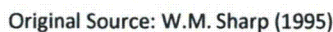
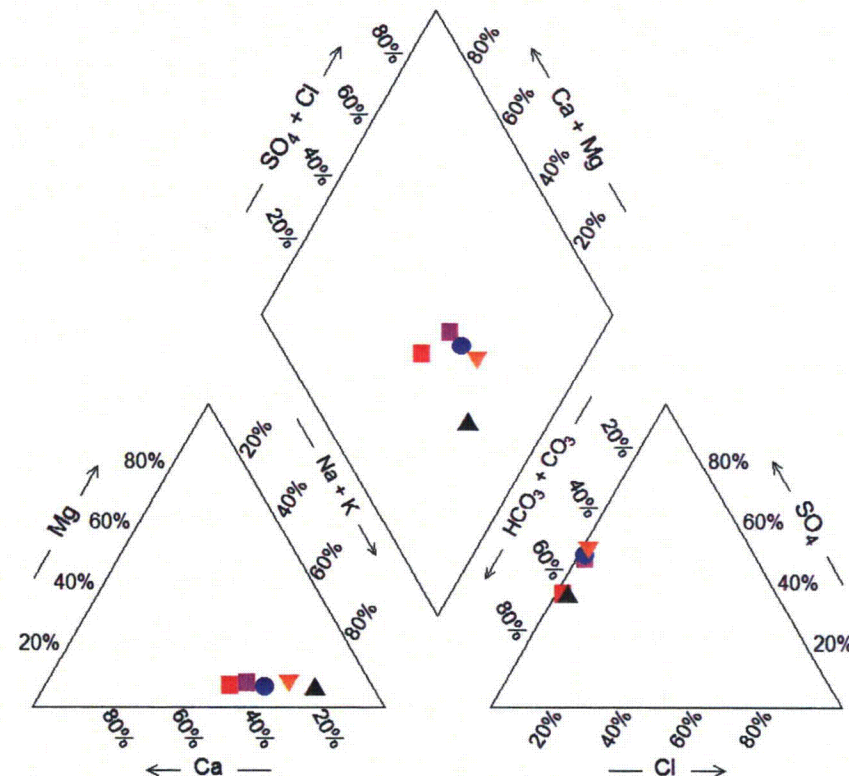
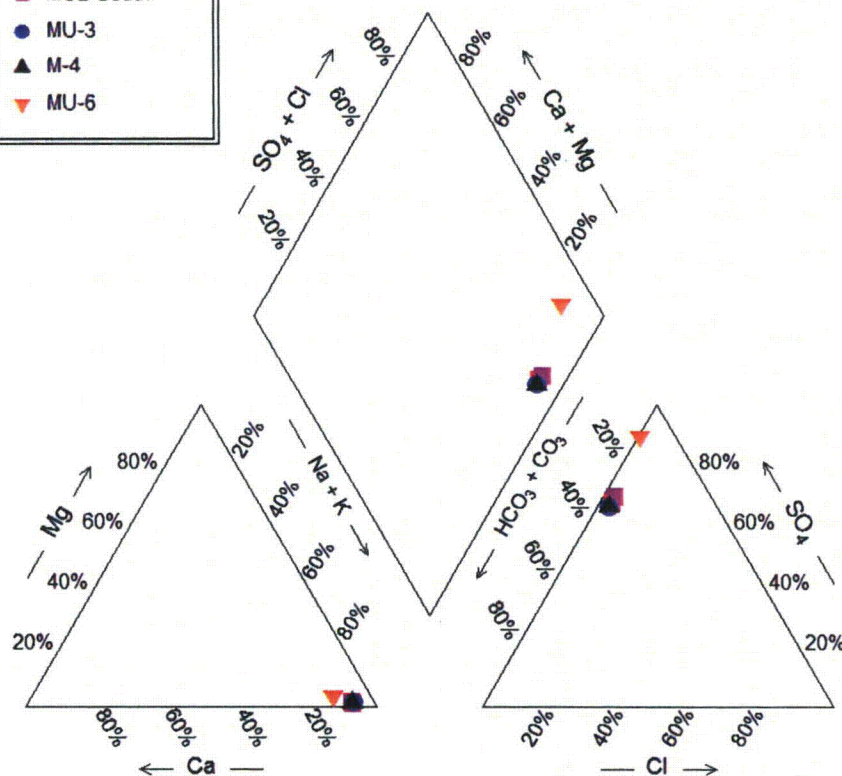
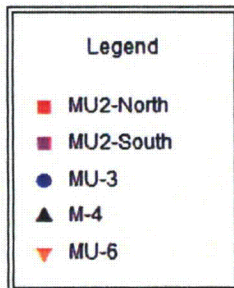


Figures





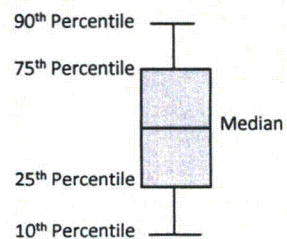
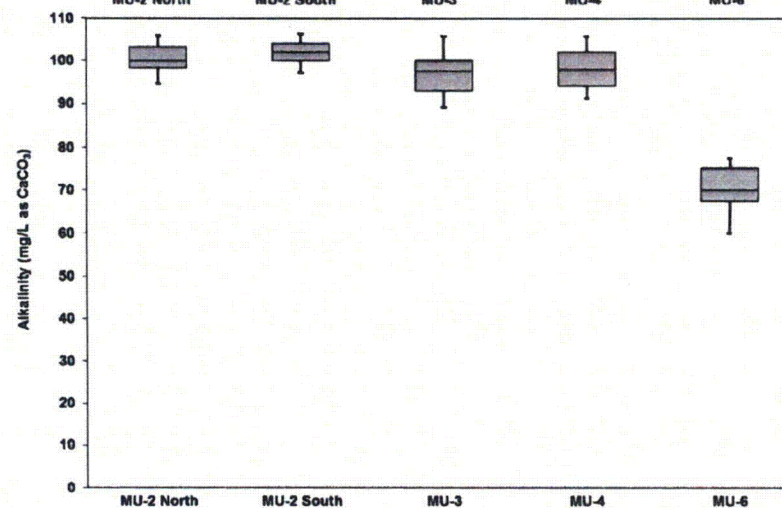
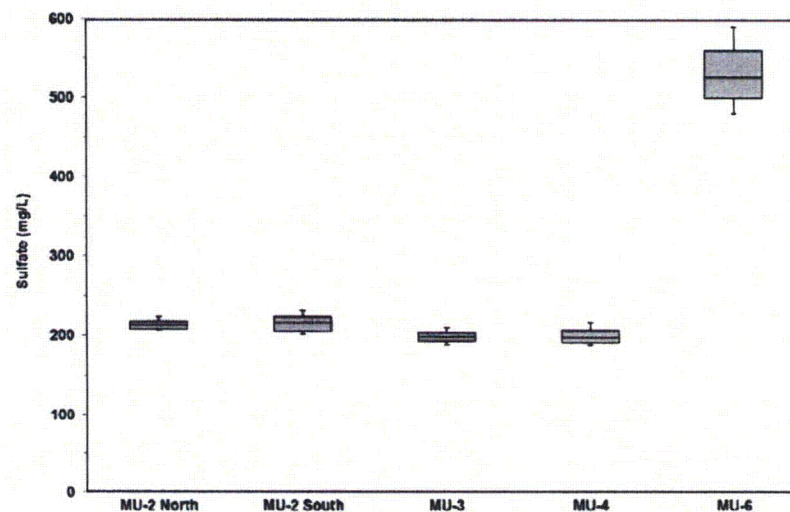
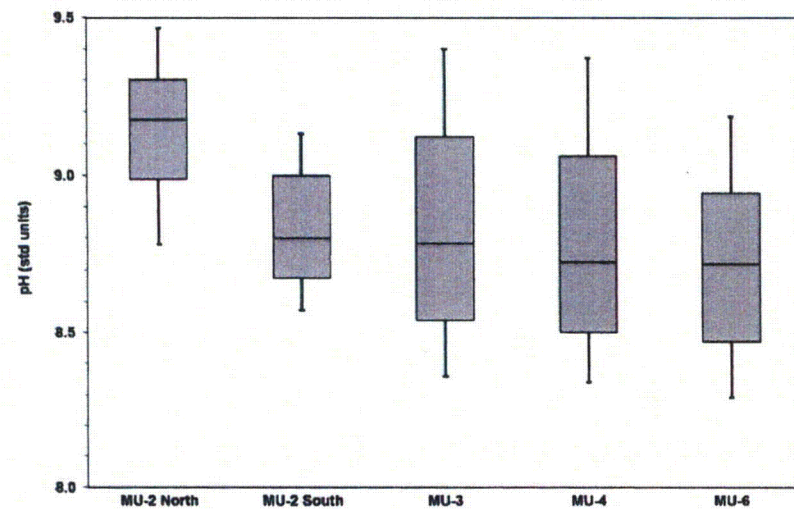
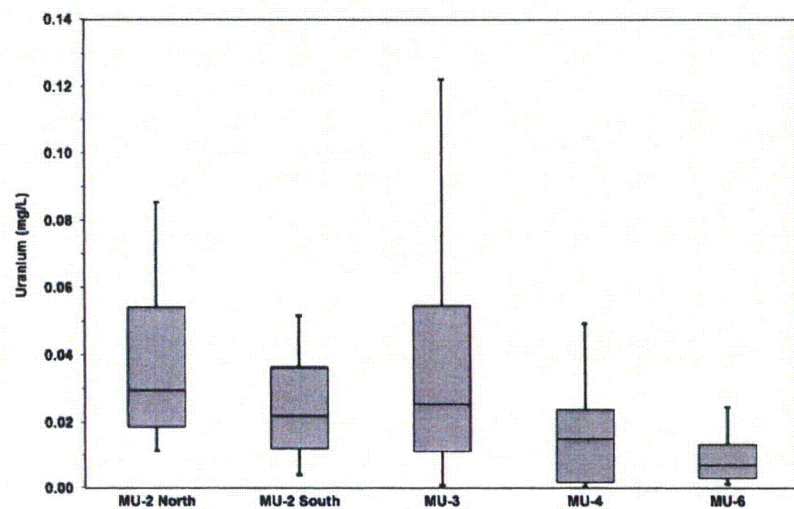
Notes:
MU-2 North and MU-2 South Baseline Results Overlap

Uranium One USA, Inc.
Willow Creek, Christensen Ranch Project

Trilinear Diagram - Production Zone Baseline and
Round 4 Stability Water Quality



FIGURE
4-1



Uranium One USA, Inc.
Willow Creek, Christensen Ranch Project

Box Plots by Mine Unit – Baseline Uranium and
Sulfate Concentrations



FIGURE
4-2



URANIUM ONE USA, INC.
CHRISTENSEN RANCH MINE UNITS 2 - 6 RESTORATION

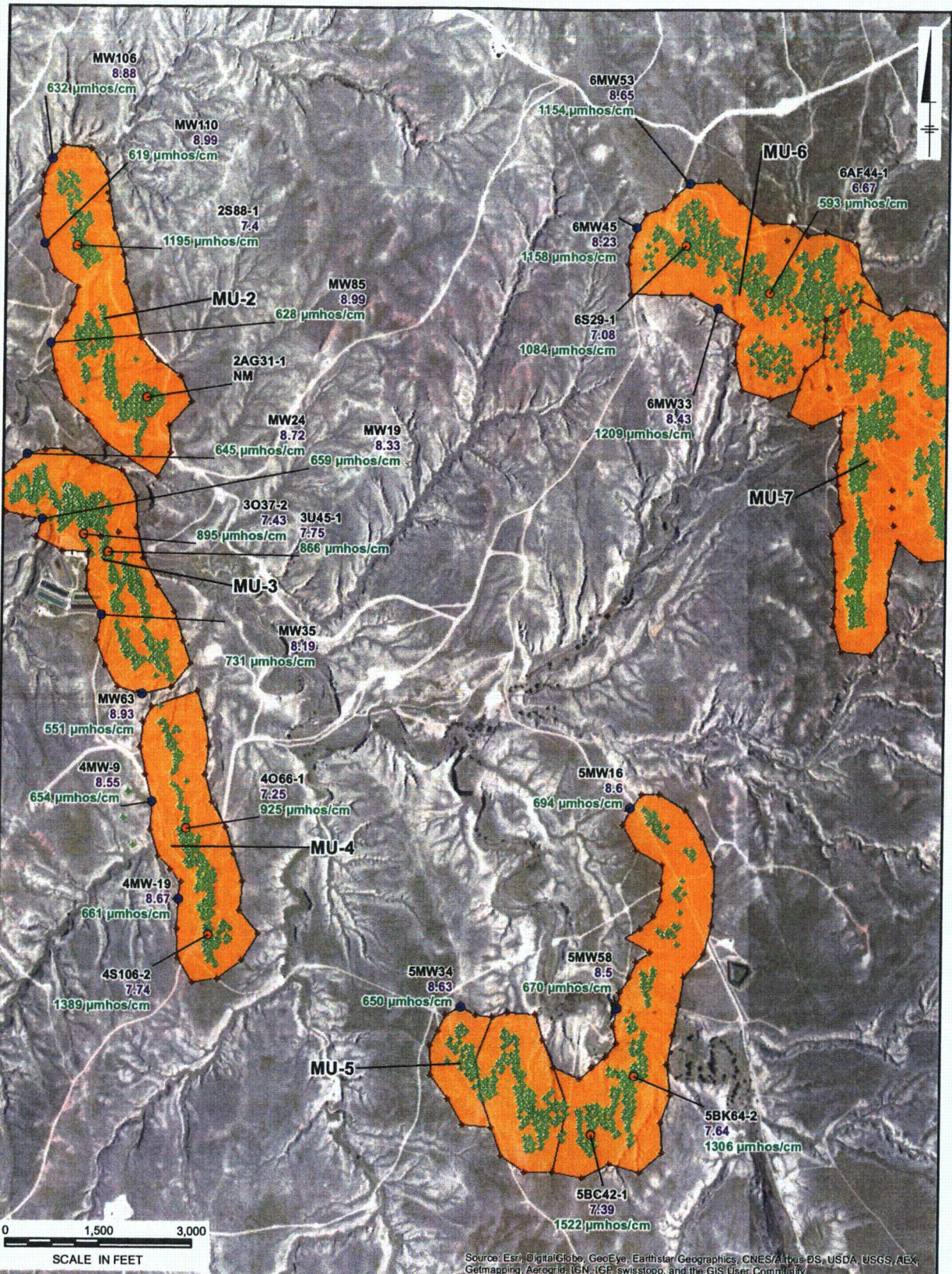
Uranium, Selenium, and Dissolved Radium-226
Analytical Results - May 2015

FIGURE

ARCADIS

4-3

CITY: (MPLS) DIVGROUP: (ENV) DB: Igreen LD: PM PROJECT: MD001216.0001
 FILE: Z:\GIS\PROJECTS\ENV\CHRISTENSEN_RANCH_Mine\Map2014-05\GW pH Cond 201505 shtWide.mxd DATE: 7/8/2015 10:28:15 AM



GROUNDWATER ANALYTICAL DATA LOCATIONS

- PRODUCTION AREA WELL - 2015 MONITORING EVENT
- PERIMETER WELL - 2015 MONITORING EVENT

WELLS

- PERIMETER MONITORING WELL
- PRODUCTION AREA WELL

■ MINE UNITS

WELL ID

pH
 ELECTRIC CONDUCTIVITY

NOTES:

AERIAL IMAGE SOURCE: ESRI Online
 NM = NOT MEASURED

URANIUM ONE USA, INC.
 CHRISTENSEN RANCH MINE UNITS 2 - 6 RESTORATION

pH and Electrical Conductivity Field
 Results - May 2015



FIGURE

4-4



CITY: (MPLS) DIV(GROUP/ENV/GIS) DB: Greene, LD; PM PROJECT: MD001216 0001
 FILE: Z:\GIS\PROJECTS\ENV\Chickadee_Ranch_Mine\ArcMap2014\4565W DO GRP 201505 siteWide.mxd DATE: 6/30/2015 10:18:53 AM

GROUNDWATER ANALYTICAL DATA LOCATIONS

- PRODUCTION AREA WELL - 2015 MONITORING EVENT
 - PERIMETER WELL - 2015 MONITORING EVENT
 - PERIMETER MONITORING WELL
 - PRODUCTION AREA WELL
 - MINE UNITS
- WELL ID**
DISSOLVED OXYGEN
OXIDATION REDUCTION POTENTIAL

NOTES:
 AERIAL IMAGE SOURCE: ESRI Online
 NM = NOT MEASURED
 DISSOLVED OXYGEN PERCENT TO MILLIGRAMS PER LITER OF DISSOLVED OXYGEN CONVERSIONS BASED ON OXYGEN CALCULATOR (<http://www.hydrochem.ch/Redoxnet/CO2calc.htm>) WITH REFERENCES TO THE CRC HANDBOOK

URANIUM ONE USA, INC.
 CHRISTENSEN RANCH MINE UNITS 2 – 6 RESTORATION

Dissolved Oxygen and Oxidation Reduction Potential Field Results – May 2015

CITY: (MPLS) DIV/GROUP:(ENV/GIS) DB: Igreen LD: PM PROJECT: MD001216.0001
FILE: Z:\GIS\PROJECTS\ ENV\Christensen Ranch Mine\ArcMap2014-06\GW UrSelfRaddis siteWide.mxd DATE: 6/30/2015 10:06:35 AM



GROUNDWATER ANALYTICAL DATA LOCATIONS

- PRODUCTION AREA WELL - 2015 MONITORING EVENT
- PERIMETER WELL - 2015 MONITORING EVENT

WELLS

- PERIMETER MONITORING WELL
- PRODUCTION AREA WELL

MINE UNITS

NOTES:
AERIAL IMAGE SOURCE: ESRI Online

URANIUM ONE USA, INC.
CHRISTENSEN RANCH MINE UNITS 2 – 6 RESTORATION

Uranium, Selenium, and Dissolved Radium-226
Analytical Results – May 2015

ARCADIS

FIGURE

4-3



CITY: (MPLS) DIV/GROUP:(ENV/GIS) DB: Igreene LD: PM PROJECT: MD001216.0001
 FILE: Z:\GIS\PROJECTS\ ENV\Christensen Ranch Mine\ArcMap2014-06\GW pH Cond 201505 siteWide.mxd DATE: 7/8/2015 10:29:15 AM

GROUNDWATER ANALYTICAL DATA LOCATIONS

- PRODUCTION AREA WELL - 2015 MONITORING EVENT
- PERIMETER WELL - 2015 MONITORING EVENT

WELLS

- PERIMETER MONITORING WELL
- PRODUCTION AREA WELL

MINE UNITS

WELL ID
 pH
 ELECTRIC CONDUCTIVITY

NOTES:

AERIAL IMAGE SOURCE: ESRI Online
 NM = NOT MEASURED

URANIUM ONE USA, INC.
 CHRISTENSEN RANCH MINE UNITS 2 – 6 RESTORATION

**pH and Electrical Conductivity Field
 Results – May 2015**



FIGURE
4-4

CITY: (MPLS) DIV/GROUP:(ENV/GIS) DB: Igreene LD: PM PROJECT: MD001216.0001
FILE: Z:\GIS\PROJECTS\ ENV\CHRISTENSEN RANCH Mine\ArcMap\2014-06\GW DO ORP 201505 siteWide.mxd DATE: 6/30/2015 10:18:53 AM



GROUNDWATER ANALYTICAL DATA LOCATIONS

- PRODUCTION AREA WELL - 2015 MONITORING EVENT
- PERIMETER WELL - 2015 MONITORING EVENT

WELLS

- PERIMETER MONITORING WELL
- PRODUCTION AREA WELL

MINE UNITS

WELL ID
DISSOLVED OXYGEN
OXIDATION REDUCTION POTENTIAL

NOTES:

AERIAL IMAGE SOURCE: ESRI Online
NM = NOT MEASURED
DISSOLVED OXYGEN PERCENT TO MILLIGRAMS PER LITER
OF DISSOLVED OXYGEN CONVERSIONS BASED ON OXYGEN
CALCULATOR (<http://www.hbuehrer.ch/Rechner/O2satur.html>)
WITH REFERENCES TO THE CRC HANDBOOK.

URANIUM ONE USA, INC.
CHRISTENSEN RANCH MINE UNITS 2 – 6 RESTORATION

**Dissolved Oxygen and Oxidation Reduction
Potential Field Results – May 2015**



FIGURE
4-5

Groundwater flow direction



Perimeter Well Observation Point

Zone 1 Upgradient	Zone 2 Production Zone	Zone 3 Downgradient	Zone 4 Far Downgradient
400 ft	400 ft wellfield width (500 ft in MU-6)	300 ft	200 ft
<ul style="list-style-type: none"> - Average surrounding aquifer MU-specific baseline water quality - Assumed dissolved oxygen = 0.1 mg/L - Assumed no sulfide minerals present 	<ul style="list-style-type: none"> - Average 2005 Round 4 Stability water quality (model scenarios 1 and 2) - Assumed dissolved oxygen = 1.0 mg/L - Assumed no sulfide minerals present 	<ul style="list-style-type: none"> - Average surrounding aquifer MU-specific baseline water quality - Assumed no dissolved oxygen present - Assumed pyrite content = 1% by mass 	

URANIUM ONE USA, INC.
CHRISTENSEN RANCH MINE UNITS 2 – 6
RESTORATION

1D Reactive Transport Model Domain

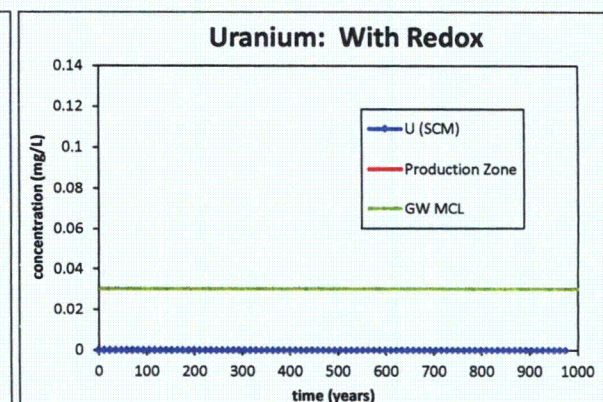
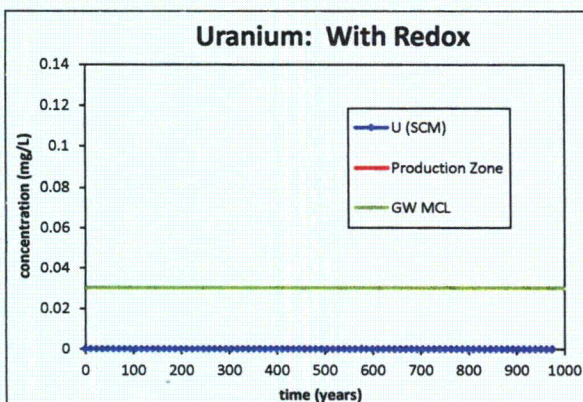
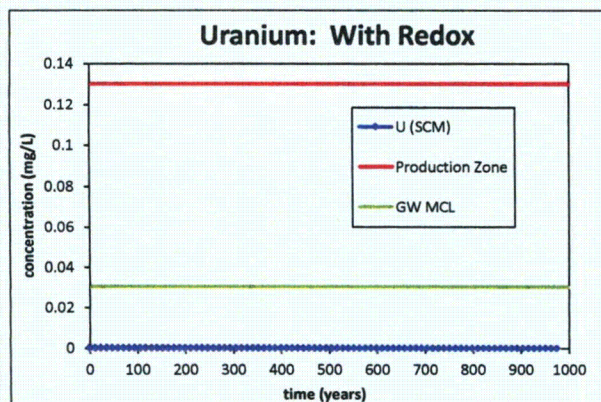
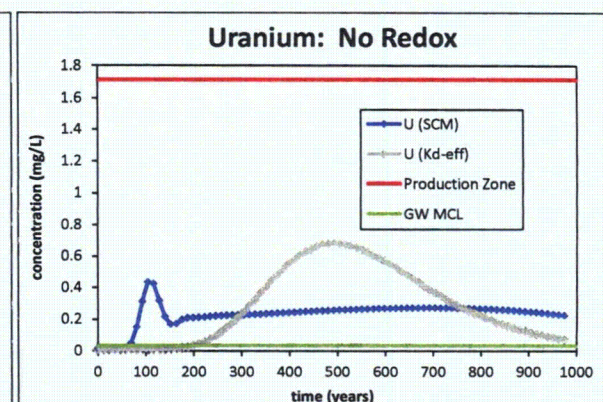
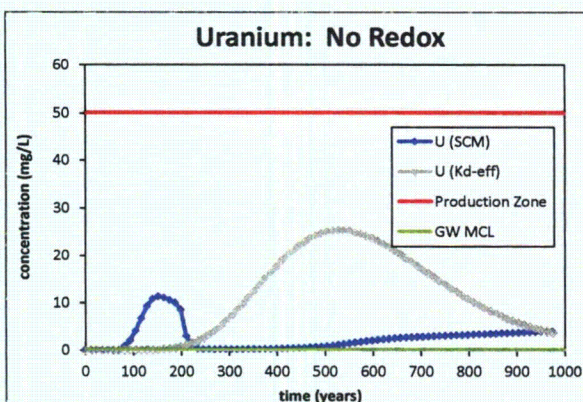
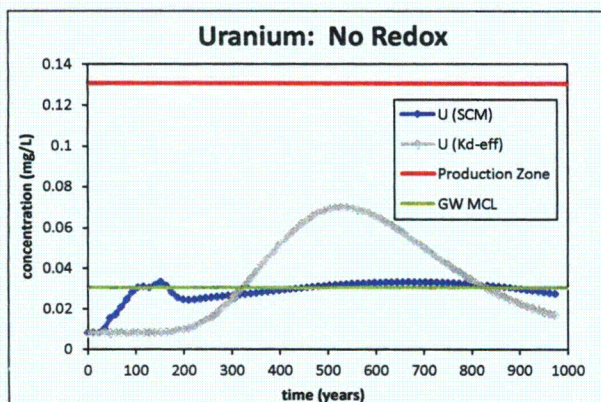


FIGURE
4-6

2005 Round 4 Stability Production Zone

2005 Round 4 Stability Production Zone U increased to 50 mg/L

May 2015 Production Zone



URANIUM ONE USA, INC.
CHRISTENSEN RANCH MINE UNITS 2 – 6
RESTORATION

Perimeter Well Uranium Concentration
Model Predictions: MU-2 South

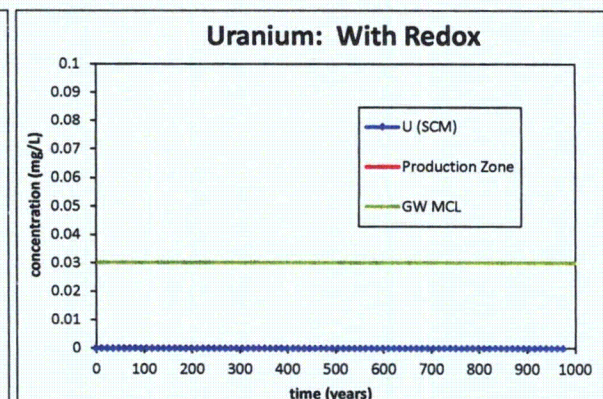
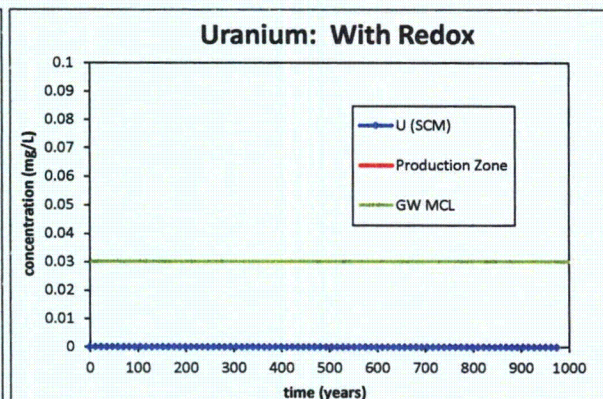
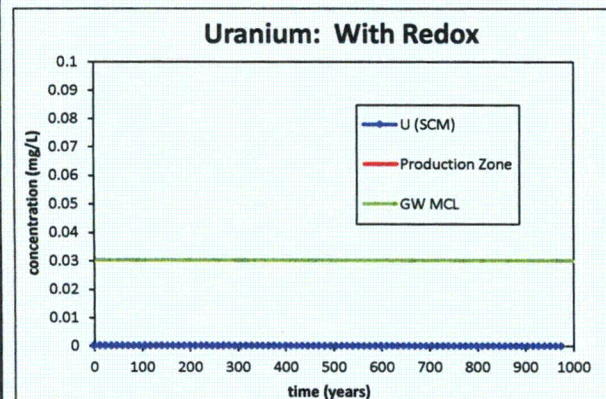
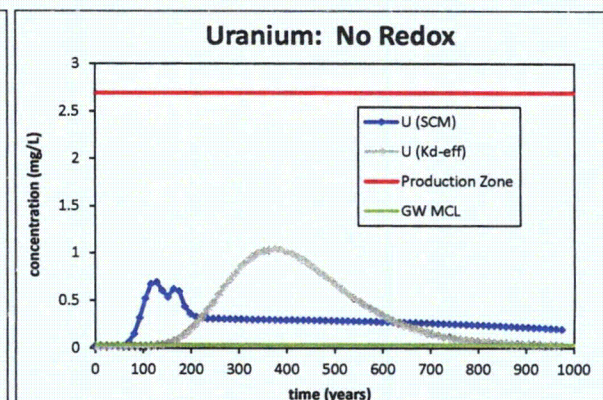
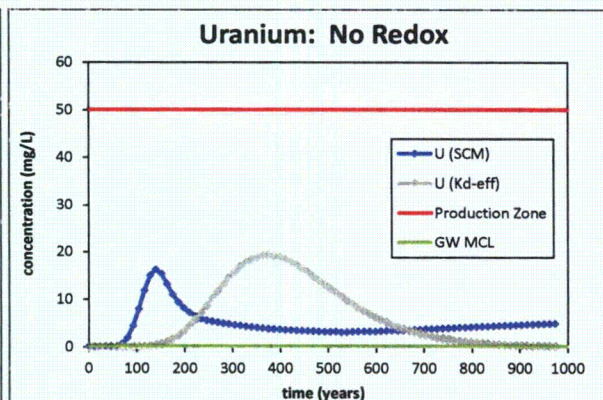
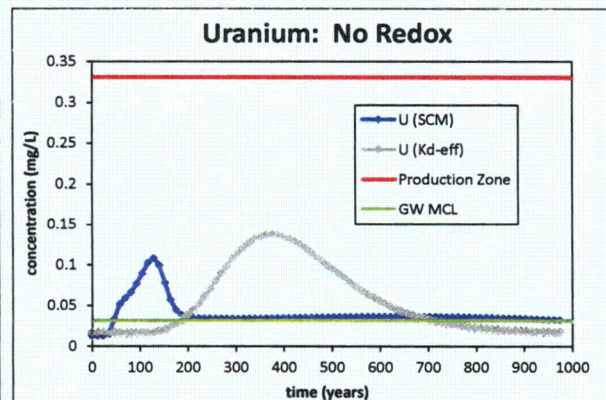


FIGURE
4-7

2005 Round 4 Stability Production Zone

2005 Round 4 Stability Production Zone U increased to 50 mg/L

May 2015 Production Zone



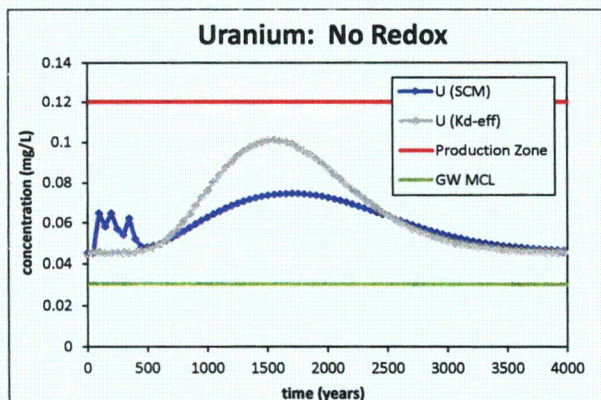
URANIUM ONE USA, INC.
CHRISTENSEN RANCH MINE UNITS 2 – 6
RESTORATION

Perimeter Well Uranium Concentration
Model Predictions: MU-2 North

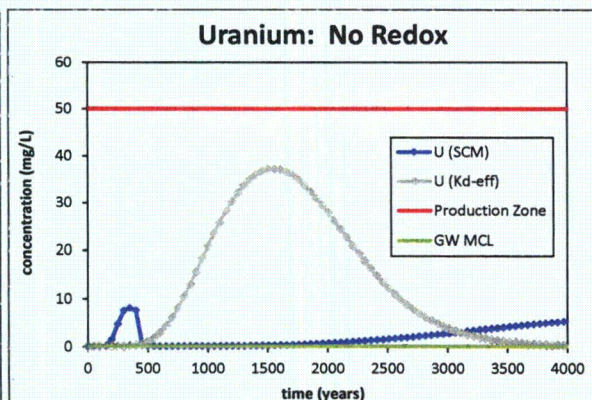


FIGURE
4-8

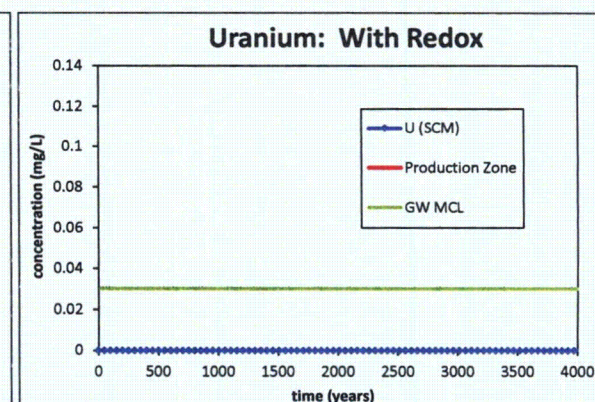
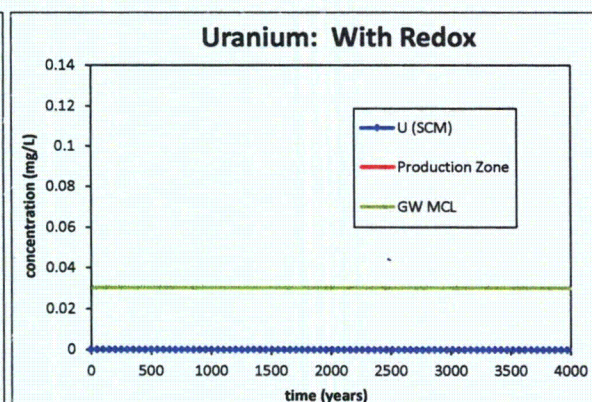
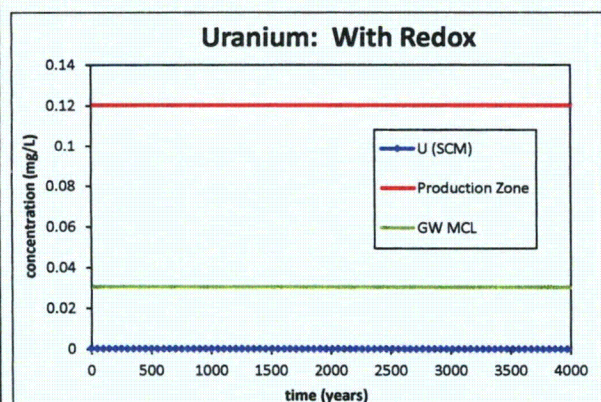
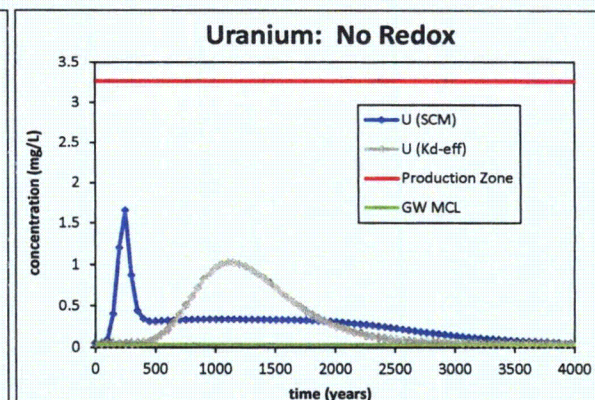
2005 Round 4 Stability Production Zone



2005 Round 4 Stability Production Zone U increased to 50 mg/L



May 2015 Production Zone



URANIUM ONE USA, INC.
CHRISTENSEN RANCH MINE UNITS 2 – 6
RESTORATION

Perimeter Well Uranium Concentration
Model Predictions: MU-3

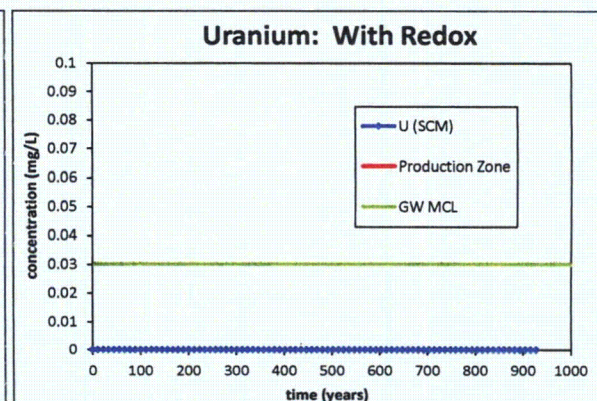
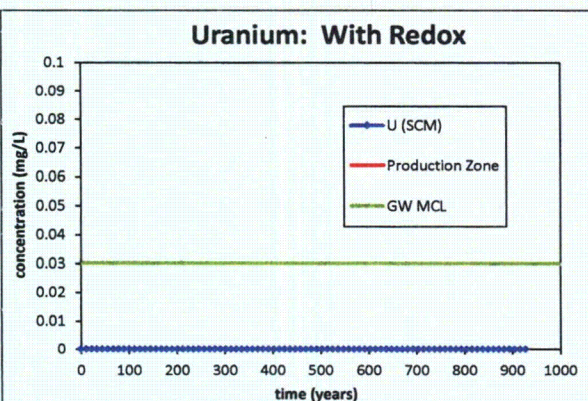
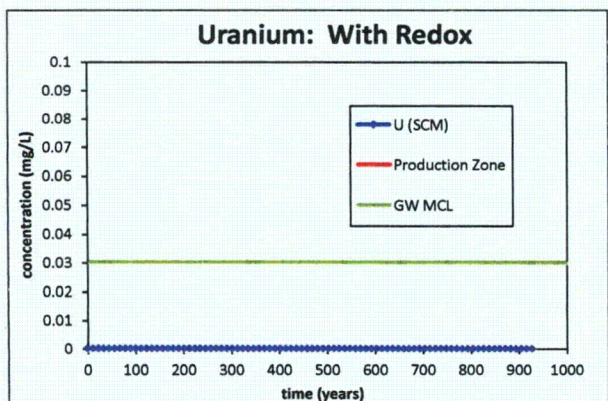
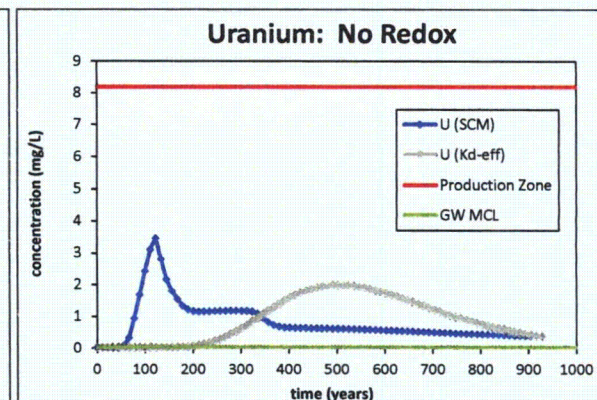
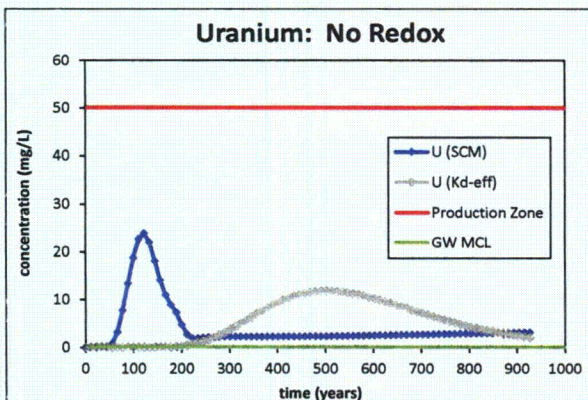
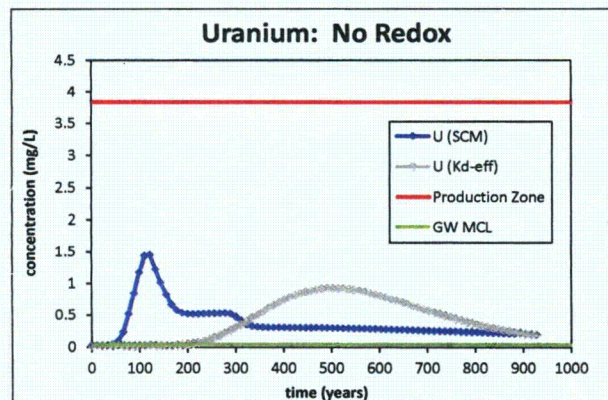


FIGURE
4-9

2005 Round 4 Stability Production Zone

2005 Round 4 Stability Production Zone U increased to 50 mg/L

May 2015 Production Zone



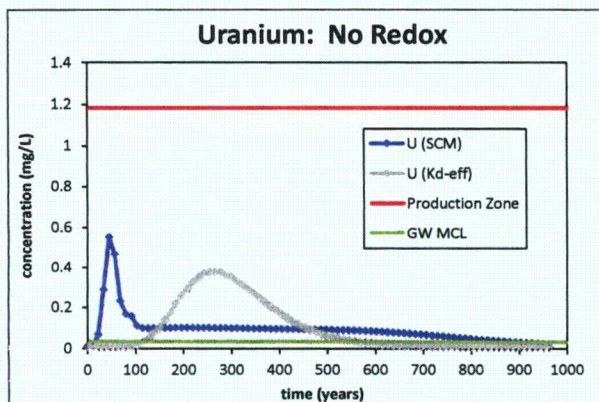
URANIUM ONE USA, INC.
CHRISTENSEN RANCH MINE UNITS 2 – 6
RESTORATION

Perimeter Well Uranium Concentration
Model Predictions: MU-4

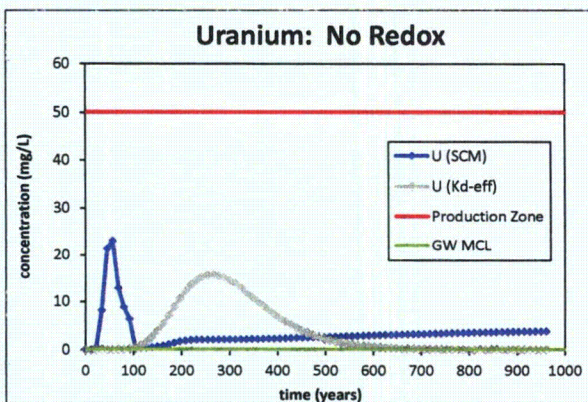


FIGURE
4-10

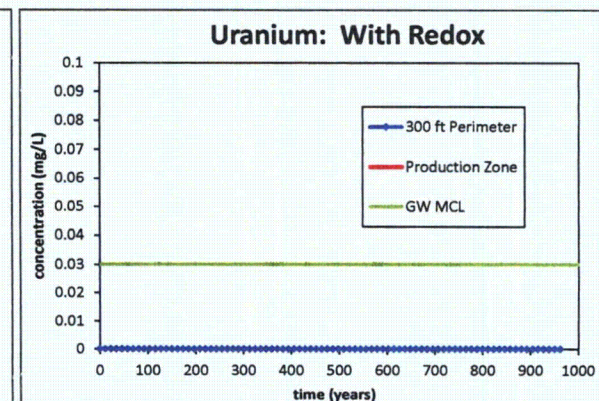
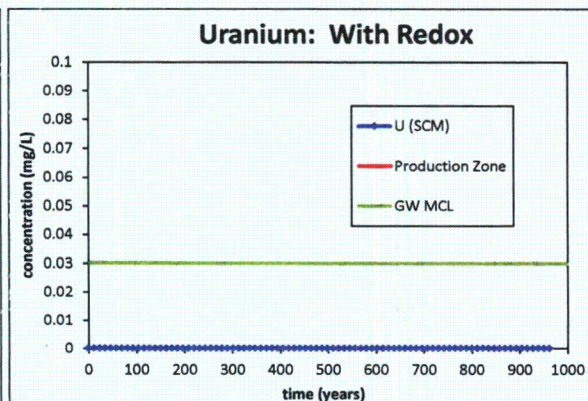
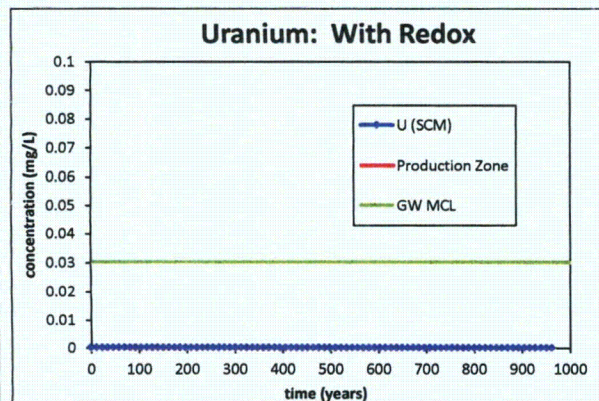
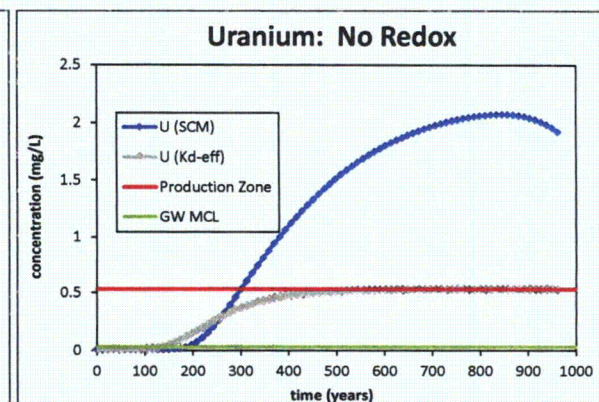
2005 Round 4 Stability Production Zone



2005 Round 4 Stability Production Zone U increased to 50 mg/L



May 2015 Production Zone



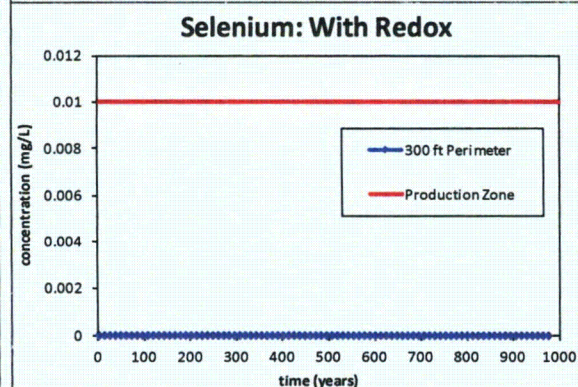
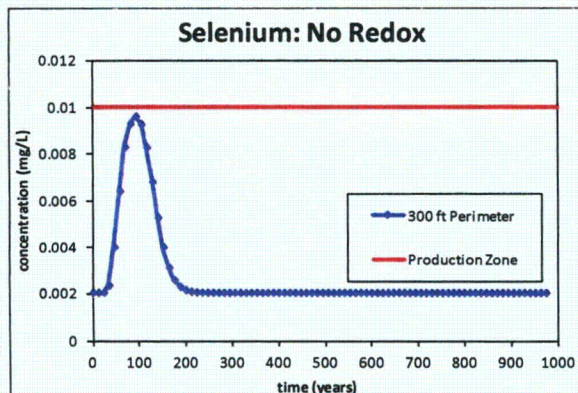
URANIUM ONE USA, INC.
CHRISTENSEN RANCH MINE UNITS 2 – 6
RESTORATION

Perimeter Well Uranium Concentration
Model Predictions: MU-6

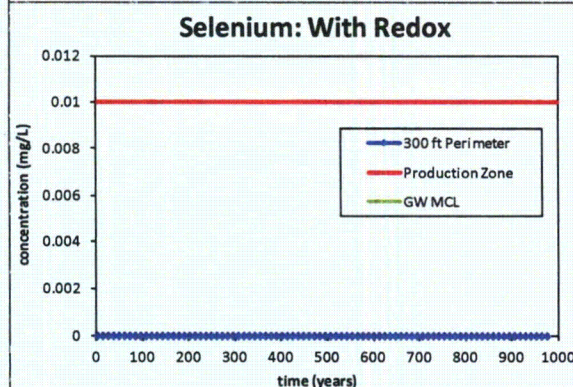
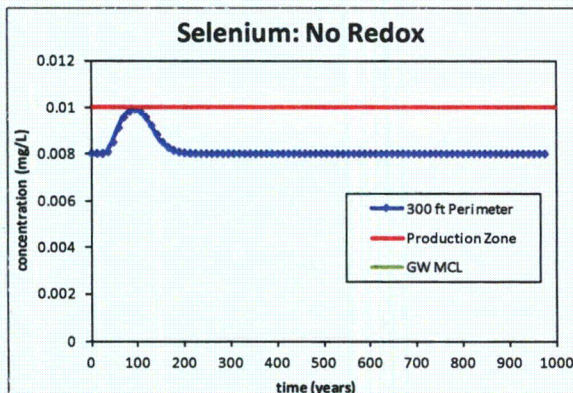


FIGURE
4-11

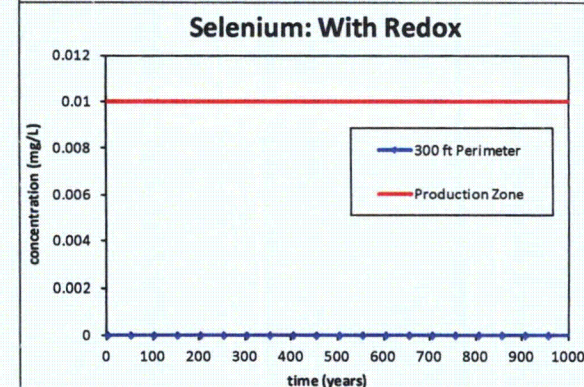
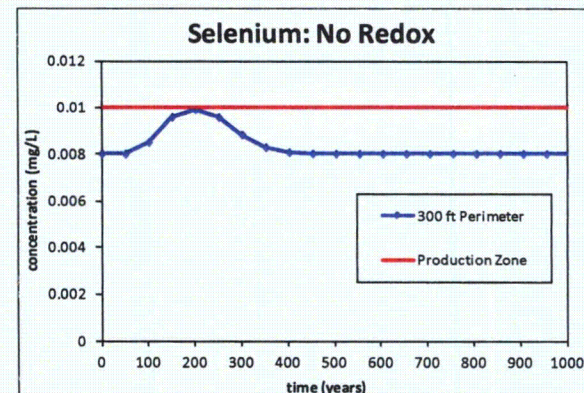
2005 Round 4 Stability Production Zone MU-2 South



2005 Round 4 Stability Production Zone MU-2 North



2005 Round 4 Stability Production Zone MU-3



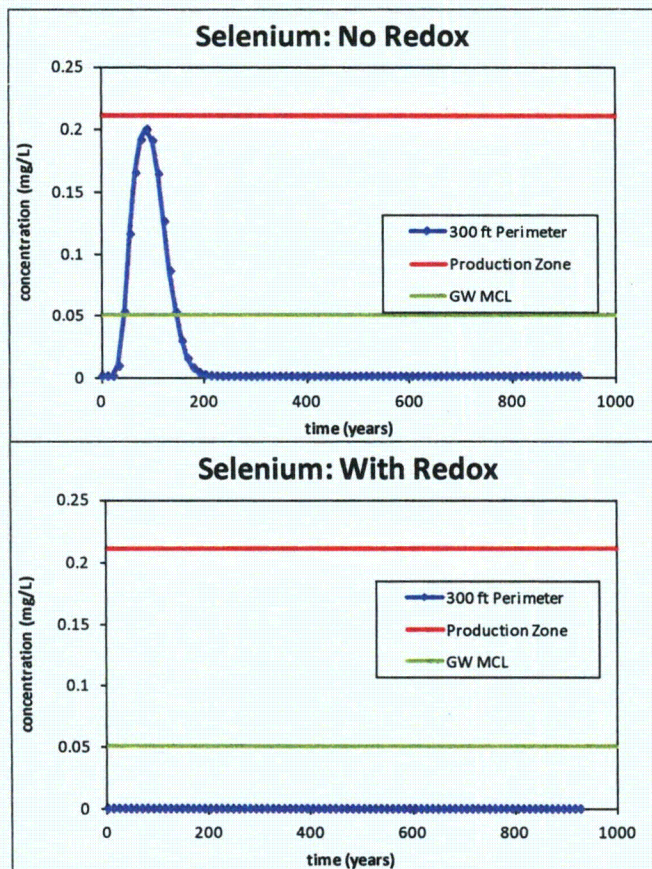
URANIUM ONE
CHRISTENSEN RANCH
REACTIVE TRANSPORT MODEL SUMMARY

**Perimeter Well Selenium Concentration Model
Predictions: MU-2 South, MU-2 North, MU-3**

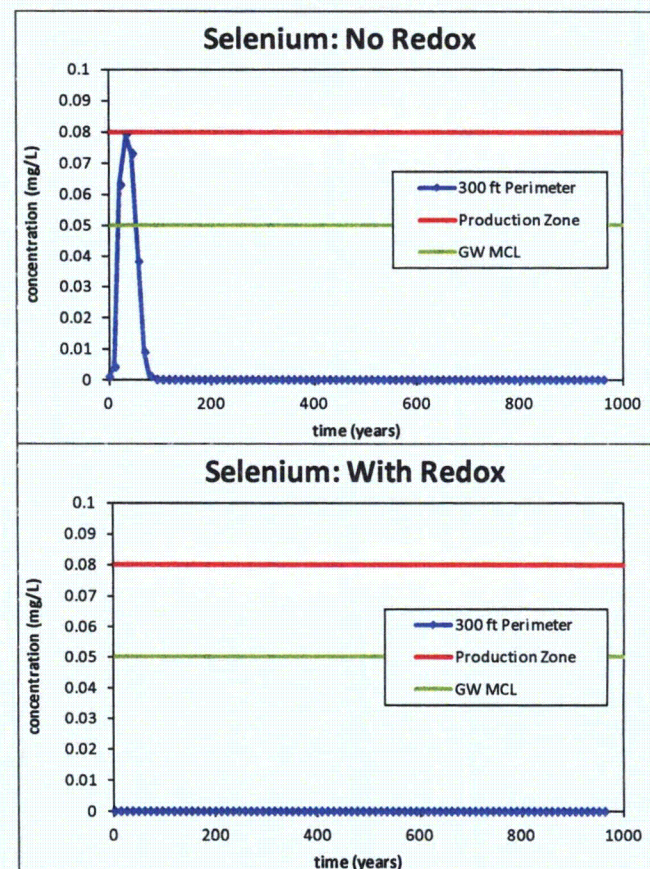


FIGURE
4-12

2005 Round 4 Stability Production Zone MU-4



2005 Round 4 Stability Production Zone MU-6



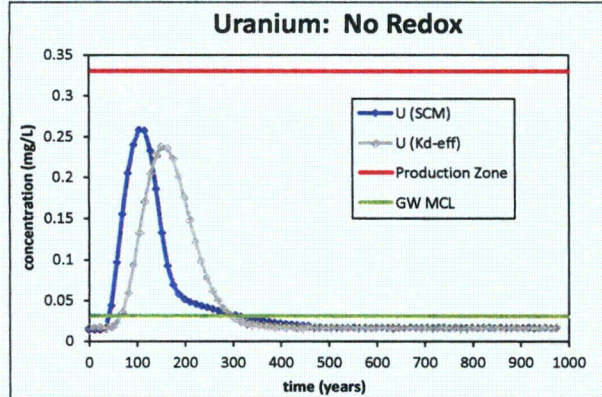
URANIUM ONE USA, INC.
CHRISTENSEN RANCH MINE UNITS 2 - 6
RESTORATION

Perimeter Well Selenium Concentration
Model Predictions: MU-4, MU-6

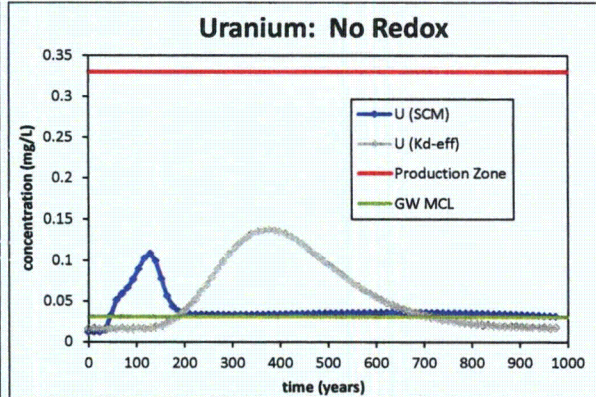


FIGURE
4-13

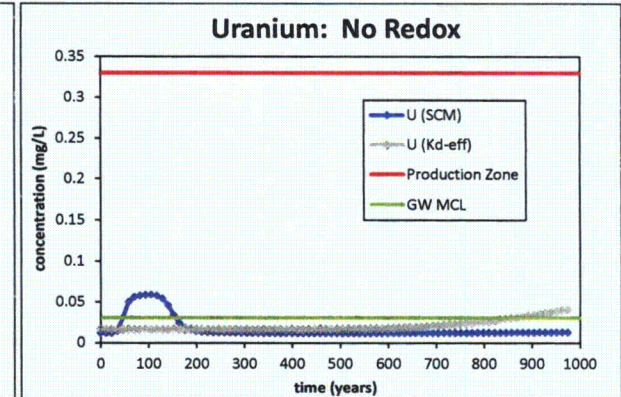
MU2 North
Site Concentration
= 0.0112 moles/L
(5x decrease)



MU2 North
Site Concentration
= 0.056 moles/L



MU2 North
Site Concentration
= 0.28 moles/L
(5x increase)

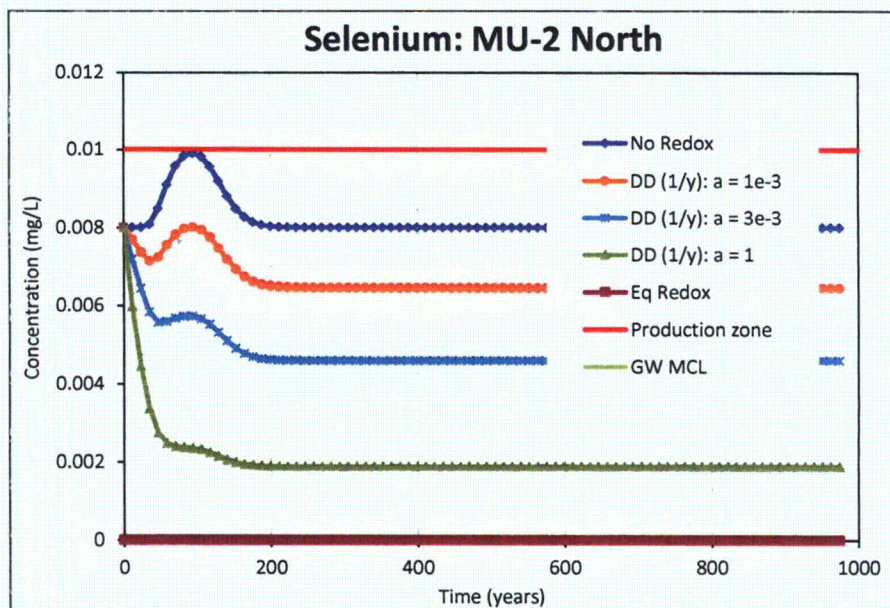
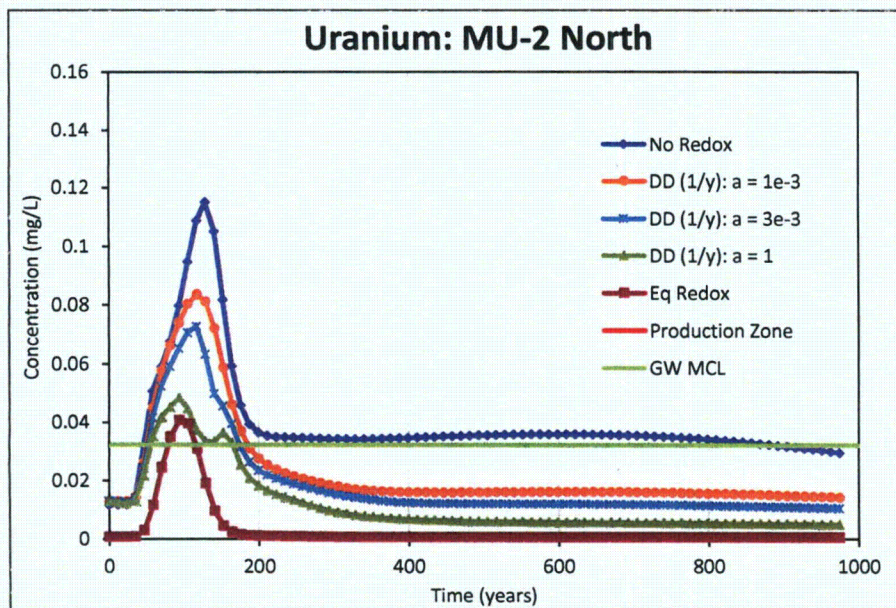


URANIUM ONE USA, INC.
 CHRISTENSEN RANCH MINE UNITS 2 – 6
 RESTORATION

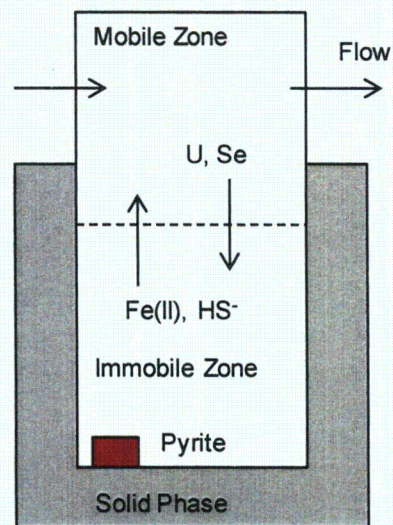
Perimeter Well Predicted Concentrations
 Varying Surface Site Concentration



FIGURE
4-14



Model Conceptualization:

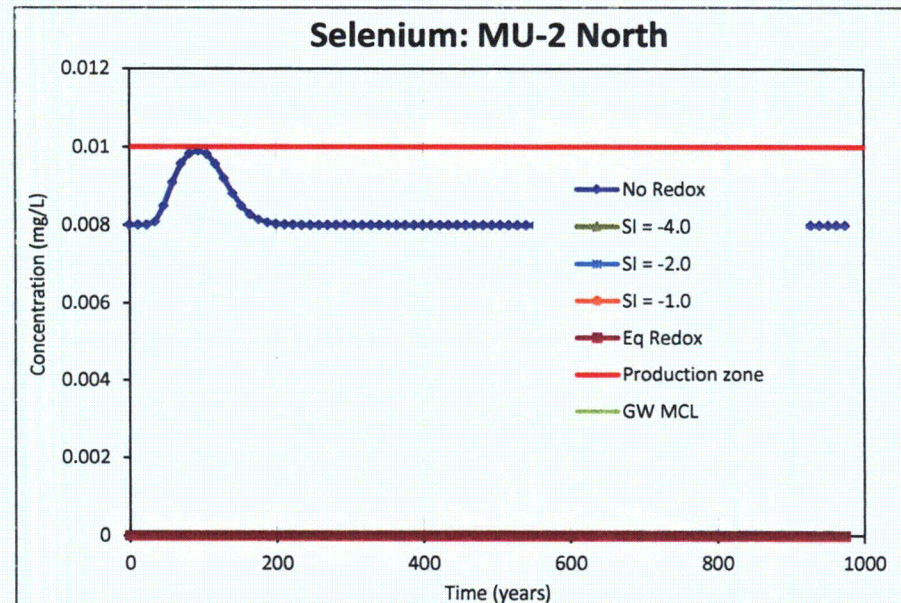
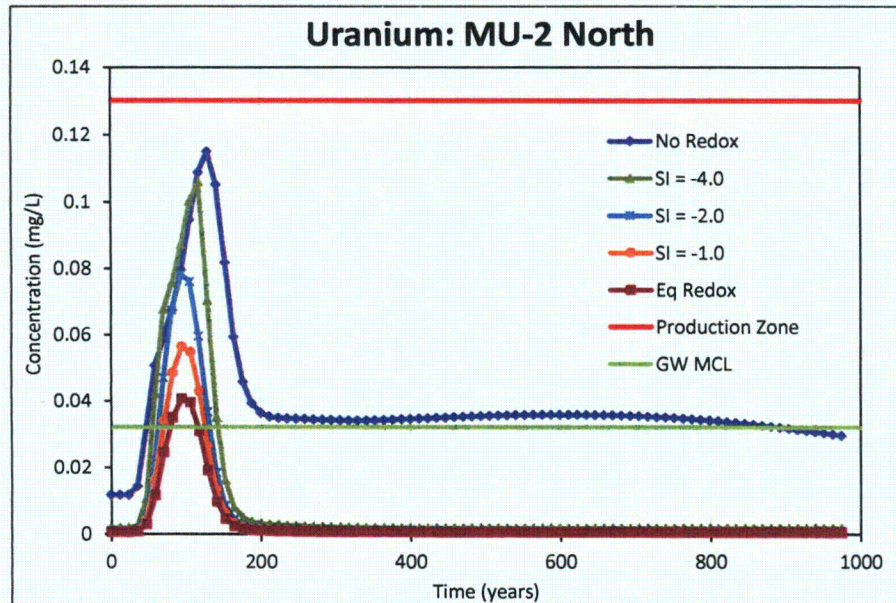


URANIUM ONE CHRISTENSEN RANCH REACTIVE TRANSPORT MODEL SUMMARY

Perimeter Well Predicted Concentrations
Mass Transfer Kinetic Limitation on Redox



FIGURE
4-15

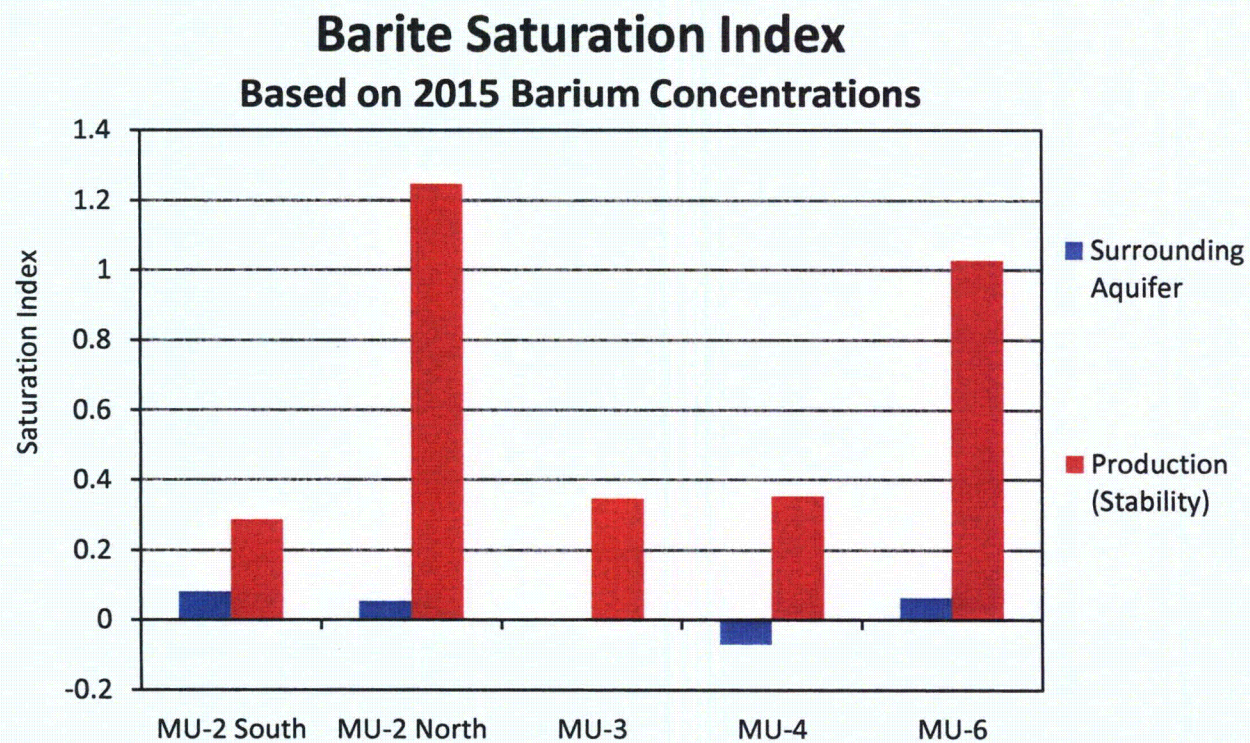


URANIUM ONE
CHRISTENSEN RANCH
REACTIVE TRANSPORT MODEL SUMMARY

Perimeter Well Predicted Concentrations
Pyrite Equilibrium Limitation on Redox



FIGURE
4-16

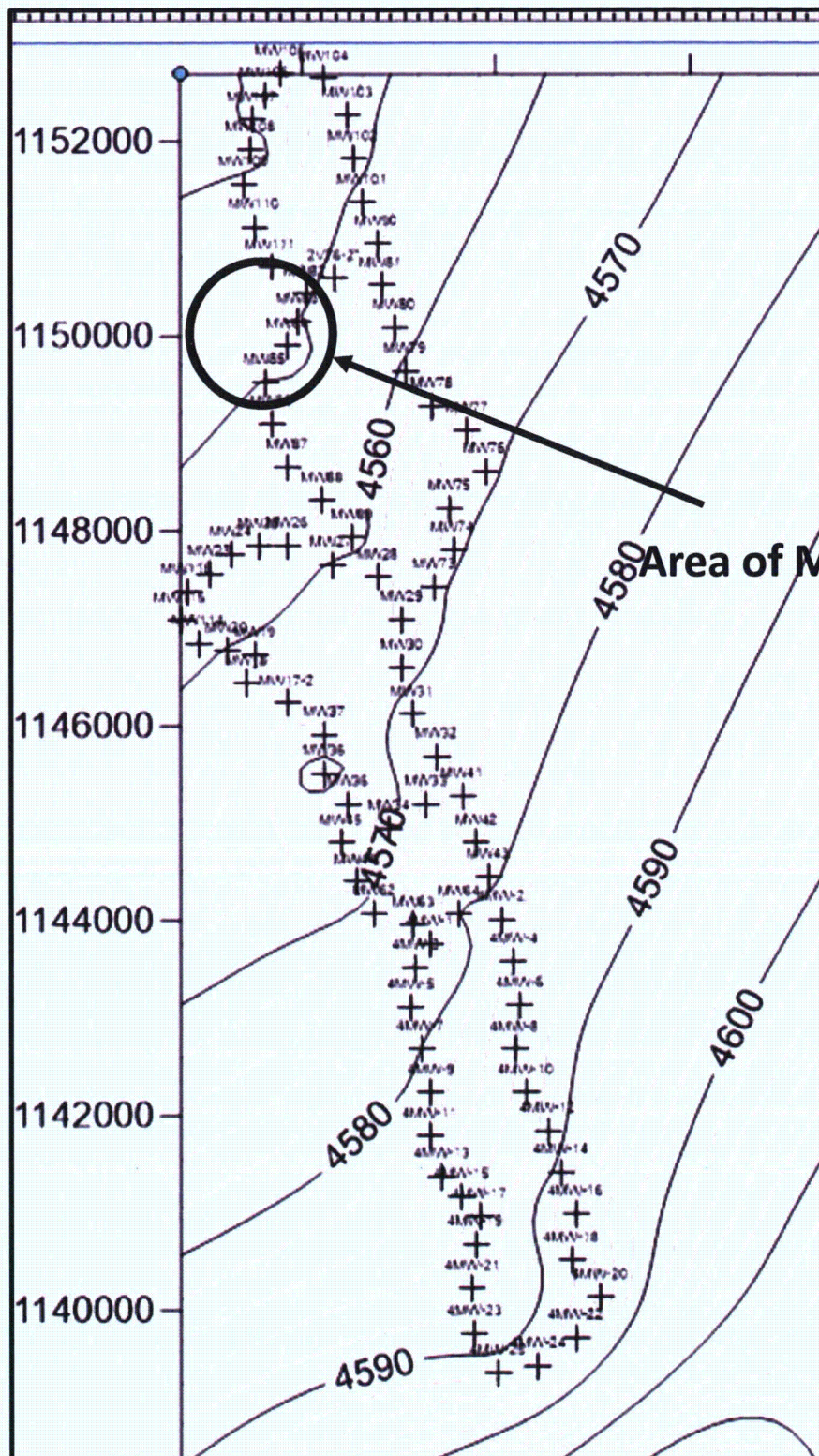


URANIUM ONE USA, INC.
CHRISTENSEN RANCH MINE UNITS 2 – 6
RESTORATION

Barite Saturation Index within the Production
Zone and Surrounding Aquifer



FIGURE
4-17



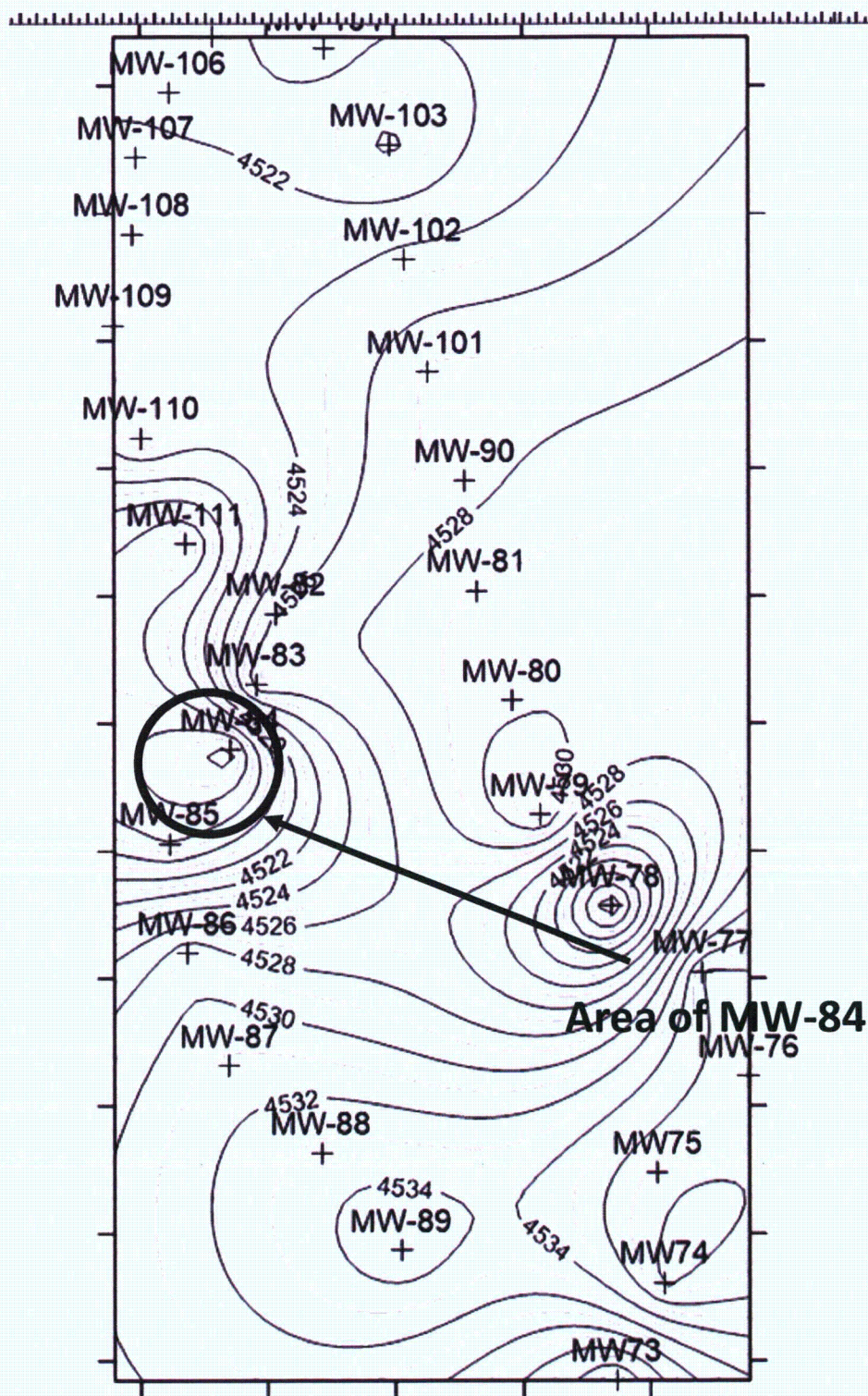
Uranium One USA, Inc.
Willow Creek, Christensen Ranch Project

Potentiometric Surface Map July 2015



FIGURE

4-18



Uranium One USA, Inc.
Willow Creek, Christensen Ranch Project

Potentiometric Surface Map June 2005



FIGURE

4-19