Umetco Minerals Corporation

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September 30, 2010

Mr. Dominic Orlando, Project Manager
U.S. Nuclear Regulatory Commission
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety and Safeguards
Office of Nuclear Material Safety and Safeguards
Mail Stop T-8-A-33
Two White Flint North, 11545 Rockville Pike
Rockville, Maryland 20852-2738

Subject: **Nuclear Regulatory Commission Annual Report**
Umetco Minerals Corporation Gas Hills, Wyoming Site
For the report period July 2009 through June 2010

Reference: **License SUA-648, Docket No. 40-0299**

Dear Mr. Orlando,

Umetco Minerals Corporation hereby submits two copies of the Gas Hills, Wyoming Annual Report prepared in accordance with License SUA-648. This document is submitted in accordance with License Conditions 10B, 16, 32, 35, and 39 for the above report period.

If you, or your staff, have any questions, please call me at (970) 256-8889.

Sincerely,

Thomas E. Gieck

Thomas E. Gieck
Reclamation Leader

Enclosures

cc: NRC Region IV (Arlington, TX)
Wyoming Department of Environmental Quality (Lander)
Bureau of Land Management (Casper Field Office)
Bureau of Land Management (Lander Field Office)

NMSS01

10-043

U. S. Nuclear Regulatory Commission

Annual Report
for
Gas Hills, Wyoming

July 2009 through June 2010

License SUA-648
Docket Number 40-0299

Umetco Minerals Corporation
2754 Compass Drive, Suite 280
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September 2010

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Appendix A Water Rights Within Five-Mile Radius of East Gas Hills Site

1.0 INTRODUCTION

This document is submitted in accordance with U.S. Nuclear Regulatory Commission (NRC) License No. SUA-648 Amendment Number 62, Conditions 10B, 16, 32, 35, and 39, Docket Number 40-0299, for the former uranium mill site at Gas Hills, Wyoming. The report includes the Umetco Minerals Corporation (Umetco) organizational structure, environmental monitoring report, land use survey and groundwater monitoring review for the period between July 1, 2009 and June 30, 2010. A copy of this annual report is retained at the Umetco office in Grand Junction, Colorado and is available for NRC review.

2.0 ORGANIZATIONAL CHART

In accordance with License Condition 10B, the authority and responsibilities of each management level for Umetco are presented in Table 2.1 and are described below. Because reclamation of the site has been completed, Umetco has no on-site employees.

Umetco is a wholly owned subsidiary of Union Carbide Corporation which is a wholly owned subsidiary of The Dow Chemical Company (Dow).

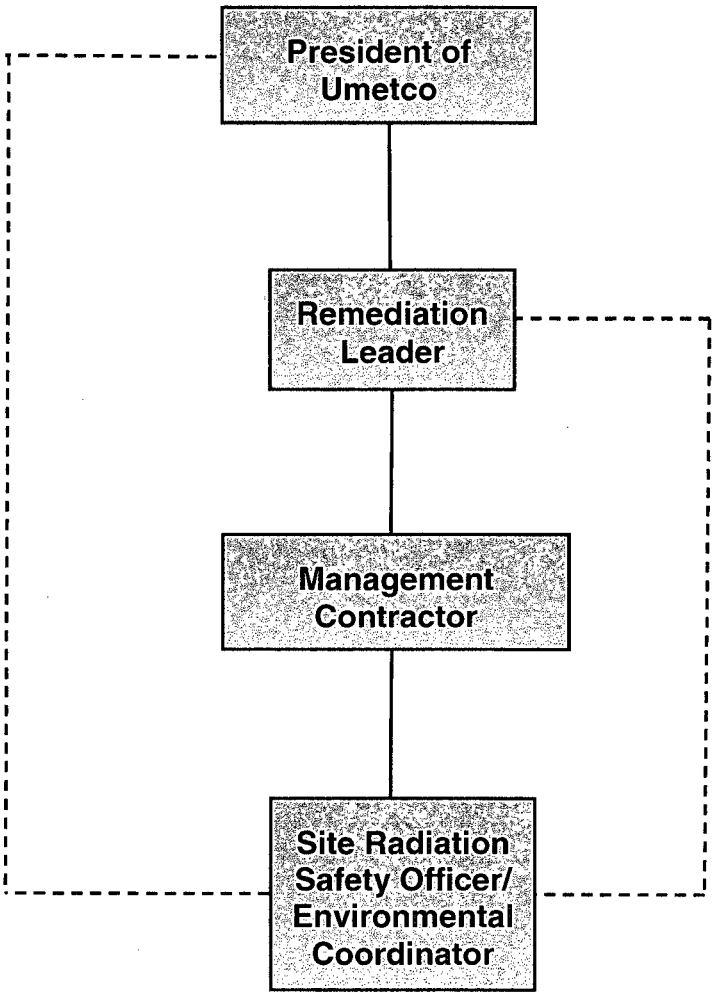
The President of Umetco is responsible for all practices and decisions made by the personnel reporting to him and reports to the Vice President of Environmental, Health and Safety at Dow.

The Remediation Leader reports to the President of Umetco and provides site management.

Umetco has retained the services of a management contractor who is responsible for compliance with the operational, health, radiation, safety and environmental practices and standards and conducts site maintenance and environmental monitoring. The management contractor is responsible for the day-to-day operating decisions at the site. The contractor reports to the Remediation Leader.

The Radiation Safety Officer/Environmental Coordinator is responsible for conducting activities that ensure the site radiation safety program meets applicable standards. This involves monitoring, evaluating personnel exposure and area surveys, overseeing the radiation protection program, providing appropriate training, maintaining monitoring equipment, and reporting. The Radiation Safety Officer/Environmental Coordinator develops and coordinates procedure modifications for radiological protection and As Low As Reasonably Achievable (ALARA) policy adherence. The Radiation Safety Officer/Environmental Coordinator is authorized to address concerns to the President of Umetco and the Remediation Leader.

Table 2.1 2010 Organization Chart for Umetco Minerals Corporation



3.0 ALARA AUDIT

As required by License Condition 16, an ALARA audit was performed on November 18, 2009. The 2010 audit is scheduled for October 2010. A copy of the annual ALARA audit report is retained at the Umetco office in Grand Junction, Colorado and is available for NRC review.

Current site conditions have reduced radiation exposures to essentially background levels. The dose to a member of the general public is based on historical data which indicate that radon-222 levels are below background levels. Gamma dose to the public historically has been approximately 58 millirem which is below the 100 millirem standard.

4.0 ANNUAL LAND USE SURVEY

The annual land use survey was prepared in accordance with License Condition 32. Mining, mine reclamation, mineral exploration (for oil and gas), recreational use and seasonal grazing are the primary land uses within the five-mile radius of the Gas Hills site. No changes in land use have occurred within the survey area since the 2009 annual report was submitted.

The following sections document current land uses.

4.1 Private Residences

The East Gas Hills site is located in a sparsely populated area within Natrona and Fremont counties in central Wyoming. The majority of the land within five miles of the site is public domain under Bureau of Land Management jurisdiction.

The nearest residence, the JE Ranch, is approximately five miles northeast of the site. It is occupied for one to two weeks per year. The nearest full-time residents are located approximately eight miles to the west-southwest at the Puddle Spring Ranch.

4.2 Grazing

Cattle are the primary livestock in the area and normally graze between April and October. Sheep graze in the early winter months. Native grazing species include antelope, deer, and elk.

4.3 Private and Public Potable Water and Agricultural Wells

The results of a search of the Wyoming State Engineers Office Water Rights Database for groundwater and surface water rights within the five-mile radius of the East Gas Hills site is given in Appendix A. No new water rights have been granted since the last report. Umetco is in the process of cancelling unnecessary water rights and transferring the water rights for wells to be kept for long term monitoring to the U. S. Department of Energy.

4.4 Other Operations

Umetco performed maintenance activities on the drainage channels within the Wyoming Department of Environmental Quality – Land Quality Division (WDEQ-LQD) East Gas Hills mine permit area during July 2009.

Umetco has one other permitted mine within the five-mile radius of the Gas Hills site. The Rattlesnake Quarry is presently inactive and in the past produced rock for the reclamation activities at the East Gas Hills site. WDEQ-LQD terminated the Clay Borrow Mine Permit on February 4, 2010.

Cameco Resources (formerly Power Resources, Inc) is in the permitting stage of an *in-situ* uranium mining operation and is performing some drilling near the Carroll Shop, approximately 2.5 miles south of the site.

Rock Springs Minerals continued to mine bentonite near the Clay Borrow site located approximately six miles west of the East Gas Hills site.

Kinder Morgan continued to use its compressor station located approximately 2.5 miles north of the East Gas Hills site.

Drilling activities for oil and gas remain about the same since 2009. Limited activity has been observed.

5.0 GROUNDWATER MONITORING REVIEW

Groundwater monitoring was performed in accordance with the *Groundwater Monitoring Plan, Appendix M,* dated March 2002, and revisions dated October 2002, January 2004 and June 2005, as required by License Condition 35A.

5.1 Annual Sampling

The Point of Compliance (POC) wells (MW1, MW21A, GW7 and GW8) were sampled for the Alternate Concentration Limit (ACL) constituents identified in License Conditions 35B and 35C. The POC wells, shown on Figure 1, were sampled in June 2010. The analytical results are shown in Tables 5.1 and 5.2 and Figure 2.

Table 5.1 Annual Sampling Results for the Western Flow Regime Collected in June 8, 2010

Analyte	Units	ACL	MW1	MW21A
Arsenic	mg/L	1.8	0.0580	0.0549
Beryllium	mg/L	1.64	0.0122	0.0207
Lead-210	pCi/L	35.4	0.36 ± 0.45	0.71 ± 0.5
Nickel	mg/L	13.0	0.60	0.64
Radium-226 + -228	pCi/L	250	19.7 ± 0.76	26.0 ± 0.78
Selenium	mg/L	0.161	< 0.0005 J	< 0.0005
Thorium-230	pCi/L	57.4	0.0 ± 0.08	0.03 ± 0.08
Natural Uranium	mg/L	11.9	0.1010 J	0.0159

J notation indicates estimated value

Table 5.2 Annual Sampling Results for the Southwestern Flow Regime Collected in June 9, 2010

Analyte	Units	ACL	GW7	GW8
Arsenic	mg/L	1.36	0.0051	0.0264
Beryllium	mg/L	1.70	0.02	0.1730
Lead-210	pCi/L	189	46.0 ± 1.3	27.0 ± 1.1
Nickel	mg/L	9.34	0.86	2.18
Radium-226 + -228	pCi/L	353	227.9 ± 1.8	108.8 ± 1.2
Selenium	mg/L	0.53	0.0003	0.0002
Thorium-230	pCi/L	44.8	0.30 ± 0.11	1.0 ± 0.21
Natural Uranium	mg/L	34.1	10.40	10.60

The isoconcentration map for natural uranium is given in Figure 3. Concentration trend plots for the ACL constituents were developed for the POC wells. Concentration trend plots for MW1 and MW21A (Western Flow Regime) are shown in Figures 4 through 11. The concentration trend plots for GW7 and GW8 (Southwestern Flow Regime) are shown in Figures 12 through 19. The ACL value for each constituent is indicated in the applicable concentration plots for comparison. No constituents exceeded the ACL values during the past year.

5.2 Semi-Annual Sampling

As required by Table M-1 of Appendix M, POC wells MW21A and GW7 and the non-POC wells were sampled semiannually in November 2009 and June 2010 for natural uranium, chloride and sulfate and measured for water levels.

A water level elevation map is provided in Figure 20. Hydrographs for Western Flow Regime POC and non-POC wells are shown in Figures 21 and 22. The Southwestern Flow Regime hydrographs are shown in Figures 23 and 24. The analytical results are shown in Tables 5.3 and 5.4.

Isoconcentration maps for natural uranium, chloride and sulfate are shown in Figures 3, 25 and 26, respectively. Comprehensive isoconcentration maps for each of the ACL constituents developed from data collected prior to ACL monitoring can be found in Appendix G of the *Final Application for ACLs for Gas Hills, Wyoming,* (Umetco May 2001). The Appendix G isoconcentration maps provide a baseline assessment of the distribution of ACL constituents. Concentration trend plots of chloride and sulfate for the POC wells are shown in Figures 27 through 30. Chloride, sulfate and natural uranium trends for the non-POC wells are shown in Figures 31 through 37.

The chloride and sulfate results of the four groundwater model verification wells (MW71B, MW28, MW72 and MW82) were compared with the target levels given in Tables 2 through 5 of Appendix M and its subsequent revisions. The sulfate and chloride target levels were not exceeded in any of the model verification wells.

Table 5.3 Semi-Annual Sampling Results for the Western Flow Regime

Monitoring Location	Sampling Date	Analyte (mg/L)		
		Chloride	Sulfate	Natural Uranium[1]
MW1	6-8-10	120	1810	0.1010
MW21A	11-12-09	110 J	1730	0.0062
	6-8-10	130	2000	0.0159
MW25	11-12-09	82	2400	0.0090
	6-9-10	77	2500	0.0065
MW28[2] [3]	11-11-09	94	1800	0.0019
	6-8-10	120	1900	0.0023
MWI64	11-12-09	69	1810	5.910
	6-8-10	26	710	2.210
MW70A	11-12-09	160	1700	2.460
	6-9-10	170	2500	2.970
MW71B[2]	11-12-09	48	730	0.0074
	6-8-10	50	820	0.0050
MW77	11-12-09	6	680	0.0016
	6-8-10	7	810	0.0024
Iron Springs	11-12-09	12 J	470	0.1170 J
	6-7-10	13	560	0.0107

(1) There are no action levels for natural uranium at the non-POC wells.
(2) MW28 and MW71B are Model Validation Wells for Western Flow Regime.
(3) Revised target levels given in the January 2004 revision to Appendix M.

J notation indicates estimated value

Table 5.4 Semi-Annual Sampling Results for the Southwestern Flow Regime

Monitoring Location	Sampling Date	Analyte (mg/L)		
		Chloride	Sulfate	Natural Uranium[1]
GW7	11-11-09	220	940	11.80
	6-9-10	200	900	10.40
GW8	6-9-10	400	2200	10.60
PW4	11-11-09	250	1300	0.2650
	6-9-10	240	1490	0.25
MW72[2]	11-11-09	39	440	0.1420
	6-9-10	49	400	0.1550
MW82[2] [3]	11-11-09	73	610	0.0536
	6-9-10	72	750	0.0679

(1) There are no action levels for natural uranium in non-POC wells.
(2) MW72 and MW82 are Model Validation Wells for the Southwestern Flow Regime.
(3) Revised target levels given in the October 2002 revision to Appendix M.

6.0 REFERENCES

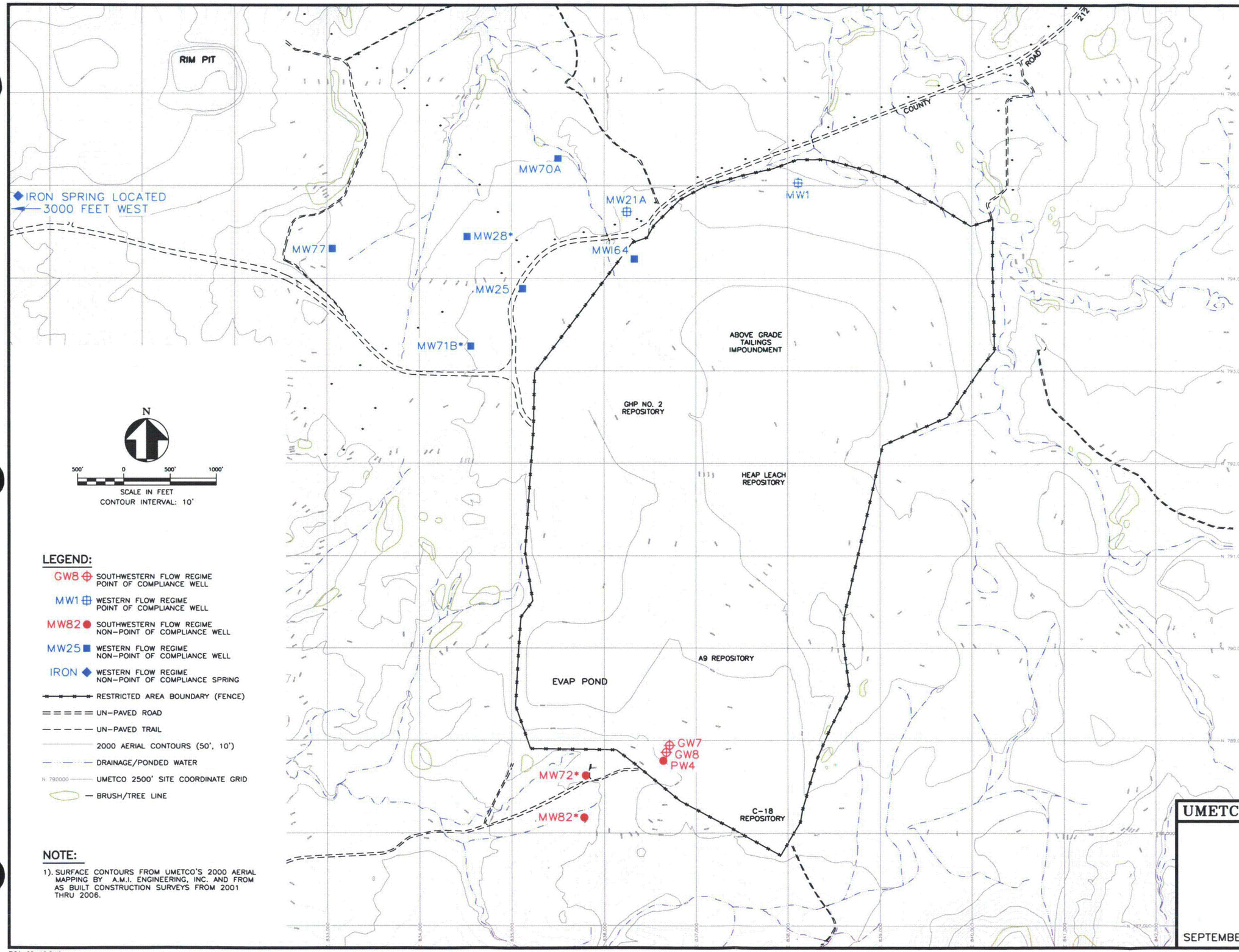
Umetco Minerals Corporation. March 2002. *Application for Alternate Concentration Limits for Gas Hills, Wyoming, Appendix M - Groundwater Monitoring Plan.*

Umetco Minerals Corporation. October 2002. *Application for Alternate Concentration Limits for Gas Hills, Wyoming, Appendix M – Groundwater Monitoring Plan*; Revised Table M-1 and Table 5.

Umetco Minerals Corporation. January 2004. *Application for Alternate Concentration Limits for Gas Hills, Wyoming, Appendix M – Groundwater Monitoring Plan*; Revised Table 3.

Umetco Minerals Corporation. June 2005. *Application for Alternate Concentration Limits for Gas Hills, Wyoming, Appendix M – Groundwater Monitoring Plan*; Revised Table M-1.

U.S. Nuclear Regulatory Commission. August 11, 2009. License Condition Changes for License SUA-648-Amendment No. 62.



LEGEND:

- GW8 — SOUTHWESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- MW1 — WESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- MW82 — SOUTHWESTERN FLOW REGIME NON-POINT OF COMPLIANCE WELL
- MW25 — WESTERN FLOW REGIME NON-POINT OF COMPLIANCE WELL
- IRON — WESTERN FLOW REGIME NON-POINT OF COMPLIANCE SPRING
- RESTRICTED AREA BOUNDARY (FENCE)
- UN-PAVED ROAD
- UN-PAVED TRAIL
- 2000 AERIAL CONTOURS (50', 10')
- DRAINAGE/PONDED WATER
- N 790000 — UMETCO 2500' SITE COORDINATE GRID
- BRUSH/TREE LINE

NOTE:

1). SURFACE CONTOURS FROM UMETCO'S 2000 AERIAL MAPPING BY A.M.I. ENGINEERING, INC. AND FROM AS BUILT CONSTRUCTION SURVEYS FROM 2001 THRU 2006.

WESTERN FLOW REGIME

POINT OF COMPLIANCE WELLS:
MW1
MW21A

NON-POINT OF COMPLIANCE WELLS:
MWI64
MW70A
MW25
MW28*
MW71B*
MW77

NON-POINT OF COMPLIANCE SPRING:
IRON SPRING

SOUTHWESTERN FLOW REGIME

POINT OF COMPLIANCE WELLS:
GW7
GW8

NON-POINT OF COMPLIANCE WELLS:
PW4
MW72*
MW82*

* – MODEL VALIDATION WELLS

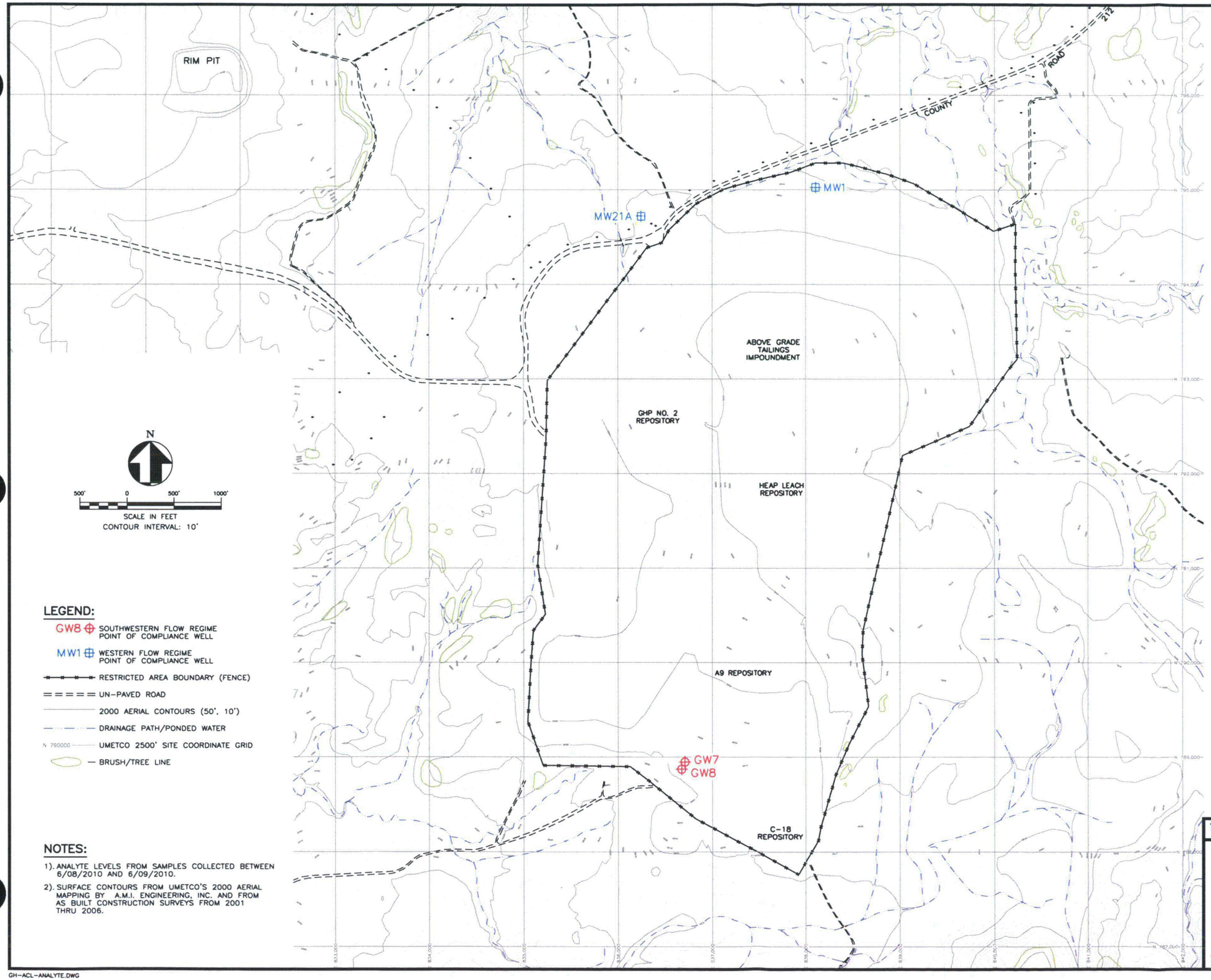
UMETCO MINERALS CORPORATION

GROUNDWATER MONITOR WELLS

GAS HILLS, WYOMING

SEPTEMBER 2010 FIGURE 1

FIG1-09-10.DWG



WESTERN FLOW REGIME ANALYTE DATA

WELL ID	ANALYTE	LEVEL/UNIT	DATE
MW1	ARSENIC	0.058 mg/L	6/08/2010
MW1	BERYLIUM	0.0122 mg/L	6/08/2010
MW1	LEAD 210	0.36 pCi/L	6/08/2010
MW1	NAT. URANIUM	0.101 mg/L	6/08/2010
MW1	NICKEL	0.6 mg/L	6/08/2010
MW1	RADIUM 226	9.8 pCi/L	6/08/2010
MW1	RADIUM 228	9.9 pCi/L	6/08/2010
MW1	SELENIUM	0.0005 mg/L	6/08/2010
MW1	THORIUM 230	0 pCi/L	6/08/2010
MW21A	ARSENIC	0.0549 mg/L	6/08/2010
MW21A	BERYLIUM	0.0207 mg/L	6/08/2010
MW21A	LEAD 210	0.71 pCi/L	6/08/2010
MW21A	NAT. URANIUM	0.0159 mg/L	6/08/2010
MW21A	NICKEL	0.64 mg/L	6/08/2010
MW21A	RADIUM 226	13 pCi/L	6/08/2010
MW21A	RADIUM 228	13 pCi/L	6/08/2010
MW21A	SELENIUM	0.0005 mg/L	6/08/2010
MW21A	THORIUM 230	0.03 pCi/L	6/08/2010

SOUTHWESTERN FLOW REGIME ANALYTE DATA

WELL ID	ANALYTE	LEVEL/UNIT	DATE
GW7	ARSENIC	0.0051 mg/L	6/09/2010
GW7	BERYLIUM	0.02 mg/L	6/09/2010
GW7	LEAD 210	46 pCi/L	6/09/2010
GW7	NAT. URANIUM	10.4 mg/L	6/09/2010
GW7	NICKEL	0.86 mg/L	6/09/2010
GW7	RADIUM 226	220 pCi/L	6/09/2010
GW7	RADIUM 228	7.9 pCi/L	6/09/2010
GW7	SELENIUM	0.0003 mg/L	6/09/2010
GW7	THORIUM 230	0.3 pCi/L	6/09/2010
GW8	ARSENIC	0.0264 mg/L	6/09/2010
GW8	BERYLIUM	0.173 mg/L	6/09/2010
GW8	LEAD 210	27 pCi/L	6/09/2010
GW8	NAT. URANIUM	10.6 mg/L	6/09/2010
GW8	NICKEL	2.18 mg/L	6/09/2010
GW8	RADIUM 226	100 pCi/L	6/09/2010
GW8	RADIUM 228	8.8 pCi/L	6/09/2010
GW8	SELENIUM	0.0002 mg/L	6/09/2010
GW8	THORIUM 230	1 pCi/L	6/09/2010

LEGEND:

- GW8 — SOUTHWESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- MW1 — WESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- RESTRICTED AREA BOUNDARY (FENCE)
- UN-PAVED ROAD
- 2000 AERIAL CONTOURS (50', 10')
- DRAINAGE PATH/PONDED WATER
- N 790000 — UMETCO 2500' SITE COORDINATE GRID
- BRUSH/TREE LINE

NOTES:

1). ANALYTE LEVELS FROM SAMPLES COLLECTED BETWEEN 6/08/2010 AND 6/09/2010.

2). SURFACE CONTOURS FROM UMETCO'S 2000 AERIAL MAPPING BY A.M.I. ENGINEERING, INC. AND FROM AS BUILT CONSTRUCTION SURVEYS FROM 2001 THRU 2006.

UMETCO MINERALS CORPORATION

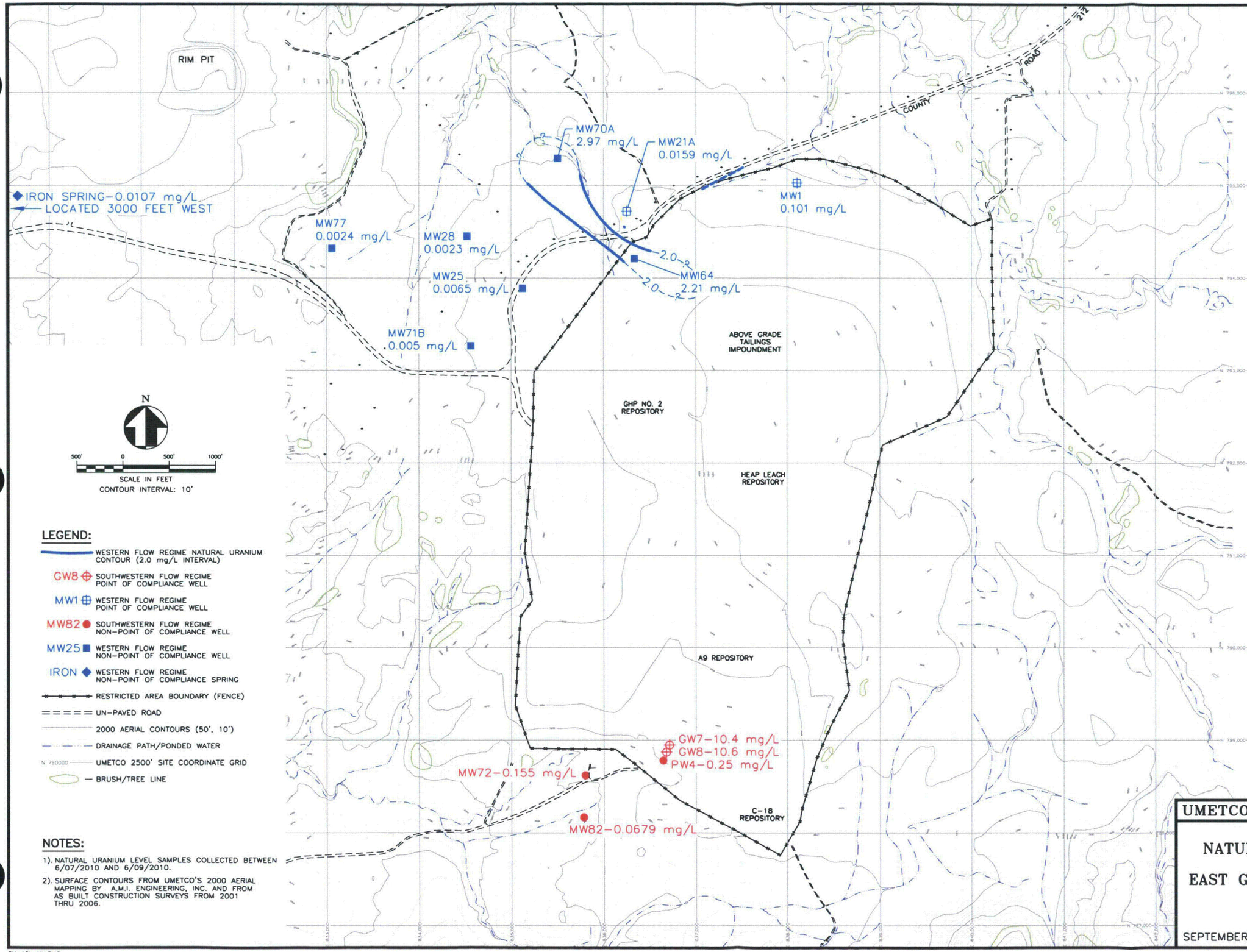
ANALYTE DATA FOR POINT OF COMPLIANCE WELLS

GAS HILLS, WYOMING

SEPTEMBER 2010

FIGURE 2

GH-ACL-ANALYTE.DWG



WESTERN FLOW REGIME

POINT OF COMPLIANCE WELLS:
MW1 – 0.101 mg/L
MW21A – 0.0159 mg/L

NON-POINT OF COMPLIANCE WELLS:
MW164 – 2.21 mg/L
MW70A – 2.97 mg/L
MW25 – 0.0065 mg/L
MW77 – 0.0024 mg/L
MW28 – 0.0023 mg/L
MW71B – 0.005 mg/L

NON-POINT OF COMPLIANCE SPRING:
IRON SPRING – 0.0107 mg/L

SOUTHWESTERN FLOW REGIME

POINT OF COMPLIANCE WELLS:
GW8 – 10.6 mg/L
GW7 – 10.4 mg/L

NON-POINT OF COMPLIANCE WELLS:
MW72 – 0.155 mg/L
PW4 – 0.25 mg/L
MW82 – 0.0679 mg/L

LEGEND:

- WESTERN FLOW REGIME NATURAL URANIUM CONTOUR (2.0 mg/L INTERVAL)
- GW8 — SOUTHWESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- MW1 — WESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- MW82 — SOUTHWESTERN FLOW REGIME NON-POINT OF COMPLIANCE WELL
- MW25 — WESTERN FLOW REGIME NON-POINT OF COMPLIANCE WELL
- IRON — WESTERN FLOW REGIME NON-POINT OF COMPLIANCE SPRING
- RESTRICTED AREA BOUNDARY (FENCE)
- UN-PAVED ROAD
- 2000 AERIAL CONTOURS (50', 10')
- DRAINAGE PATH/PONDED WATER
- N 790000 — UMETCO 2500' SITE COORDINATE GRID
- BRUSH/TREE LINE

NOTES:

1). NATURAL URANIUM LEVEL SAMPLES COLLECTED BETWEEN 6/07/2010 AND 6/09/2010.

2). SURFACE CONTOURS FROM UMETCO'S 2000 AERIAL MAPPING BY A.M.I. ENGINEERING, INC. AND FROM AS BUILT CONSTRUCTION SURVEYS FROM 2001 THRU 2006.

UMETCO MINERALS CORPORATION

NATURAL URANIUM DATA FOR EAST GAS HILLS MONITOR WELLS

GAS HILLS, WYOMING

SEPTEMBER 2010 FIGURE 3

GH-ACL-NU.DWG

Figure 4 Arsenic Trends in the Western Flow Regime POC Wells

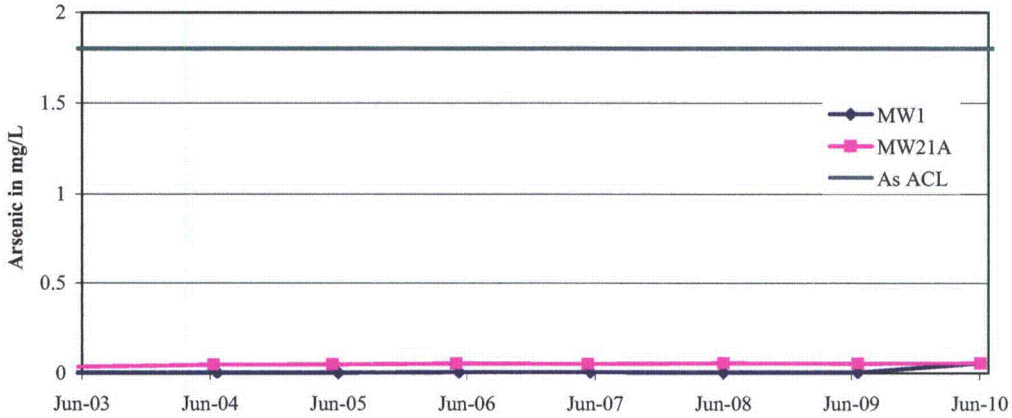


Figure 5 Beryllium Trends in the Western Flow Regime POC Wells

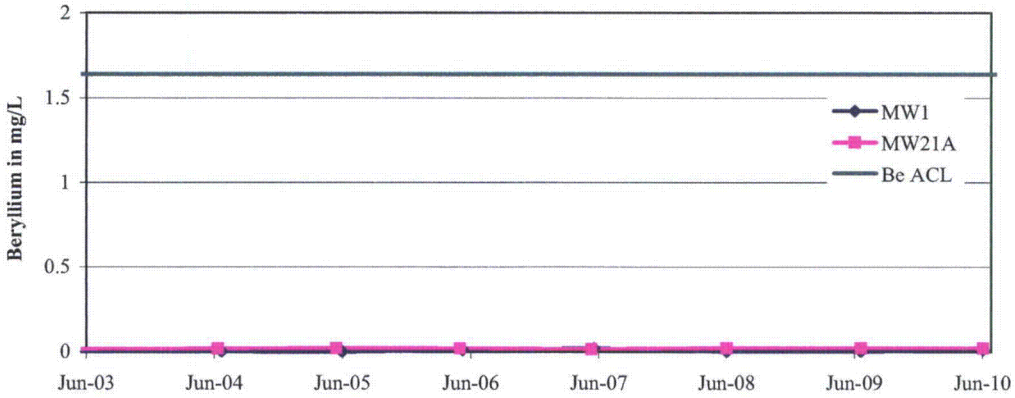


Figure 6 Lead-210 Trends in the Western Flow Regime POC Wells

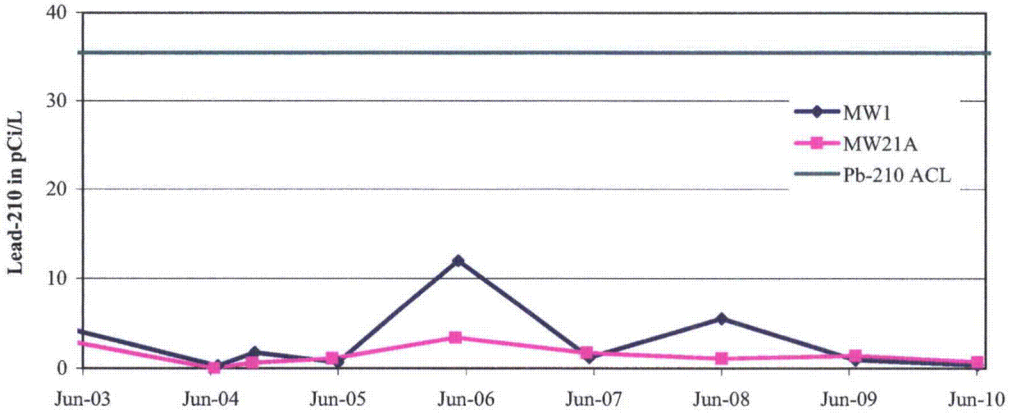


Figure 7 Nickel Trends in the Western Flow Regime POC Wells

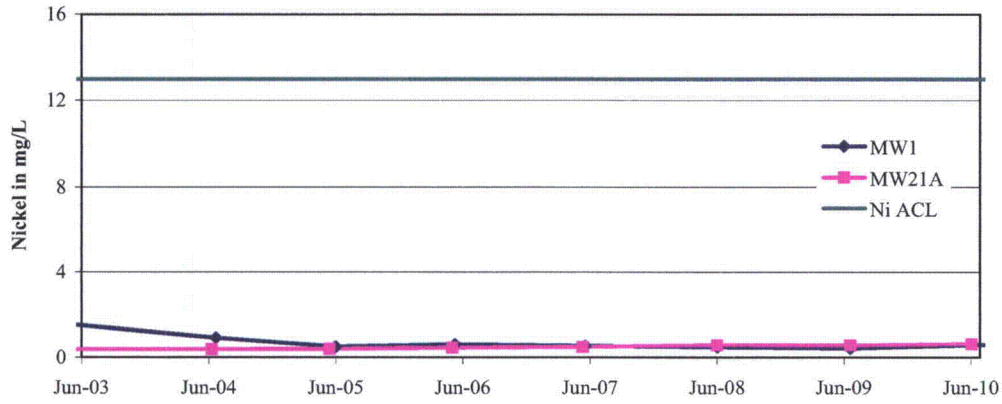


Figure 8 Combined Radium-226 & 228 Trends in the Western Flow Regime POC Wells

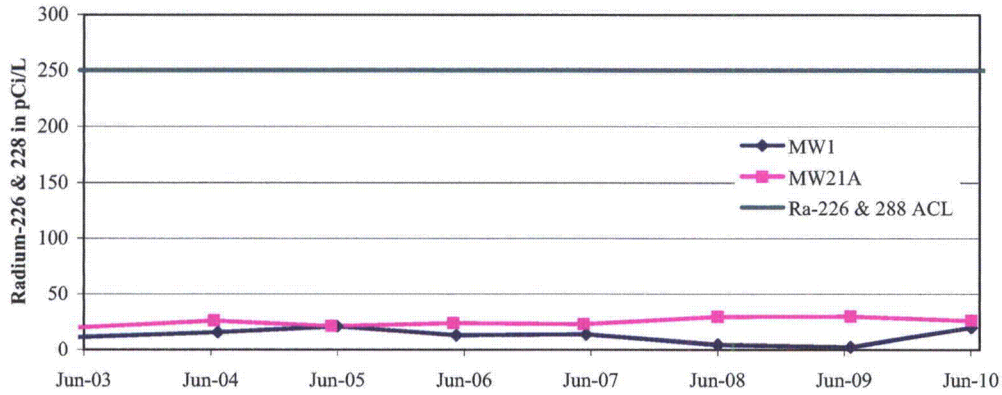


Figure 9 Selenium Trends in the Western Flow Regime POC Wells

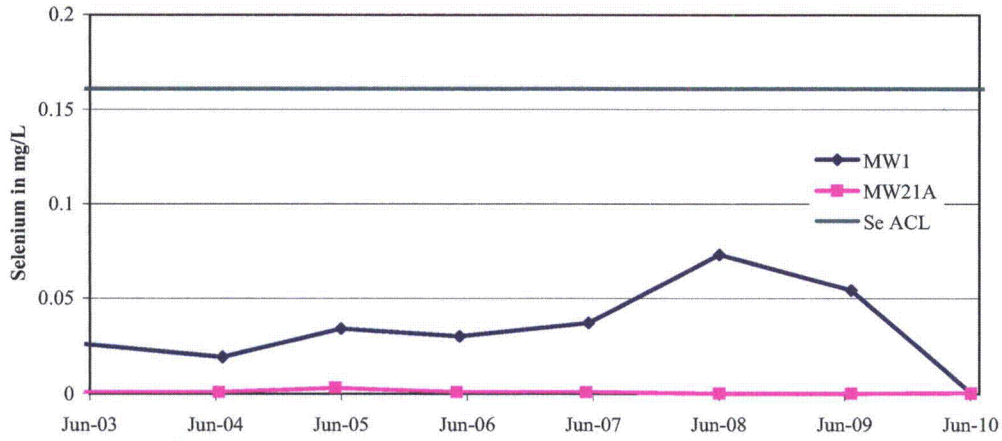


Figure 10 Thorium-230 Trends in the Western Flow Regime POC Wells

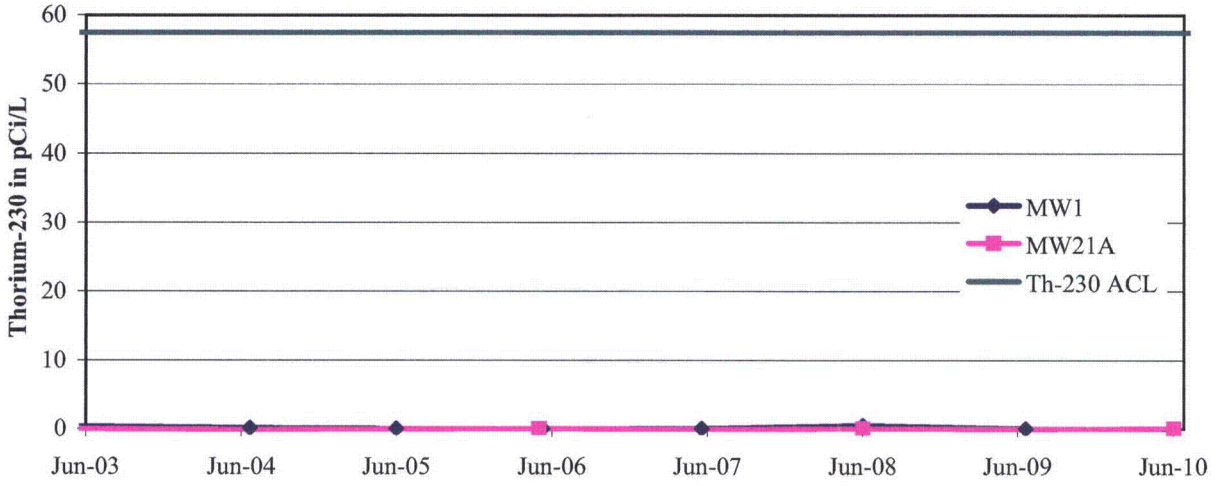


Figure 11 Natural Uranium Trends in the Western Flow Regime POC Wells

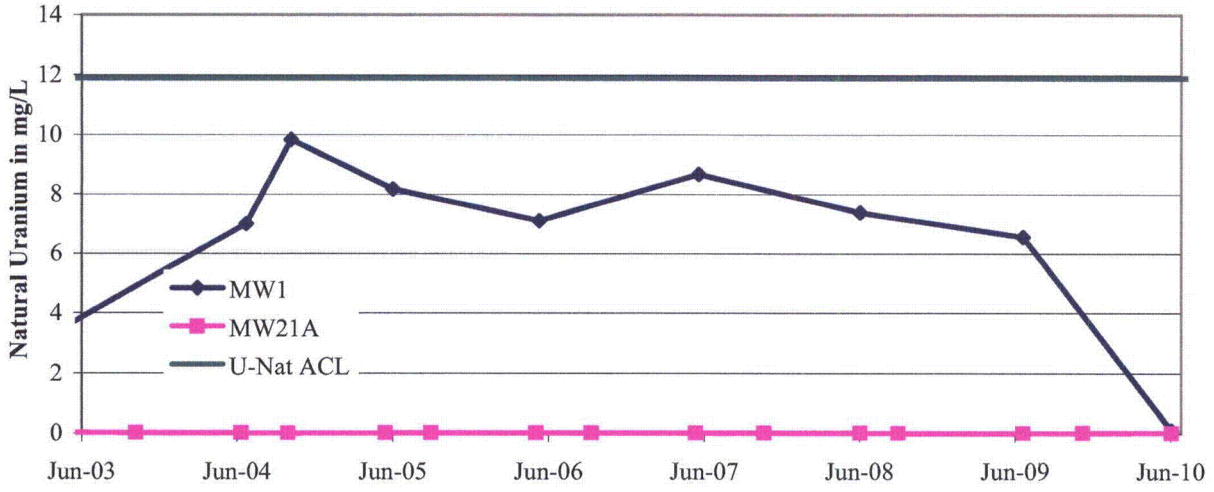


Figure 12 Arsenic Trends in the Southwestern Flow Regime POC Wells

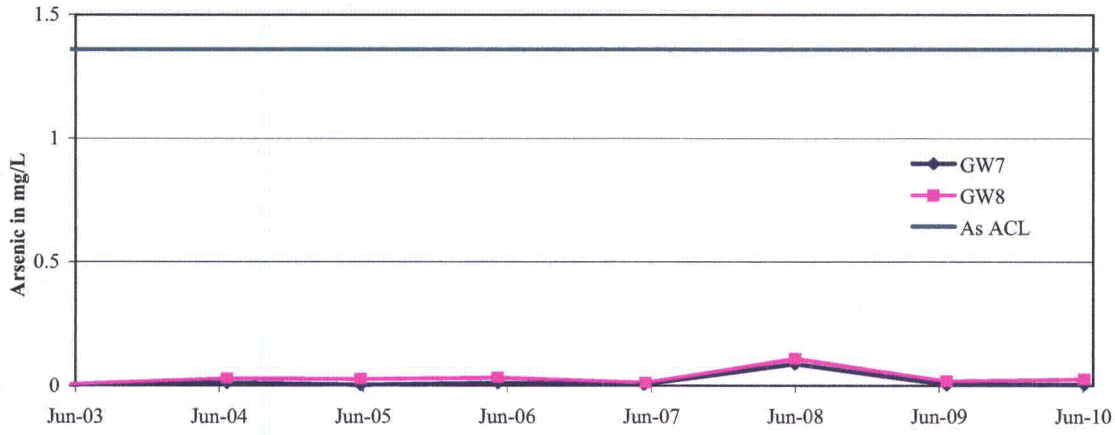


Figure 13 Beryllium Trends in the Southwestern Flow Regime POC Wells

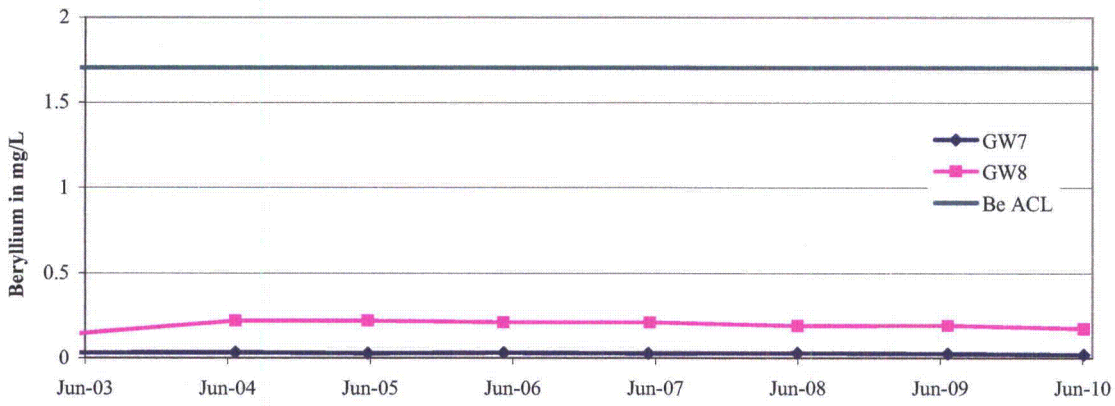


Figure 14 Lead-210 Trends in the Southwestern Flow Regime POC Wells

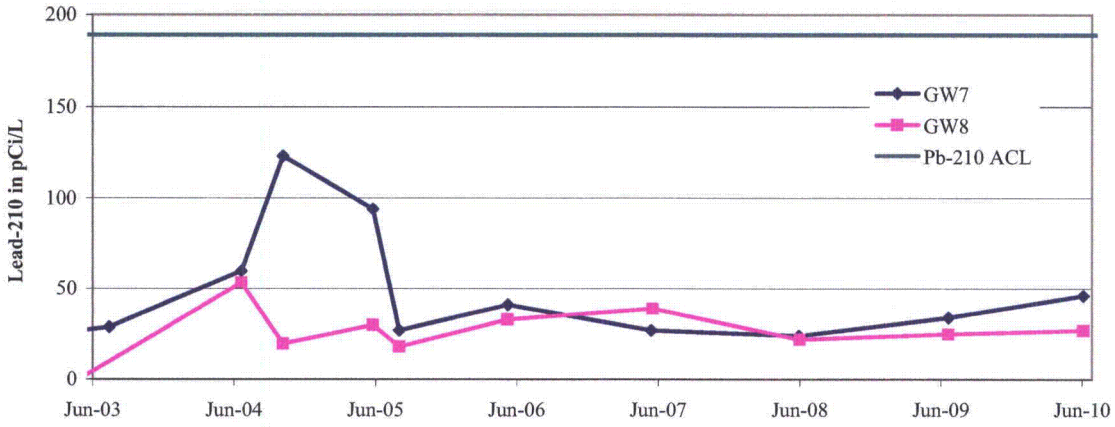


Figure 15 Nickel Trends in the Southwestern Flow Regime POC Wells

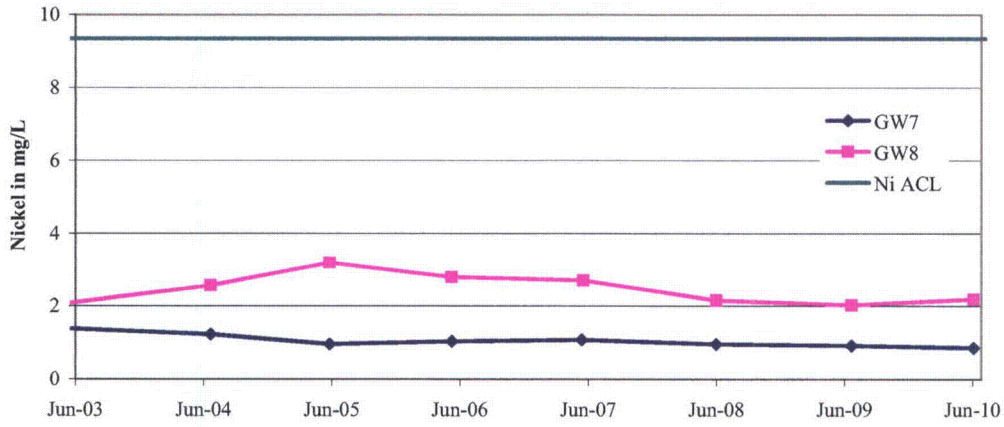


Figure 16 Combined Radium-226 & 228 Trends in the Southwestern Flow Regime POC Wells

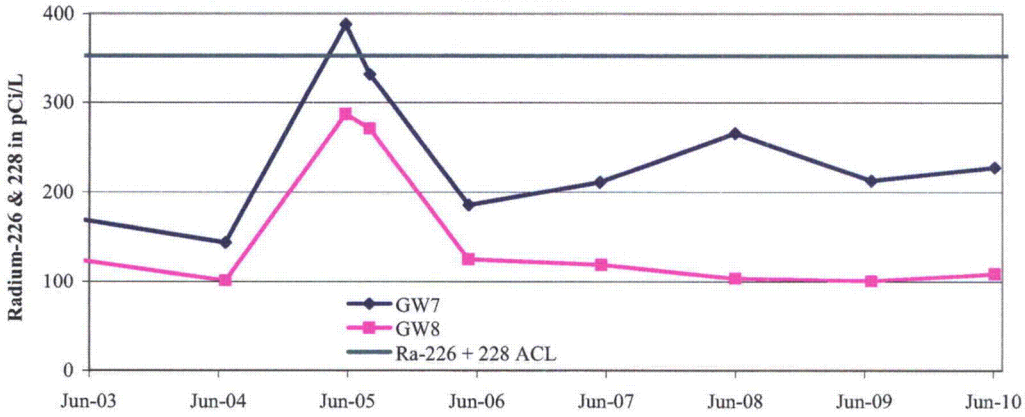


Figure 17 Selenium Trends in the Southwestern Flow Regime POC Wells

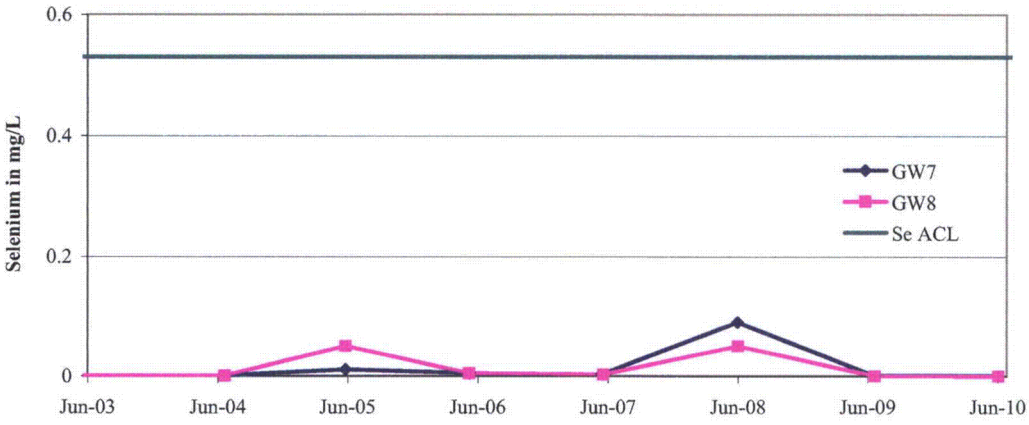


Figure 18 Thorium-230 Trends in the Southwestern Flow Regime POC Wells

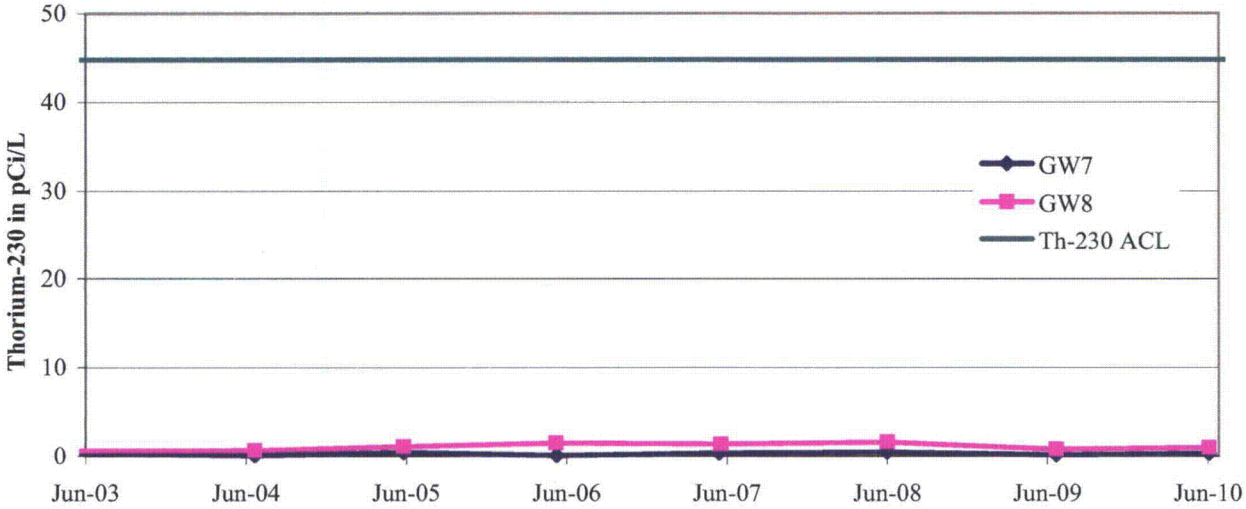
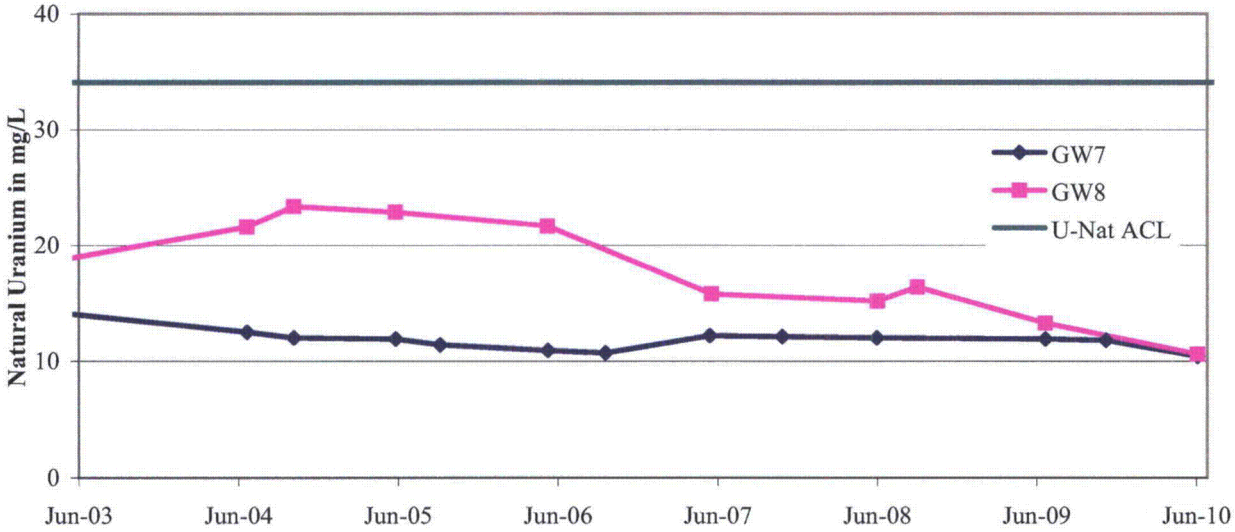
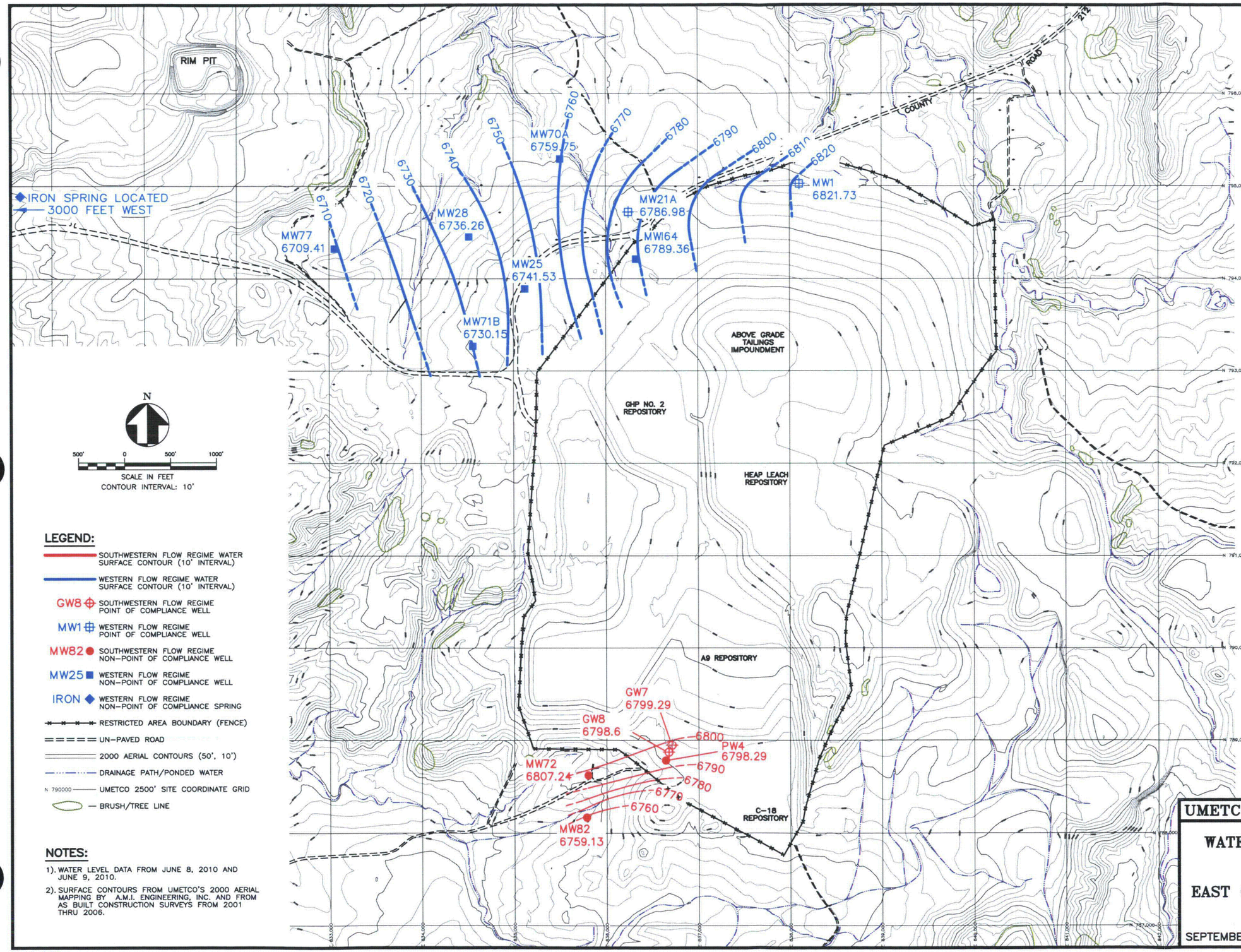


Figure 19 Natural Uranium Trends in the Southwestern Flow Regime POC Wells





WESTERN FLOW REGIME

POINT OF COMPLIANCE WELLS:
MW1 – 6821.73
MW21A – 6786.98

NON–POINT OF COMPLIANCE WELLS:
MWI64 – 6789.36
MW70A – 6759.75
MW25 – 6741.53
MW28 – 6736.26
MW71B – 6730.15
MW77 – 6709.41

NON–POINT OF COMPLIANCE SPRING:
IRON SPRING – SURFACE

SOUTHWESTERN FLOW REGIME

POINT OF COMPLIANCE WELLS:
GW7 – 6799.38
GW8 – 6805.13

NON–POINT OF COMPLIANCE WELLS:
MW72 – 6807.24
PW4 – 6788.68
MW82 – 6759.13

LEGEND:

- SOUTHWESTERN FLOW REGIME WATER SURFACE CONTOUR (10' INTERVAL)
- WESTERN FLOW REGIME WATER SURFACE CONTOUR (10' INTERVAL)
- GW8 SOUTHWESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- MW1 WESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- MW82 SOUTHWESTERN FLOW REGIME NON–POINT OF COMPLIANCE WELL
- MW25 WESTERN FLOW REGIME NON–POINT OF COMPLIANCE WELL
- IRON WESTERN FLOW REGIME NON–POINT OF COMPLIANCE SPRING
- RESTRICTED AREA BOUNDARY (FENCE)
- UN–PAVED ROAD
- 2000 AERIAL CONTOURS (50', 10')
- DRAINAGE PATH/PONDED WATER
- N 790000 UMETCO 2500' SITE COORDINATE GRID
- BRUSH/TREE LINE

NOTES:

1). WATER LEVEL DATA FROM JUNE 8, 2010 AND JUNE 9, 2010.

2). SURFACE CONTOURS FROM UMETCO'S 2000 AERIAL MAPPING BY A.M.I. ENGINEERING, INC. AND FROM AS BUILT CONSTRUCTION SURVEYS FROM 2001 THRU 2006.

UMETCO MINERALS CORPORATION

WATER LEVEL ELEVATION MAP
JUNE 2010
EAST GAS HILLS MONITOR WELLS
GAS HILLS, WYOMING

SEPTEMBER 2010 FIGURE 20

GH–ACL–W.DWG

Figure 21 Phreatic Elevations in the Western Flow Regime POC Wells

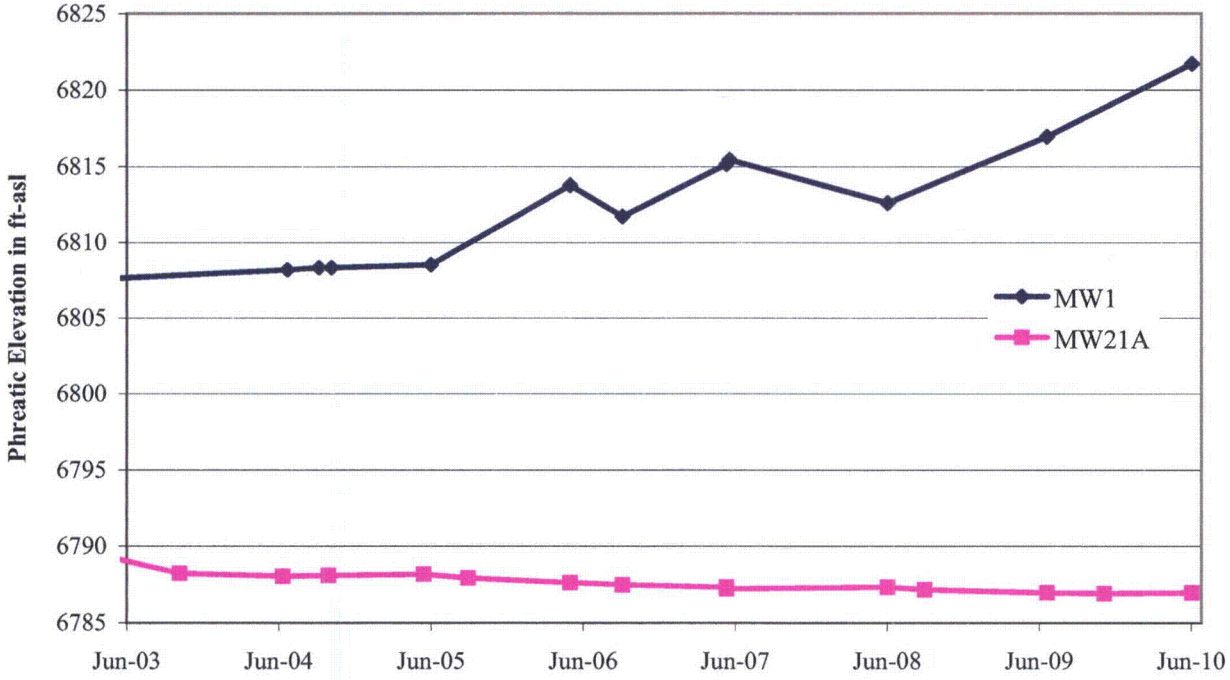


Figure 22 Phreatic Elevations in the Western Flow Regime Monitoring Wells

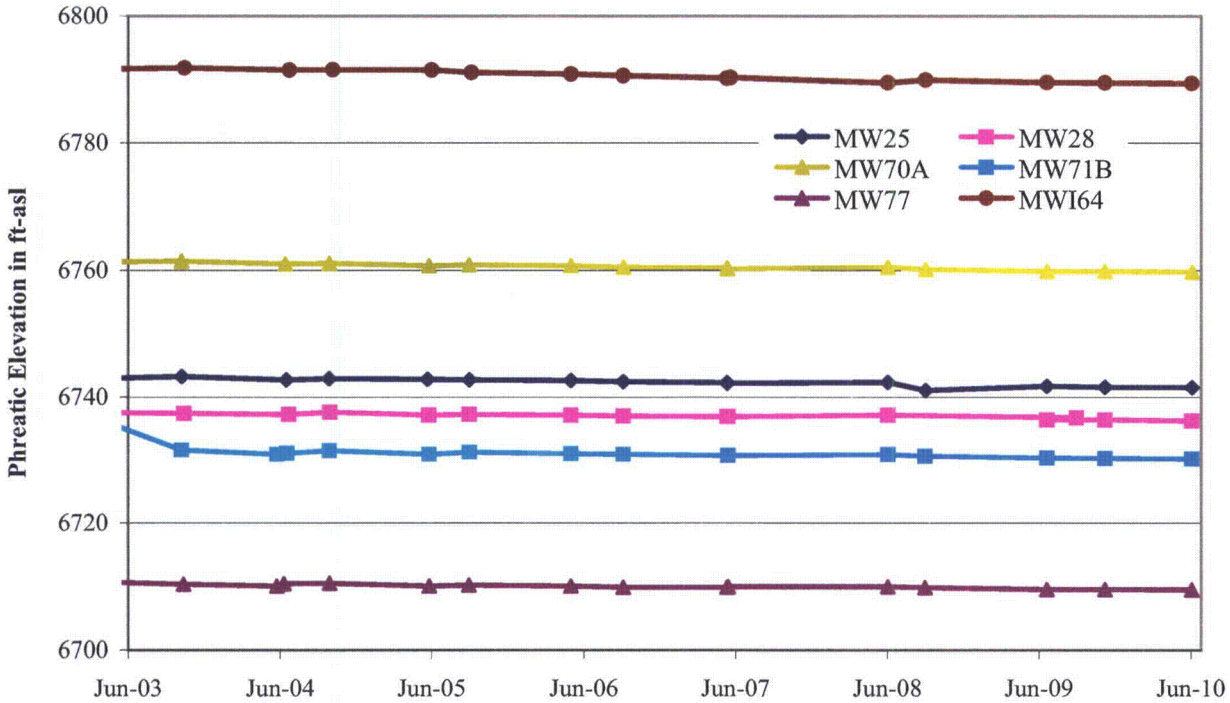


Figure 23 Phreatic Elevations in the Southwestern Flow Regime POC Wells

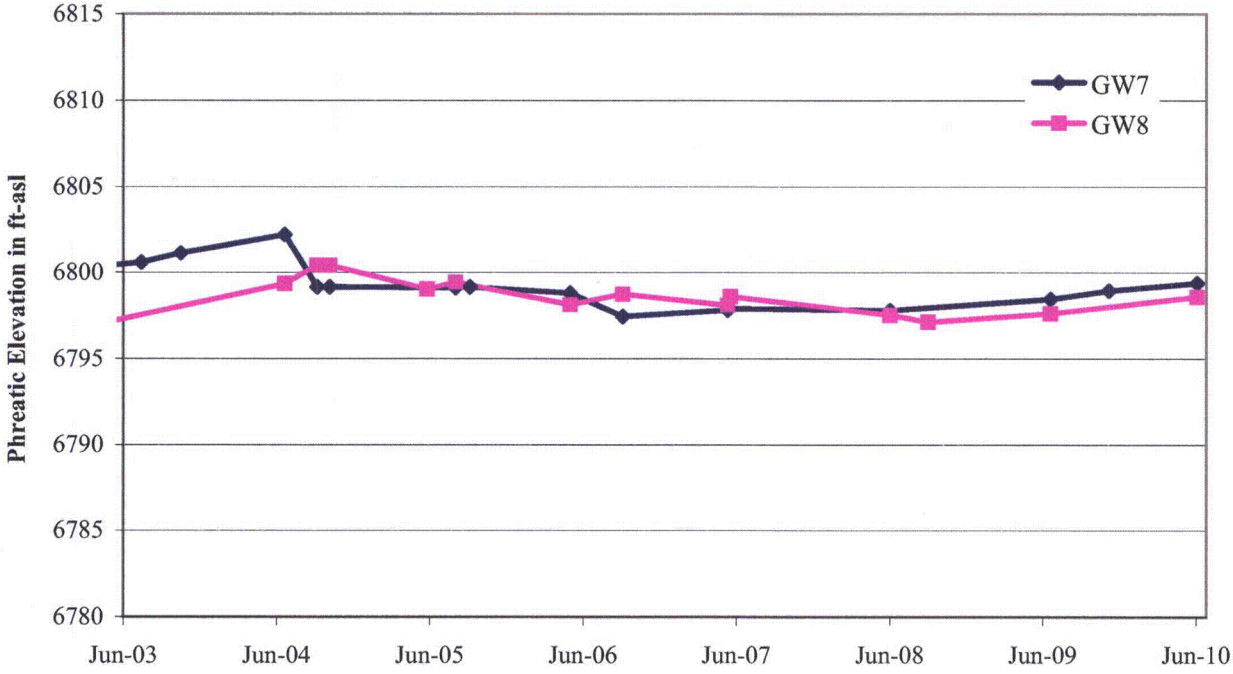
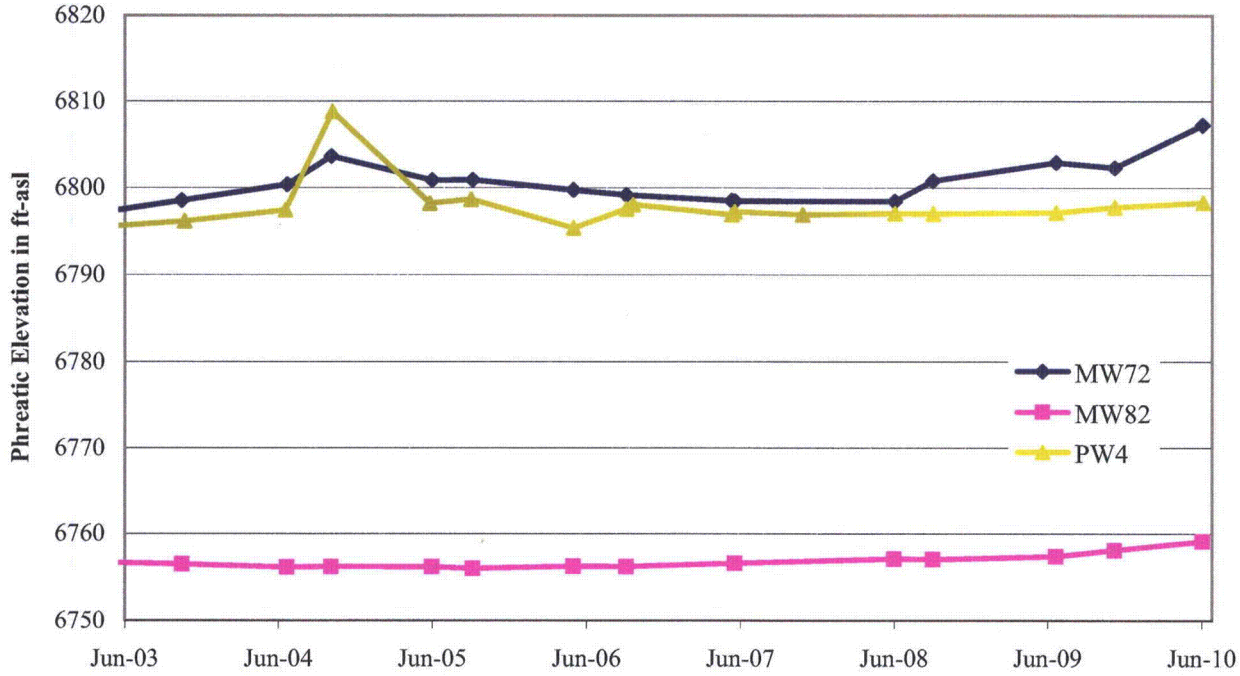
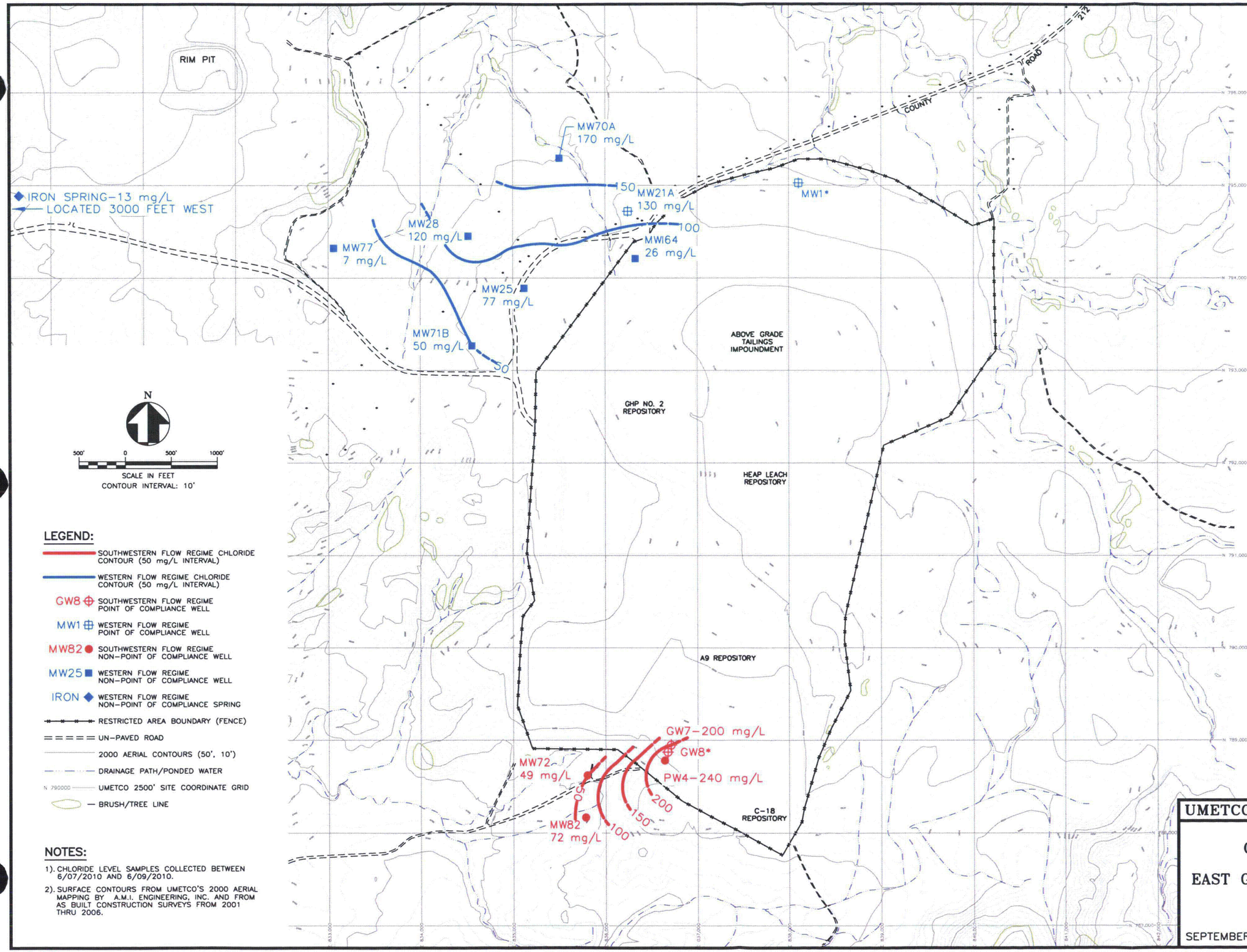


Figure 24 Phreatic Elevations in the Southwestern Flow Regime Monitoring Wells





LEGEND:

- SOUTHWESTERN FLOW REGIME CHLORIDE CONTOUR (50 mg/L INTERVAL)
- WESTERN FLOW REGIME CHLORIDE CONTOUR (50 mg/L INTERVAL)
- GW8 — SOUTHWESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- MW1 — WESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- MW82 — SOUTHWESTERN FLOW REGIME NON-POINT OF COMPLIANCE WELL
- MW25 — WESTERN FLOW REGIME NON-POINT OF COMPLIANCE WELL
- IRON — WESTERN FLOW REGIME NON-POINT OF COMPLIANCE SPRING
- RESTRICTED AREA BOUNDARY (FENCE)
- UN-PAVED ROAD
- 2000 AERIAL CONTOURS (50', 10')
- DRAINAGE PATH/PONDED WATER
- N 790000 — UMETCO 2500' SITE COORDINATE GRID
- BRUSH/TREE LINE

NOTES:

1). CHLORIDE LEVEL SAMPLES COLLECTED BETWEEN 6/07/2010 AND 6/09/2010.

2). SURFACE CONTOURS FROM UMETCO'S 2000 AERIAL MAPPING BY A.M.I. ENGINEERING, INC. AND FROM AS BUILT CONSTRUCTION SURVEYS FROM 2001 THRU 2006.

WESTERN FLOW REGIME

POINT OF COMPLIANCE WELLS:
MW21A – 130 mg/L
MW1* –

NON-POINT OF COMPLIANCE WELLS:
MW70A – 170 mg/L
MW164 – 26 mg/L
MW25 – 77 mg/L
MW28 – 120 mg/L
MW71B – 50 mg/L
MW77 – 7 mg/L

NON-POINT OF COMPLIANCE SPRING:
IRON SPRING – 13 mg/L

SOUTHWESTERN FLOW REGIME

POINT OF COMPLIANCE WELLS:
GW8* –
GW7 – 200 mg/L

NON-POINT OF COMPLIANCE WELLS:
PW4 – 240 mg/L
MW72 – 49 mg/L
MW82 – 72 mg/L

* AS PER ACL APPLICATION, ANALYSIS FOR CHLORIDE IS NOT REQUIRED FOR POINT OF COMPLIANCE WELLS MW1 AND GW8.

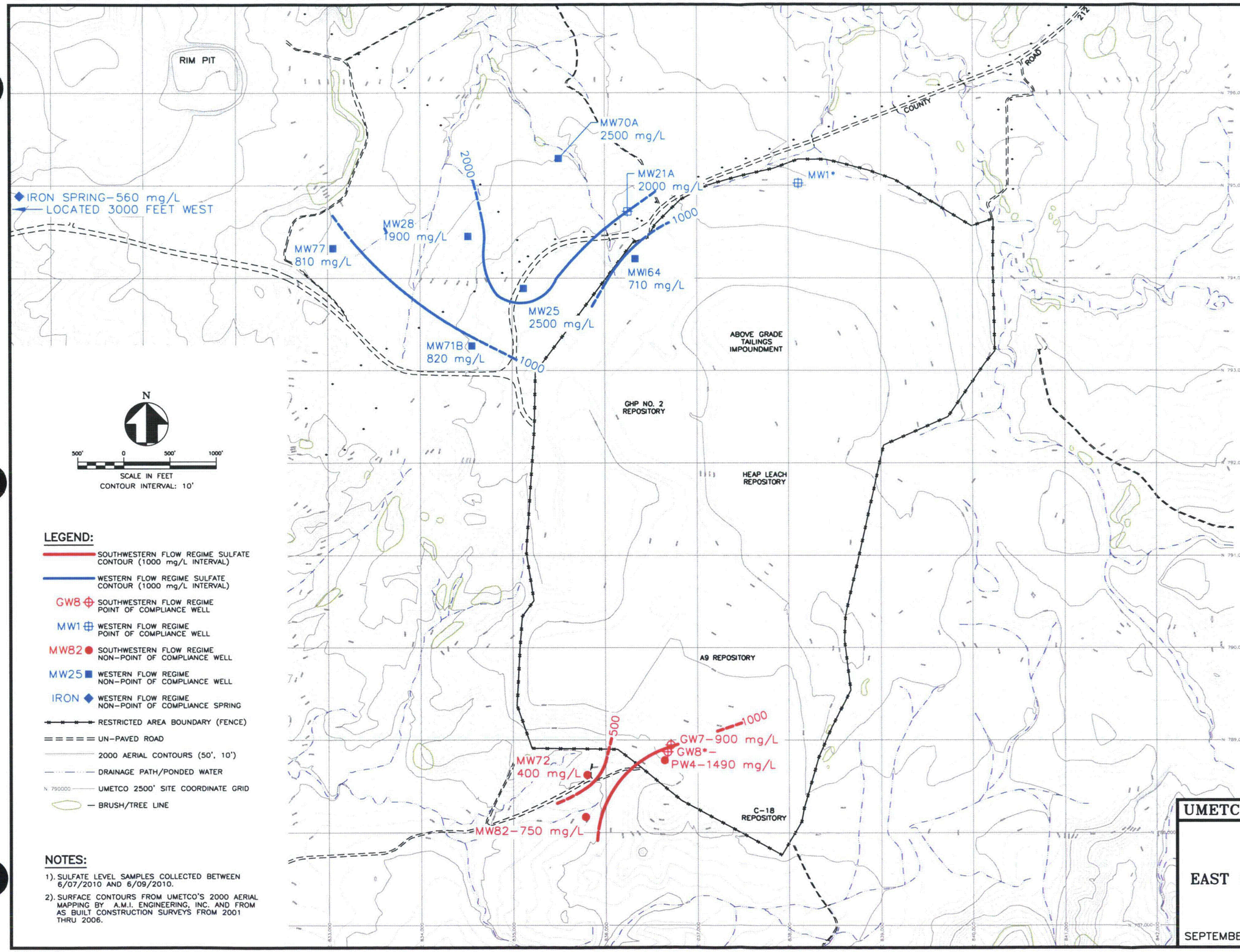
UMETCO MINERALS CORPORATION

CHLORIDE DATA FOR EAST GAS HILLS MONITOR WELLS

GAS HILLS, WYOMING

SEPTEMBER 2010 FIGURE 25

GH-ACL-C.DWG



WESTERN FLOW REGIME

POINT OF COMPLIANCE WELLS:
MW21A – 2000 mg/L
MW1* –

NON–POINT OF COMPLIANCE WELLS:
MW164 – 710 mg/L
MW25 – 2500 mg/L
MW70A – 2500 mg/L
MW28 – 1900 mg/L
MW71B – 820 mg/L
MW77 – 810 mg/L

NON–POINT OF COMPLIANCE SPRING:
IRON SPRING – 560 mg/L

SOUTHWESTERN FLOW REGIME

POINT OF COMPLIANCE WELLS:
GW8* –
GW7 – 900 mg/L

NON–POINT OF COMPLIANCE WELLS:
PW4 – 1490 mg/L
MW82 – 750 mg/L
MW72 – 400 mg/L

* AS PER ACL APPLICATION, ANALYSIS FOR SULFATE IS NOT REQUIRED FOR POINT OF COMPLIANCE WELLS MW1 AND GW8.

LEGEND:

- SOUTHWESTERN FLOW REGIME SULFATE CONTOUR (1000 mg/L INTERVAL)
- WESTERN FLOW REGIME SULFATE CONTOUR (1000 mg/L INTERVAL)
- GW8 — SOUTHWESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- MW1 — WESTERN FLOW REGIME POINT OF COMPLIANCE WELL
- MW82 — SOUTHWESTERN FLOW REGIME NON–POINT OF COMPLIANCE WELL
- MW25 — WESTERN FLOW REGIME NON–POINT OF COMPLIANCE WELL
- IRON — WESTERN FLOW REGIME NON–POINT OF COMPLIANCE SPRING
- RESTRICTED AREA BOUNDARY (FENCE)
- UN–PAVED ROAD
- 2000 AERIAL CONTOURS (50', 10')
- DRAINAGE PATH/PONDED WATER
- N 790000 — UMETCO 2500' SITE COORDINATE GRID
- BRUSH/TREE LINE

NOTES:

1). SULFATE LEVEL SAMPLES COLLECTED BETWEEN 6/07/2010 AND 6/09/2010.

2). SURFACE CONTOURS FROM UMETCO'S 2000 AERIAL MAPPING BY A.M.I. ENGINEERING, INC. AND FROM AS BUILT CONSTRUCTION SURVEYS FROM 2001 THRU 2006.

UMETCO MINERALS CORPORATION

SULFATE DATA FOR

EAST GAS HILLS MONITOR WELLS

GAS HILLS, WYOMING

SEPTEMBER 2010 FIGURE 26

GH–ACL–SU.DWG

Figure 27 Chloride Trends in the Western Flow Regime POC Wells

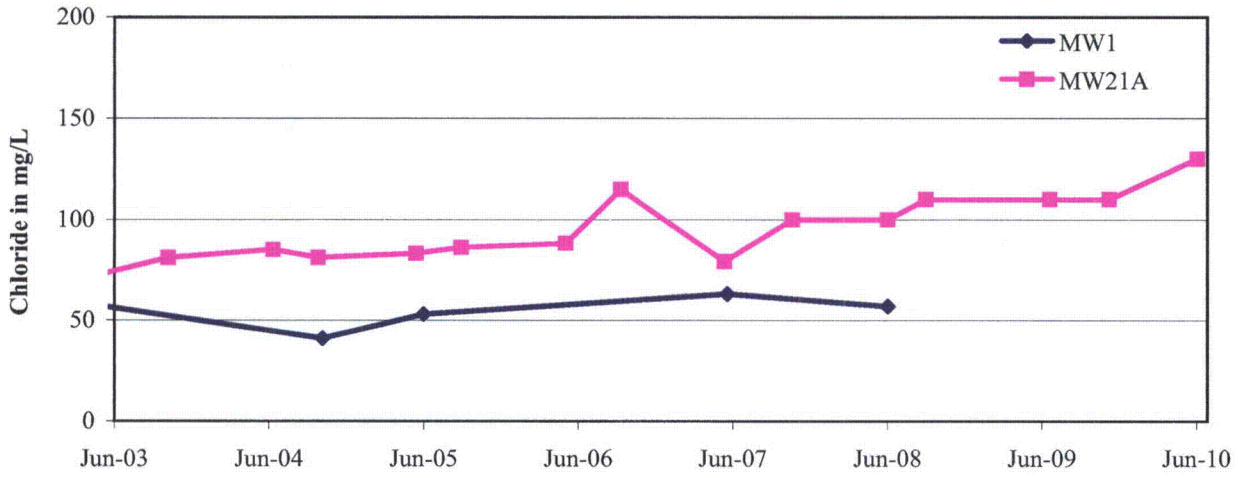


Figure 28 Sulfate Trends in the Western Flow Regime POC Wells

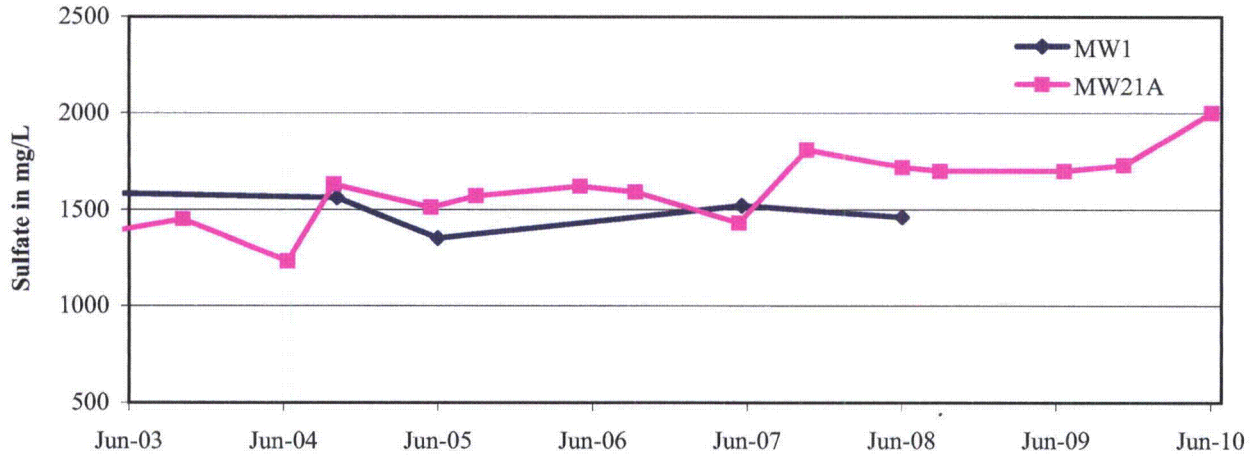


Figure 29 Chloride Trends in the Southwestern Flow Regime POC Wells

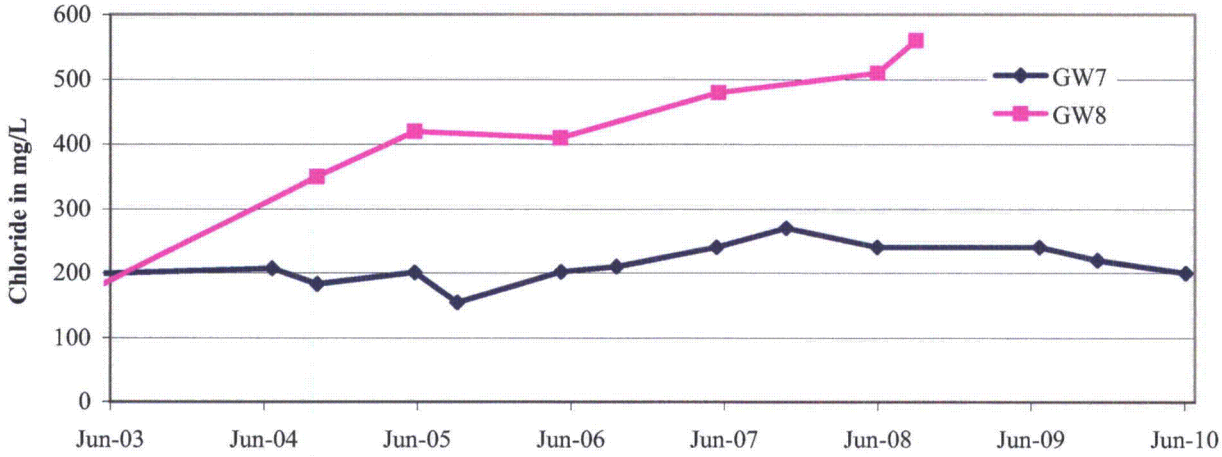


Figure 30 Sulfate Trends in the Southwestern Flow Regime POC Wells

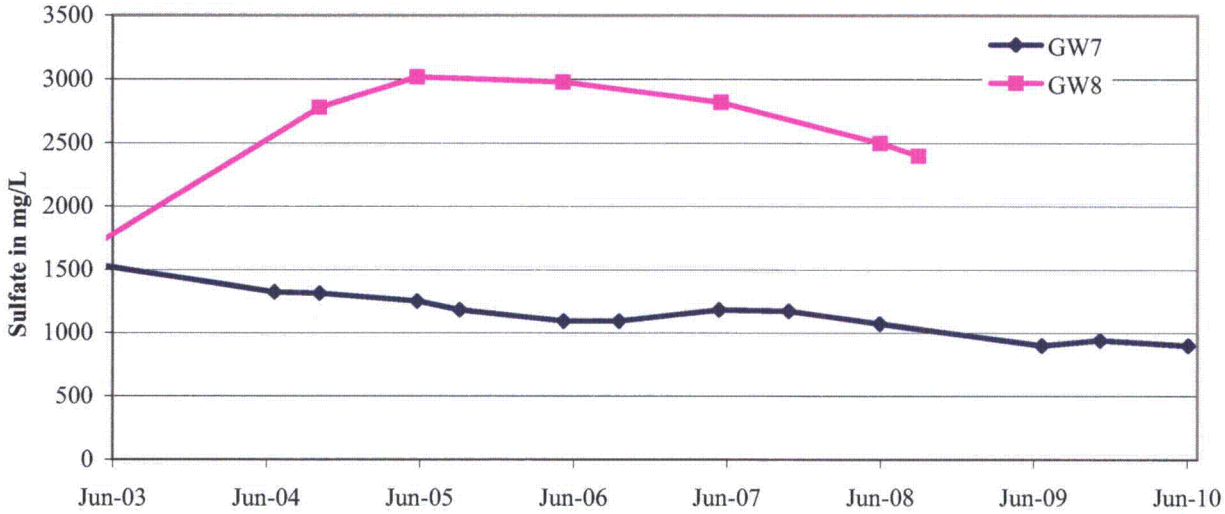


Figure 31 Chloride Trends in the Western Flow Regime Monitoring Wells

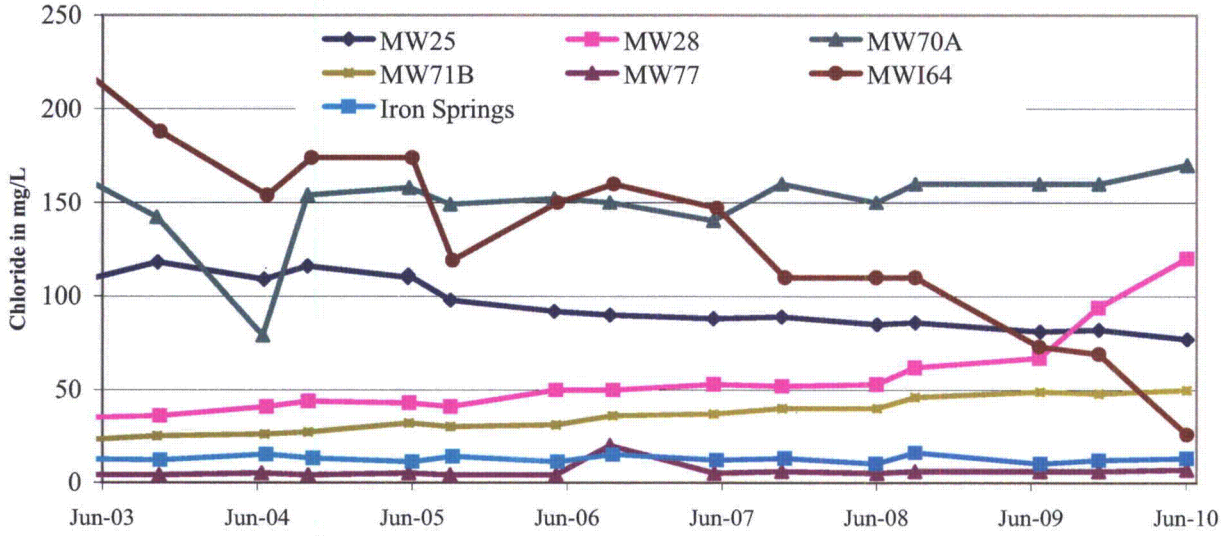


Figure 32 Sulfate Trends in the Western Flow Regime Monitoring Wells

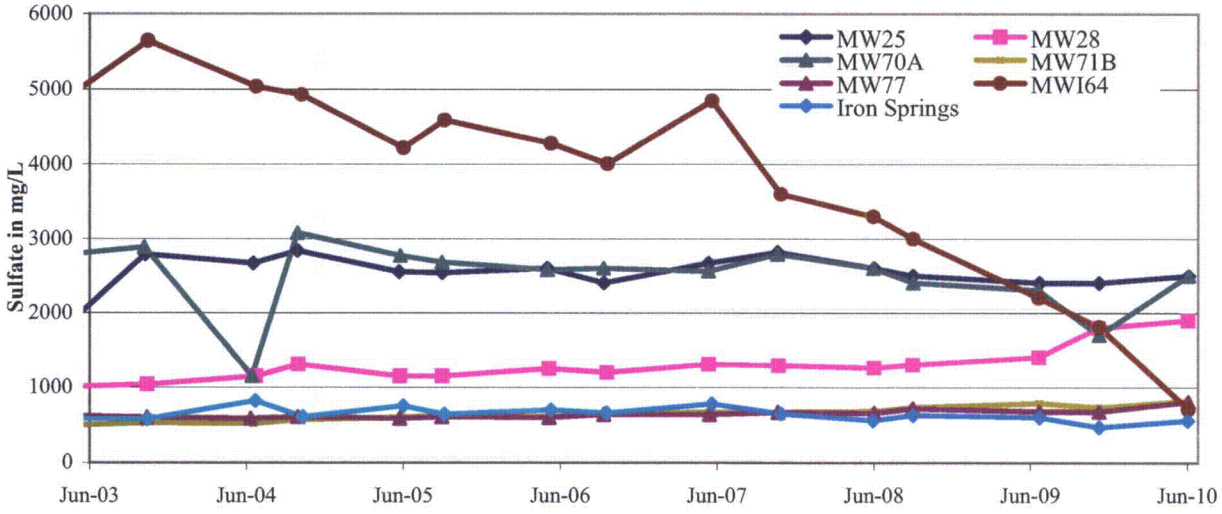


Figure 33 Natural Uranium Trends in the Western Flow Regime Monitoring Wells

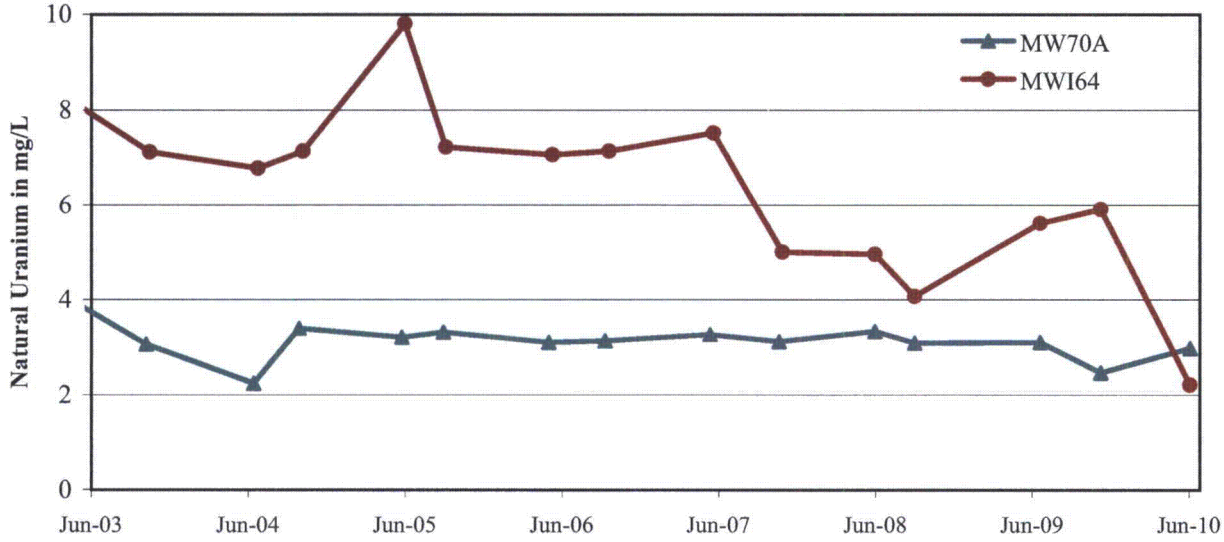


Figure 34 Natural Uranium Trends in the Western Flow Regime Monitoring Wells

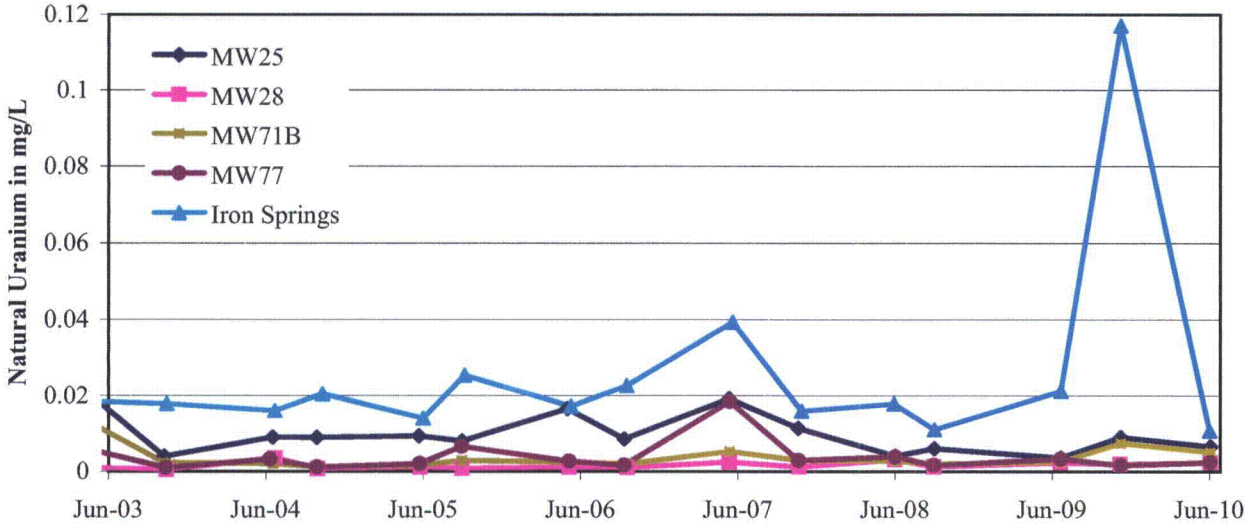


Figure 35 Chloride Trends in the Southwestern Flow Regime Monitoring Wells

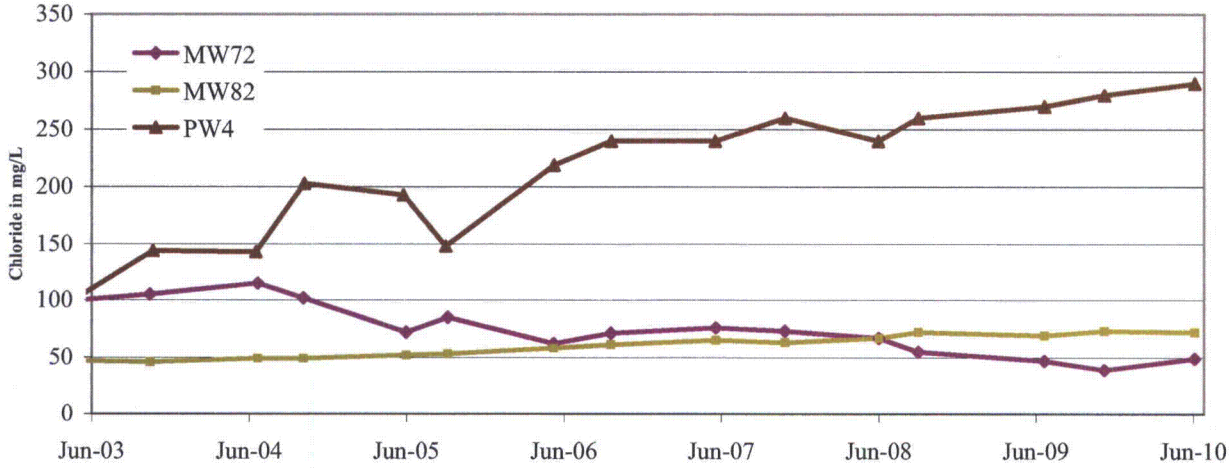


Figure 36 Sulfate Trends in the Southwestern Flow Regime Monitoring Wells

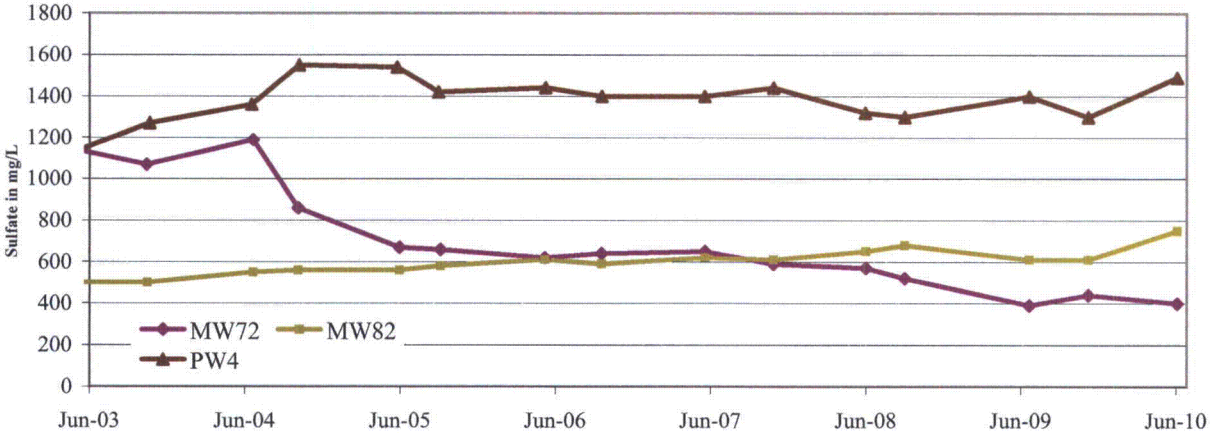
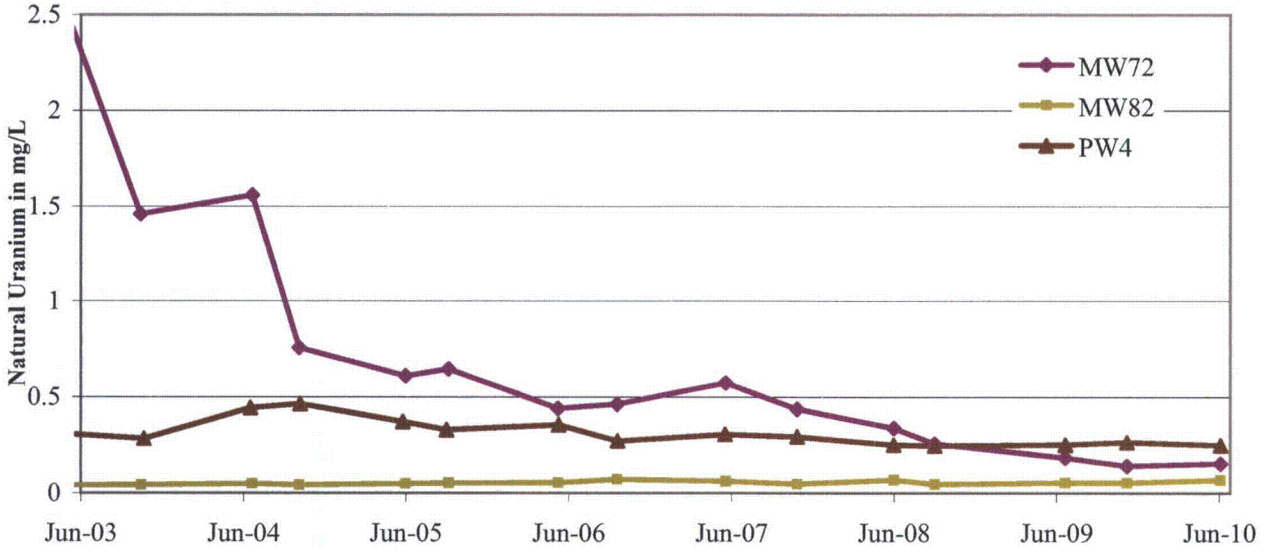


Figure 37 Natural Uranium Trends in the Southwestern Flow Regime Monitoring Wells



Appendix A
Water Rights Within Five-Mile Radius of East Gas Hills Site

Permit Number (Appropriation)	Facility Name	Permit Applicant	Tns		Rng		Section	Qtrqtr	Lots	Additional Description	Acres	Head Gate-Outlet-Well	Status	Supply type	Uses	Priority	Amount	Unit	Source	Permit Well Depth	Permit Static Well Depth
21/2/264W			33	N	89	W	15	NWNW		X		X	UNA	ORI							
21/3/264W			33	N	89	W	10	SWSW		X		X	UNA	ORI							
22/6/316W			33	N	89	W	15	NESW				X	UNA	ORI							
25/1/58W			33	N	89	W	32	NENW				X	UNA	ORI							
25/10/102W			33	N	89	W	14	NESW				X	UNA	ORI							
25/10/299W			33	N	89	W	22	NESW				X	UNA	ORI							
25/11/207W			33	N	89	W	10	SWSW				X	UNA	ORI							
25/11/299W			33	N	89	W	22	NESW				X	UNA	ORI							
25/12/57W			33	N	89	W	32	NENW				X	UNA	ORI							
25/2/58W			33	N	89	W	32	NENW				X	UNA	ORI							
25/3/58W			33	N	89	W	32	NENW				X	UNA	ORI							
25/4/58W			33	N	89	W	32	NENW				X	UNA	ORI							
25/5/58W			33	N	89	W	32	NENW				X	UNA	ORI							
25/6/58W			33	N	89	W	32	NENW				X	UNA	ORI							
25/7/207W			33	N	89	W	10	SWSW				X	UNA	ORI							
25/7/299W			33	N	89	W	22	NESW				X	UNA	ORI							
25/8/207W			33	N	89	W	10	SWSW				X	UNA	ORI							
25/8/299W			33	N	89	W	22	NESW				X	UNA	ORI							
25/9/102W			33	N	89	W	14	NESW				X	UNA	ORI							
25/9/207W			33	N	89	W	10	SWSW				X	UNA	ORI							
25/9/299W			33	N	89	W	22	NESW				X	UNA	ORI							
26/4/21W			33	N	89	W	15	SESW				X	UNA	ORI							
27/5/280R			33	N	90	W	36	SWSW				X	UNA	ORI							
28/6/373S	Reservoir #7	USDI BLM	33	N	89	W	14	NENW		P		X	REJ	ORI	STO	11/1/1982	1	ACFT			
40/5/489W	CAROL WELL #1	POWER RESOURCES, INC. d/b/a CAMECO RESOURCES	33	N	89	W	28	NESW			0	X	UNA	ORI	MIS	1/7/2008					
C33/360A	Holliday Ditch	John J. Holliday	33	N	88	W	7		L5	Proof P11692/1314D	28		PUD,ADJ	ORI	IRR	08/27/1896			Deer Creek		
C44/698A	C. B. C. Ditch	C. B. Cunningham	33	N	89	W	4	NWNW	L4	Proof P 18903/15179D	8		PUD,ADJ	ORI	IRR,STO,DOM	8/9/1918			Canyon Creek		
C69/240A	Rawlins Pipe Line, Enl	City of Rawlins	34	N	88	W	34	SWNW		Proof 6252/29058		X	ADJ	ORI	RES						
C77/017A	Cross Ell Ditch, Enlargement No. 3 of the	Clear Creek Cattle Company	33	N	89	W	1	SENE		Proof P34969/4483E	7.8		ADJ,DSC	ORI	IRR	3/18/1926			Deer Creek		
C77/025A	Cross Ell Ditch	Clear Creek Cattle Company	33	N	89	W	1	SESE		Proof P34977/9431D			ADJ,DSC	ORI	IRR	10/11/1909			Deer Creek		
C77/041A	Diamond Ring Ditch No. 5	Wyoming State Board of Land Commissioners (Owners); Clear Creek Cattle Company (Lessee)	33	N	89	W	1	SENE		Proof P34998/17093D		X	PUD,ADJ	ORI	IRR	3/18/1926			Deer Creek		
CR15/077A	Buss I Reservoir		33	N	89	W	27	NWSW		Proof P37599/10039R	0				STO	3/31/1994	1026	ACFT	Buss Draw (A closed Basin) drainage of		
CR15/079A	Cap Pit Reservoir		33	N	89	W	27	SENW		Proof P37601/10041R	0				STO	3/31/1994	50.86	ACFT	CH. 4 Draw		
CR15/374A	Area 4 Reclamation Reservoir	Pathfinder Mines Corporation; State Lands and Investments	33	N	90	W	0		M610	Proof P38228/9722R MS610	0		ADJ	STR	STO,WIL	12/24/1991	6787.5	ACFT	Fraser Draw		
CR15/375A	2R Reclamation Reservoir	Pathfinder Mines Corporation	32	N	90	W	0		M654	Proof P38229/9442R MS610	0		ADJ	STR	STO,WIL	11/23/1988	987.45	ACFT	Dry Coyote Creek		
CU10/160A	Lucky Mc #11	Pathfinder Mines Corporation; State Board of Land Commissioners; USDI Bureau of Reclamation	32	N	90	W	0			Proof P3811/2395W X M.S. 610			ADJ	ORI	IND	12/6/1968					

Appendix A
Water Rights Within Five-Mile Radius of East Gas Hills Site

Permit Number (Appropriation)	Facility Name	Permit Applicant	Tns		Rng		Section	Qtrqtr	Lots	Additional Description	Acres	Head Gate-Outlet-Well	Status	Supply type	Uses	Priority	Amount	Unit	Source	Permit Well Depth	Permit Static Well Depth
CU10/187A	Lucky Mc #8	Pathfinder Mines Corporation; Wyoming State Board of Land Commissioners; USDI, Bureau of Land Management	32	N	90	W	0			Proof P3838/3W X M.S. 610			ADJ	ORI	IND	3/14/1958					
CU10/404A	Buss I Reservoir	1) Power Resources, Incorporated; 2) USDI, Bureau of Land Management	33	N	89	W	27	SWNW		Proof P4041/95290W	0		ADJ	RES	MIS	4/26/1994	-0.0001	GPM			
P10039R	Buss I Reservoir	Power Resources Inc.**USDI BLM	33	N	89	W	27	SWNW		P		X	UNA	ORI	STO	3/31/1994	1026	ACFT	Buss Draw (A closed Basin) drainage of		
P10040R	Buss III Reservoir	Power Resources Inc.**USDI BLM	33	N	89	W	27	NESW		P		X	UNA	ORI	STO	3/31/1994	14.9	ACFT	Buss Draw (A closed Basin) drainage of		
P10041R	Cap Pit Reservoir	Power Resources Inc.**USDI BLM	33	N	89	W	27	SWNE		P			UNA	ORI	STO	3/31/1994	50.86	ACFT	CH. 4 Draw		
P10075S	Rim Stock Reservoir	USDI, Bureau of Land Management Casper District	33	N	89	W	35	NESW		Proof P 0/10075S P		X	GST	ORI	STO	1/27/1987	6.78	ACFT	Middle Sage Hen Creek		
P10166D	Crane Ditch	J. J. Holliday	33	N	88	W	7	NWSE				X	PUD	ORI	IRR	9/26/1910	0.36	CFS	Deer Creek		
P102340W	Philps #1	Philp's Sheep Co.	33	N	89	W	4	NESE		S		X	ABA	ORI	STO	5/13/1996	25	GPM			
P103584W	BS 96 M-1	Power Resources Inc.	33	N	89	W	32	NENW				X	UNA	ORI	MON	8/29/1996	0	GPM		305	194.1
P103586W	WSL96M-1	Power Resources Inc.	33	N	89	W	28	NESE				X	UNA	ORI	MON	8/29/1996	0	GPM		365	175.25
P103587W	MU 96 M-2	Power Resources Inc.	33	N	89	W	31	NESW				X	UNA	ORI	MON	8/29/1996	0	GPM		475	256.7
P103588W	MU 96 M-1	Power Resources Inc.	33	N	89	W	31	NESW				X	UNA	ORI	MON	8/29/1996	0	GPM		465	244.5
P103591W	WSL96MP1	Power Resources Inc.	33	N	89	W	28	NWSE				X	UNA	ORI	MON	8/29/1996	0	GPM		275	148.25
P103982W	Lucky Mc #14	USDI, BLM**Barnhart Drilling Company, Inc.	33	N	90	W	24	SWNE				X	UNA	ORI	MIS	9/17/1996	400	GPM		1505	70
P103983W	Lucky Mc #12	USDI, BLM**Barnhart Drilling Company, Inc.	33	N	90	W	24	SWSW		X			UNA	ORI	MIS	9/17/1996	310	GPM		1451	64
P104183W	MW 75	Umetco Minerals Corporation	33	N	89	W	14	NESW				X	A&C	ORI	MON	10/15/1996	0	GPM		205	120.93
P104184W	MW 76	Umetco Minerals Corporation	33	N	89	W	8	NESE				X	A&C	ORI	MON	10/15/1996	0	GPM		142	95.55
P104185W	MW 77	Umetco Minerals Corporation	33	N	89	W	9	SWSE				X	UNA	ORI	MON	10/15/1996	0	GPM		279	231.01
P10444R	GHP No. 2 Evaporation Reservoir	Umetco Minerals Corporation	33	N	89	W	15	NENW		P		X	CAN	STR	IND,PCT	11/21/1996	199.36	ACFT	Canyon Creek		
P104718W	C-18 Pit	Umetco Minerals Corporation	33	N	89	W	22	NENW				X	UNA	ORI	MIS,DEW,RES	11/21/1996	500	GPM		85	80
P104730W	ALJOB #2	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	NESW		X			UNA	ORI	MIS	11/25/1996	45	GPM		537	270
P105492W	MW 70A	Umetco Minerals Corporation	33	N	89	W	10	SWSW				X	UNA	ORI	MON	4/11/1997	0	GPM		151	141
P105493W	MW 70B	Umetco Minerals Corporation	33	N	89	W	10	SWSW				X	A&C	ORI	MON	4/11/1997	0	GPM		265	138
P105494W	MW 71A	Umetco Minerals Corporation	33	N	89	W	16	NENE				X	A&C	ORI	MON	4/11/1997	0	GPM		237	224
P105495W	MW 71B	Umetco Minerals Corporation	33	N	89	W	16	NENE				X	UNA	ORI	MON	4/11/1997	0	GPM		329	223
P105496W	MW 72	Umetco Minerals Corporation	33	N	89	W	22	NWNW				X	UNA	ORI	MON	4/11/1997	0	GPM		85	56
P105497W	MW 73	Umetco Minerals Corporation	33	N	89	W	22	NENW				X	A&C	ORI	MON	4/11/1997	0	GPM		153	104
P105498W	MW 74	Umetco Minerals Corporation	33	N	89	W	22	NWNW				X	A&C	ORI	MON	4/11/1997	0	GPM		60	21
P106684W	PIX MO 97-1	Power Resources Inc.	33	N	89	W	22	NESW				X	UNA	ORI	MON	7/1/1997	0	GPM		185	90
P106685W	PIX MU 97-1	Power Resources Inc.	33	N	89	W	22	NESW				X	UNA	ORI	MON	7/1/1997	0	GPM		310	90
P106686W	PIX MU 97-1	Power Resources Inc.	33	N	89	W	22	NESW				X	UNA	ORI	MON	7/1/1997	0	GPM		245	90
P106687W	BUMP 97-1	Power Resources Inc.	33	N	89	W	34	NENW				X	UNA	ORI	MON	7/1/1997	0	GPM		620	352
P106688W	BUMO 97-1	Power Resources Inc.	33	N	89	W	34	NENW				X	UNA	ORI	MON	7/1/1997	0	GPM		370	314
P106689W	BUMU 97-1	Power Resources Inc.	33	N	89	W	34	NENW				X	UNA	ORI	MON	7/1/1997	0	GPM		720	354
P106690W	GW 10	Power Resources Inc.	33	N	89	W	21	SESE				X	UNA	ORI	MON	7/1/1997	0	GPM		312	200
P107839W	MUMP 97-1	Power Resources Inc.	33	N	89	W	31	NESE				X	UNA	ORI	MON	10/6/1997	0	GPM		440	237
P108001W	MW78	Umetco Minerals Corporation	33	N	89	W	15	SESW				X	A&C	ORI	MON	11/4/1997	0	GPM		150	111.45
P108002W	MW79	Umetco Minerals Corporation	33	N	89	W	15	SESW				X	A&C	ORI	MON	11/4/1997	0	GPM		150	118.83
P108003W	MW80	Umetco Minerals Corporation	33	N	89	W	15	SESW				X	A&C	ORI	MON	11/4/1997	0	GPM		155	117.48
P108004W	MW81	Umetco Minerals Corporation	33	N	89	W	10	SWSW				X	A&C	ORI	MON	11/4/1997	0	GPM		240	171
P108233W	GH97WW-1	Power Resources Inc.	32	N	89	W	2	NESW		X			UNA	ORI	MIS	11/17/1997	100	GPM		1325	425
P10858D	Dew Drop Ditch	The Diamond Ring Co.	33	N	89	W	7	SENE				X	PUD	ORI	STO,IRR	7/17/1911	0.07	CFS	Dew Drop Spring		
P10859D	Iron Spring Ditch	The Diamond Ring Co.	33	N	89	W	8	SESW				X	PUD	ORI	STO,IRR	7/17/1911	0.28	CFS	Iron Spring		
P10860D	Medicine Spring Ditch	The Diamond Ring Co.	33	N	89	W	7	NWNW				X	PUD	ORI	STO,IRR	7/17/1911	0.06	CFS	Medicine Spring		
P10861D	Pine Tree Ditch	The Diamond Ring Co.	33	N	89	W	8	SWNW				X	PUD	ORI	STO,IRR	7/17/1911	0.07	CFS	Pine Tree Spring		
P112329W	BSPW-1	Power Resources Inc.	33	N	89	W	32	SENW			0	X			MON	10/8/1998	0			425	257.4

Appendix A
Water Rights Within Five-Mile Radius of East Gas Hills Site

Permit Number (Appropriation)	Facility Name	Permit Applicant	Tns		Rng		Section	Qtrqtr	Lots	Additional Description	Acres	Head Gate-Outlet-Well	Status	Supply type	Uses	Priority	Amount	Unit	Source	Permit Well Depth	Permit Static Well Depth
P112330W	BSMU-1	Power Resources Inc.	33	N	89	W	32	NENW			0	X			MON	10/8/1998	0			485	266.9
P112331W	BSMP-1	Power Resources Inc.	33	N	89	W	32	NENW			0	X			MON	10/8/1998	0			376	212
P112332W	BSMP-2	Power Resources Inc.	33	N	89	W	32	NENW			0	X			MON	10/8/1998	0			410	230
P112333W	BSMP-3	Power Resources Inc.	33	N	89	W	32	NENW			0	X			MON	10/8/1998	0			372	221
P114511W	MW10D	Umetco Minerals Corporation	33	N	89	W	15	SWNE			0	X	A&C	ORI	MON	3/10/1999	0			265	214.41
P114512W	MW24D	Umetco Minerals Corporation	33	N	89	W	15	SESW			0	X	A&C	ORI	MON	3/10/1999	0			210	131.51
P114513W	MW7D	Umetco Minerals Corporation	33	N	89	W	15	NESW			0	X	A&C	ORI	MON	3/10/1999	0			266	185.87
P114514W	MW6D	Umetco Minerals Corporation	33	N	89	W	15	NWSE			0	X	A&C	ORI	MON	3/10/1999	0			270	231.7
P1209D	Ervay Nos. 1 & 2	Mrs. M. E. Ervay	33	N	89	W	1	SWNE		X			PU,PUD	ORI	IRR	05/11/1896	1.78	CFS	Deer Creek		
P1226D	O. K. Ditch	Josie P. Biggs	33	N	88	W	17	NWNW				X	PUD	ORI	IRR	05/11/1896	1.14	CFS	Deer Creek		
P13001R	B-Spoils Reservoir	Umetco Minerals Corporation	33	N	89	W	15	NESE			0	X	UNA	STR	IND	8/27/2007	63.4	ACFT	Canyon Creek		
P130987W	HW4EX	Umetco Minerals Corporation	33	N	89	W	15	SWNW			0	X	UNA	ORI	MIS	11/28/2000	0				
P1314D	Holliday Ditch	John J. Holliday	33	N	88	W	7		L5		7		ELI,PUD,ADJ	ORI	STO,IRR,DOM	08/27/1896	0.57	CFS	Deer Creek		
P13527S	Lilly Pad Stock Reservoir	USDI, Bureau of Land Management	34	N	89	W	19	NWSW	L3	Proof P0/13527S	0	X	ADJ	ORI	STO	11/1/1982	3.8	ACFT	Imaginary Draw		
P13528S	Lilly Pad Stock Reservoir / East Canyon Stock Reservoir	USDI, Bureau of Land Management	34	N	89	W	9	NESW		Proof P0/13528S	0	X	ADJ	ORI	STO	11/1/1982	1.5	ACFT	Jackrabbit Draw		
P144110W	MW82	Umetco Minerals Corporation** USDI, Bureau of Land Management	33	N	89	W	22	NWNW			0	X	GST	ORI	MON	4/26/2002				115	86
P14468D	Dulton Pipe Line No. 1 Ditch	Ben M. & B. B. Wood	33	N	90	W	2	NWSW				X	PUD	ORI	STO,MIN,DOM,DRI	10/16/1916	0.06	CFS	Spring		
P15179D	C. B. C. Ditch	Charles B. Cunningham	33	N	89	W	4	NWNW	L4	HES	8		ADJ,DSC,PU,PUD	ORI	STO,IRR,DOM	8/9/1918	0.17	CFS	Canyon Creek		
P162305W	Process Water Well #6	Umetco Minerals Corporation	33	N	89	W	15	NENW			0		GST	ORI	IND	8/16/2004				1685	90
P1626R	Asbell Reservoir	Starling P. Asbell	32	N	89	W	10	SESW		P			PU	ORI	STO,IRR,DOM	9/24/1909	49.1	ACFT	Sage Hen Creek		
P169586W	Liam	Glenn H. Burgett	34	N	90	W	36	NENE			0	X	GSI	ORI	STO	8/25/2005					
P16967D	Diamond Ring Ditch No. 4	NELLIE B. GRIEVE	34	N	88	W	36	NWNW				X	PUD	ORI	IRR	2/14/1925	0	CFS	Landon Creek		
P17093D	Diamond Ring Ditch No. 5	Diamond Ring Co.	33	N	89	W	1	SENE				X	PUD,ADJ	ORI	IRR	3/18/1926	0.21	CFS	Deer Creek		
P174546W	Burgett #1	Glenn H. Burgett	34	N	89	W	4	SENE			0		GSI	ORI	STO	5/4/2006					
P175221W	Gunnel #1	BRS Inc.	33	N	90	W	25	NENW			0		GSI	ORI	MIS	6/26/2006					
P179593W	GAS HILLS WATER WELL-1	POWER RESOURCES, INC** USDI - BLM	33	N	89	W	32	SENW			0	X	GSI	ORI	MIS	2/14/2007					
P182674W	CROSS MEADOWS 12-1	CLEAR CREEK CATTLE CO** USDI - BLM	33	N	89	W	12	SWSW			0	X	GSI	ORI	STO	7/9/2007					
P182751W	RYDER OIL & GAS NO 10-1 & BLM	RYDER OIL & GAS, LLC** USDI - BLM	33	N	90	W	11, 14				0		GSI	ORI	IND	6/26/2007					
P182956W	LUCKY MC14	Barnhart Drilling Co., Inc.** WYOMING STATE BOARD OF LAND COMMISSIONERS** USDI - BLM	33	N	90	W	24	NESW			0	X	GSI	ORI	MIS	8/15/2007				1505	50
P183419W	LUCKY MC #12	Barnhart Drilling Co., Inc.** USDI - BLM** WYOMING STATE BOARD OF LAND COMMISSIONERS	33	N	90	W	24	SENW			0	X	GSI	ORI	MIS	9/13/2007				1451	64
P215W	Water Well #3	Globe Mining Co.	33	N	89	W	15	NENW		X			UNA	ORI	IND	8/24/1959	250	GPM		1668	20
P2395W	Lucky Mc #11	Pathfinder Mines Corporation	32	N	90	W	0			X MS 610			ADJ	ORI	IND	12/6/1968	100	GPM		2140	186
P24172P	JE Ranch #12-5	Matador Cattle Company	34	N	88	W	32	NENW		SD			PUW	ORI	DOM,STO	8/13/1973	5	GPM		175	35
P25540D	Hydrostatic Test - North Pipeline Pump Point	Colorado Interstate Gas Company	32	N	89	W	0			X			CAN	ORI	TEM,IND	10/19/1977	2.23	CFS	Sweetwater River		
P2575D	Merriam Ditch	Frank A. Merriam	33	N	89	W	8	SWNW				X	PUD	ORI	IRR	3/30/1900	0.11	CFS	Iron Spring		
P26230D	Coyote Water Hole #1	D. H. Branson	33	N	90	W	11	NWNE		X			CAN	ORI	TEM,IND,MIN,DRI	6/26/1979	0.28	CFS	Coyote Creek		
P2754E	Cross Ell Ditch - Permit 9431 {Enl. of}	Grieve Brothers	33	N	89	W	1		L2				DSC,PUD	ORI	IRR	2/5/1913			Deer Creek		
P30310D	AML 16-C-2 Water Haul	Roth Trucking	33	N	89	W	32	NWNW		X			CAN	ORI	IND,TEM	11/6/1989	0.166	CFS	Lucky Mac Draw		
P30542W	BS 12 1024W	Inc. Western Nuclear	33	N	89	W	32	SWNE		X			PUW	ORI	DEW,MIS	7/25/1975	0	GPM		751	360
P30698W	UPZ Well #1	Federal-American Partners	33	N	89	W	33	NWNW		X			PUW	ORI	MON	7/30/1975	-1	GPM		925	470
P30735W	Lucky Mc Well #12	Pathfinder Mines Corporation	33	N	90	W	24	SENW			0	X	CAN	ORI	IND	8/8/1975	310	GPM		1451	64
P31252W	UPZ Well #2	Federal-American Partners	33	N	89	W	32	SENE		X			PUW	ORI	MON	9/22/1975	0	GPM		806	440

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P31496W	BS12-1025P	Federal-American Partners	33	N	89	W	32	SWNE		X			PUW	ORI	MON	11/12/1975	0	GPM		777	345
P31497W	BS12-1026P	Federal-American Partners	33	N	89	W	32	SWNE		X			PUW	ORI	MON	11/12/1975	0	GPM		640	345
P31498W	BS12-1027P	Federal-American Partners	33	N	89	W	32	SWNE				X	PUW	ORI	MON	11/12/1975	0	GPM		565	325
P31499W	BS12-1028P	Federal-American Partners	33	N	89	W	32	NWSE		X			PUW	ORI	MON	11/12/1975	0	GPM		827	440
P31500W	BS12-1029P	Federal-American Partners	33	N	89	W	32	NWSE		X			PUW	ORI	MON	11/12/1975	0	GPM		735	440
P31501W	BS12-1030P	Federal-American Partners	33	N	89	W	32	NWSE		X			PUW	ORI	MON	11/12/1975	0	GPM		640	435
P31504W	UPZ 417P	Federal-American Partners	33	N	89	W	33	SWNW		X			PUW	ORI	MIS	11/12/1975	0	GPM		650	460
P31919W	ENL BS12-1024W	Federal-American Partners	33	N	89	W	32	SWNE		X			PUW	ORI	MIS	11/19/1975	0	GPM		751	360
P32404W	ENL UPZ #1	Federal-American Partners	33	N	89	W	33	SWNW				X	PUW,PU	ORI	MIS	1/26/1976	-1	GPM		925	470
P33517W	Cayias #1	Inc. Hills Gas	33	N	89	W	18	NWSW		X			PUW	ORI	IND	4/9/1976	0	GPM			
P33518W	Cayias #2	Inc. Hills Gas	33	N	89	W	18	SESW		X			PUW	ORI	IND	4/9/1976	0	GPM			
P3369R	Dutton Reservoir	Ben M. Wood**B. B. Ward	33	N	90	W	2	SWSE		P			PU,PUO	ORI	STO,DOM,DRI	10/16/1916	0.86	ACFT	Spring		
P34361W	Blackstone #1	Western Nuclear Inc.	33	N	89	W	32	SWNE		X			PUW	ORI	MON	7/22/1976	0	GPM			
P3W	Lucky Mc #8	Pathfinder Mines Corporation	32	N	90	W	0			X MS 610			ADJ	ORI	IND	3/14/1958	80	GPM		1500	392
P40467W	RHW-1	Mullen Mining Company	33	N	89	W	9	SESW		X			PUW	ORI	MON	8/5/1977	0	GPM		160	154
P40468W	RHW-2	Mullen Mining Company	33	N	89	W	9	NESW		X			PUW	ORI	MON	8/5/1977	0	GPM		134	-7
P41021W	RHW-4	Mullen Mining Company	33	N	89	W	9	SWNE		X			PUW	ORI	MON	11/16/1977	0	GPM		280	0
P41022W	RHW-3	Mullen Mining Company	33	N	89	W	9	SESE		X			PUW	ORI	MON	11/16/1977	0	GPM		310	257
P41023W	RHW-5	Mullen Mining Company	33	N	89	W	9	SWSW				X	PUW	ORI	MON	11/16/1977	0	GPM		180	0
P43111W	CEE #1	Union Carbide Corporation	33	N	89	W	17	NWNE		X			PU	ORI	MIS	3/10/1978	500	GPM		130	55
P43159W	Lucky Mc #14	Pathfinder Mines Corporation	33	N	90	W	24	NESW			0	X	CAN	ORI	IND	3/31/1978	500	GPM		1505	70
P43745W	ADOBE #1	USDI, BLM** Mullen Engineering	33	N	89	W	9	SWSW		X			PUW	ORI	IND,MIS	6/9/1978	50	GPM			
P438G	Lucky Mc 1	Pathfinder Mines Corporation	33	N	90	W	23	NWSE		D		X	UNA	ORI	DOM	5/1/1956	10	GPM		90	30
P439G	Lucky Mc 2	Pathfinder Mines Corporation	33	N	90	W	26	NENW		D		X	UNA	ORI	DOM	5/1/1956	350	GPM		110	20
P44612W	Carol Well #1	Power Resources Inc.	33	N	89	W	28	NESW		X		X	UNA	ORI	MIS	11/25/1977	50	GPM		400	200
P44796W	Rattlesnake #1	The Matador Cattle Company	33	N	88	W	7	NENE		Proof P0/44796W		X	PUW	ORI	STO	9/1/1978	1	GPM		2	-4
P44797W	Rattlesnake #2	The Matador Cattle Company	33	N	88	W	8	SENE		Proof P0/44797W S			PUW	ORI	STO	9/1/1978	0.5	GPM		4	-4
P44798W	Rattlesnake #3	The Matador Cattle Company	33	N	88	W	8	SWNE		Proof P0/44798W S			PUW	ORI	STO	9/1/1978	25	GPM		5	-4
P44799W	Rattlesnake #4	The Matador Cattle Company	33	N	88	W	8	SWSW		Proof P0/44799W S			PUW	ORI	STO	9/1/1978	4	GPM		5	-4
P44800W	Rattlesnake #5	The Matador Cattle Company	33	N	88	W	17	NENE		Proof P0/44800W S			PUW	ORI	STO	9/1/1978	2	GPM		3	-4
P4483E	Cross Ell Ditch, Enlargement No. 3 of the	Diamond Ring Co.	33	N	89	W	1	SENE			7.8		ADJ	ORI	IRR	3/18/1926	0.19	CFS	Deer Creek		
P45368W	Monitor Well GW 7	Power Resources Inc.	33	N	89	W	27	NESE		X		X	UNA	ORI	MON	9/26/1978	0	GPM		660	82
P45369W	Monitor Well GW 8	Silver King Mines, Inc.	33	N	89	W	27	NENE				X	UNA	ORI	MON	9/26/1978	0	GPM		360	98
P45370W	Monitor Well GW 9	Silver King Mines, Inc.	33	N	89	W	28	NESE				X	UNA	ORI	MON	9/26/1978	0	GPM		325	111
P45371W	Monitor Well GW 10	Power Resources Inc.	33	N	89	W	21	SESE				X	A&C	ORI	MON	9/26/1978	0	GPM		475	153
P45502W	Barrel Springs #1	USDI, BLM	32	N	89	W	8	NWSW		S			PUW,PU	ORI	STO	10/20/1978	25	GPM			
P46378W	Sage Hen #1	Matador Cattle Company	33	N	89	W	26	SESE		S			PUW	ORI	STO	8/14/1978	1	GPM		5	-4
P46384W	Holiday #1	The Matador Cattle Company	33	N	88	W	19	SWSW		Proof P0/446384W S			PUW	ORI	STO	8/14/1978	10.5	GPM		5	-4
P46385W	Cole #80	Matador Cattle Company	33	N	89	W	18	SWNW		S			ADJ	ORI	STO	8/14/1978	0.75	GPM		2	-4
P46387W	Little X-L #1	The Matador Cattle Company	33	N	88	W	6	NWSW		Proof P0/46387W S			PUW	ORI	STO	8/14/1978	3	GPM		2	-4
P46388W	Medicine Springs #1	The Matador Cattle Company	33	N	89	W	7	NWNW		Proof P0/46388W		X	ADJ	ORI	STO	8/14/1978	4	GPM		6	-4
P46389W	Iron Spring #1	The Matador Cattle Company	33	N	89	W	8	SESW		Proof P0/46389W S			PUW	ORI	STO	8/14/1978	3	GPM		3	-4
P46771W	BS 1051	American Nuclear Corporation	32	N	90	W	1	SESE		X			PUW,PU	ORI	MIS	1/13/1978	110	GPM			

Appendix A
Water Rights Within Five-Mile Radius of East Gas Hills Site

Permit Number (Appropriation)	Facility Name	Permit Applicant	Tns		Rng		Section	Qtrqtr	Lots	Additional Description	Acres	Head Gate-Outlet-Well	Status	Supply type	Uses	Priority	Amount	Unit	Source	Permit Well Depth	Permit Static Well Depth
P46772W	Muskrat Well #1	American Nuclear Corporation	32	N	90	W	1	SESE		X			PUW,PU	ORI	DEW,MIS	2/22/1978	120	GPM			
P46773W	Muskrat P 3	Silver King Mines, Inc.	33	N	89	W	31	SESW				X	UNA	ORI	MON	2/22/1978	0	GPM		515	194
P46774W	Muskrat P 4	Silver King Mines, Inc.	33	N	89	W	31	NESW				X	UNA	ORI	MON	2/22/1978	0	GPM		530	244
P46775W	Muskrat P 2	Silver King Mines, Inc.	33	N	89	W	31	SWSE				X	UNA	ORI	MON	2/22/1978	0	GPM		530	134
P46776W	Muskrat P 1	Silver King Mines, Inc.	33	N	89	W	31	NWSE		X		X	UNA	ORI	MON	2/22/1978	0	GPM		440	201
P47060W	ENL Lucky Mc #8	Pathfinder Mines Corp. Lucky Mc Mine	33	N	90	W	23			MS582			UNA	RES	RES,IND,MIS	9/18/1979	80	GPM		1500	392
P47061W	ENL Lucky Mc #11	Pathfinder Mines Corp. Lucky Mc Mine	33	N	90	W	23			MS582			PU,DSC	ORI	RES,IND,MIS	9/18/1978	0	GPM		2140	186
P49121W	Lincoln Springs #1	The Matador Cattle Company	33	N	89	W	7	SENE		Proof P0/49121W S			PUW	ORI	STO	7/11/1979	3	GPM		5	-4
P49333W	Barrel Springs #1	Matador Cattle Company	32	N	89	W	8	SWSW		S			PUW,PU	ORI	STO	8/6/1979	1	GPM		4	-4
P501G	Lucky Mc #3	Pathfinder Mines Corporation	33	N	90	W	0			DX			UNA	ORI	IND,DOM	12/3/1956	300	GPM		218	95
P502G	Lucky Mc #4	Pathfinder Mines Corporation	33	N	90	W	0			DX			UNA	ORI	IND,DOM	12/3/1956	150	GPM		112	28
P530G	JAY #1	Vitro Minerals Corporation	33	N	90	W	26	SWNE		X		X	UNA	ORI	IND	1/29/1957	100	GPM		206	80
P53366W	Bates Springs #1	The Matador Cattle Company	33	N	89	W	8	SWSW		S			PUW	ORI	STO	8/8/1980					
P56W	ALJOB #1	Globe Mining Co.	33	N	89	W	15	NENW		X			ABA	ORI	IND,DOM	8/29/1958	45	GPM		484	256
P57999W	Pay #1	Union Carbide Corporation	33	N	89	W	22	NENE		X			PUW	ORI	MIS	5/4/1981	1200	GPM		200	97
P60146W	Bengal Well #1	USDI, BLM** Federal-American Partners	33	N	89	W	27	NENE		X			PUW	RES	RES,MIS	11/25/1977	0	GPM		-1	0
P60147W	Bengal Well #2	USDI, BLM** Federal-American Partners	33	N	89	W	27	NENE				X	PUW	RES	MIS	11/25/1977	0	GPM		-1	0
P64404W	ALLEGRETTI #1	USDI, BLM** Adobe Oil & Gas Corporation	32	N	89	W	5	NWSE		X			PUW,PU	ORI	MIS	6/2/1983	20	GPM			
P66157W	Guard Well 3A	USDI, BLM** Union Carbide Corporation	33	N	89	W	15	SESW			0	X	GST	ORI	MON	4/1/1983	10	GPM		158	101
P67075W	Guard Well 3B	USDI, BLM** Union Carbide Corporation	33	N	89	W	15	SWSW		X			A&C	RES	RES,IND,MIS	2/16/1984	7	GPM		159	114.1
P67076W	Guard Well 3C	USDI, BLM** Union Carbide Corporation	33	N	89	W	15	NWNW		X			A&C	ORI	RES,IND,MIS	2/16/1984	10	GPM		159	105
P67077W	HDW-1	Union Carbide Corporation	33	N	89	W	15	NWSW		X			PUW	RES	RES,IND,MIS	2/8/1984	1	GPM		35	-4
P67146W	MW1	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	10	SWSE		X			PUW	ORI	MON	4/23/1984	0	GPM		79	58.24
P67147W	MW2	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	10	SWSW				X	A&C	ORI	MON	4/23/1984	0	GPM		170	125
P67148W	MW4	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	10	SWSE				X	A&C	ORI	MON	4/23/1984	0	GPM		140	82
P67149W	MW6	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	NWSE			0	X	A&C	ORI	MON	4/23/1984	0	GPM		220	162
P67150W	MW7	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	NESW			0	X	A&C	ORI	MON	4/23/1984	0	GPM		220	145
P67151W	MW8	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SWNE				X	A&C	ORI	MON	4/23/1984	0	GPM		159	57.15
P67152W	MW10	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SWNE			0	X	A&C	ORI	MON	4/23/1984	0	GPM		160	95
P67153W	MW16	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	10	SWSW				X	ABA	ORI	MON	4/23/1984	0	GPM		200	-7
P67154W	MW17	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	10	NESW				X	A&C	ORI	MON	4/23/1984	0	GPM		160	105
P67155W	MW18	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	10	NWSE				X	A&C	ORI	MON	4/23/1984	0	GPM		80	53
P67156W	MW19	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	10	SESE				X	A&C	ORI	MON	4/23/1984	0	GPM		110	67
P67157W	MW20	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	NENE				X	A&C	ORI	MON	4/23/1984	0	GPM		90	65
P67158W	MW21	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	10	SWSW			0	X	A&C	ORI	MON	4/23/1984	0	GPM		159	-7
P67159W	MW23	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	10	NWSE				X	A&C	ORI	MON	4/23/1984	0	GPM		140	80
P67160W	GW1	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SESW				X	A&C	ORI	MON	4/23/1984	0	GPM		160	105
P67161W	GW2	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SESW				X	A&C	ORI	MON	4/23/1984	0	GPM		158	114
P67162W	GW3	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SESW			0	X	A&C	ORI	MON	4/23/1984	0	GPM		160	107
P67163W	GW4	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	22	NENW				X	A&C	ORI	MON	4/23/1984	0	GPM		165	112.42
P67164W	GW5	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SWSE				X	A&C	ORI	MON	4/23/1984	0	GPM		160	100
P67165W	GW6	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	22	NWNE				X	A&C	ORI	MON	4/23/1984	0	GPM		121	86.18
P67166W	GW7	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SESW		X			PUW,PU	ORI	MON	4/23/1984	0	GPM		190	0.3
P67167W	GW8	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	22	NENW		X			PUW,PU	ORI	MON	4/23/1984	0	GPM		172	125
P67168W	PW1	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	NESW				X	A&C	ORI	MON	4/23/1984	0	GPM		220	168
P67169W	PW2	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SWSW				X	A&C	ORI	MON	4/23/1984	0	GPM		220	192
P67170W	PW3	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SWSW				X	A&C	ORI	MON	4/23/1984	0	GPM		220	148
P67171W	PW4	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	22	NENW		X			PUW,PU	ORI	MON	4/23/1984	0	GPM		230	100
P67172W	PW5	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	22	NENW				X	A&C		MON	4/23/1984	0	GPM		160	120.72
P67173W	PW6	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	22	NENW				X	A&C	ORI	MON	4/23/1984	0	GPM		136	122.39

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P67174W	PW7	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SWSE				X	A&C	ORI	MON	4/23/1984	0	GPM		260	-7
P67175W	EPW1	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	16	SESE				X	A&C	ORI	MON	4/23/1984	0	GPM		155	110
P67176W	EPW2	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	22	NWNW				X	A&C	ORI	MON	4/23/1984	0	GPM		115	89
P67177W	EPW3	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	22	NWNW				X	A&C	ORI	MON	4/23/1984	0	GPM		110	70
P67178W	DW2	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SESW				X	ABA	ORI	MON	4/23/1984	0	GPM		260	140
P67179W	DW3	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SWNW				X	A&C	ORI	MON	4/23/1984	0	GPM		228	210
P67180W	MW30026	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	22	NWNW				X	A&C	ORI	MON	4/23/1984	0	GPM		193	77
P67181W	RW1	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	22	NWNW			0	X	A&C	ORI	MON	4/23/1984	0	GPM		130	87.04
P67182W	RW2	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	22	NWNW				X	A&C	ORI	MON	4/23/1984	0	GPM		120	76
P67183W	HW1	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SWSW			0	X	A&C	ORI	MON	4/23/1984	0	GPM		267.6	152.35
P67184W	HW2	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	16	NESE				X	A&C	ORI	MON	4/23/1984	0	GPM		117	104.72
P67185W	HW3	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SWNW				X	A&C	ORI	MON	4/23/1984	0	GPM		135.5	113.34
P67186W	HW4	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	15	SWNW				X	A&C	ORI	MON	4/23/1984	0	GPM		155.4	123.85
P67187W	RIM 1	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	9	SWSW		X		X	ABA	ORI	MON	4/23/1984	0	GPM		300	179
P67188W	RIM 2	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	9	SENW		X		X	ABA	ORI	MON	4/23/1984	0	GPM		260	78
P67189W	RIM 3	USDI, BLM** Umetco Minerals Corporation	33	N	89	W	8	NESE		X		X	ABA	ORI	MON	4/23/1984	0	GPM		196	87
P682G	Lucky Mc #5	Pathfinder Mines Corporation	33	N	90	W	23			X			UNA	ORI	IND,DOM	7/2/1957	200	GPM		995	100
P716G	Lucky Mc #6	Pathfinder Mines Corporation	33	N	90	W	23			DX			UNA	ORI	IND,DOM	11/21/1957	350	GPM		1340	53
P71755W	Cross L #2 Spring	Clear Creek Cattle Co.	33	N	88	W	7	NWNE		Proof P0/71755W		X	PUW,PU	ORI	DOM,STO	9/13/1984	5	GPM		3	-4
P71757W	Little Cross L #1 Spring	Clear Creek Cattle Co.	33	N	88	W	6	NWSW	L11	Proof P0/71757W S			PUW	ORI	STO	9/13/1984	10	GPM		4	-4
P71758W	McKenzie Spring	Clear Creek Cattle Co.	33	N	88	W	19	SWSW	L7	Proof P0/71758W S			PUW	ORI	STO	9/13/1984	20	GPM		5	-4
P71762W	Roberts Spring	Clear Creek Cattle Co.	34	N	88	W	31	NWNE		Proof P0/71762W S			PUW	ORI	STO	9/13/1984	10	GPM		5	-4
P71764W	Government #1 West (Rattlesnake)	Clear Creek Cattle Co. and BLM Casper District	33	N	88	W	6	SESE		Proof P0/71764W S			PUW	ORI	STO	10/9/1984	4	GPM		5	-4
P71766W	Beaver Rim #2	USDI BLM Casper District**Clear Creek Cattle Co.	33	N	89	W	27	NENE		S			PUW	ORI	STO	1/17/1986	15	GPM		10	-4
P717G	Lucky Mc #7	Pathfinder Mines Corporation	33	N	90	W	23			DX			A&C	ORI	IND,DOM	11/21/1957	150	GPM		1720	28
P76332W	MW25	Umetco Minerals Corporation	33	N	89	W	15	NWNW		X			PUW,PU	ORI	MON	2/19/1988	0	GPM		256	227.5
P76333W	MW26	Umetco Minerals Corporation	33	N	89	W	10	NWSW				X	A&C	ORI	MON	2/19/1988	0	GPM		160	90
P76334W	MW27	Umetco Minerals Corporation	33	N	89	W	11	SWSW				X	A&C	ORI	MON	2/19/1988	0	GPM		121	41
P76996W	JGW 1	WYDEQ	33	N	90	W	26	SENE				X	PUW	ORI	MON	5/23/1988	0	GPM		300	136.9
P76997W	4WW 1	WYDEQ	33	N	90	W	26	NWSE		X			PUW,PU	ORI	MON	5/23/1988	0	GPM		300	206.07
P76998W	JGW 3	WYDEQ	33	N	90	W	26	SWSE		X			PUW,PU	ORI	MON	5/23/1988	0	GPM		200	175.75
P77793W	MW 28	Umetco Minerals Corporation	33	N	89	W	9	SESE		X		X	UNA	ORI	MON	8/3/1988	0	GPM		282	178.4
P7951R	Lagoon 1 Reservoir	Pathfinder Mines Corporation	33	N	90	W	23	NWSE		MINERAL SURVEY 582			DSC,PUO,PU	ORI	IND	5/17/1978	6.6	ACFT	Fraser Draw		
P7952R	Lagoon 2 Reservoir	Pathfinder Mines Corporation	33	N	90	W	23	NWSE		MINERAL SURVEY 582			DSC,PUO,PU	ORI	IND	5/17/1978	0.22	ACFT	Fraser Draw		
P7964R	Area 7 Settling Reservoir	Pathfinder Mines Corporation	33	N	90	W	25	NESW		P			PU,PUO	ORI	IND	9/14/1978	23.25	ACFT	Fraser Draw		
P80432W	MW 29	Umetco Minerals Corporation	33	N	89	W	15	NESW				X	ABA	ORI	MON	8/4/1989	0	GPM		195	188
P80433W	MW 31	Umetco Minerals Corporation	33	N	89	W	15	NESW				X	ABA	ORI	MON	8/4/1989	3	GPM		180	130.77
P80434W	MW 32	Umetco Minerals Corporation	33	N	89	W	15	SESW				X	A&C	ORI	MON	8/4/1989	0	GPM		160	102
P80484W	LA 1	Lidstone & Anderson Inc.	33	N	89	W	14	SWNW		X		X	UNA	ORI	MON	8/14/1989	0	GPM		60	43
P80485W	LA 2	Lidstone & Anderson Inc.	33	N	89	W	14	SWSW		X		X	UNA	ORI	MON	8/14/1989	0	GPM		165	128.5
P80486W	LA 3	Lidstone & Anderson Inc.	33	N	89	W	15	SESE		X		X	UNA	ORI	MON	8/14/1989	0	GPM		195	183
P80487W	LA 4	Lidstone & Anderson Inc.	33	N	89	W	14	SWSW		X		X	A&C	ORI	MON	8/14/1989	0	GPM		184.5	145
P80488W	LA 5	Lidstone & Anderson Inc.	33	N	89	W	22	NWNE		X		X	UNA	ORI	MON	8/14/1989	0	GPM		128	115
P80489W	LA 6	Lidstone & Anderson Inc.	33	N	89	W	22	NENE		X		X	UNA	ORI	MON	8/14/1989	0	GPM			
P80490W	LA 7	Lidstone & Anderson Inc.	33	N	89	W	23	NWNW		X		X	UNA	ORI	MON	8/14/1989	0	GPM		105	71.5

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P8108R	Lucky MC Reclamation Reservoir	Pathfinder Mines Corporation	33	N	90	W	2, 35	NWNW, NESE, SESE	L4	P, MS610			CAN	ORI	WIL,STO	2/26/1980	1940.45	ACFT	Fraser Draw		
P8122R	A-9 Pit Subgrade Tailings Disposal Reservoir	Union Carbide Corporation	33	N	89	W	15	SWSE		P			CAN	ORI	IND	4/3/1980	1107.73	ACFT	Union Draw		
P8208R	Adobe Oil & Gas Corporation Evaporation Pond Reservoir	Adobe Oil & Gas Corporation	33	N	89	W	9	NESE				X	PUO,PU	ORI	IND,MIS	3/2/1979	25.82	ACFT	East Draw		
P82562W	MWC-33	Umetco Minerals Corporation	33	N	89	W	15	NENW		X		X	ABA	ORI	MIS	4/27/1990	2	GPM		210	121.81
P82563W	MWC-34	Umetco Minerals Corporation	33	N	89	W	10	SWSW		X			ABA		MIS	4/27/1990	3	GPM		200	157.06
P82564W	MWC-35	Umetco Minerals Corporation	33	N	89	W	15	NENW		X			ABA	ORI	MIS	4/27/1990	5	GPM		190	148.03
P82565W	MWC-36	Umetco Minerals Corporation	33	N	89	W	15	NENW		X			ABA	ORI	MIS	4/27/1990	12	GPM		200	143.41
P82566W	MWI-37	Umetco Minerals Corporation	33	N	89	W	10, 15	SWSW, NWNW		X		X	ABA, UNA	ORI	MON	4/27/1990	0	GPM		240	222.9
P82567W	MWI-38	Umetco Minerals Corporation	33	N	89	W	10	SWSW				X	ABA	ORI	MON	4/27/1990	0	GPM		230	195.88
P82568W	MWI-39	Umetco Minerals Corporation	33	N	89	W	10	SWSW				X	ABA	ORI	MON	4/27/1990	0	GPM		253	222
P82823W	MUSKRAT-MO	Power Resources Inc.	33	N	89	W	31	NESW		X		X	UNA	ORI	MON	6/28/1990	0	GPM		381	198
P82824W	Muskrat Pump	Power Resources Inc.	33	N	89	W	31	NWSE		X		X	UNA	ORI	MON	6/28/1990	0	GPM		455	266
P82825W	Muskrat MP	Power Resources Inc.	33	N	89	W	31	NWSE		X		X	UNA	ORI	MON	6/28/1990	0	GPM		453	249
P83055W	MW-21A	Umetco Minerals Corporation	33	N	89	W	10	NWSW		X		X	UNA	ORI	MON	7/23/1990	0	GPM		200	165.87
P83269W	MWC-42	Umetco Minerals Corporation	33	N	89	W	10	SESW		X		X	ABA	ORI	MIS	8/15/1990	10	GPM		240	138
P8461R	Rim #1 Settling Reservoir	Umetco Minerals Corporation	33	N	89	W	9	NWSW		P			CAN	ORI	TEM,IND	9/14/1981	15.63	ACFT	Rim Draw		
P8462R	Rim #2 Settling Reservoir	Umetco Minerals Corporation	33	N	89	W	8	NESE		P			CAN	ORI	TEM,IND	9/14/1981	1.14	ACFT	Iron Springs Draw		
P8463R	Rim #3 Settling Reservoir	Umetco Minerals Corporation	33	N	89	W	8	NESE		P			CAN	ORI	TEM,IND	9/14/1981	13.48	ACFT	Iron Springs Draw		
P84648W	MWI 43	Umetco Minerals Corporation	33	N	89	W	15	NWNW				X	A&C	ORI	MON	3/18/1991	0	GPM		240	194.8
P84650W	MWI-50	Umetco Minerals Corporation	33	N	89	W	15	NENE				X	ABA	ORI	MON	3/18/1991	0	GPM		240	171
P84651W	MWI-51	Umetco Minerals Corporation	33	N	89	W	15	NENE				X	ABA	ORI	MON	3/18/1991	0	GPM		240	159
P84652W	MWI-52	Umetco Minerals Corporation	33	N	89	W	15	NENE				X	ABA	ORI	MON	3/18/1991	0	GPM		245	144
P84751W	MWC-45	Umetco Minerals Corporation	33	N	89	W	15	NENW		X			ABA	ORI	MIS	3/18/1991	15	GPM		240	195.24
P84753W	MWC-47	Umetco Minerals Corporation	33	N	89	W	15	NWNW		X			ABA	ORI	MIS	3/18/1991	15	GPM		255	188
P84754W	MWC-48	Umetco Minerals Corporation	33	N	89	W	15	NWNE				X	ABA	ORI	MIS	3/18/1991	15	GPM		245	177.92
P84755W	MWC-49	Umetco Minerals Corporation	33	N	89	W	15	NENE		X			ABA	ORI	MIS	3/18/1991	15	GPM		240	156.35
P85776W	ENL MWC-42	Umetco Minerals Corporation	33	N	89	W	15	NENW					A&C	ORI	MIS	7/24/1991	8	GPM		240	180.58
P8599S	Canyon Creek #1 Stock Reservoir	Matador Cattle Company	33	N	89	W	9	NENE		P			PUO	ORI	STO	8/6/1979	0.13	ACFT	Canyon Creek		
P8641R	A-9 Pit Tailings Disposal Reservoir	Umetco Minerals Corporation	33	N	89	W	15	NESW		P			CAN	ORI	TEM,IND	7/27/1983	966.77	ACFT	Union Draw		
P87214W	Area 4 Reclamation Reservoir	Pathfinder Mines Corp.	33	N	90	W	35	SWNE		X			UNA	ORI	MIS	12/24/1991	12	GPM		460	270
P87215W	Area 5 Reclamation Reservoir	Pathfinder Mines Corp.	33	N	90	W	26	NWNW					UNA	ORI	MIS	12/24/1991	66	GPM		250	95
P89541W	DW-4	Umetco Minerals Corporation	33	N	89	W	10	SWSW		X			UNA	ORI	MIS	9/3/1992	8	GPM		260	135
P91081W	MW-63	Umetco Minerals Corporation	33	N	89	W	15	NESW				X	UNA	ORI	MON	3/19/1993	0	GPM		180	120
P91082W	MW-64	Umetco Minerals Corporation	33	N	89	W	10	SWSW				X	UNA	ORI	MON	3/19/1993	0	GPM		260	160
P91083W	MW-65	Umetco Minerals Corporation	33	N	89	W	15	SWNW				X	UNA	ORI	MON	3/19/1993	0	GPM		180	120
P91277W	MWC 55	Umetco Minerals Corporation	33	N	89	W	15	NWNW		X			ABA	ORI	MIS	3/19/1993	7	GPM		171.78	112.5
P91278W	MWC 56	Umetco Minerals Corporation	33	N	89	W	15	NENW		X		X	ABA	ORI	MIS	3/19/1993	5	GPM		261	171
P91279W	MWC 57	Umetco Minerals Corporation	33	N	89	W	15	NENE		X			ABA	ORI	MIS	3/19/1993	6	GPM		252	165
P91280W	MWC 58	Umetco Minerals Corporation	33	N	89	W	15	NWNW					A&C	ORI	MIS	3/19/1993	6	GPM		250	154
P91281W	MWC 59	Umetco Minerals Corporation	33	N	89	W	10	SWSW		X			ABA	ORI	MIS	3/19/1993	6	GPM		250	147
P91282W	MWC 60	Umetco Minerals Corporation	33	N	89	W	15	NENW					A&C	ORI	MIS	3/19/1993	4	GPM		160	111
P91283W	MWC 61	Umetco Minerals Corporation	33	N	89	W	15	NENW					A&C	ORI	MIS	3/19/1993	3.5	GPM		150	116
P91284W	MWC 62	Umetco Minerals Corporation	33	N	89	W	15	NWNW					A&C	ORI	MIS	3/19/1993	4	GPM		165	107
P92098W	MWC-66	Umetco Minerals Corporation	33	N	89	W	15	NENE		X			UNA	ORI	MIS	6/18/1993	15	GPM		190	120
P92914W	PRI #1	PRI Environmental Inc.	33	N	89	W	28	SENE				X	UNA	ORI	MON	10/1/1993	0	GPM		275	153.58
P93567W	LA-8	Lidstone & Anderson Inc.	33	N	89	W	22	NENE				X	UNA	ORI	MON	12/10/1993	0	GPM		163	72.9
P93801W	PWR #107 Spring (77)	USDI, BLM	33	N	89	W	18	NESW		S		X	ADJ	ORI	STO	4/17/1926	10	GPM		-1	-1

Appendix A
Water Rights Within Five-Mile Radius of East Gas Hills Site

Permit Number (Appropriation)	Facility Name	Permit Applicant	Tns		Rng		Section	Qtrqtr	Lots	Additional Description	Acres	Head Gate-Outlet-Well	Status	Supply type	Uses	Priority	Amount	Unit	Source	Permit Well Depth	Permit Static Well Depth
P94133W	Upper Mac Spring	USDI, BLM	33	N	88	W	30	NWNW	L1	Proof P0/94133W			ADJ	ORI	STO	4/17/1926	1	GPM		-1	-1
P94134W	Spring #7	USDI, BLM	33	N	88	W	19	NWSW	L3	Proof P0/94134W S		X	ADJ	ORI	STO	4/17/1926	5	GPM		-1	-1
P94135W	Spring #8	USDI, BLM	33	N	88	W	19	SWSW	L4	Proof P0/94135W S		X	ADJ	ORI	STO	4/17/1926	5	GPM		-1	-1
P9431D	Cross Ell Ditch	Leonidas Clayton	33	N	89	W	1		L2		5		ADJ,ELI	ORI	IRR	10/11/1909	1.21	CFS	Deer Creek		
P9442R	2R Reclamation Reservoir	Pathfinder Mines Corp. Lucky Mc Mine	32	N	90	W	0		M654	MS654	0	X	ADJ	STR	WIL,STO	11/23/1988	987.45	ACFT	Dry Coyote Creek		
P95290W	Buss I Reservoir	USDI, BLM** Power Resources Inc.	33	N	89	W	27	SESE		X	0		UNA,ADJ	ORI	MIS,DEW,RES	4/26/1994	2000	GPM		210	171
P9573R	Veca Pond Reservoir	Bureau of Land Management	33	N	89	W	23	NENW		P			UNA	ORI	STO,WIL	1/23/1990	55.55	ACFT	Veca Draw		
P96884W	Herbst Ervay Basin #1	Herbst Lazy Ty Land Co.	34	N	89	W	11	SWSW		S		X	UNA	ORI	STO	8/25/1994	5	GPM		75	30
P9722R	Area 4 Reclamation Reservoir	Pathfinder Mines Corp.**State Land and Farm Loan Office	33	N	90	W	36		M610	MS610	0		ADJ	STR	STO,WIL	12/24/1991	6787.5	ACFT	Fraser Draw		
P9723R	Area 5 Reclamation Reservoir	Pathfinder Mines Corporation	33	N	90	W	26			P MS 589		X	UNA	ORI	STO,WIL	12/24/1991	3202.22	ACFT	Fraser Draw		
P98996W	Herbst Ervay Basin #2	Herbst Lazy Ty Land Co.	34	N	89	W	9	NESW		S		X	UNA	ORI	STO	4/20/1995	4	GPM		3378	-6

Appendix A
Water Rights Within Five-Mile Radius of East Gas Hills Site
Abbreviations

Additional Description:

D	Ditch or Pipeline Permit
E	Enlargement of a Ditch or Pipeline Permit
P	Stock and Domestic Use Wells completed prior to May 24, 1969 and registered with the State Engineer's Office prior to December 31, 1972
R	Reservoir Permit
S	Stock Reservoir Permit
W	Permits are for wells with a priority date for the date of filing with the State Engineer

For Status:

A&C	Abandoned and Cancelled
ABA	Abandoned
ADJ	Adjudicated
DSC	Description
ELI	Eliminated
GST	Good Standing
PU	Point of Use Non Irrigation (Not Actual Status)
PUD	Point of Diversion (Not Actual Status)
PUO	Point of Reservoir Outlet (Not Actual Status)
PUW	Location of Well (Not Actual Status)
REJ	Rejected by the State Engineer
UNA	Un-adjudicated

For Supply Type:

ORI	Original Supply
STR	Storage Supply (for Reservoir and Stock Reservoir Permits – May not appear on older permits)

For Uses:

DEW	Dewatering
DOM	Domestic
DRI	Drilling
IND	Industrial
IRR	Irrigation
MIN	Mining
MIS	Miscellaneous
MON	Monitoring
RES	Reservoir Supply
STO	Stock
TEM	Temporary Use
WIL	Wildlife