



May 3, 2013

Mr. Brandon Danforth  
Environmental Specialist  
WPX Energy Rocky Mountain LLC  
1058 County Road 215  
Parachute, Colorado 81635

**RE: Baseline Water Quality Sampling Evaluation – CMU 22-33 Drill Pad**

Dear Mr. Danforth,

Western Water & Land, Inc. (WWL) has completed a hydrologic water source evaluation for the WPX Energy Rocky Mountain LLC (WPX) CMU 22-33 Drill Pad in accordance with COGCC Rule 609. The evaluation considered all water sources as defined in Rule 609 within a 0.5-mile radius of the referenced drill pad. Water sources located on the basis of section quarters were included in the evaluation if the any portion of the section quarter(s) lies within the 0.5-mile radius area. A preliminary screening of the water sources was completed to identify the sources considered to be potentially available for sampling pending results of the owner questionnaire and field inspections to verify sampling feasibility and the consent of the structure owners. Each potentially available water source was then evaluated to identify the preferred sources for the baseline program. If the resulting number of potentially available sources was four or less, all of the sources were included in the list of preferred sources. If more than four sources were potentially available, the sources were prioritized based on WWL's hydrologic knowledge of the region, general hydrologic rationale, and in accordance with the guidelines specified in Rule 609.

**Water Sources**

Water sources as defined in Rule 609 include water wells registered with the Colorado Division of Water Resources (DWR), permitted or adjudicated springs, and monitoring wells installed for baseline sampling and monitoring under COGCC Rules 318A.e(4), 608, or 609. Water sources located within a 0.5-mile radius of the CMU 22-33 Drill Pad are shown in Figure 1. Well permit files are included for all wells located within the 0.5-mile radius evaluation area in Attachment A. Structure owners are identified as reported in DWR databases. Property owners are identified as reported in county property records. The water sources within a 0.5-mile radius of the drill pad are summarized as follows:

- Water Well (Permit No.229106; Permit Issued and Completed)
  - Well Permit Applicant Owner:  
Lee Morgan  
1205 Walz Ave.  
Glenwood Springs, Colorado 81601
  - Land Owner:

Morgan Ranch LLLP  
1400 Fir Court  
Rifle, Colorado 81650

- Uses: Domestic Irrigation
- Location Accuracy: Spotted from Section Lines

### **Potentially Available Water Sources**

Each water source identified within the 0.5-mile radius area is considered to be a potentially available water source unless existing information suggests that the water source would not be suitable for the baseline water quality program. The following water sources are considered potentially available for inclusion in the program:

- Water Well (Permit No. 229106; Permit Issued and Completed)

### **Preferred Water Sources**

In accordance with Rule 609, all available water sources within a 0.5-mile radius of the drill pad, up to a maximum of four sources must be included in the baseline and subsequent monitoring program. Because only one potentially available water source was located within 0.5 miles of the CMU 22-33 Drill Pad, this source is considered to be a preferred water source. The preferred potentially available water source is as follows:

- Water Well (Permit No. 229106; Permit Issued and Completed)

The preferred water source will be incorporated into the baseline water quality monitoring program provided the structures exist, and the structure owner, or land owner if the structure owner is not known, grants approval to sample the source and inspection of the structure confirms that a representative sample can be obtained from the structure.

If you have any questions or concerns, please contact me at (970) 242-0170.

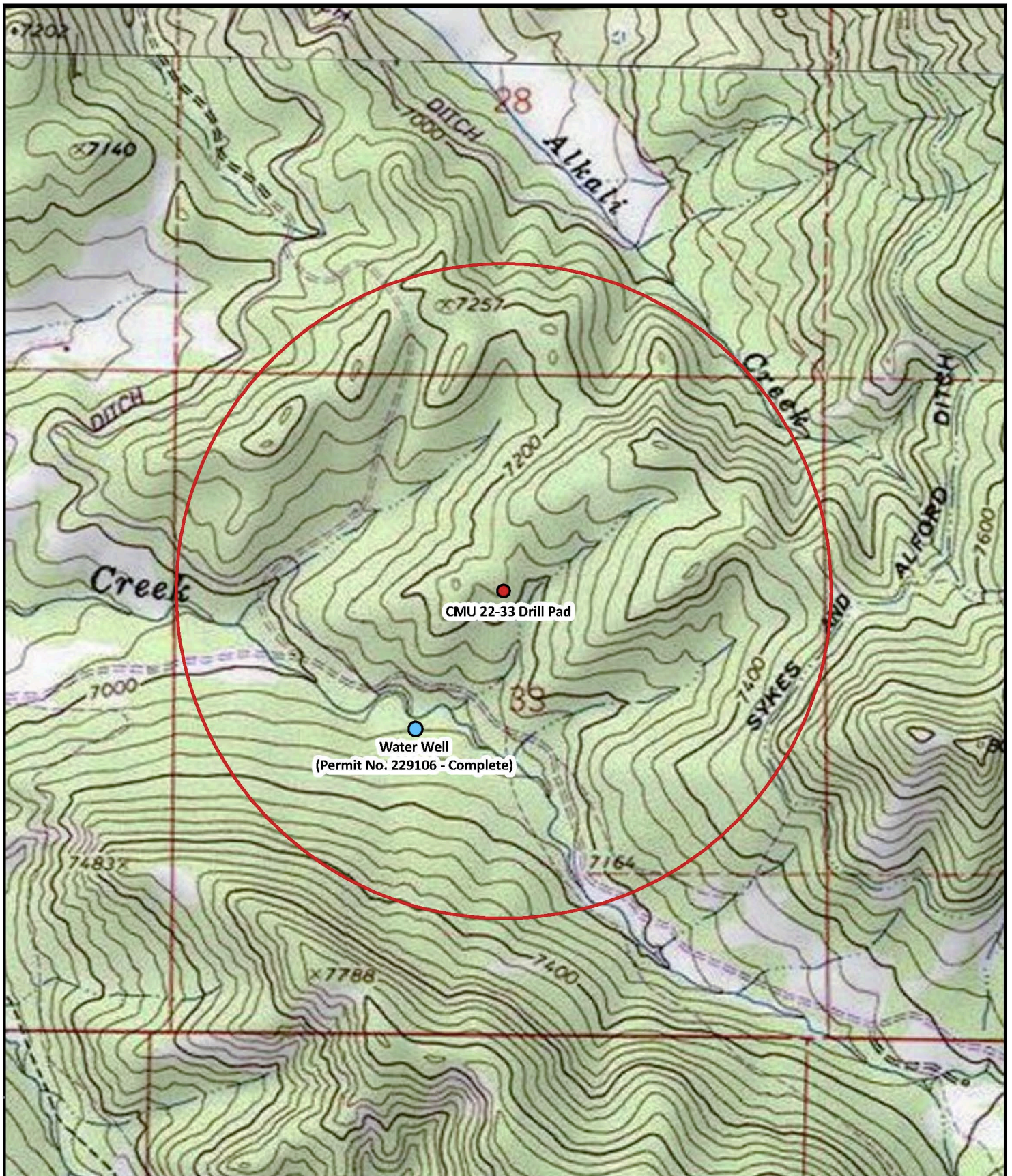
Sincerely,



Bruce D. Smith  
Principal Hydrogeologist  
WESTERN WATER & LAND, INC.

Attachments





#### Legend

- Permitted Well
- Drill Pad CMU 22-33
- Decreed Spring
- 0.5-Mile Radius Evaluation Area



Feet  
1,000 500 0 1,000  
1:12,675

**Figure 1: Drill Pad Location CMU 22-33**  
0.5 Mile Radius Water Source Evaluation  
WPX Energy Rocky Mountain LLC

Garfield County, Colorado

SW1/4NE1/4 Sec 33 Tws 6S R 90W

Basemap Source: Bing Maps and Esri ArcGIS Online



Western Water & Land, Inc.  
Applications in Earth Science



## Attachment A

### Water Source Records

**OFFICE OF THE STATE ENGINEER**  
**COLORADO DIVISION OF WATER RESOURCES**  
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203  
(303) 866-3581

1095

APPLICANT

**WELL PERMIT NUMBER** 229106  
DIV. 5 WD 45 DES. BASIN MD

LEE MORGAN  
1205 WALZ AVE.  
GLENWOOD SPRINGS, CO 81601-

(970) 945-6351

APPROVED WELL LOCATION

GARFIELD COUNTY  
NE 1/4 SW 1/4 Section 33  
Township 6 S Range 90 W Sixth P.M.

DISTANCES FROM SECTION LINES

2540 Ft. from South Section Line  
1950 Ft. from West Section Line

**PERMIT TO CONSTRUCT A WELL**

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not assure the applicant that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-92-602(3)(b)(II)(A) as the only well on a tract of land of 40 acres described as the NE 1/4, SW 1/4, Sec. 33, Twp. 6 South, Rng. 90 West, 6th P.M., Garfield County.
- 4) The use of ground water from this well is limited to fire protection, ordinary household purposes inside not more than three (3) single family dwellings, the watering of poultry, domestic animals and livestock on a farm or ranch and the irrigation of not more than one (1) acre of home gardens and lawns.
- 5) The maximum pumping rate of this well shall not exceed 15 GPM.
- 6) The return flow from the use of this well must be through an individual waste water disposal system of the non-evaporative type where the water is returned to the same stream system in which the well is located.
- 7) This well shall be constructed not more than 200 feet from the location specified on this permit.

NOTE: Parcel Identification Number (PIN): 23-2183-332-00-013

NOTE: Assessor Tax Schedule Number: 017220 (totalling 320 acres)

*D 2 2*  
*10/10/2000*

APPROVED  
DMW

*Hel A. Sington*  
State Engineer

DATE ISSUED **OCT 10 2000**

*Dyrt 2.2 Schott*  
By  
EXPIRATION DATE **OCT 10 2002**

Receipt No. 9500246

COLORADO DIVISION OF WATER RESOURCES  
DEPARTMENT OF NATURAL RESOURCES  
1313 SHERMAN ST., RM. 818, DENVER CO 80203  
phone - info: (303) 866-3587 main: (303) 866-3581

# **NEW 35+ ACRE RESIDENTIAL**

Review instructions prior to completing form

RECEIVED

RECEIVED

OCT 16 2000

SEP 06 '00

## **Water Well Permit Application**

Must be completed in black ink or typed

<b>1. APPLICANT INFORMATION</b>				<b>6. USE OF WELL</b> (check appropriate entry or entries)			
Name of applicant <b>Lee Morgan</b>				<input checked="" type="checkbox"/> <b>A. Ordinary household purposes in up to 3 single-family dwellings, the watering of domestic animals, and the irrigation of not more than one (1) acre of home gardens and lawns</b>			
Mailing Address <b>1205 Walz Ave.</b>				<input checked="" type="checkbox"/> <b>B. Livestock watering</b> (on farm/ranch/range/pasture)			
City <b>Glenwood Springs</b>		State <b>Co.</b>		Zip code <b>81601</b>			
Telephone Number (include area code) <b>970-945-6351</b>				<b>7. WELL DATA</b>			
<b>2. TYPE OF APPLICATION</b>				<b>MAXIMUM PRODUCTION RATE OF THE WELL SHALL NOT EXCEED 15 GPM</b>			
<b>CONSTRUCT A NEW WELL ON A TRACT OF LAND OF 35 ACRES OR MORE</b>				<b>8. TYPE OF RESIDENTIAL SEWAGE SYSTEM</b>			
<b>3. REFER TO</b> (if applicable):				<input checked="" type="checkbox"/> <b>Septic tank / absorption leach field</b>			
Monitoring hole acknowledgment # <b>MH-</b>				<input type="checkbox"/> <b>Central system</b>			
<b>4. LOCATION OF WELL</b>				District name: _____			
County <b>Garfield</b>		Quarter/quarter <b>NE 1/4 1/4</b>		Quarter <b>SW 1/4 1/4</b>			
Section <b>33</b>	Township N or S <b>6</b>	Range E or W <b>90</b>	Principal Meridian <b>6th P.M.</b>				
Distance of well from section lines							
2540 ft. from <input type="checkbox"/> N <input checked="" type="checkbox"/> S		1950 ft. from <input type="checkbox"/> E <input checked="" type="checkbox"/> W					
Well location address, if different from applicant address (if applicable) <b>8186 County Rd. 312</b>							
<b>9. PROPOSED WELL DRILLER</b> (optional)							
Name <b>Shelton Drilling Co.</b>						License number <b>1095</b>	
<b>10. SIGNATURE</b> of applicant(s) or authorized agent							
The making of false statements herein constitutes perjury in the second degree, which is punishable as a class 1 misdemeanor pursuant to C.R.S. 24-4-104(13)(a). I have read the statements herein, know the contents thereof and state that they are true to my knowledge.							
Must be original signature <i>Lee Morgan</i>							
True Owner						Date <b>9/6/2000</b>	
Office Use Only <b>CENTER MOUNTAIN CO</b>						DWR Map No. <b>N-9</b>	
Receipt # <b>9500246</b>							
Permit # <b>229106</b>							
Well owner <b>TAB</b>							
<b>ALOT</b>							
PIN: <b>23-2183-332-00-013</b>						DIV <b>5</b>	
Tax # <b>01724</b>						CO <b>23</b>	
Invoice # <b>468876</b>						WD <b>45</b>	
10/16/00 -- 8:42:24 AM						BA _____	
Cashier ID: <b>01</b>							
\$ <b>68.00</b>							
Check Purchase- #166							
USE _____ MD _____							
<b>5. TRACT ON WHICH WELL WILL BE LOCATED</b>							
<b>A. ATTACH LEGAL DESCRIPTION FOR 35+ ACRE TRACT</b>							
<input type="checkbox"/> <b>Development</b> - None							
Name - <b>Ranch</b>							
Lot no. _____ Unit _____							
<input checked="" type="checkbox"/> <b>Other</b> <b>Garfield NE 1/4 SW 1/4 Sect. 33</b>							
<b>65 - R. 90W - 6th P.M. h.m.</b>							
<b>B. STATE PARCEL ID#</b> (optional):							
<b>C. # acres in tract</b> <b>40 A.M.</b>							
<b>D. THIS WILL BE THE ONLY WELL ON THIS TRACT</b>							

COLORADO DIVISION OF WATER RESOURCES  
DEPARTMENT OF NATURAL RESOURCES

GWS-50INST (12/95)

## NEW 35+ ACRE RESIDENTIAL - GENERAL INSTRUCTIONS

There are a variety of uses for ground water in Colorado. This form (GWS-50) is to be used only when applying for a new well that will be used for household use in up to three single family residences, watering of up to one acre of home garden and lawn, and watering of the owner's domestic animals (this is sometimes referred to as "domestic" use), and/or for the watering of livestock on a farm, ranch, range, or pasture. This form is to be used only if the well will be the only well on a tract of land of 35 acres or more.

This form should not be used for the following situations:

HOUSEHOLD USE ONLY - use RESIDENTIAL form GWS-49

REPLACEMENT of a residential or livestock well - use RESIDENTIAL form GWS-49

**FEES** This Application must be submitted with the required \$60 non-refundable filing fee.  
Checks should be payable to the COLORADO DIVISION OF WATER RESOURCES.

Applications are evaluated in chronological order. Please allow approximately six weeks for processing.

APPLICATIONS must be completed clearly, and legibly, in BLACK INK or typed. ALL ITEMS in the application must be completed. Incomplete applications may be returned to the applicant for more information.

THE LOCATION of the well in item 4 must be correctly and accurately described. The county, quarter/quarter, section, township, range, principal meridian, and distance from section lines must be provided.

NOTE: Distances are not necessarily the same distances as the distances from (your) property lines.

For additional assistance in describing the location of your well review the instruction sheet entitled "How To Determine A Well Location" which can be requested from any Colorado Division of Water Resources Office.

A LEGAL DESCRIPTION, survey, or copy of a map showing your lot or parcel of land is required. This description must be legible, and must include a tie to a section line or corner.

If you are unsure of what USE to request, the instruction sheet entitled "Qualifying For A Well Permit", may be of assistance in determining the maximum use for which you may qualify. This can be requested from any Colorado Division of Water Resources office.

In Colorado the primary criteria for evaluation of availability of permits for residential and livestock water well use is based on injury to other water rights. There are specific exclusions to the injury determination that are based on the tract on which the well is to be located. For applications other than new construction the criteria for evaluation may be based on additional factors such as historic use, previously permitted use, or decreed use.

An ORIGINAL signature must be on each application. The applicant's authorized agent may sign the application, if a letter signed by the applicant is submitted with the application authorizing the individual signing the application to act as agent for the purpose of obtaining a well permit.

DETAILED INSTRUCTIONS ARE AVAILABLE UPON REQUEST

**IF YOU HAVE ANY QUESTIONS** regarding any item on the application form, please call the Division of Water Resources Ground Water Information Desk (303-866-3587), or the nearest Division of Water Resource Field Office located in Greeley (970-352-8712), Pueblo (719-542-3368), Alamosa (719-589-6683), Montrose (970-249-6622), Glenwood Springs (970-945-5665), Steamboat Springs (970-879-0272), or Durango (970-247-1845).

COLORADO DIVISION OF WATER RESOURCES, 1313 SHERMAN STREET, ROOM 821, DENVER, CO 80203  
PHONE 303-866-3587 (Information), 303-866-3581 (Main), 303-866-3447 (Well & Water Rights Records), 303-866-3589 (Fax).

WATER RESOURCES  
STATE ENGINEER  
COLO.

6

1461.00 FEET 28



WELL CONSTRUCTION AND TEST REPORT STATE OF COLORADO, OFFICE OF THE STATE ENGINEER				FOR OFFICE USE ONLY	
<b>1. WELL PERMIT NUMBER</b> 229106				RECEIVED <i>Rec #</i> MAY 11 2001 09500246 WATER RESOURCES STATE ENGINEER COLO. APPROVAL # GWS31-91-03	
<b>2. Owner Name(s) :</b> Lee Morgan <b>Mailing Address :</b> 1205 Walz Ave. <b>City, St. Zip :</b> Glenwood Springs, Co. 81601 <b>Phone :</b> (970) 945-6351					
<b>3. WELL LOCATION AS DRILLED:</b> NE 1/4 SW 1/4 Sec. 33 Twp. 06S Range 90W <b>DISTANCES FROM SEC. LINES:</b> 2540 ft. from South Sec. line. and 1950 ft. from West Sec. line. OR <b>SUBDIVISION :</b> LOT BLOC FILING(UNIT) <b>STREET ADDRESS AT WELL LOCATION :</b>					
<b>4. GROUND SURFACE ELEVATION</b> ft. <b>DRILLING METHOD</b> Air Rotary <b>DATE COMPLETED</b> 04/18/01 <b>TOTAL DEPTH</b> 175 ft. <b>DEPTH COMPLETED</b> 175 ft.					
<b>5. GEOLOGIC LOG :</b>				<b>6. HOLE DIAM. (in)</b>	
Depth	Type of Material (Size, Color, and Type)			FROM (ft)	TO (ft)
000-015	Clays, Rocks	9.0		0	40
015-175	Wasatch Formation	6.5		40	175
				<b>7. PLAIN CASING</b>	
		OD (in)	Kind	Wall Size	From (ft)
		7.0	Steel	0.240	-1
		5.5	PVC	.250	18
		5.5	PVC	.250	70
				<b>PERF. CASING : Screen Slot Size :</b>	
		5.5	PVC	.250	60
<b>WATER LOCATED :</b> 60  <b>REMARKS :</b>		<b>8. Filter Pack</b>		<b>9. Packer Placement</b>	
		Material :		Type :	
		Size :		Depth :	
		Interval :			
		<b>10. GROUTING RECORD :</b>			
		Material	Amount	Density	Interval
		cement	5 sks	16 gal	10-40
<b>11. DISINFECTION : Type :</b> HTH				<b>Amt. Used :</b> oz.	
<b>12. WELL TEST DATA :</b> <input type="checkbox"/> Check Box If Test Data is Submitted On Supplemental <b>TESTING METHOD :</b> Air Compressor <b>Static Level :</b> 19 ft. <b>Date/Time Measured :</b> 4/18/01 <b>Production Rate :</b> 1 gpm <b>Pumping Level :</b> Total ft. <b>Date/Time Measured :</b> 4/18/01 <b>Test Length :</b> 2 hrs. <b>Remarks :</b>					
<b>13. I have read the statements made herein and know the contents thereof, and that they are true to my knowledge. (Pursuant to Section 24-4-104 (13)(a) CRS, the making of false statements constitutes perjury in the second degree and is punishable as a class 1 misdemeanor.)</b> <b>CONTRACTOR :</b> Shelton Drilling Corp. <b>Phone :</b> (970) 927-4182 <b>Mailing Address :</b> P.O. Box 1059 <b>Basalt, CO 81621</b> <b>Lic. No.</b> 1095 <b>Name / Title (Please Type or)</b> <b>Signature</b> <b>Date</b> 05/08/01 Wayne Shelton / President					

ORIGINAL

FORM NO. 6WS-32 10/94	<b>PUMP INSTALLATION AND TEST REPORT</b> STATE OF COLORADO, OFFICE OF THE STATE ENGINEER	For Office Use only <div style="border: 1px solid black; padding: 5px; display: inline-block;">           RECEIVED             MAY 14 2001   <small>WATER RESOURCES STATE ENGINEER COLO.</small> </div> <i>Rec# 09500246</i>
1.	<b>WELL PERMIT NUMBER</b> <u>229106</u>	
2.	<b>OWNER NAME(S)</b> <u>Lee Morgan</u> <b>Mailing Address</b> <u>1205 Walz Ave.</u> <b>City, St. Zip</b> <u>Glen Spgs Co 81601</u> <b>Phone ( 970 )</b> <u>945-6351</u>	
3.	<b>WELL LOCATION AS DRILLED:</b> <u>NE 1/4 SW 1/4, Sec.33</u> Twp. <u>6 S</u> , Range <u>90 W 6th</u> <b>DISTANCES FROM SEC. LINES:</b> <u>2540</u> ft. from <u>South</u> Sec. line. and <u>1950</u> ft. from <u>West</u> Sec. line. <small>(north or south) (east or west)</small> <b>SUBDIVISION:</b> _____ <b>LOT</b> _____ <b>BLOCK</b> _____ <b>FILING(UNIT)</b> _____ <b>STREET ADDRESS AT WELL LOCATION:</b> _____	
4.	<b>PUMP DATA:</b> Type <u>Submersible</u> Installation Completed <u>5/2/01</u> Pump Manufacturer <u>Goulds</u> Pump Model No. <u>5GS05412L</u> Design GPM <u>5</u> at RPM <u>3450</u> , HP <u>1/2</u> , Volts <u>230</u> , Full Load Amps <u>4.6</u> Pump Intake Depth <u>170'</u> Feet, Drop/Column Pipe Size <u>1"</u> Inches, Kind <u>Sch 80 PVC</u>  <b>ADDITIONAL INFORMATION FOR PUMPS GREATER THAT 50 GPM:</b> <b>TURBINE DRIVER TYPE:</b> <input type="checkbox"/> Electric <input type="checkbox"/> Engine <input type="checkbox"/> Other _____ Design Head _____ feet, Number of Stages _____, Shaft size _____ inches.	
5.	<b>OTHER EQUIPMENT:</b> Airline Installed <input type="checkbox"/> Yes <input type="checkbox"/> No, Orifice Depth ft. _____ Monitor Tube Installed <input type="checkbox"/> Yes <input type="checkbox"/> No, Depth ft. _____ Flow Meter Mfg. _____ Meter Serial No. _____ Meter Readout <input type="checkbox"/> Gallons, <input type="checkbox"/> Thousand Gallons, <input type="checkbox"/> Acre feet, <input type="checkbox"/> Beginning Reading _____	
6.	<b>TEST DATA:</b> <input type="checkbox"/> Check box if Test data is submitted on Supplemental Form. <div style="display: flex; justify-content: space-between;"> <div>           Total Well Depth <u>175'</u>            Static Level <u>12'</u>            Date Measured <u>5/02/01</u> </div> <div>           Date <u>5/02/01</u>            Time <u>2 HR</u>            Rate (GPM) <u>2.2</u>            Pumping Lvl. <u>165'</u> </div> </div>	
7.	<b>DISINFECTION:</b> Type <u>Chlorox</u> Amt. Used <u>1 Cup</u>	
8.	Water Quality analysis available. <input type="checkbox"/> Yes <input type="checkbox"/> No	
9.	<b>Remarks</b> _____ _____ _____ _____ _____	
10. I have read the statements made herein and know the contents thereof, and that they are true to my knowledge. [Pursuant to Section 24-4-104 (13)(a) C.R.S., the making of false statements herein constitutes perjury in the second degree and is punishable as a class 1 misdemeanor.]		
<b>CONTRACTOR</b> <u>J &amp; M Pump Co.</u> Phone <u>(970) 945-6159</u> Lic. No. <u>1196</u> <b>Mailing Address</b> <u>8611 Co Rd 117 Glen Spgs Co 81601</u>		
<b>Name/Title (Please type or print)</b> <u>Richard A. Holub</u> Owner	<b>Signature</b> <i>Richard A Holub</i>	<b>Date</b> <u>5/07/01</u>