APPENDIX A

PHASE 1 HYDROGEOLOGICAL TESTING TECHNICAL MEMORANDUM

Golder Associates Inc.
44 Union Boulevard, Suite 300
Lakewood, CO USA 80228
Telephone: (303) 980-0540
Fax: (303) 985-2080
www.golder.com

TECHNICAL MEMORANDUM

TO:	Bob Monok, Energy Fuels Resources Corp. (EFRC)	**DATE:**	May 14, 2008
FR:	Sarah Doyle and Roman Popielak, Golder Associates Inc. (Golder)	**OUR REF:**	073-81694.0013
CC:	Frank Filas (EFRC) and Kimberly Morrison (Golder)		
RE:	**PRELIMINARY WATER SUPPLY EVALUATION, PIÑON RIDGE PROJECT, MONTROSE COUNTY, COLORADO**		

INTRODUCTION

This technical memorandum presents the results of our initial (Phase 1) hydrogeologic testing and evaluation of the groundwater production potential for the Piñon Ridge Project site (Site), located near Naturita, Colorado. Recently, Golder Associates Inc. (Golder) has tested and evaluated the water supply potential of four locations on Site. Testing included short-term, variable-rate pumping tests to determine the availability of water and aquifer properties. In particular, this technical memorandum summarizes the results of the four variable-rate, short-term pumping tests and, based on those results, provides recommendations for continued evaluation of the water-production potential on Site.

BACKGROUND

In an effort to locate groundwater sources within the Site, a program consisting of drilling a series of exploratory holes (EX-series) was initiated in the spring of 2008. Initially, the program entailed drilling six exploratory holes (EX-2 to EX-7). Three of those holes (EX-5, EX-6 and EX-7) encountered water. Holes EX-2, EX-3, and EX-4, were dry. In addition to these exploratory holes, monitoring well MW-6 installed in 2007 by Kleinfelder also intercepted water. The locations of the EX-series holes and MW-6 well are shown in Figure 1.

Testing, termed as the Phase 1 groundwater investigation, was performed at all four locations where water was encountered, as shown in Figure 1. The exploratory holes hosting groundwater are located in the southern part of the site along a line paralleling the northeastern edge of Davis Mesa, while the monitoring well is located further in the valley, east of the exploratory holes. All of the tested holes intercepted water-bearing sandstone of the Chinle Formation. The depths of this water-bearing sandstone are shown in Table 1.

The exploratory holes were drilled using an air rotary method, which is a preferable method for detecting saturated strata during drilling. Four-inch diameter polyvinyl chloride (PVC) Certa-Lok casing was placed in each of the exploratory holes, with a 60-foot screened interval. In each of the exploratory holes, the screened interval nearly penetrates the entire water-bearing unit. Table 1 summarizes the static water levels, depths of the water-bearing sandstone, screened intervals, and

casing depths for EX-5, EX-6, and EX-7. Due to the temporary nature of these exploratory holes, they have not been completed with sand pack, filter pack, or grout.

Monitoring well MW-6 was also drilled by air rotary methods to a depth of 490 feet. The water-bearing sandstone was encountered at a depth from approximately 440 to 470 feet below ground surface (bgs). The well, in contrast to the EX-series holes, is completed as a permanent monitoring point, with 4-inch diameter schedule 80 PVC, and a screened interval from 460 to 480 feet bgs. The well has a dedicated 3-inch pump installed at a depth of approximately 470 feet bgs. The pump is a 5-gallon-per-minute (gpm), 1.5 horsepower, Grundfos pump. Depths of the static water level, water-bearing sandstone, casing, and screened interval are summarized in Table 1.

A fence diagram of EX-5, EX-6, EX-7, and MW-6 is shown in Figure 2. As shown in the figure, the water-bearing sandstone in MW-6 has a thickness of 30 feet. In contrast, the thicknesses of the water-bearing sandstone in EX-5, EX-6, and EX-7, range from 48 to 60 feet. Static water level elevations observed in the three exploratory holes (EX-5, EX-6, and EX-7) are within three feet of each other. However, the static water level elevation at MW-6 is approximately 130 feet lower than those observed in the exploratory holes.

METHODS

Water-production potential was evaluated by variable-rate pumping tests. The pump used for testing EX-5, EX-6, and EX-7, was a Gould, stainless steel, 25 gpm, 5 horsepower, 3-inch diameter pump. At MW-6, the dedicated pump was used for testing. Valley Pump Company of Montrose, Colorado was contracted to provide pump testing services. Prior to setting the pump, a Level Troll® 700 pressure transducer was taped approximately 3 feet above the intake for the pump. Personnel from the Valley Pump Company placed the pumps in the wells using 2-inch diameter PVC piping at EX-5, and 1-inch diameter PVC piping at EX-6, EX-7, and MW-6. Three or four 'steps' were performed as part of each test, depending on the well. Each step consisted of pumping the well at a constant discharge rate for either 100 minutes or 120 minutes, as determined by the drawdown-over-time data. The pumping rate increased from step to step, with the initial step having the lowest pumping rate and the final step having the highest pumping rate. Throughout the testing, the pressure transducer logged water levels in the pumping well and a flow totalizer was used to determine well discharge rates.

To estimate saturated hydraulic conductivities, results from the pumping tests were analyzed using the Cooper-Jacob method (Cooper-Jacob 1946). This method is a straight-line approximation of the Theis equation (Theis 1935), and assumes that the aquifer is confined and the well screen fully penetrates the aquifer thickness. Recovery data from EX-5, EX-6, and EX-7 were analyzed using the Theis (1935) straight-line method for residual drawdown data, which assumes an infinitesimal radius for the pumped well and neglects wellbore storage. Recovery data from MW-6 was not analyzed because the dedicated pump was not equipped with a check-valve. AQTESOLV software (Duffield 2007) was used to analyze the test data.

Groundwater samples were collected during the pumping tests at EX-5, EX-6, and EX-7. Field parameters of pH, specific conductivity, temperature, oxidation reduction potential, and dissolved oxygen were measured prior to filling sample bottles and are presented in Attachment A. Field parameters for MW-6 were measured during the pumping test; however, samples for laboratory analyses were not collected. At EX-5, EX-6, and EX-7, measurements of pH ranged from 7.38 to 7.70, and specific conductivity measurements ranged from 1.26 to 1.39 milliSiemens per centimeter (mS/cm). Assuming a standard estimation for total dissolved solids (TDS) from specific conductivity

(TDS (mg/L) = conductivity (μS/cm) *0.67), TDS is approximately 870 mg/L. This TDS values exceeds the National Secondary Drinking Water standard for TDS, which is 500 mg/L (U.S. EPA 2002). At MW-6, the measured pH was 7.08 and specific conductivity was 3.16 mS/cm, which is significantly higher than the measured specific conductivities at EX-5, EX-6, and EX-7. Groundwater samples taken from the exploratory holes were shipped to ACZ Laboratories in Steamboat Springs for further analysis. The Chain-of-Custody Forms (including a list of requested analyses) and field sample collection sheets are included in Attachment A.

RESULTS

Table 2 shows the pumping rates for each step conducted at EX-5, EX-6, EX-7, and MW-6. The attained pumping rates ranged from about 19 gpm (holes EX-5 and EX-7) to 28 gpm (well EX-6). Table 2 summarizes pumping rates recorded for various steps of the tests. Graphs of drawdown over time are presented Attachment B.

At EX-5, the pumping rate for the third step was initially adjusted to approximately 22 gpm. Drawdown data indicated that this pumping rate was unsustainable for the 120 minute duration of the step and the pumping rate was therefore lowered slightly to 19.8 gpm. At EX-7, the pumping rate for the third step was also initially adjusted to flow rate of approximately 22 gpm. After observing drawdown data, this pumping rate was determined to be unsustainable for the 100 minute duration of the step and the pumping rate was therefore lowered to 19.4 gpm.

At EX-6, the maximum pumping rates exceeded those at EX-5 and EX-7. During the fourth step, the well was pumped at 27.8 gpm, with an observed maximum water level drawdown of 29.1 feet. This pumping rate is within one or two gpm of the maximum possible pumping rate of the pump used for the testing. At MW-6, the pumping rates were also limited by the pump used for testing, as the dedicated pump used for the testing is rated at 5 gpm.

Cooper-Jacob and Theis fits to the data are presented in Attachment C. During testing, no influence between wells was observed. Saturated hydraulic conductivities (K_{sat}) estimated with the Cooper-Jacob and Theis methods are presented in Table 3. Estimated average K_{sat} values range from 2.9×10^{-4} cm/s at EX-5 to 6.8×10^{-3} cm/s at EX-6.

SUMMARY AND RECOMMENDATIONS

Pumping rates achieved during the tests approximate groundwater-production potential at the locations of the exploratory holes and monitoring well tested. Of the four locations tested, data indicate that EX-6 has the highest production potential. Therefore, we recommend that EX-6 be completed as a production well. Following well completion, additional pumping tests should be performed on this well and any future production wells to determine the extent of the aquifer, the radius of influence from pumping, and the long-term sustainability of the water supply.

If you have any questions regarding the testing described above, please do not hesitate to call us at (303) 980-0540.

Attachments:

Table 1: Well Summary
Table 2: Pumping Rates (Gallons per Minute) at EX-5, EX-6, EX-7, and MW-6
Table 3: Estimated Saturated Hydraulic Conductivities at EX-5, EX-6, EX-7, and MW-6

Figure 1: Testing Locations
Figure 2: Fence Diagram of Testing Locations

Attachment A: Field Sample Collection Sheets and Chain-of-Custody Forms
Attachment B: Graphs of Drawdown over Time
Attachment C: Cooper-Jacob and Theis Fits to Pumping-Test Data

REFERENCES

Cooper, H.H. and C.E. Jacob, 1946. A generalized graphical method for evaluating formation constants and summarizing well field history, Am. Geophys. Union Trans., vol. 27, pp. 526-534.

Duffield, Glenn M., 2007. AQTESOLV for Windows Version 4.0 Professional, HydroSOLVE, Inc.

Theis, C.V., 1935. The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using groundwater storage, Am. Geophys. Union Trans., vol. 16, pp. 519-524.

U.S. Environmental Protection Agency (US EPA), 2002. 40 Code of Federal Regulations, Chapter 1 (7-1-02 Edition), Section 143.3, Secondary Maximum Contaminant Levels.

TABLES

TABLE 1
WELL SUMMARY

Well	Elevation of Top of PVC Casing (ft-amsl)	Height of PVC stick-up (ft)	Static Water Level		Date of Water Level Reading	Water-bearing Sandstone		Screened Interval		Bottom of Well Casing	
			Depth (ft btoc)	Elevation (ft-amsl)		Depth (ft btoc)	Elevation (ft-amsl)	Depth (ft btoc)	Elevation (ft-amsl)	Depth (ft btoc)	Elevation (ft-amsl)
EX-5	5623.14	0.60	345.45	5277.69	4/21/08	365.6 - 420.6	5257.5 - 5202.5	360.6 - 420.6	5262.5 - 5202.5	440.60	5182.54
EX-6	5570.92	0.79	291.00	5279.92	4/24/08	310.8 - 358.8	5260.1 - 5212.1	300.8 - 360.8	5270.1 - 5210.1	380.79	5190.13
EX-7	5606.73	0.78	330.08	5276.65	4/23/08	310.8 - 370.8	5295.9 - 5235.9	315 - 375	5291.7 - 5231.7	395.03	5211.70
MW-6	5554.21	2.38	407.59	5146.62	4/22/08	442.4 - 472.4	5111.8 - 5081.8	462 - 481.4	5092.2 - 5072.8	487.38	5066.83

ft-amsl: feet above mean sea-level
ft btoc: feet below top of PVC casing

TABLE 2
PUMPING RATES (GALLONS PER MINUTE) AT EX-5, EX-6, EX-7, AND MW-6

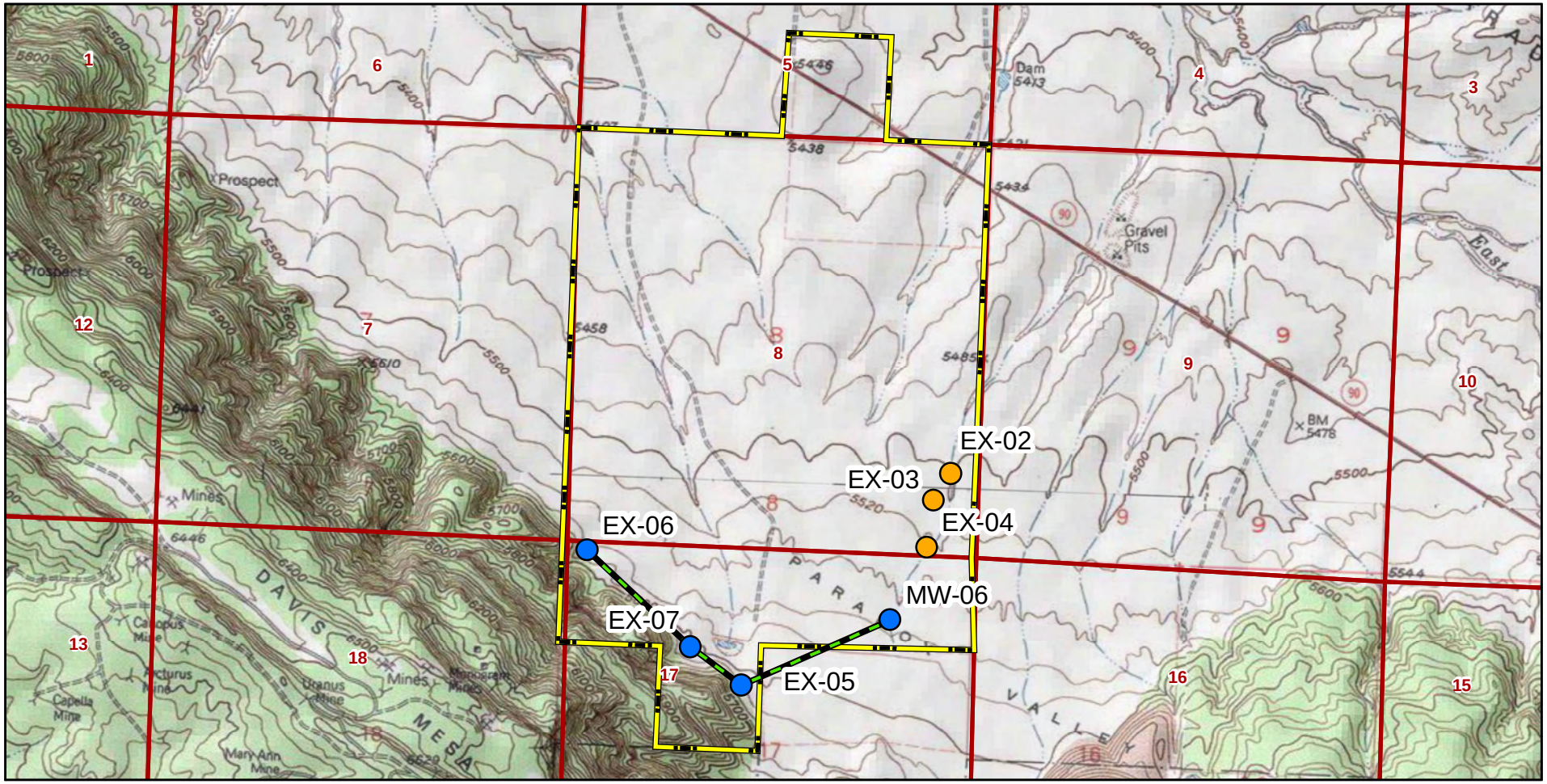
Well	Pumping Rate (gpm)			
	Step 1	Step 2	Step 3	Step 4
EX-5	8.8	17.6	19.8	NA
EX-6	8.7	10.8	20.7	27.8
EX-7	8.5	10.9	12.6	19.4
MW-6	2.5	3.8	4.7	NA

NA: Not Applicable; a fourth step was not performed

TABLE 3
ESTIMATED SATURATED HYDRAULIC CONDUCTIVITIES AT EX-5, EX-6, EX-7, AND MW-6

Well	Range of K_{sat} (cm/s)		Arithmetic Mean K_{sat} (cm/s)
	Minimum	Maximum	
EX-5	1.9E-04	3.4E-04	2.9E-04
EX-6	4.2E-03	1.2E-02	6.8E-03
EX-7	4.3E-03	7.6E-03	6.0E-03
MW-6	5.5E-04	6.3E-04	5.9E-04

FIGURES



LEGEND

- Well Not Tested
- Well Tested
- Location of Fence Diagram
- Site Boundary
- Public Land Survey System (PLSS)

REFERENCES

USGS: 7.5' Topo Quadrangles: Bull Canyon, Davis Mesa, Naturita NW, Uravan.
Well Points: Dick White, Energy Fuels Resources Corporation.
Projection: StatePlane, Colorado Central, NAD83, Feet.

2,000 1,000 0 2,000 FEET

SCALE 1:24,000 1 INCH EQUALS 2,000 FEET
WHEN PRODUCED AT SIZE 8.5X11IN

N

PROJECT

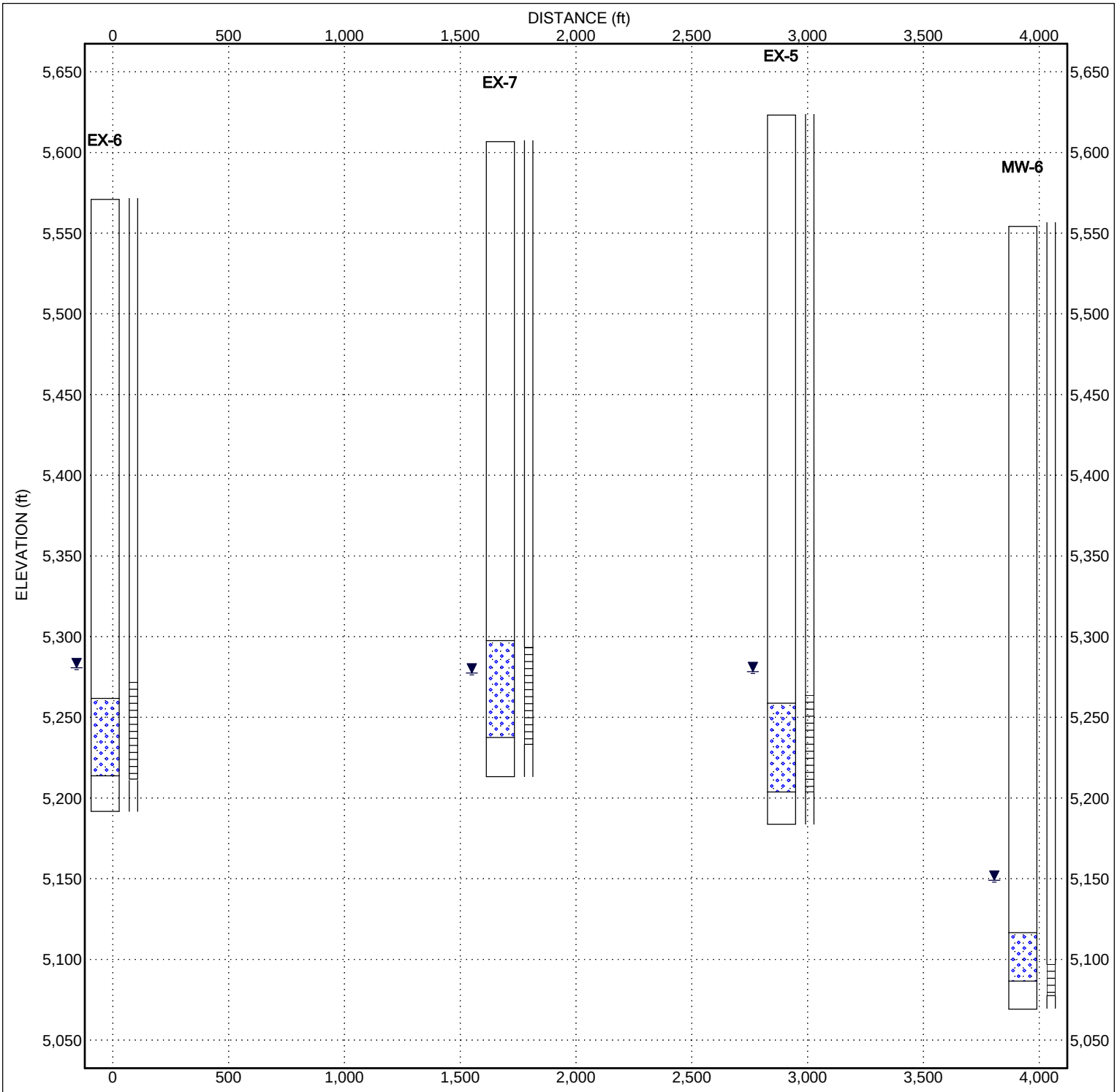
ENERGY FUELS RESOURCES
PIÑON RIDGE PROJECT
MONTROSE COUNTY, COLORADO

TITLE

TESTING LOCATIONS

Golder Associates
Denver, Colorado

PROJECT No.	073-81694-B		FILE No.	8-5x11_PR_TestLoc.mxd
DESIGN	AR	04/15/2008	SCALE AS SHOWN	REV 0
GIS	AR	04/15/2008	FIGURE 1	
CHECK	SED	05/14/2008		
REVIEW	KFM	05/14/2008		



LEGEND

Water Bearing Sandstone

DISTANCE ALONG BASELINE (ft)

Baseline Coordinates (North, East)
Start: 1,591,833, 2,058,786
End: 1,590,343, 2,062,498

Borings used
"EX-5","EX-6","EX-7","MW-6"

PROJECT

Energy Fuels Resources Corporation
Piñon Ridge Project
Montrose County, Colorado

TITLE

Fence Diagram of Testing Locations

Golder Associates
Denver, Colorado

PROJECT No.		073-81694	FILE No.	PINION.GPJ
DESIGN	NRQ	5/14/08	SCALE NTS	REV.
DRAWN	NRQ	5/14/08		
CHECK	SED	5/14/08		
REVIEW	KFM			

FIGURE 2

ATTACHMENT A

FIELD SAMPLE COLLECTION SHEETS AND CHAIN-OF-CUSTODY FORMS

GROUNDWATER SAMPLE COLLECTION FORM

Golder Associates

Project Ref: Piñon Ridge Project No.: 073-81694-13

WEATHER CONDITIONS

Temperature ~65°F Weather sunny

SAMPLE INFORMATION

Sample Location EX-5 Sample No.

Sample Date 4/22/08 Time 1250 Sample By Sarah Doyle / Adam Hobson

Sample Method Sampling port from pump manifold Sample Type Groundwater

Water Level Before Purging: 345.45 ft below top of PVC casing (4/21/08)

Well Volume: 95.15 ft of water x 0.653 gal/ft = ~62 gallons

Volume Water Removed Before Sampling: >4,000 gallons

Water Level Before Sampling: ~390 ft btoc

Water Level After Sampling:

Appearance of Sample: clear

FIELD MEASUREMENTS

Parameter	Units	Measurement	Measurement	Measurement	Measurement	Measurement
Time	hhmm	10:10 am	12:35 pm	12:43 pm	12:50 pm	
Volume Discharge	gals					
pH	Standard	7.70	7.65	7.38	7.38	
Spec. Cond.	m S/CM	1.286	1.262	1.264	1.264	
Turbidity	NTU	—	—	—	—	
Temperature	°C	17.14	17.06	17.21	17.30	
Dissolved Oxygen	mg/l	—	—	4.88	4.52	
Redox Potential	+/- mV	—	98.2	126.0	122.9	

LABORATORY CONTAINERS

Sub-Sample	Analysis Requested	Type and Size of Sample Container	Filtered (Yes or No)	Type of Preservative
1	Wet Chem	plastic	No	none
2	Sulfide	plastic	No	NaOH & ZnAcetate
3	Wet Chem	plastic	Yes	none
4	Metals	plastic	Yes	Nitric Acid
5	Radiochem 2	plastic gallon cubes	Yes	Nitric Acid
6	COD, TOC, Phenols	glass	No	Sulfuric Acid
7				
8				

REMARKS: Well has not been completed with sand pack, filter pack, and grout. Sampled during 3rd step of step test. Pumping rate: ~19.5 gpm

NA = Not applicable

SAMPLING METHODS:

Bailer: PVC/PE Peristaltic Pump Air-Lift Pump

Stainless Steel Submersible Pump Other

Teflon Hand Pump

Gould 25gpm stainless steel pump

GROUNDWATER SAMPLE COLLECTION FORM

Golder Associates

Project Ref: Piñon Ridge Project No.: 073-81694-13

WEATHER CONDITIONS

Temperature ~60°F Weather sunny

SAMPLE INFORMATION

Sample Location EX-6 Sample No.

Sample Date 4/25/08 Time 9:45 am Sample By Sarah Doyle

Sample Method sampling port from pump manifold Sample Type Groundwater

Water Level Before Purging: 219.00 ft below top of PVC casing (4/24/08)

Well Volume: 90 ft of water × 0.653 = ~59 gallons

Volume Water Removed Before Sampling: ~1200 gallons

Water Level Before Sampling: ~225 ft btoc

Water Level After Sampling:

Appearance of Sample: clear

FIELD MEASUREMENTS

Parameter	Units	Measurement	Measurement	Measurement	Measurement	Measurement
Time	hhmm	8:31 am	8:45	9:28		
Volume Discharge	gals			~1200 gallons		
pH	Standard	7.53	7.46	7.46		
Spec. Cond.	m S/CM	1.393	1.390	1.391		
Turbidity	NTU	–	–	–		
Temperature	°C	15.16	16.59	16.78		
Dissolved Oxygen	mg/l	7.80	7.38	7.23		
Redox Potential	+/- mV	95.1	113.2	123.4		

LABORATORY CONTAINERS

Sub-Sample	Analysis Requested	Type and Size of Sample Container	Filtered (Yes or No)	Type of Preservative
1	Wet Chem		No	none
2	Sulfide		No	NaOH & ZnAcetate
3	Wet chem		Yes	none
4	Metals		Yes	nitric acid
5	Radiochem		Yes	nitric acid
6	COD, TOC, Phenols		No	sulfuric acid
7				
8				

REMARKS: Well has not been completed with sand pack, filter pack, or grout. Sampled during 2nd step of step test. Pumping rate = ~11 gpm

NA = Not applicable

SAMPLING METHODS:

Bailer: PVC/PE Peristaltic Pump Air-Lift Pump

Stainless Steel Submersible Pump Other

Teflon Hand Pump

GROUNDWATER SAMPLE COLLECTION FORM

Golder Associates

Project Ref: Piñon Ridge Project No.: 073-81694-13

WEATHER CONDITIONS

Temperature ~65°F Weather Sunny

SAMPLE INFORMATION

Sample Location EX-7 Sample No.

Sample Date 4/24/08 Time 1120 Sample By Sarah Doyle

Sample Method sampling port from Pump manifold Sample Type Groundwater

Water Level Before Purging: 330.08 ft below top of PVC casing (4/23/08)

Well Volume: ~~90 ft of water × 0.653 = ~59 gallons~~ 65ft × 0.653 = ~42 gallons

Volume Water Removed Before Sampling: ~1200 gallons

Water Level Before Sampling: ~337 ft btoc

Water Level After Sampling:

Appearance of Sample: clear

FIELD MEASUREMENTS

Parameter	Units	Measurement	Measurement	Measurement	Measurement	Measurement
Time	hhmm	10:12 am	10:31	11:07		
Volume Discharge	gals			~1200 gallons		
pH	Standard	7.42	7.42	7.45		
Spec. Cond.	m S/CM	1.310	1.305	1.287		
Turbidity	NTU	—	—	—		
Temperature	°C	17.61	17.50	17.31		
Dissolved Oxygen	mg/l	5.81	5.73	5.75		
Redox Potential	+/- mV	136.0	143.1	144.6		

LABORATORY CONTAINERS

Sub-Sample	Analysis Requested	Type and Size of Sample Container	Filtered (Yes or No)	Type of Preservative
1	Wet Chem		No	none
2	Sulfide		No	NaOH & Zn Acetate
3	Wet Chem		Yes	none
4	Metals		Yes	nitric acid
5	Radiochem		Yes	nitric acid
6	COD, TOC, Phenols		No	sulfuric acid
7				
8				

REMARKS: Well has not been completed with sand pack, filter pack, or grout. Sampled during 2nd step of step test. Pumping rate = ~11 gpm

NA = Not applicable

SAMPLING METHODS:

Bailer: PVC/PE, Stainless Steel, Teflon

~~Peristaltic Pump~~, Submersible Pump, Hand Pump

Air-Lift Pump, Other

GROUNDWATER SAMPLE COLLECTION FORM

Golder Associates

Project Ref: Piñon Ridge Project No.: 0738169 4-13

WEATHER CONDITIONS

Temperature ~65°F Weather Sunny

SAMPLE INFORMATION

Sample Location MW-6 Sample No.

Sample Date 4/23/08 Time Sample By Sarah Doyle

Sample Method Grundfos 5gpm pump (field params during pumping test) Sample Type

Water Level Before Purging: 407.59 ft btoc (PVC)

Well Volume:

Volume Water Removed Before Sampling:

Water Level Before Sampling:

Water Level After Sampling:

Appearance of Sample: clear, strong sulfur-like odor

measured during pumping test

FIELD MEASUREMENTS

Parameter	Units	Measurement	Measurement	Measurement	Measurement	Measurement
Time	hhmm	10:25am	11:02	12:02	12:35	
Volume Discharge	gals				>800 gallons	
pH	Standard	7.06	7.07	6.99	7.08	
Spec. Cond.	m S/CM	3.210	3.204	3.109	3.160	
Turbidity	NTU					
Temperature	°C	19.78	19.93	19.64	19.38	
Dissolved Oxygen	mg/l	2.83	2.08	–	2.30	
Redox Potential	+/- mV	-183.7	-182.7	-174.1	-182.3	

LABORATORY CONTAINERS — NO LAB ANALYSES

Sub-Sample	Analysis Requested	Type and Size of Sample Container	Filtered (Yes or No)	Type of Preservative
1				
2				
3				
4				
5				
6				
7				
8				

REMARKS: did not take samples for laboratory analyses. only field parameters were recorded during pumping tests

NA = Not applicable

SAMPLING METHODS:

Bailer: PVC/PE ~~Peristaltic Pump~~ Air-Lift Pump

Stainless Steel Submersible Pump Other

Teflon Hand Pump

FedEx pickup# MTJA4

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Zach Rogers
Company: Energy Fuels Resources Corporation
E-mail: z.rogers@energyfuels.com
Address: 44 Union Blvd Suite 600 Lakewood, CO 80228
Telephone: 303-974-2140

Copy of Report to:

Name: Richard White
Company: Energy Fuels Resources Corporation
E-mail: d.white@energyfuels.com
Telephone: 970-864-7775

Invoice to:

Name: Energy Fuels Resources Corporation
Company: Zach Rogers
E-mail: z.rogers@energyfuels.com
Address: Same as above
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ✓ NO
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

Quote #: Piñon-Ridge
Project/PO #: Piñon Ridge
Reporting state for compliance testing: CO
Sampler's Name: Sarah Doyle/Adam Hobson
Are any samples NRC licensable material?

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Wet Chem-Raw	Sulfide-Raw NaOH & Zinc Acetate	Wet Chem-Field filtered	Metals-Field filtered Nitric Acid	Radiochem-Field filtered Nitric Acid	COD, TIC, Phenols, Raw, Sulfuric		
Sue's Well	4/22/08 1625	GW	7	1	1	1	1	2	1		
EX-5	4/22/08 1250	GW	7	1	1	1	1	2	1		

Please see attached list of all requested analyses

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other

REMARKS/ SAMPLE DISCLOSURES

PAGE 1 of 1

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Sarah Doyle	4/22/08		

FRMAD050.03.05.02 White - Return with sample. Yellow - Retain for your records.

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Zach Rogers
Company: Energy Fuels Resources Corp.
E-mail: z.rogers@energyfuels.com
Address: 44 Union Blvd. Suite 600
Lakewood, CO 80228
Telephone: 303-974-2140

Copy of Report to:

Name: Richard White
Company: Energy Fuels Resources Corp.
E-mail: d.white@energyfuels.com
Telephone: 970-864-7775

Invoice to:

Name: Energy Fuels Resources Corporation
Company: Zach Rogers
E-mail: z.rogers@energyfuels.com
Address: Same as above
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ✓ NO
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

Quote #: Piñon-Ridge
Project/PO #: Piñon Ridge
Reporting state for compliance testing: CO
Sampler's Name: Sarah Doyle
Are any samples NRC licensable material?

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Wet Chem-Raw	Sulfide-Raw NaOH&Zn Acetate	Wet Chem-Field Filtered	Metals-Field Filtered-Nitric Acid	Radiochem-Field Filtered-Nitric Acid	COD, TOC, Phenols Raw, Sulfuric Acid		
EX-6	4/25/08 9:45am	GW	7	1	1	1	1	2	1		

Please see attached list of all requested analyses

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Sarah Doyle			

FRMAD050.03.05.02 White - Return with sample. Yellow - Retain for your records.

MTJA 13

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Zach Rogers
Company: Energy Fuels Resources Corporation
E-mail: z.rogers@energyfuels.com
Address: 44 Union Blvd. Suite 600 Lakewood, CO 80228
Telephone: 303-974-2140

Copy of Report to:

Name: Richard White
Company: Energy Fuels Resources Corporation
E-mail: d.white@energyfuels.com
Telephone: 970-864-7775

Invoice to:

Name: Zach Rogers
Company: Energy Fuels Resources Corporation
E-mail: z.rogers@energyfuels.com
Address: Same as above
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ✓ NO
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

Quote #: Piñon-Ridge
Project/PO #: Piñon Ridge
Reporting state for compliance testing: CO
Sampler's Name: Sarah Doyle
Are any samples NRC licensable material?

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Wet Chem-Raw	Sulfide-Raw NaOH & Zn Acetate	Wet Chem-field filtered	Metals-field filtered, Nitric Acid	Radiochem-field filtered, Nitric Acid	CO, TDS, Phenols Raw, Sulfuric		
EX-7	4/24/08 1120	GW	7	1	1	1	1	2	1		

Please see attached list of all requested analyses

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other

REMARKS/ SAMPLE DISCLOSURES

PAGE 1 of 1

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Sarah Doyle	4/24/08 8:00 pm		

Table 2
Analytical Laboratory Water Quality Parameters at Piñon Ridge

Analytes[a]	Reporting Limit[b]	Analytical Method	Collection and Preservation	Hold Time (Days)	Sample Container Type
Total Suspended Solids	1 mg/L	SM2540D	500 ml, Cool to 4 degrees C	7	Plastic or Glass
Total Dissolved Solids	10 mg/L	SM2540C	500 ml, Cool to 4 degrees C	7	Plastic or Glass
Total Alkalinity	1 mg/L	A2320 B	500 ml, Cool to 4 degrees C	14	Plastic or Glass
Ammonia as nitrogen	0.05 mg/L	A4500-NH3 G	500 ml, Cool to 4 degrees, H2SO4	28	Plastic or Glass
Silica	0.1 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Carbonate	1 mg/L	A2320 B	500 ml, Cool to 4 degrees C	14	Plastic or Glass
Chloride	1 mg/L	SM 4500-Cl	500 ml, Cool to 4 degrees C,	28	Plastic or Glass
Sulfate	1 mg/L	A4500-S04 E	500 ml, Cool to 4 degrees C,	28	Plastic or Glass
Nitrate/nitrite	0.1 mg/L	E353.2	500 ml, Cool to 4 degrees C, H2SO4	28	Plastic or Glass
Calcium	1 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Potassium	1 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Sodium	1 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Magnesium	1 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
TOC	0.5 mg/L	SM 5310 C	500 ml-H2SO4	28	Glass
Aluminum	0.1 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Arsenic	0.001 mg/L	200.8	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Barium	0.1 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Boron	0.1 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Cadmium	0.005 mg/L	200.8	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Cesium	0.01mg/L	200.8	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Chromium	0.05 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Copper	0.01 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Fluoride	0.1 mg/L	SM4500-F C	500 ml, Cool to 4 degrees C	28	Plastic or Glass
Iron	0.03 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Lead	0.001 mg/L	200.8	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Manganese	0.01 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Mercury[a]	0.001 mg/L 0.001 mg/L	EPA 245.1	500 ml, pH to less 2, HNO3	28	Plastic or Glass
Molybdenum	0.1 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Nickel[a]	0.05 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Selenium	0.001 mg/L	200.8	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Uranium-natural	0.0001mg/L	200.8	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Vanadium	0.1 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Zinc	0.01 mg/L	200.7	500 ml, pH to less 2, HNO3	180	Plastic or Glass
Gross Alpha	2-4 pCi/L	E900.0	2 L, HNO3	180	Plastic or Glass
Gross Beta	2-4 pCi/L	E900.0	2 L , HNO3	180	Plastic or Glass
Radium-226	0.2 pCi/L	E903.0	2 L , HNO3	180	Plastic or Glass

+Sulfide

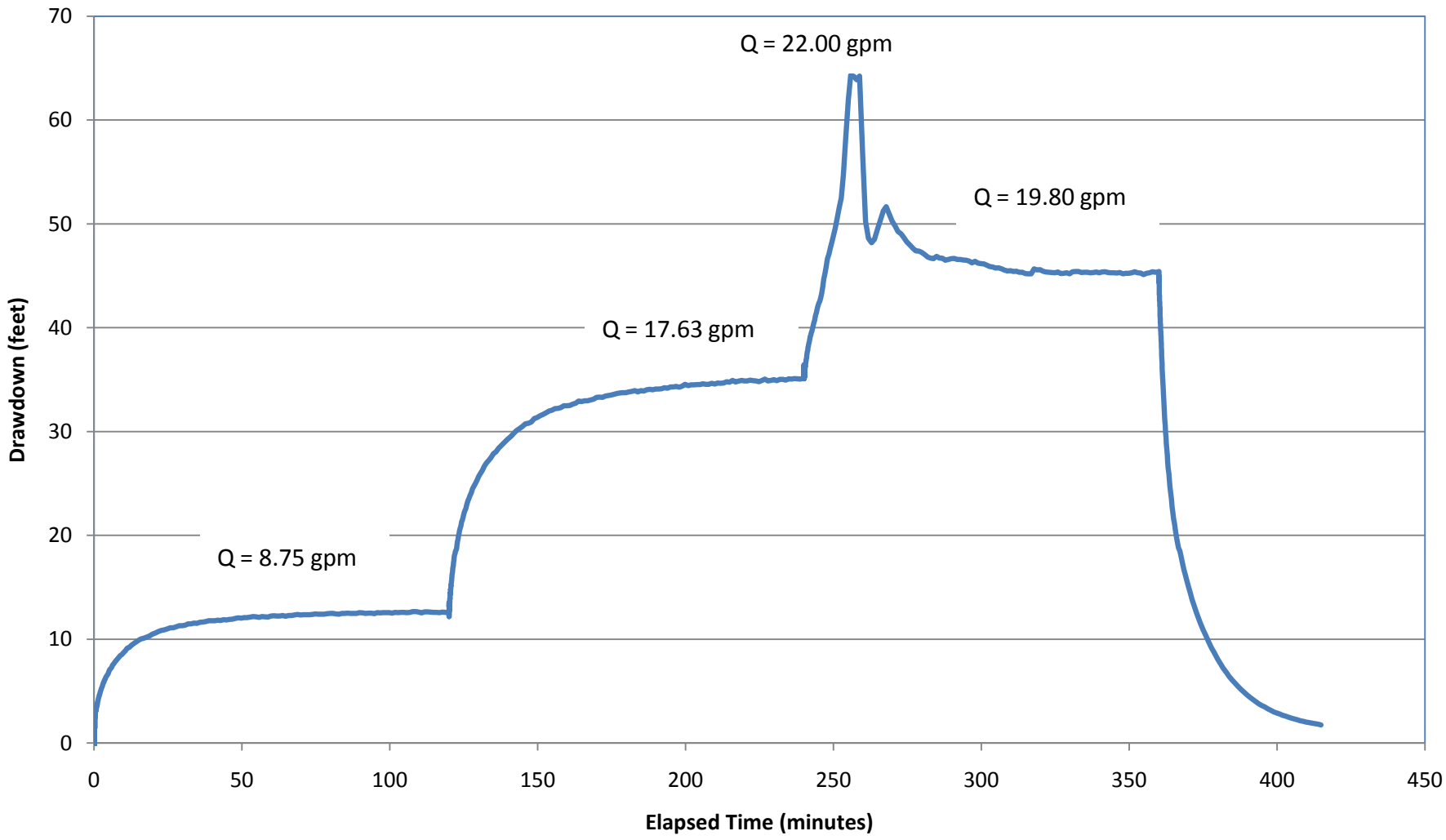
Notes:

[a]Cesium, cadmium, barium, nickel, chromium, mercury, and TOC will be included in the analytical suite for the initial sampling event only; the remaining analytes on this list will be included in the initial sampling event and subsequent quarterly sampling events.

[b]Reporting limit: listed as milligrams per liter for anions, cations, metals, arsenic, selenium, total dissolved solids, total suspended solids, total alkalinity, ammonia as nitrogen, TOC, and silica; listed as picoCuries per gram for radionuclides.

ATTACHMENT B

GRAPHS OF DRAWDOWN OVER TIME



Golder Associates

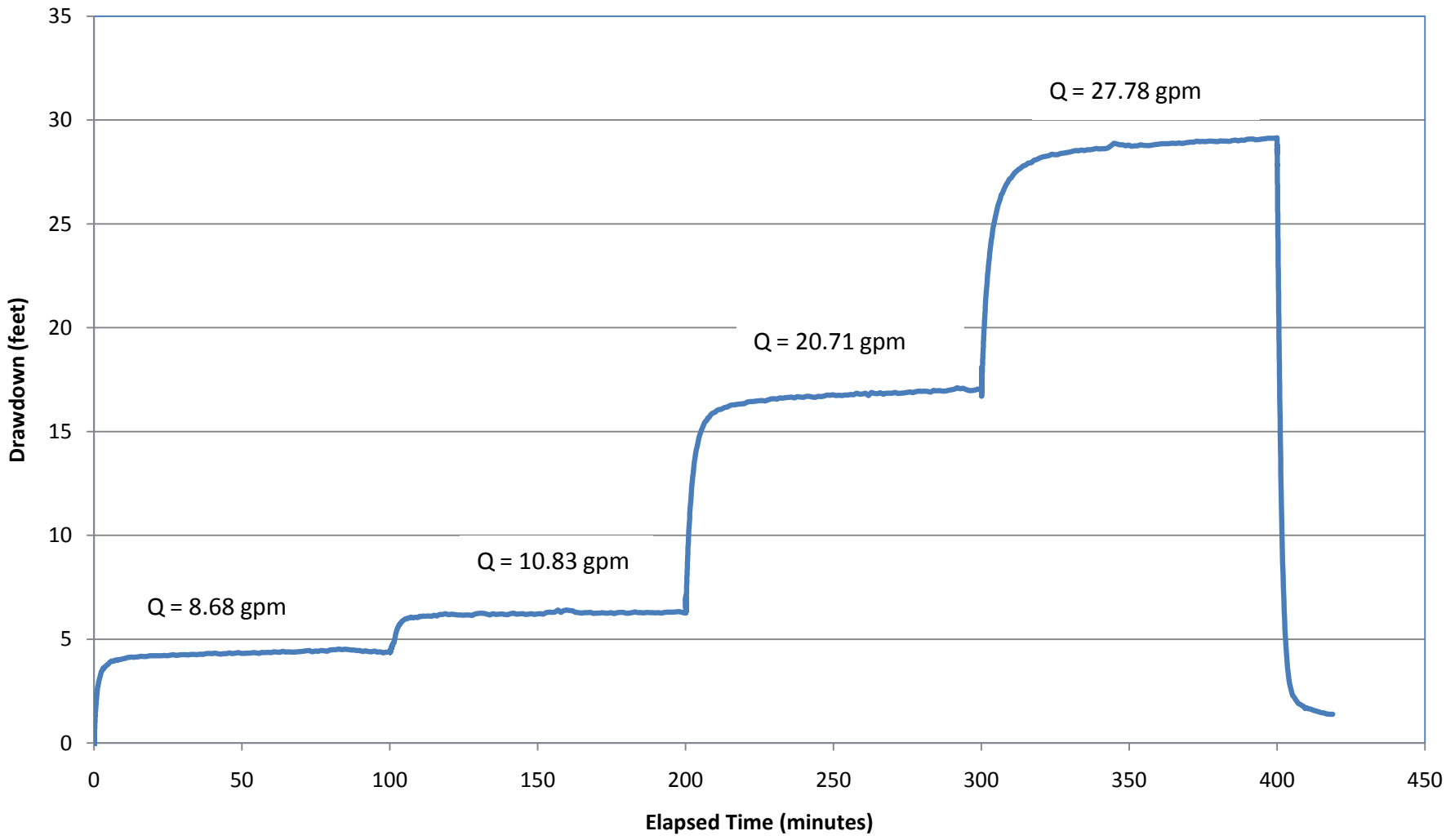
DENVER, COLORADO USA

EX-5 Pumping Test Results
Drawdown over Time

Energy Fuels Resources Corporation

Date	Job No.
May-08	**073-81694**
File name	
Tables.xlsx	**Attachment B1**

I:\07\81694\0122 TM\WS 14MAY08\07381694 WS Tables 14MAY08



Golder Associates

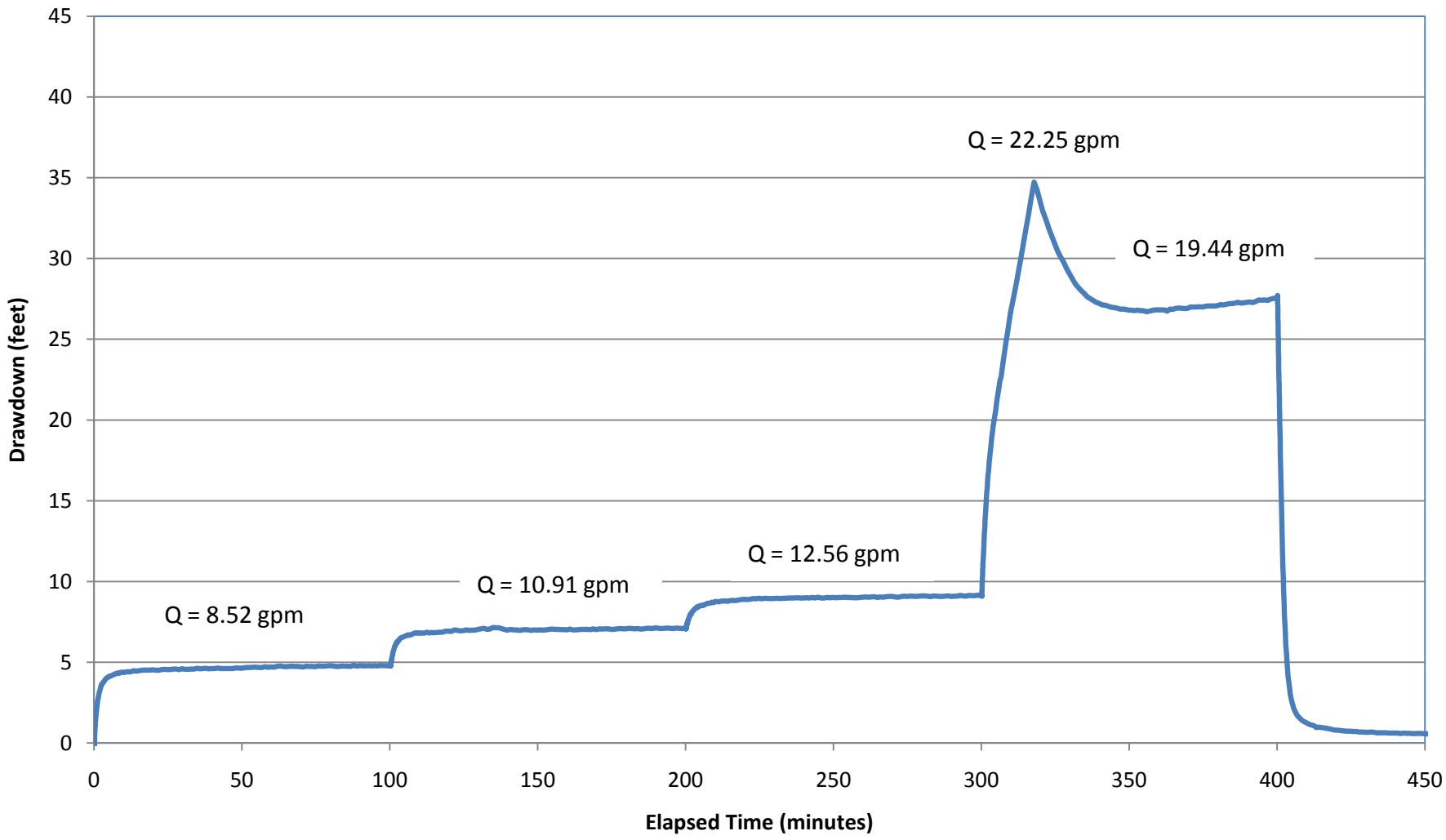
DENVER, COLORADO USA

EX-6 Pumping Test Results
Drawdown over Time

Energy Fuels Resources Corporation

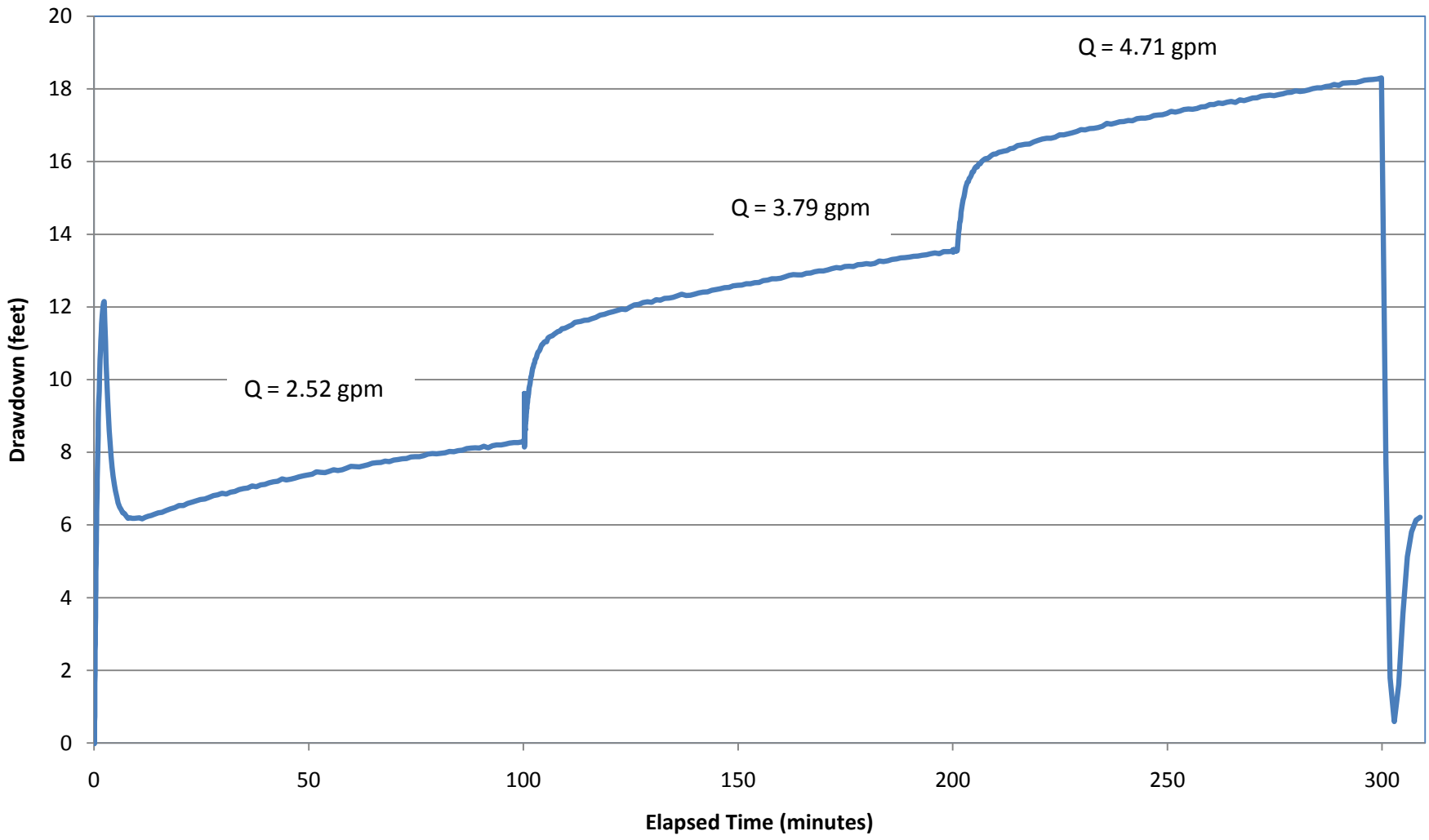
Date	Job No.
May-08	073-81694
File name: *Tables.xlsx*	Attachment B2

I:\07\81694\0122 TM\WS 14MAY08\07381694 WS Tables 14MAY08



Golder Associates DENVER, COLORADO USA	**EX-7 Pumping Test Results Drawdown over Time**	
Energy Fuels Resources Corporation	Date **May-08**	Job No. **073-81694**
	File name *Tables.xlsx*	**Attachment B3**

I:\07\81694\0122 TM\WS 14MAY08\07381694 WS Tables 14MAY08



Golder Associates DENVER, COLORADO USA	**MW-6 Pumping Test Results Drawdown over Time**	
Energy Fuels Resources Corporation	Date **May-08**	Job No. **073-81694**
	File name *Tables.xlsx*	**Attachment B4**

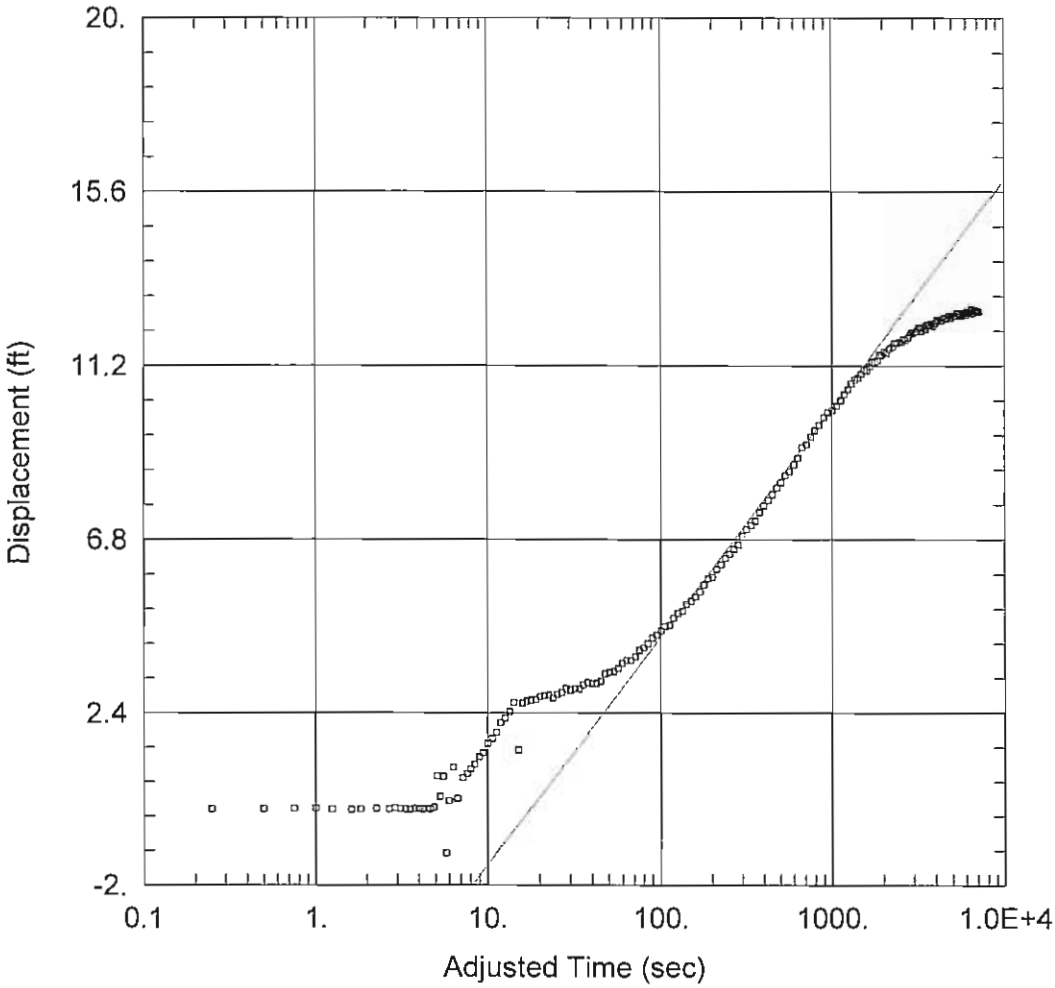
I:\07\81694\0122 TM\WS 14MAY08\07381694 WS Tables 14MAY08

ATTACHMENT C

COOPER-JACOB AND THEIS FITS TO PUMPING-TEST DATA

ATTACHMENT C - TABLE 1
SUMMARY OF PUMPING TEST ANALYSES

Well	Saturated Thickness (ft)	Test	T (cm2/s)	K (cm/s)
EX-5	55	Step 1	0.5721	3.41E-04
		Step 2	0.5515	3.29E-04
		Step 3	not matched	
		Recovery	0.3179	1.90E-04
EX-6	48	Step 1	10.06	6.88E-03
		Step 2	17.44	1.19E-02
		Step 3	8.195	5.60E-03
		Step 4	7.936	5.42E-03
		Recovery	6.131	4.19E-03
EX-7	60	Step 1	7.925	4.33E-03
		Step 2	13.88	7.59E-03
		Step 3	12.48	6.82E-03
		Step 4	not matched	
		Recovery	9.961	5.45E-03
MW-6	30	Step 1	not matched	
		Step 2	0.5032	5.50E-04
		Step 3	0.5778	6.32E-04



WELL TEST ANALYSIS

Data Set: C:\...\EX-5-step1.aqt
Date: 05/12/08 Time: 10:42:31

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 55. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EX-5	2061222.1	1590062.7

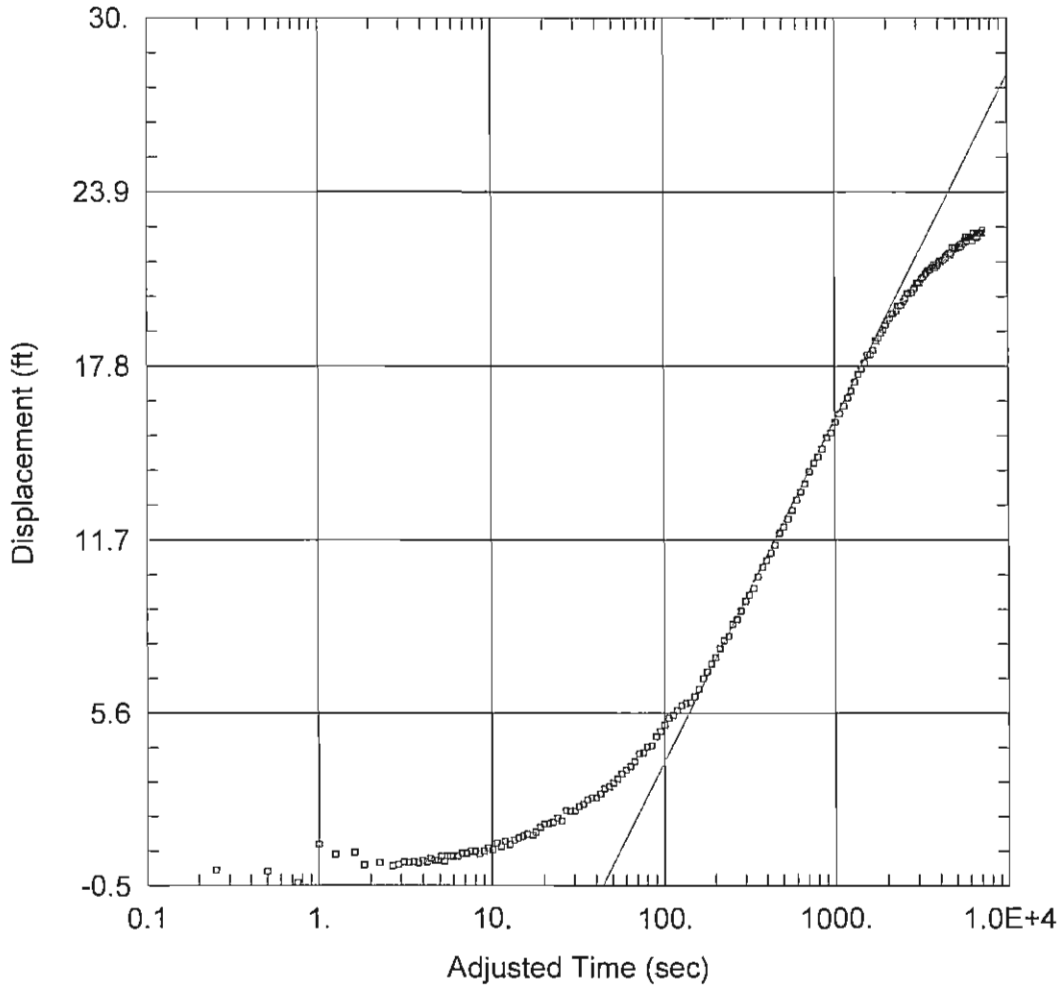
Observation Wells

Well Name	X (ft)	Y (ft)
▫ EX-5	2061222.1	1590062.7

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 0.5721 cm^2/sec S = 0.1961



WELL TEST ANALYSIS

Data Set: C:\...\EX-5-step2.aqt
Date: 05/12/08 Time: 10:43:25

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 55. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EX-5	2061222.1	1590062.7

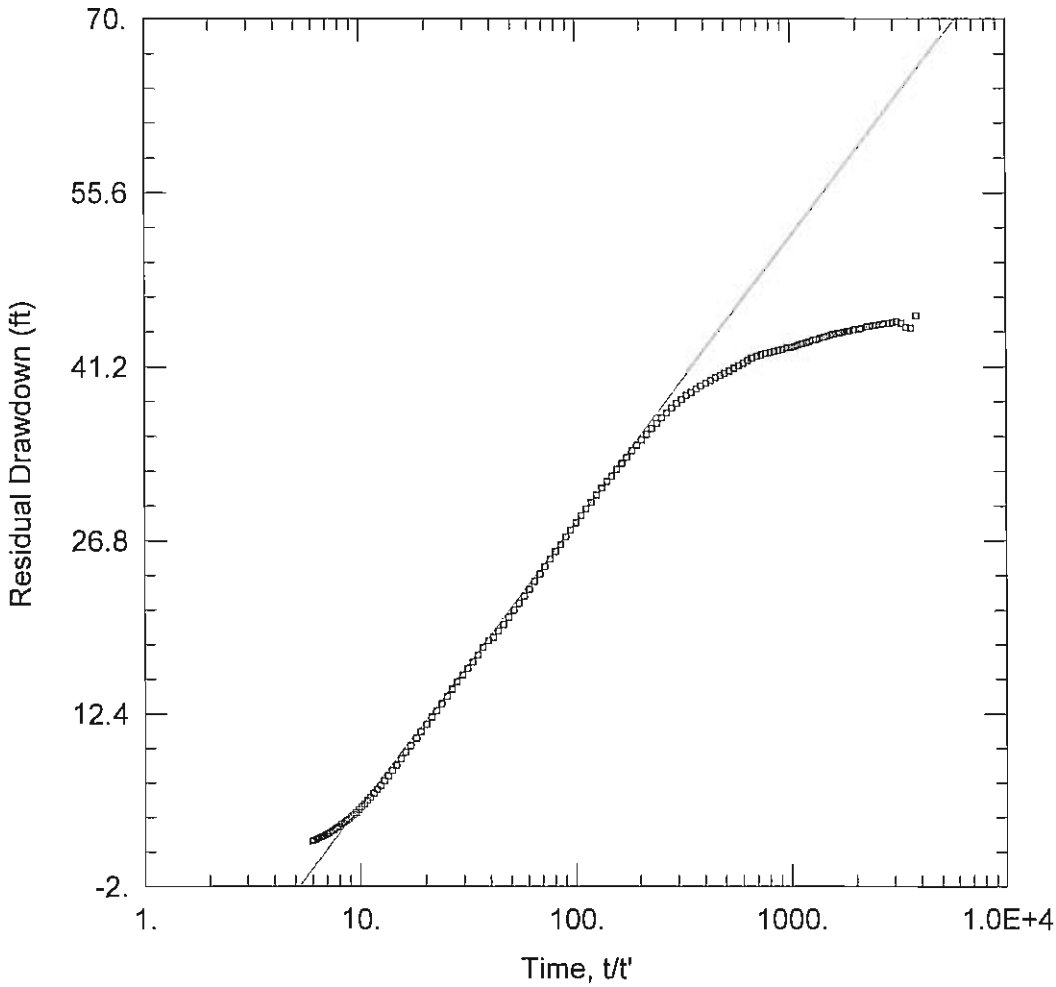
Observation Wells

Well Name	X (ft)	Y (ft)
EX-5	2061222.1	1590062.7

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 0.5515 cm^2/sec S = 0.5056



WELL TEST ANALYSIS

Data Set: C:\...\EX-5-recovery-theis.aqt
Date: 05/12/08 Time: 10:39:36

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 55. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EX-5	2061222.1	1590062.7

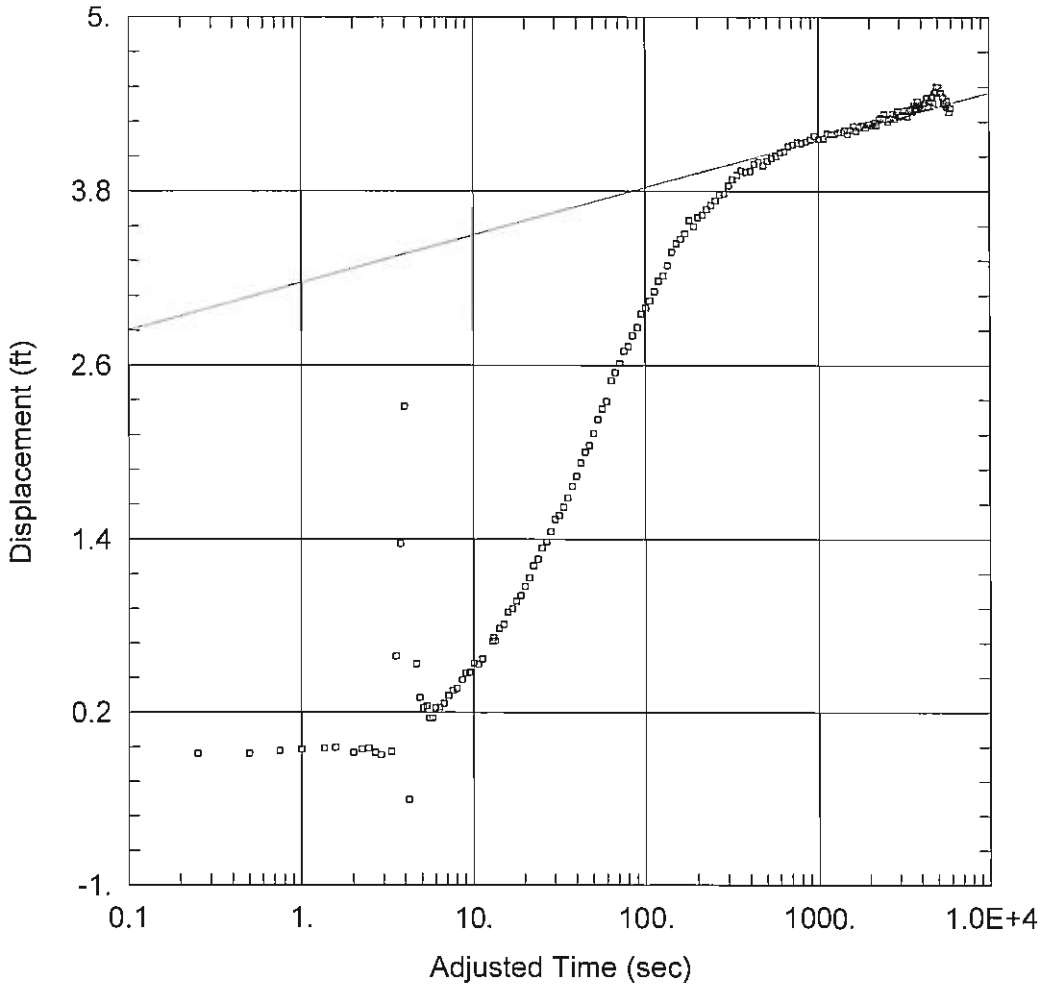
Observation Wells

Well Name	X (ft)	Y (ft)
▫ EX-5	2061222.1	1590062.7

SOLUTION

Aquifer Model: Confined Solution Method: Theis (Recovery)

T = 0.3179 cm^2/sec S/S' = 6.328



WELL TEST ANALYSIS

Data Set: C:\...\EX-6-step1late.aqt
Date: 05/12/08 Time: 10:48:08

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 48. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EX-6	0	0

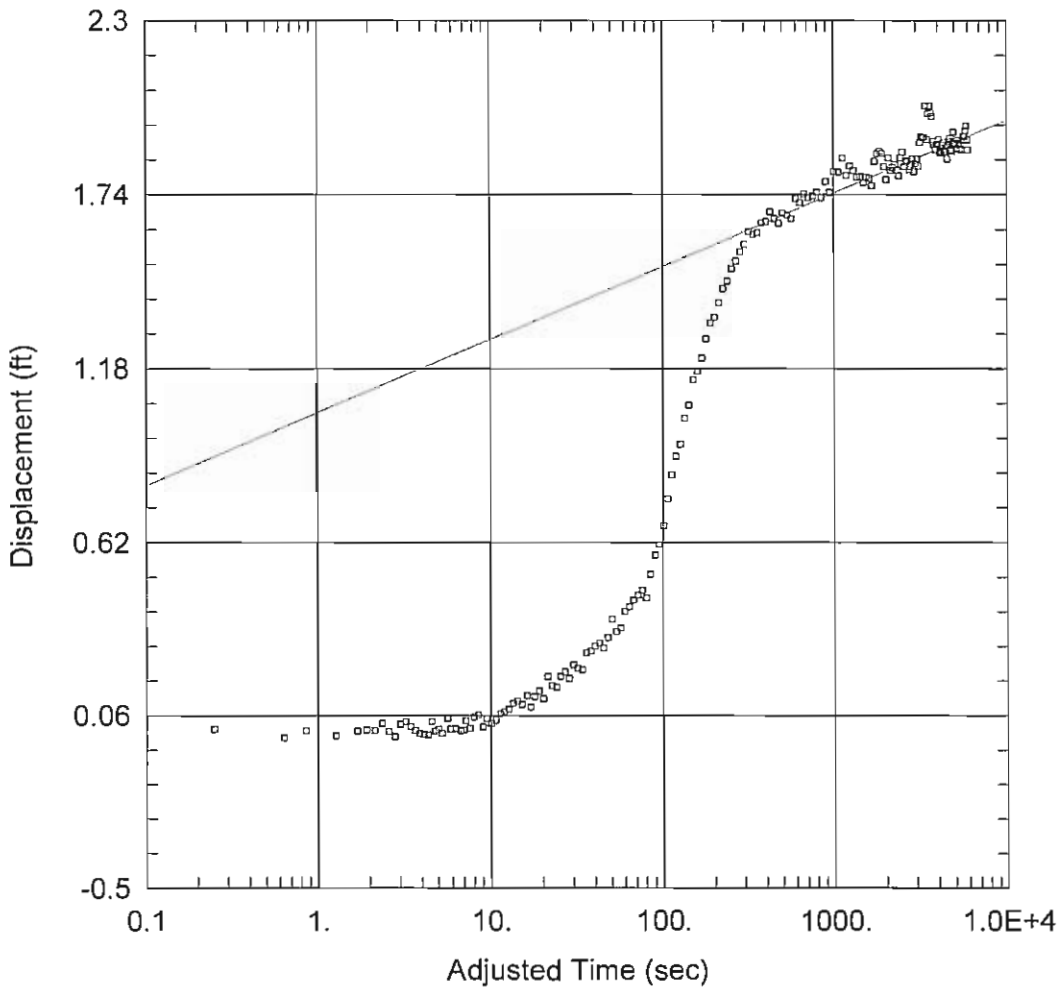
Observation Wells

Well Name	X (ft)	Y (ft)
▫ EX-6	0	0

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 10.06 cm^2/sec S = 4.506E-11



WELL TEST ANALYSIS

Data Set: C:\...\EX-6-step2late.aqt
Date: 05/12/08 Time: 13:28:17

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 48. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EX-6	2058881.4	1592070.3

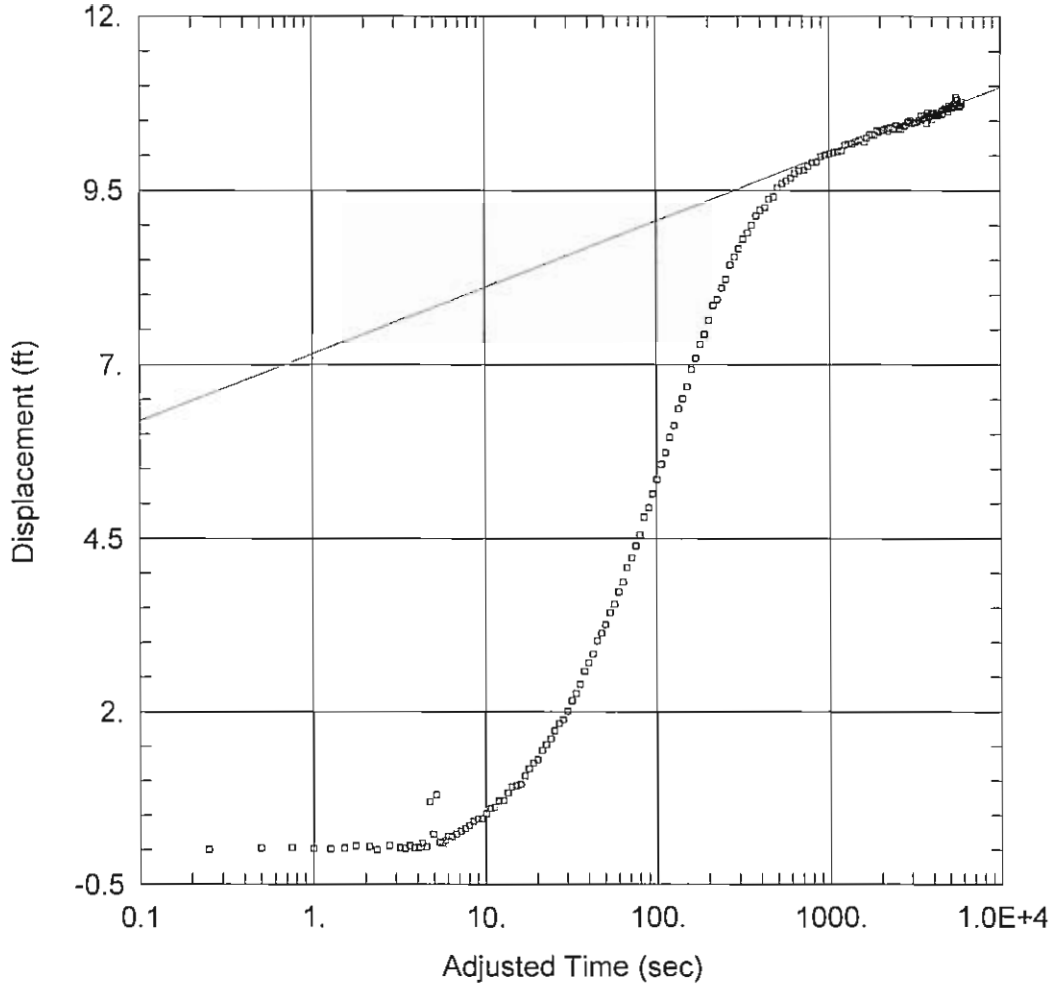
Observation Wells

Well Name	X (ft)	Y (ft)
▫ EX-6	2058881.4	1592070.3

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 17.44 cm^2/sec S = 1.507E-5



WELL TEST ANALYSIS

Data Set: C:\...\EX-6-step3late.aqt
Date: 05/12/08 Time: 10:51:18

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 48. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EX-6	2058881.4	1592070.3

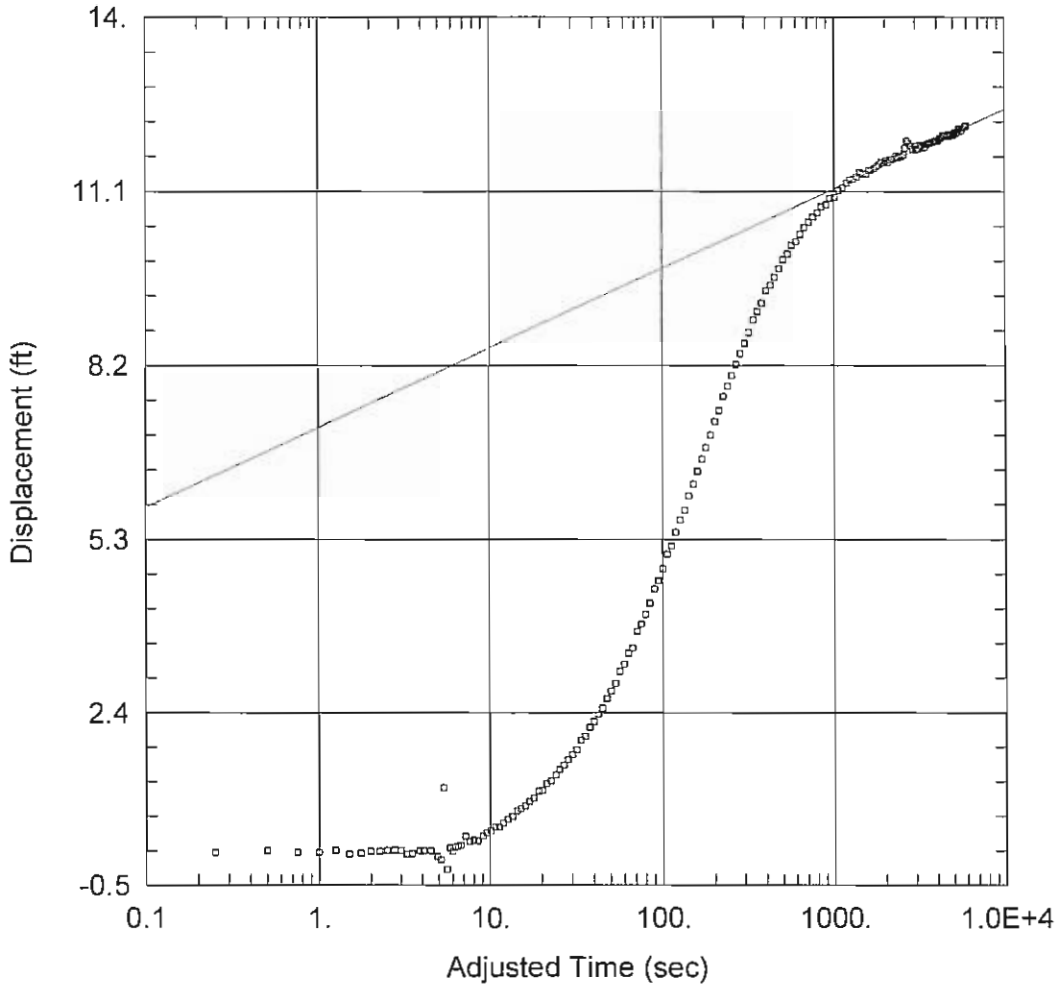
Observation Wells

Well Name	X (ft)	Y (ft)
EX-6	2058881.4	1592070.3

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 8.195 cm^2/sec S = 6.247E-9



WELL TEST ANALYSIS

Data Set: C:\...\EX-6-step4late.aqt
Date: 05/12/08 Time: 10:54:50

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 48. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EX-6	2058881.4	1592070.3

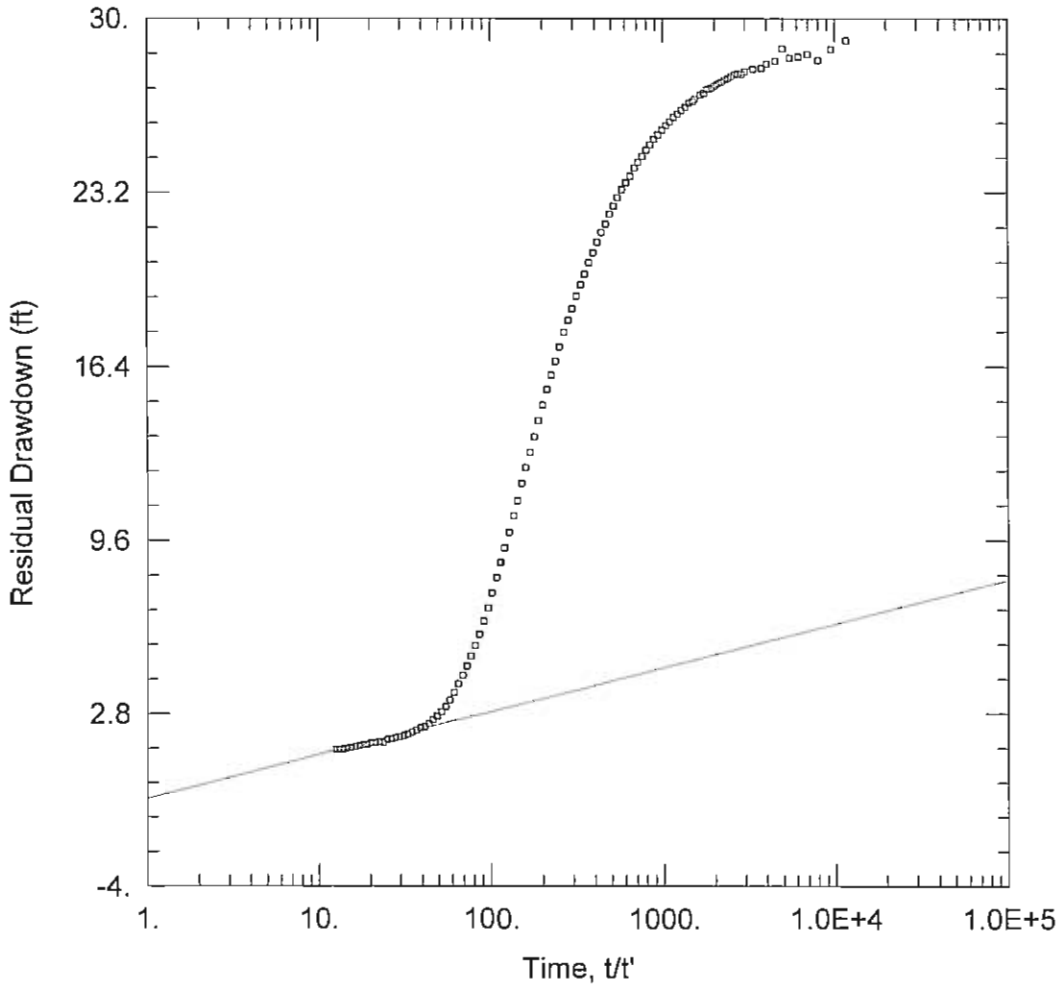
Observation Wells

Well Name	X (ft)	Y (ft)
▫ EX-6	2058881.4	1592070.3

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 7.936 cm^2/sec S = 7.031E-7



WELL TEST ANALYSIS

Data Set: C:\...\EX-6 recovery-theis.aqt
Date: 05/12/08 Time: 10:45:31

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 48. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EX-6	2058881.4	1592070.3

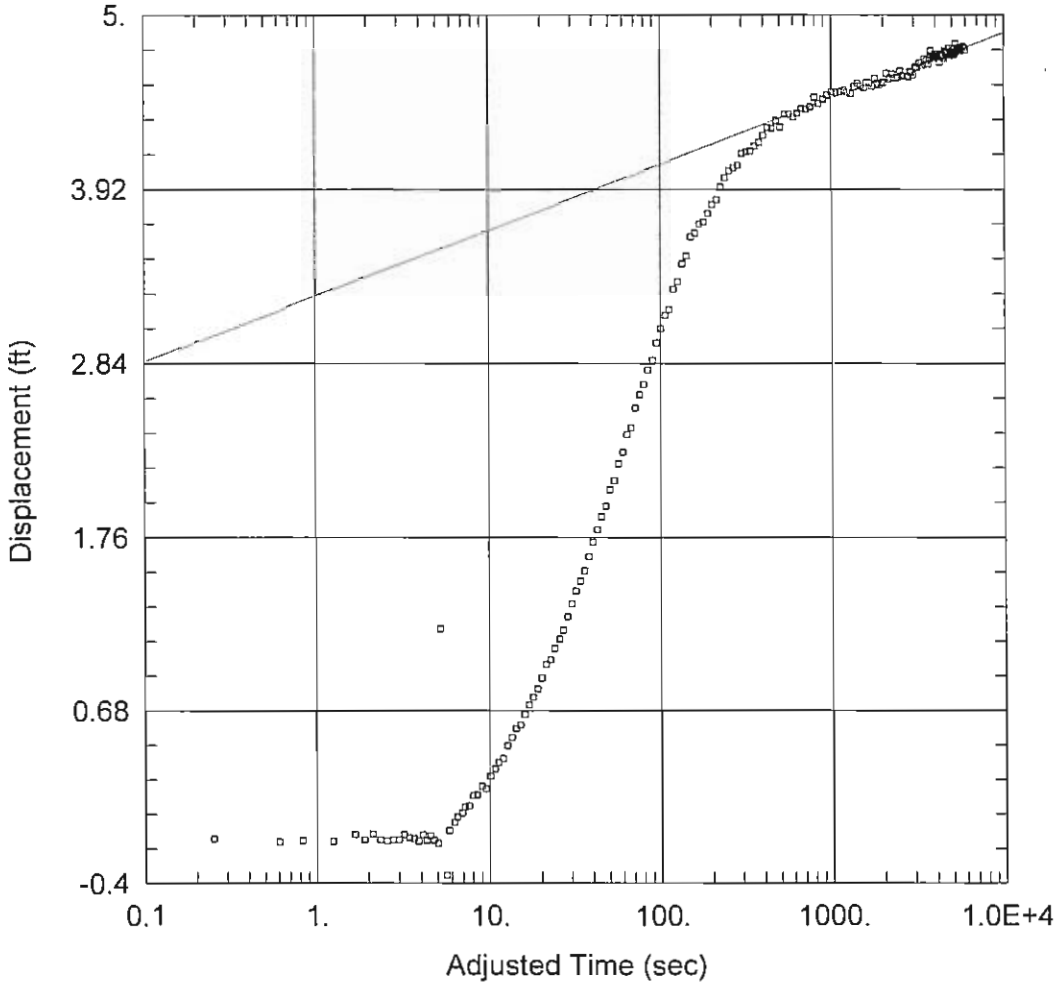
Observation Wells

Well Name	X (ft)	Y (ft)
▫ EX-6	2058881.4	1592070.3

SOLUTION

Aquifer Model: Confined Solution Method: Theis (Recovery)

T = 6.131 cm^2/sec S/S' = 2.114



WELL TEST ANALYSIS

Data Set: C:\...\EX-7 Step1late.aqt
Date: 05/12/08 Time: 10:58:03

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 60. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EX-7	2060220.4	1590825.3

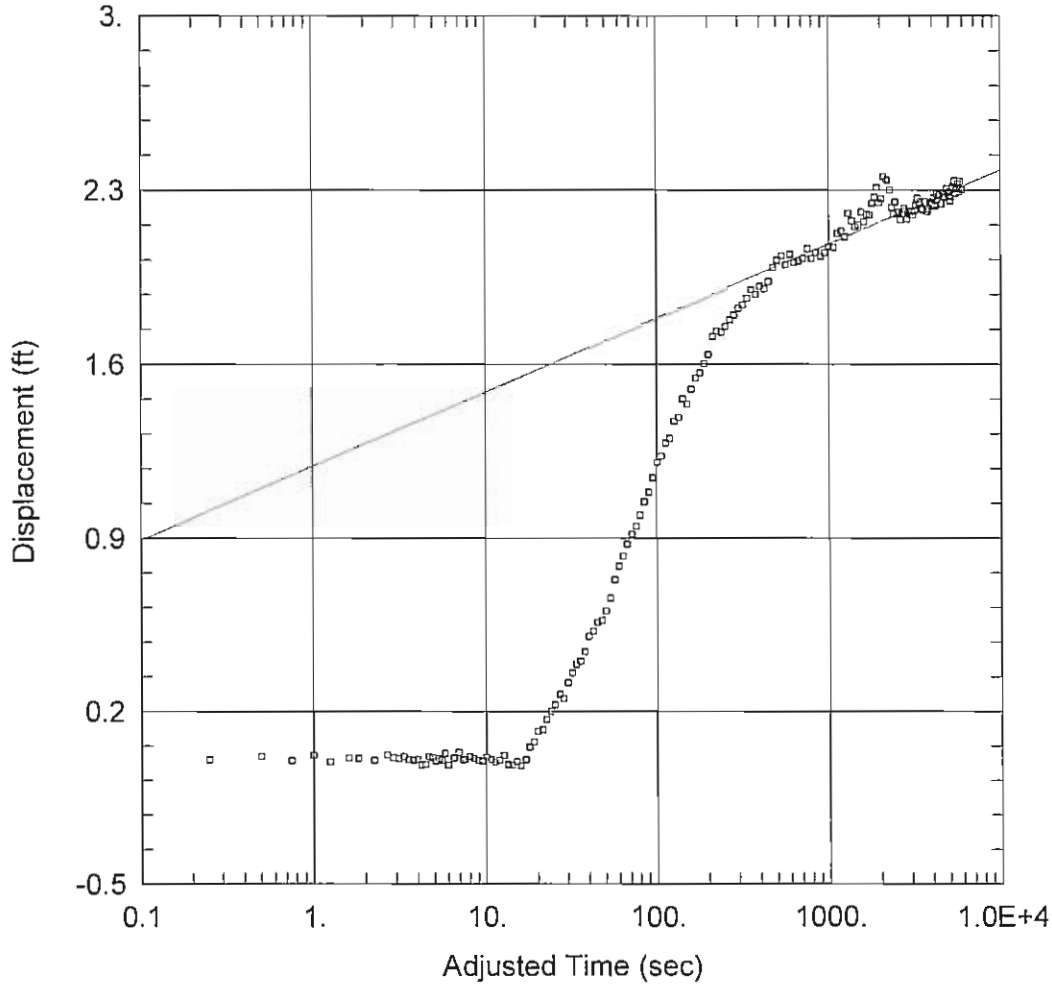
Observation Wells

Well Name	X (ft)	Y (ft)
▫ EX-7	2060220.4	1590825.3

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 7.925 cm^2/sec S = 1.76E-9



WELL TEST ANALYSIS

Data Set: C:\...\EX-7 Step2late.aqt
Date: 05/12/08 Time: 10:59:09

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 60. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EX-7	2060220.4	1590825.3

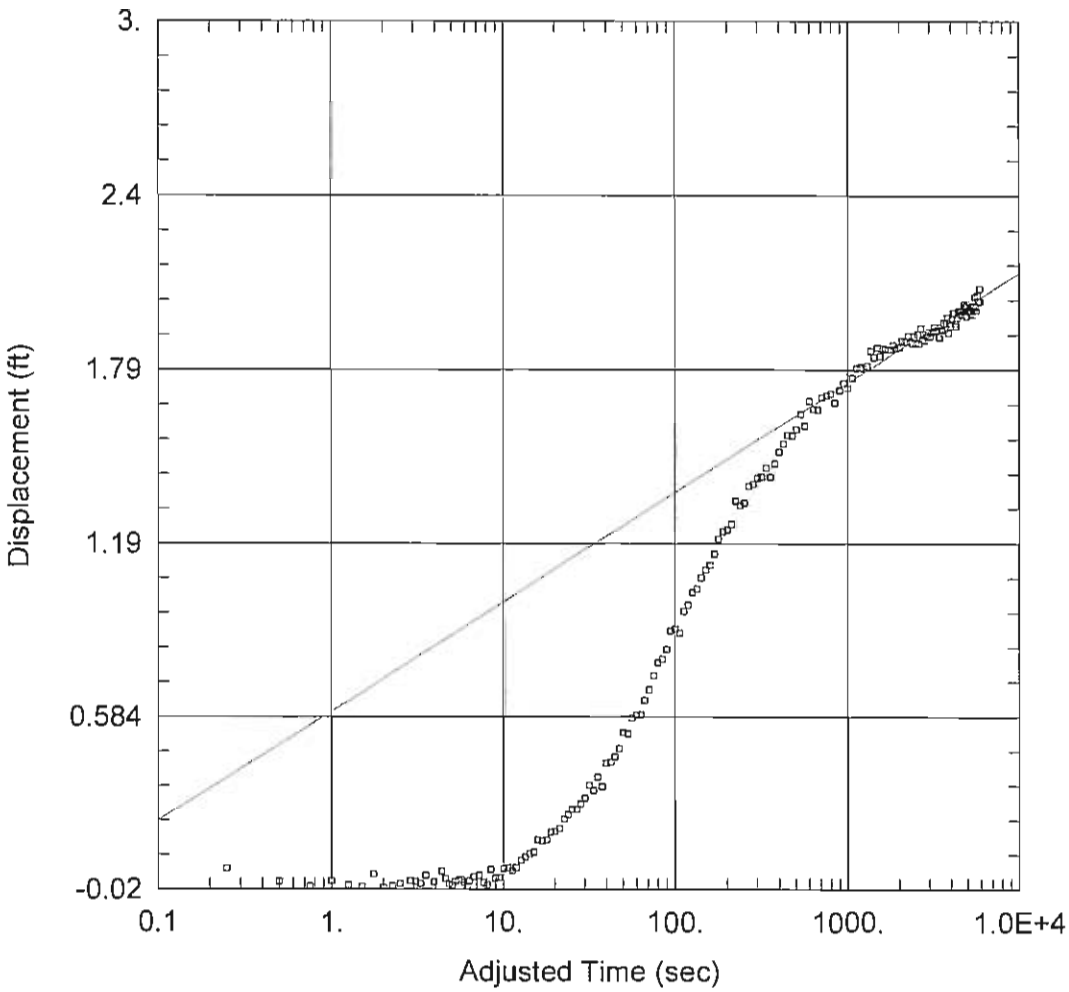
Observation Wells

Well Name	X (ft)	Y (ft)
▫ EX-7	2060220.4	1590825.3

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 13.88 cm^2/sec S = 3.152E-5



WELL TEST ANALYSIS

Data Set: C:\...\EX-7 Step3late.aqt
Date: 05/12/08 Time: 11:00:10

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 60. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EX-7	2060220.4	1590825.3

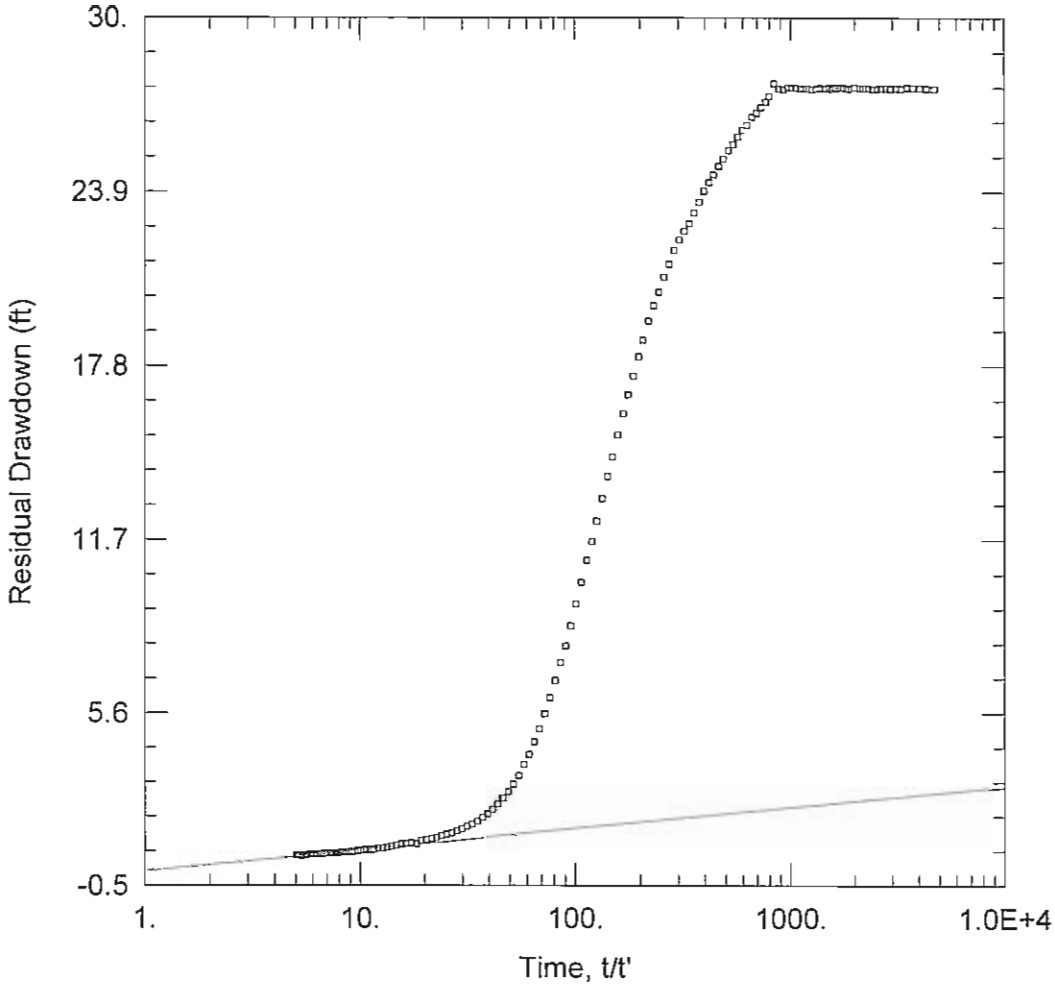
Observation Wells

Well Name	X (ft)	Y (ft)
▫ EX-7	2060220.4	1590825.3

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 12.48 cm^2/sec S = 0.007344



WELL TEST ANALYSIS

Data Set: C:\...\EX-7 recovery-theis.aqt
Date: 05/12/08 Time: 10:57:21

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 60. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EX-7	2060220.4	1590825.3

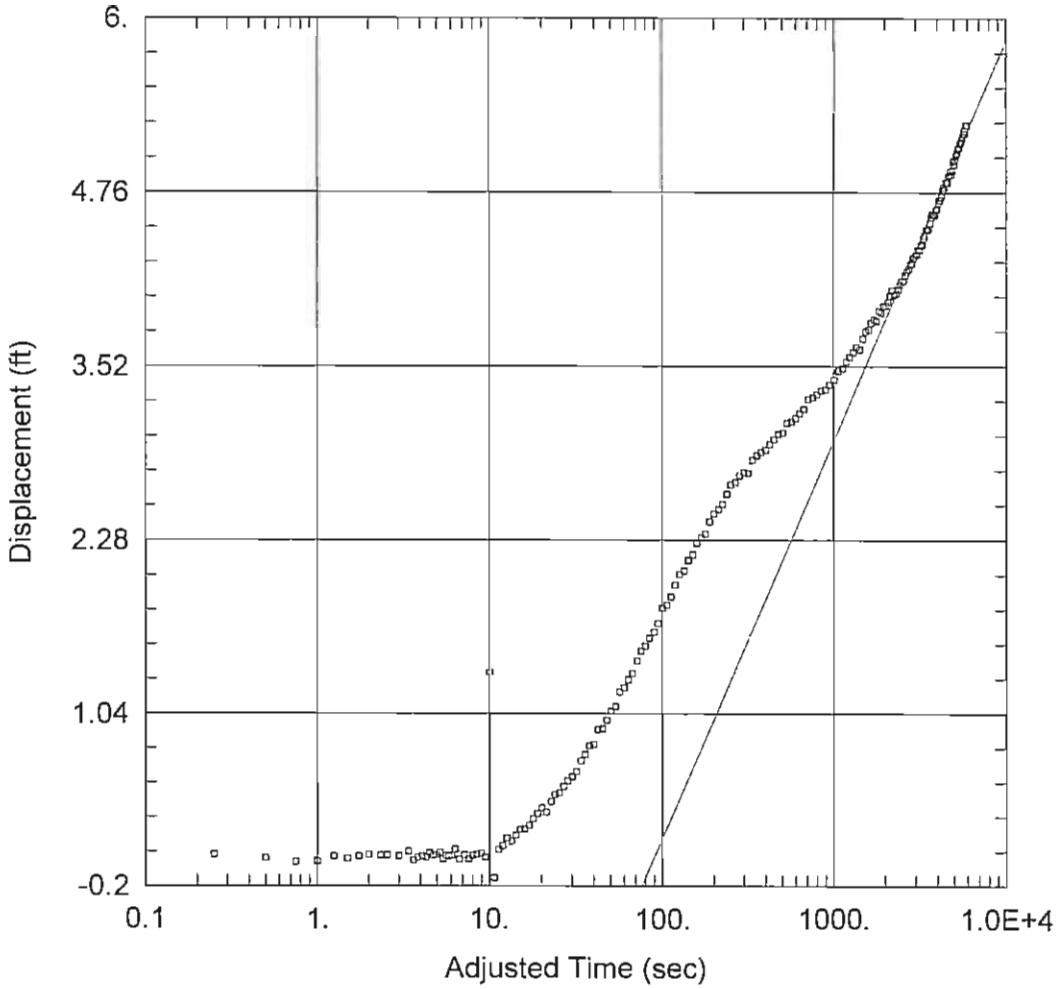
Observation Wells

Well Name	X (ft)	Y (ft)
▫ EX-7	2060220.4	1590825.3

SOLUTION

Aquifer Model: Confined Solution Method: Theis (Recovery)

T = 9.961 cm^2/sec S/S' = 1.025



WELL TEST ANALYSIS

Data Set: C:\...\MW-6 step2.aqt
Date: 05/12/08 Time: 11:01:13

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 30. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW-6	2062791.6	1591173.9

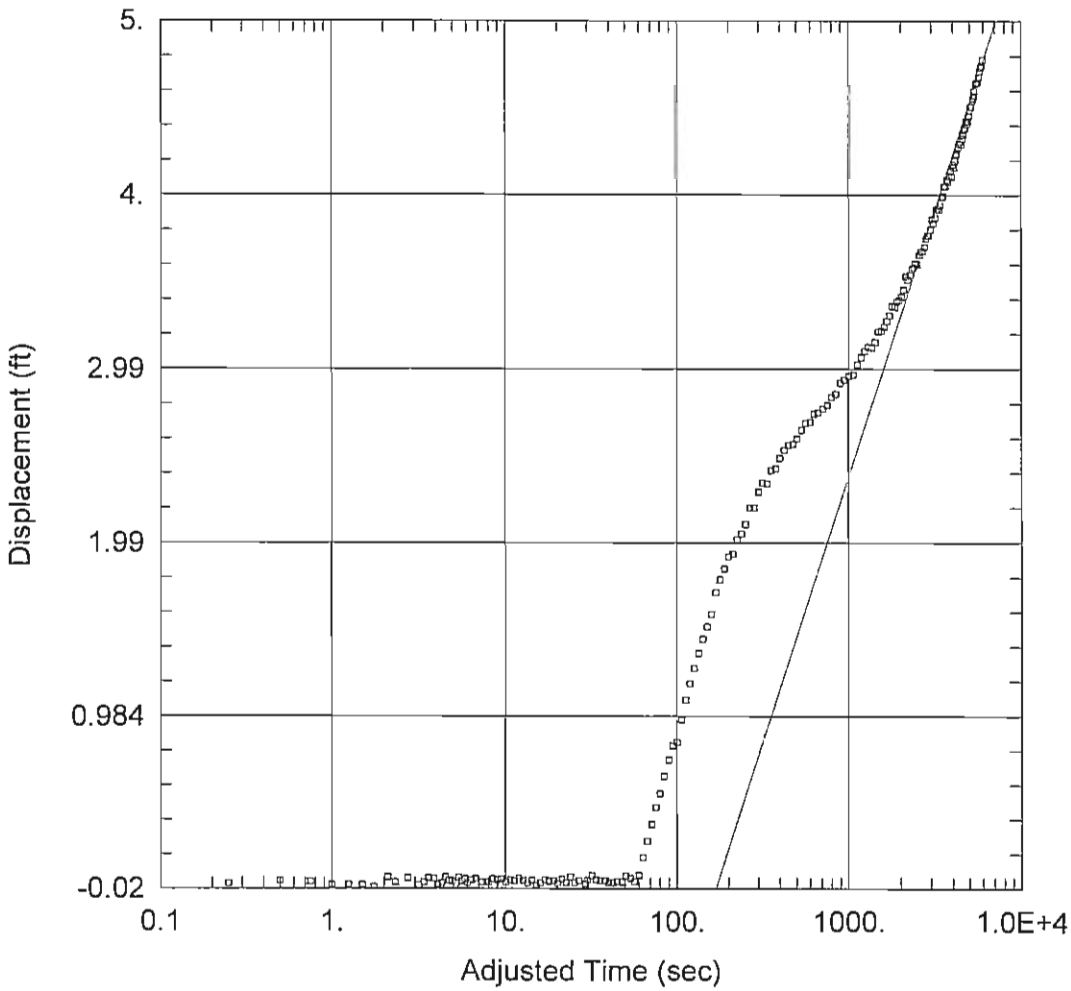
Observation Wells

Well Name	X (ft)	Y (ft)
▫ MW-6	2062791.6	1591173.9

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 0.5032 cm^2/sec S = 1.



WELL TEST ANALYSIS

Data Set: C:\...\MW-6 step3.aqt
Date: 05/12/08 Time: 11:01:52

PROJECT INFORMATION

Project: 073-81694
Location: Piñon Ridge
Test Well: EX-5
Test Date: 4/22/08

AQUIFER DATA

Saturated Thickness: 30. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW-6	2062791.6	1591173.9

Observation Wells

Well Name	X (ft)	Y (ft)
▫ MW-6	2062791.6	1591173.9

SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 0.5778 cm^2/sec S = 2.189