surface disturbing activities. Suicide Hill lek and Highland lek will have a 2-mile Timing Limited Stipulation (TLS) buffer placed around them where surface disturbing activities may be limited from March 15 - June 30 annually. In addition to the 2-mile TLS buffer a 0.25-mile No Surface Occupancy (NSO) buffer will be placed around the lek perimeter. The NSO buffer may preclude any surface disturbing activities near the lek perimeter. The remaining leks observed during the aerial survey did not have any males displaying on the day the survey was conducted (Table 1), however, based on the previous 10 years lek data Sand Creek 2 lek, North 95 lek, and the North 95 East lek are still occupied leks and will also be afforded protection through the same management actions as listed above.

| PROJECT        | SURVEY    | SURVEY | SURVEY | Surveyor   | LEK               | LEK         | COORDINATES |         |      | LEGAL LOCATION |    |    | COUNT INFORMATION |         |      | RELEVANT   |
|----------------|-----------|--------|--------|------------|-------------------|-------------|-------------|---------|------|----------------|----|----|-------------------|---------|------|--|
| NAME           | DATE(S)   | METHOD | TIMES  | Name*      | NAME <sup>1</sup> | STATUS 2012 | UTM E       | UTM N   | QQ   | S              | T  | R  | MALES             | FEMALES | UNK. | COMMENTS   |
| Cameco Uranium | 4/23/2012 | Aerial | 6:20   | Chris Apel | North 95          | Inactive    | 439119      | 4757724 | SWSW | 28             | 35 | 74 | 0                 | 0       |      |  |
| Cameco Uranium | 4/23/2012 | Aerial | 6:25   | Chris Apel | North 95 East     | Inactive    | 440565      | 4757474 | NWNW | 34             | 35 | 74 | 0                 | 0       |      |  |
| Cameco Uranium | 4/23/2012 | Aerial | 6:05   | Chris Apel | Sand Creek 2      | Inactive    | 431649      | 4761132 | SWSE | 15             | 35 | 75 | 0                 | 0       |      |  |
| Cameco Uranium | 4/23/2012 | Aerial | 6:10   | Chris Apel | Turner Divide     | Inactive    | 439500      | 4772900 | NESW | 9              | 36 | 74 | 0                 | 0       |      |  |
| Cameco Uranium | 4/23/2012 | Aerial | 6:30   | Chris Apel | Highland          | Active      | 448446      | 4767533 | NWSW | 28             | 36 | 73 | 12                | 0       |      | Highland lek was documented in 2011 and is active again in 2012. Highland lek will be classified as an occupied lek.         |
| Cameco Uranium | 4/23/2012 | Aerial | 6:40   | Chris Apel | Suicide Hill      | Active      | 444006      | 4778858 | SWSE | 24             | 37 | 74 | 8                 | 0       |      | Suicide Hill lek was documented in 2011 and is active again in 2012. Suicide Hill lek will be classified as an occupied lek. |

If you have questions or comments please contact Zach Byram (307) 648-2112 (office) or (307) 217-2102 (cell).





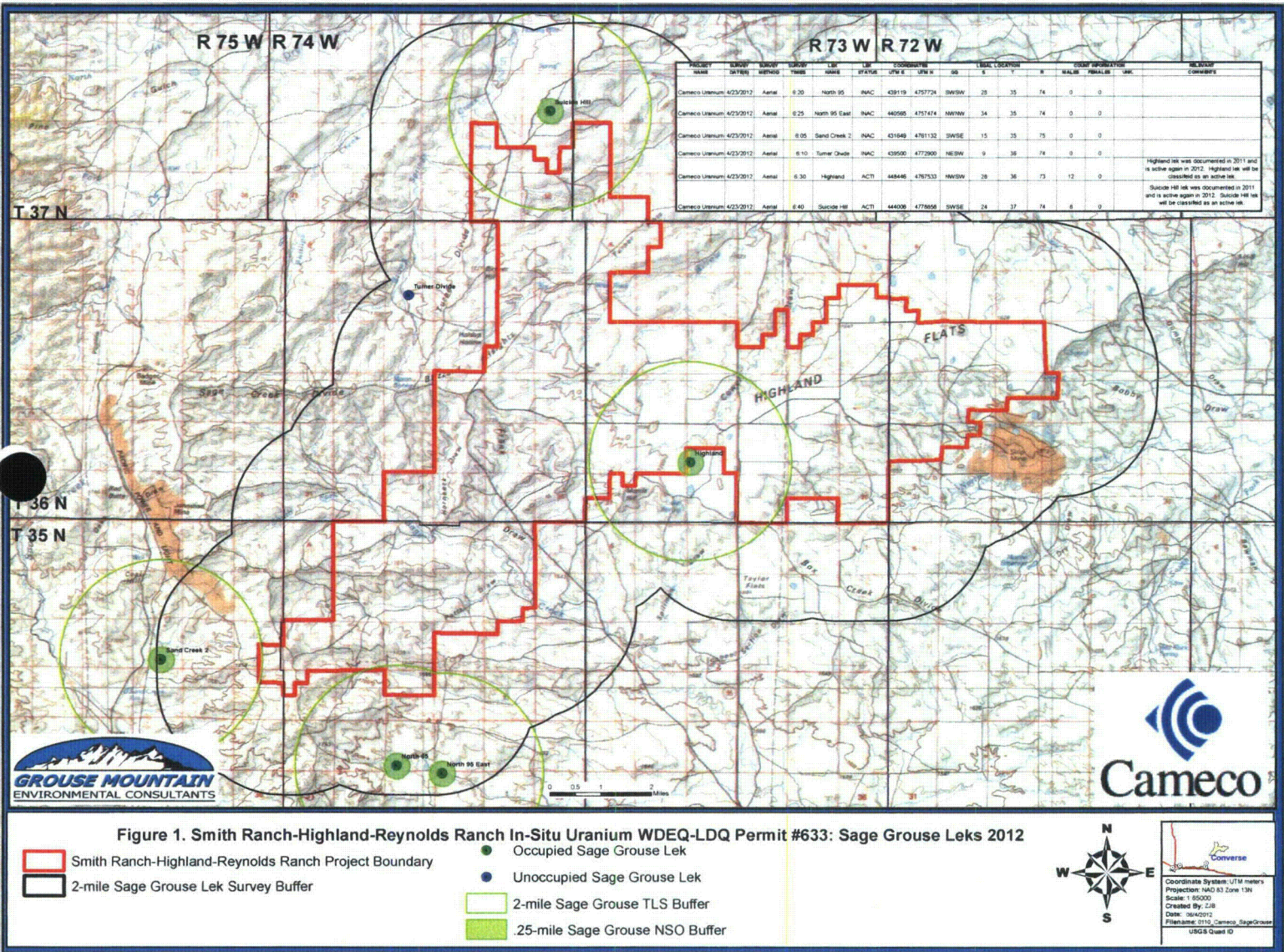


Figure 1. Smith Ranch-Highland-Reynolds Ranch In-Situ Uranium WDEQ-LDQ Permit #633: Sage Grouse Leks 2012

- Smith Ranch-Highland-Reynolds Ranch Project Boundary
- 2-mile Sage Grouse Lek Survey Buffer
- Occupied Sage Grouse Lek
- Unoccupied Sage Grouse Lek
- 2-mile Sage Grouse TLS Buffer
- .25-mile Sage Grouse NSO Buffer

Coordinate System: UTM meters  
 Projection: NAD 83 Zone 13N  
 Scale: 1:5000  
 Created By: JJB  
 Date: 04/02/2012  
 Filename: 0110\_Cameco\_SageGrouse  
 USGS Quad ID



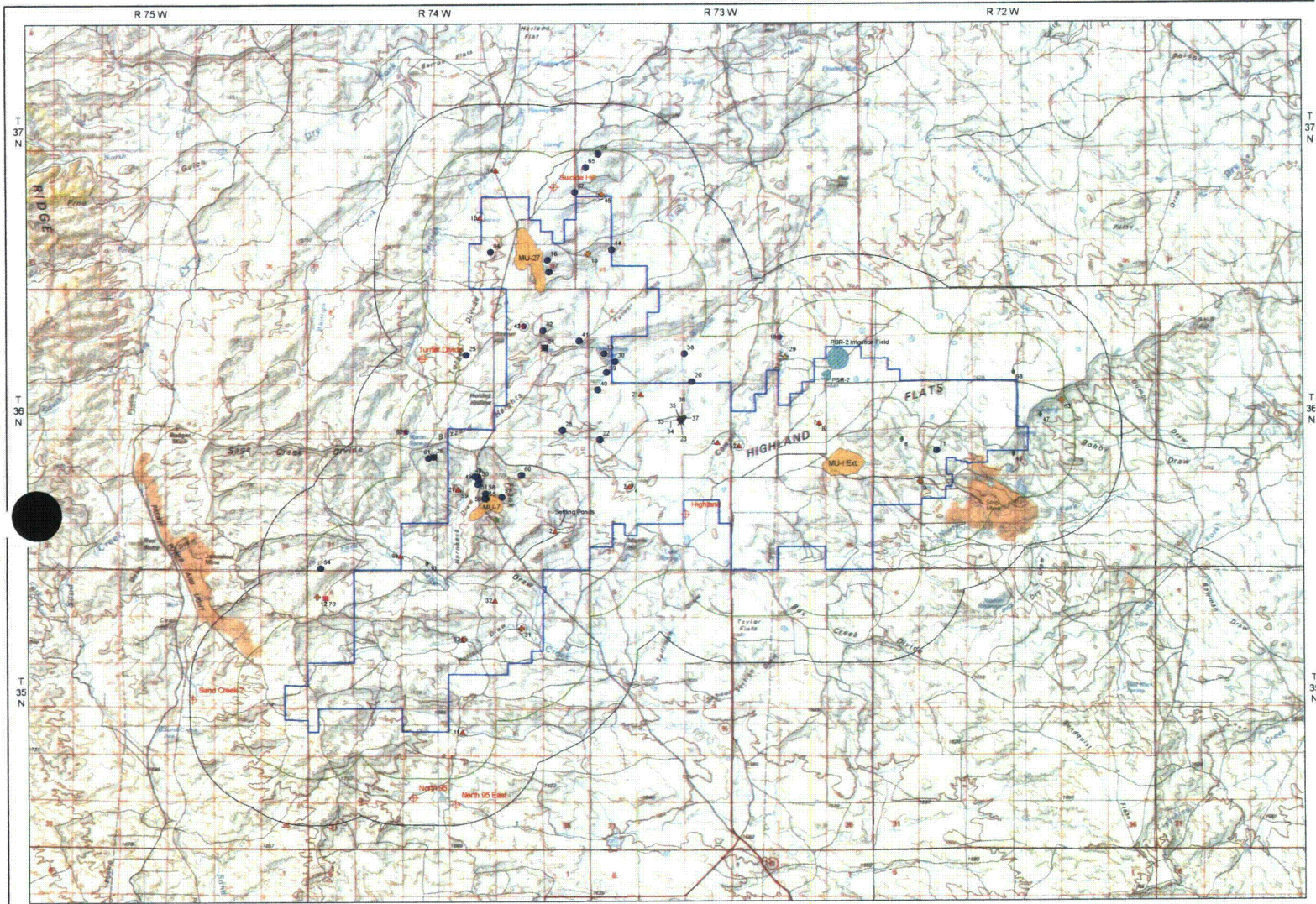
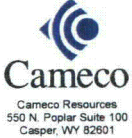


Figure 1. Locations of sage-grouse leks, raptor nests, swift fox den and wetland/pond monitoring sites in and around the Smith Ranch-Highland/Reynolds Ranch Permit Area.



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