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Sparks NV 89431 USA
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Stantec

**SUMMARY OF WELL CONSTRUCTION
MT. ROSE SKI AREA
WASHOE COUNTY, NEVADA**

JANUARY 1999

PREPARED FOR:

MT. ROSE DEVELOPMENT COMPANY

Buildings

Environment

Industrial

Management Systems

Transportation

Urban Land

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January 6, 1999
Project No. 26100027

Paul Senft
MT. ROSE DEVELOPMENT COMPANY
22222 Mt. Rose Highway
Reno, Nevada 89511

RE: Water Well Construction and Testing

Dear Paul:

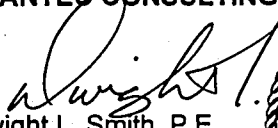
This report contains a summary of drilling, construction, pumping tests, and water quality testing for the new water well built at Mt. Rose Ski Area. In the appendices you will find the following information:

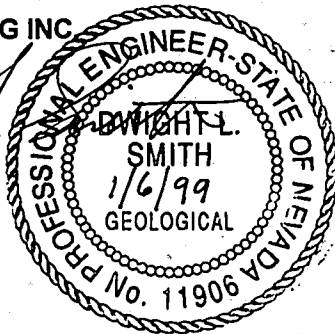
- Appendix A - Geologic and electric logs
- Appendix B - As-built drawing
- Appendix C - Pumping test results (plots)
- Appendix D - Water quality testing

It has been a pleasure working with you on this portion of the improvements at Mt. Rose Ski Area. Please do not hesitate to contact me, if you have any questions regarding equipping or operation of the well.

Sincerely,

STANTEC CONSULTING INC


Dwight L. Smith, P.E.
Hydrogeologist



DLS:rw
Enclosures
p:\geotech\6100027\wpdocs\reports\well as-built report.doc

Buildings

Environment

Industrial

Management Systems

Transportation

Urban Land

Summit Envirosolutions, Inc.

1475 Terminal Way
 Reno, NV 89506
 702-785-8888

BOREHOLE: 1
 LOGS: Natural Gamma
 SP, Resistance
 Normal Resistivity
 Temp., Fluid Resis.

PROJECT: Mt. Rose Well No.1
 CLIENT: Nevada Drilling
 LOCATION: Mt. Rose Ski Area

DATE: September 15, 1998
 COUNTY/COUNTRY: Washoe
 STATE/PROVINCE: Nevada

BOREHOLE DATA

DRILLING CONTRACTOR: Nevada Drilling
 ELEV: 8300 MSL DEPTH REF: T.O.C.

CUSTOMER TD: 500
 LOGGER TD: 496

RUN NO.	BIT RECORD			CASING RECORD		
	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	12	0	122	12	0	122
2	9 7/8	122	500	NA	NA	NA
3	NA	NA	NA	NA	NA	NA

DRILL METHOD: Mud Rotary DATE DRILLED: 9-15-98 TIME SINCE CIRC: 9-12-98
 HOLE MEDIUM: Water FLUID LEVEL: 10 feet MUD TYPE: Quick Mud
 VISCOSITY: NA WEIGHT: NA Rm: NA at 36 Deg F

GENERAL DATA

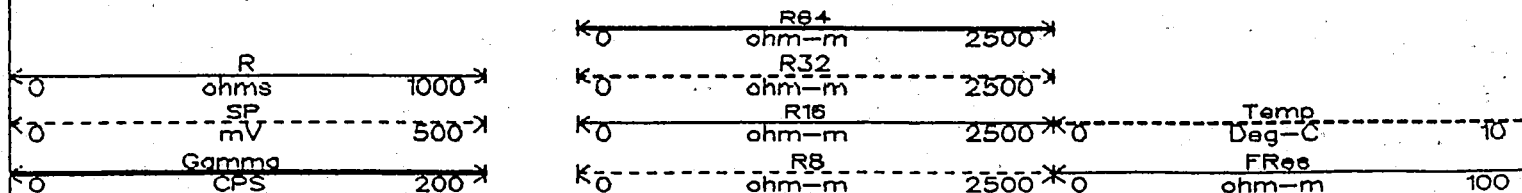
LOGGED BY: Dale Braue OTHER SERVICES: NA
 WITNESS: Lynn Zonge, Brian Gulbranson UNIT/TRUCK: NA

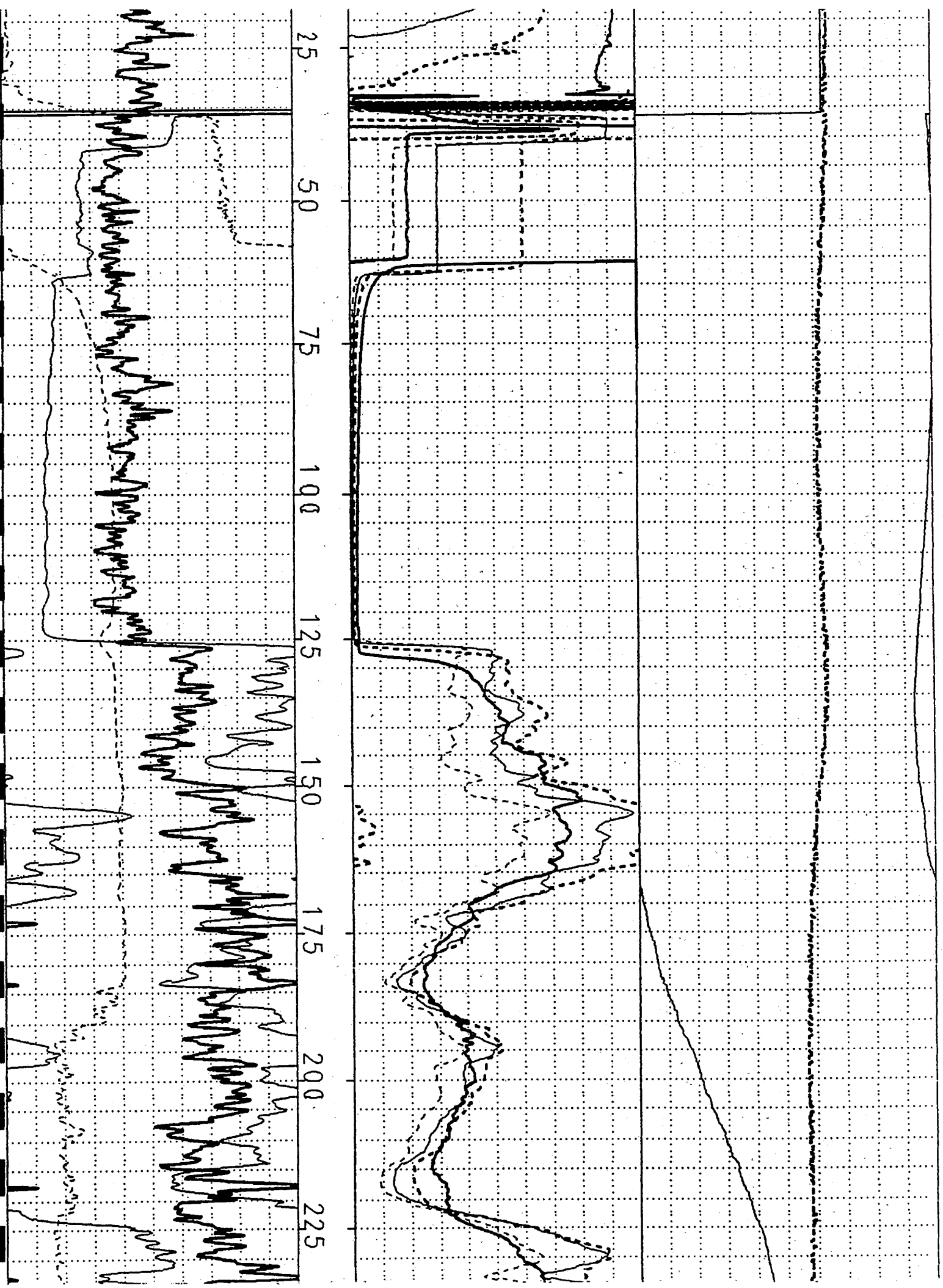
LOGGING DATA

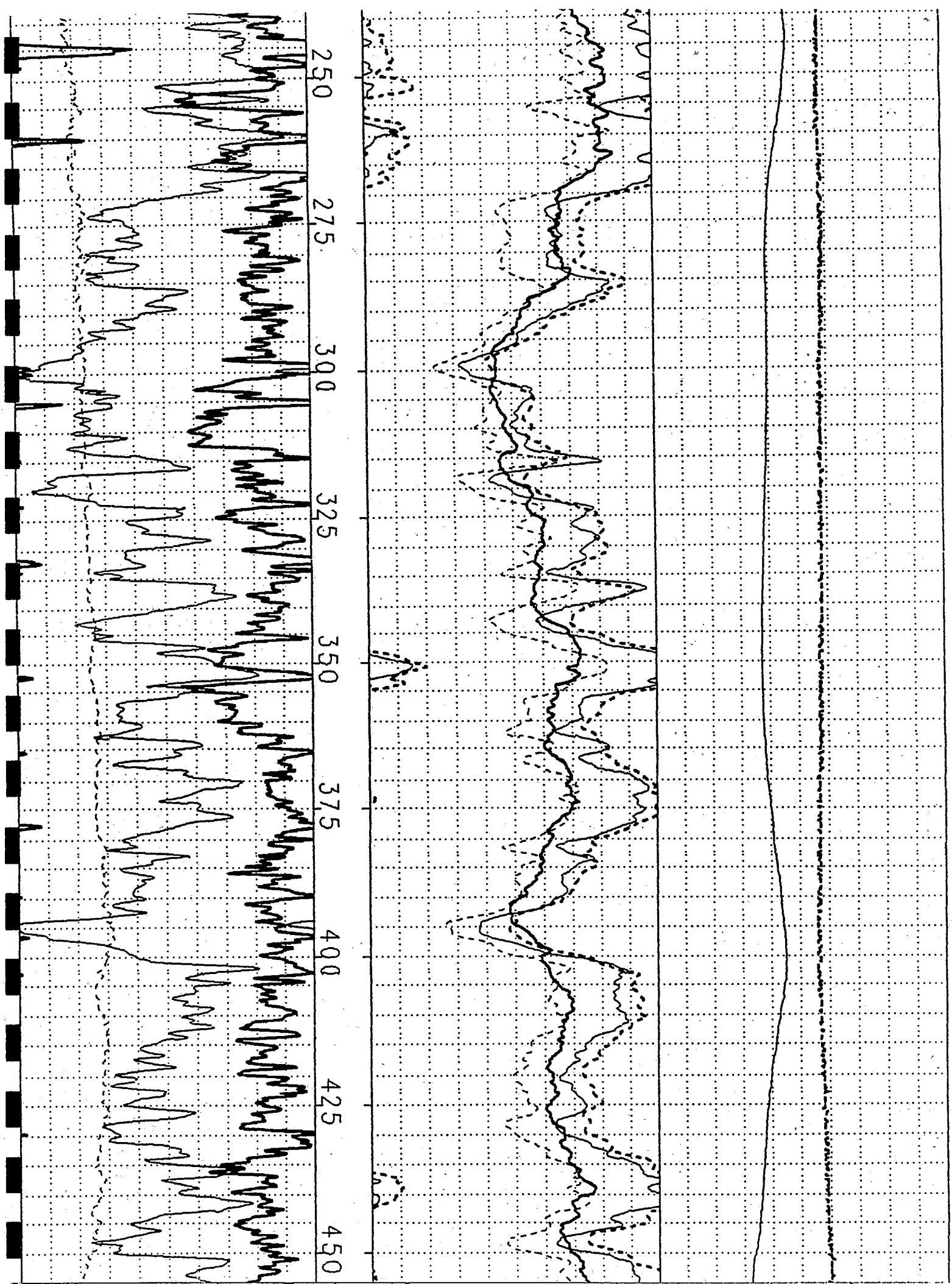
LOG FUNCTION	RUN NO.	EQUIPMENT		LOGGING		DETECTOR TYPE	SOURCE		LOGGED INTERVAL			COMMENTS	
		MODEL	PROBE S.N.	UPHOLE S.N.	DIG INT FEET		SPEED FT/MIN	TYPE	SIZE GBq	FROM	TO		INT. FEET
PolyElectric	1	MGX II			.1 ft	20 fpm	strat.	NA	NA	12	496	all	

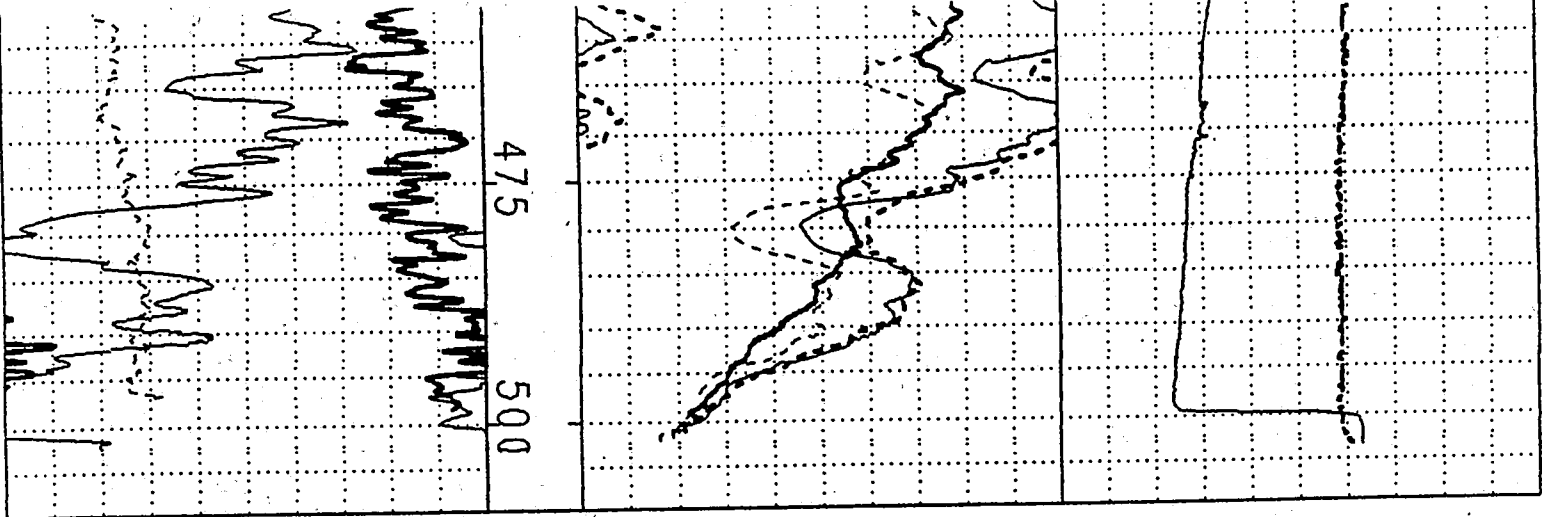
DIGITAL FILE NAME(S): well 1.ca3
 REMARKS:

Mt. Rose Ski Area Supply Well No. 1









**SUMMARY OF WELL CONSTRUCTION
MT. ROSE SKI AREA
WASHOE COUNTY, NEVADA**

Drilling and Well Construction

Drilling was commenced by Nevada Drilling, Incorporated in August, 1998 and well construction and pumping tests were completed by mid-October, 1998. Drilling encountered alluvium (gravel and sands with boulders and cobbles) down to a depth of approximately 120 feet. Granite bedrock was encountered below the alluvium. The granite bedrock was moderately to highly fractured for most the depth drilled (505 feet). The rock between 170 to 225 feet was particularly fractured, and the rock between 290 to 500 feet was also consistently fractured. A regional fracture system was apparently encountered, as hoped for during the selection of the well location.

The well is constructed of 8-inch diameter casing (inside diameter), and consists of continuous-slot wire-wrap screen (0.10 inch slot size) from 165 to 225 feet, and 265 to 485 feet. A sanitary seal of Type II cement grout ~~was~~ was placed from approximately 110 feet to within 10 feet of ground surface. Bentonite hole plug was placed in the upper 10 feet of annular space between the well casing and the bore hole.

Well Pumping Tests

The well was pumped at rates up to 750 gallons per minute (maximum capacity of the pump) and the well can efficiently produce up to 750 gallons per minute. Water levels recorded for various pumping rates are as follows:

Static Water Level	41.1 feet below top of casing
Pumping Water Level at 150 gpm	44.3 feet
Pumping Water Level at 300 gpm	47.2 feet
Pumping Water Level at 450 gpm	52.5 feet
Pumping Water Level at 600 gpm	58.7 feet
Pumping Water Level at 750 gpm	65.8 feet

A constant rate pumping test was conducted at 700 gpm. Water level recovery measurements which followed this pumping test indicate that well will need recovery time (non-pumping time) in order to avoid detrimental long-term drawdown. The static water level following the pumping test was approximately 10 feet lower than when the test was started. If pumping at a high rate were to be sustained for a long period time, without non-pumping (recovery) periods, the pumping water level would constantly decline as portions of the fracture system are depleted of water quicker than water flows into the fracture system. Large volumes of water can be withdrawn from the fracture system, as long as recovery time is allowed so that water can be replenished.

Numerous scenarios of pumping and recovery could be successfully implemented. The well could be pumped intensively in the early winter for snow making supply and then pumping reduced until after the spring time recharge occurs. For example, the well could be pumped at 600 gpm for 14 hours a day for 6 to 8 weeks, followed by minimal pumping for the remainder of the year. We can review the sustainability of what ever scenario you may desire.

Equipping the well with a pump system will be dependant on several factors, including the horse-power of the pump needed to generate the desired flow rate and lift. The 8-inch diameter casing will limit the size of submersible pump motor and diameter of the drop pipe which can be installed in the well. The desired flow rate and lift will need to be reviewed for compatibility with the