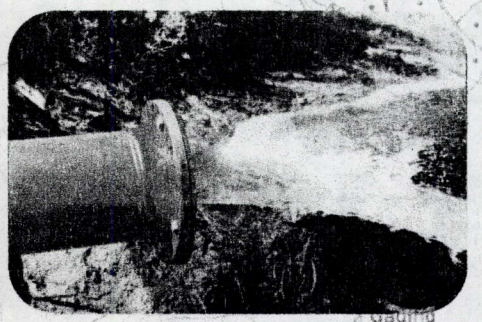
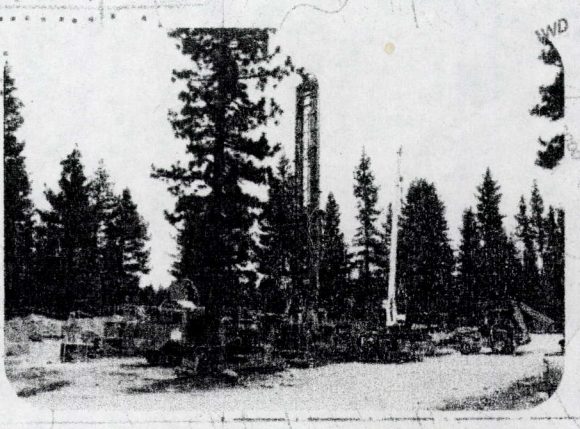
1506-00072

Callamont Estates Ground Water Development Program

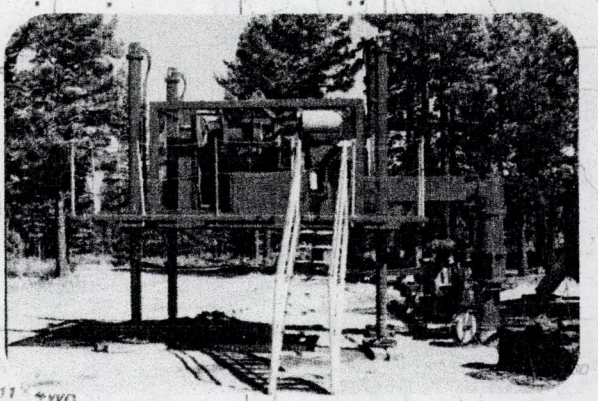
July 2001





Callamont Production Well No. 2 (North) →

Callamont Production Well No. 1 (South) →



AquA
Hydrogeologic Consulting LLC

AquA Hydrogeologic Consulting

Callamont Estates
Ground Water Development Program

Prepared For:
Conti Development
937 Tahoe Blvd., Suite 220
Incline Village, Nevada 89451

July 2001

P.O. Box 18793 • Reno Nevada 89511 • (775) 250-9700 • Fax (775) 841-0946 • DavidECarlson@email.msn.com

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1.0 EXECUTIVE SUMMARY

This report presents results of the ground water supply development program for Callamont Estates, Washoe County, Nevada. This program involved the drilling of a test well and two large diameter production wells. The two production wells are capable of meeting the water supply requirement of the development. Any excess water will be available for Washoe County use. The findings and recommendations of the development program are as follows:

1.1 Findings

- An 800 foot test well was drilled, constructed, and tested near the center of the development. Fractured Andesite and layers of sand and gravel were encountered during drilling. These favorable results, along with a downhole geophysical log which indicated good ground water potential, provided enough evidence to recommend going forward with the ground water supply development program.

- Production Well (PW) No. 1 (South) is located 50 feet from the test well and was drilled and constructed to a depth of 900 feet. To minimize impact to nearby shallow domestic wells, blank steel casing was installed from ground surface to a depth of 400 feet. The remaining portion of the borehole contains 460 feet of 14-inch, 80-slot, wire-wrapped screen.

- Based on data analysis of the 10-day constant-discharge pumping test, Production Well No. 1 (South) has been given a production pumping rating of 500 gallons per minute (gpm).

- Production Well (PW) No. 2 (North) was drilled and constructed approximately 2,000 feet north of Production Well No. 1 (South). This well was drilled to a depth of 980 feet. Like the design used in Production Well No. 1 (South) to minimize potential impact to shallow domestic wells, blank casing was installed to a depth of 480 feet below ground surface. The remaining portion of the borehole was completed with 460 feet of 14-inch, 80-slot, wire-wrapped screen.

- Based on data analysis of the 7-day constant-discharge pumping test, Production Well No. 2 (North) has been given a production pumping rating of 600 gpm.

- Data analysis of both pumping tests indicates there is mutual pumping interference between the two production wells. This interference was calculated to be 10 feet after 30 days of constant pumping.

1.2 Recommendations

- Install a 500 gpm production pump in Production Well No. 1 (South) at a depth of 600 feet below ground surface.

- Install a 600 gpm production pump in Production Well No. 2 (North) at a depth of 560 feet below ground surface.

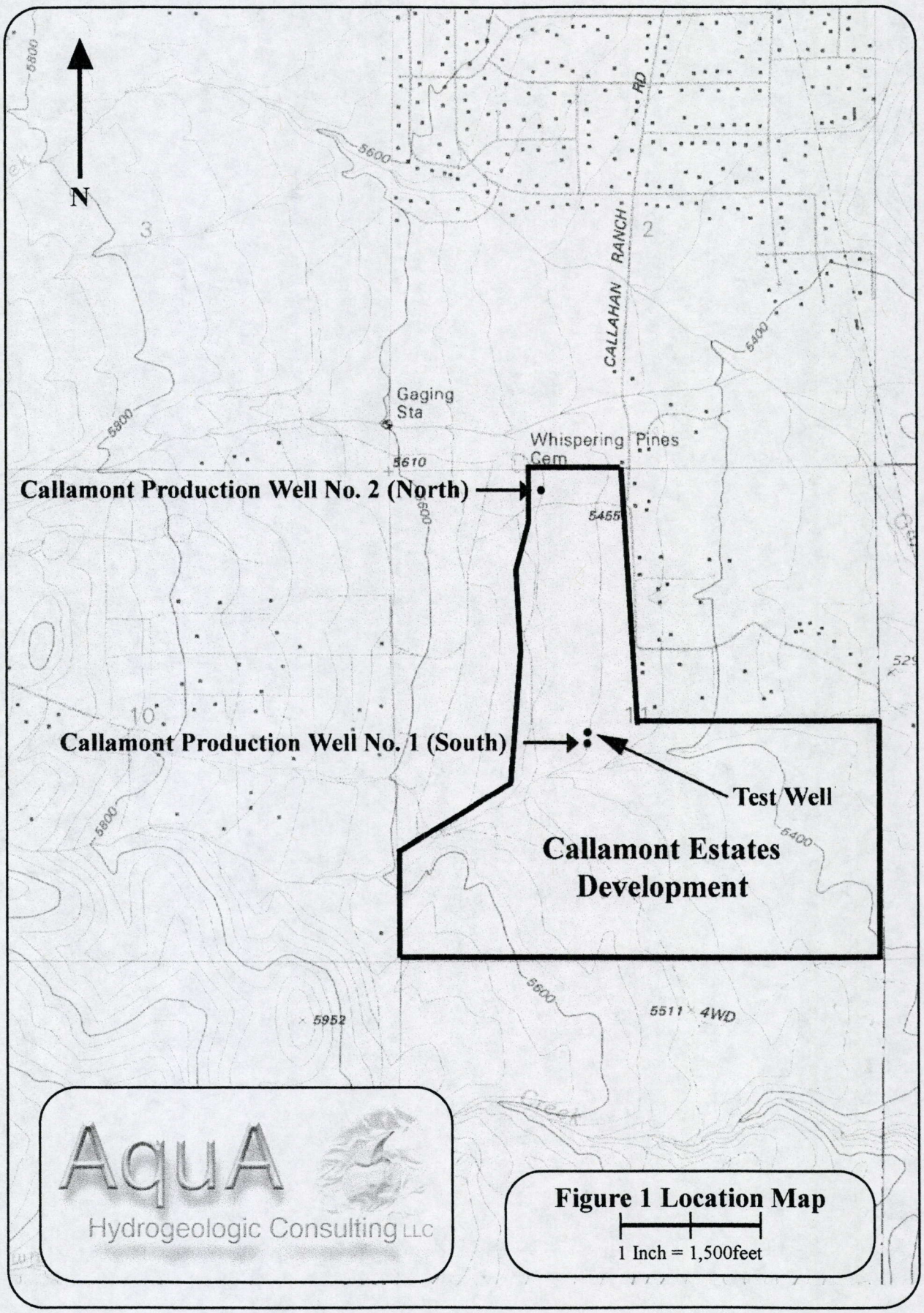
- Monitor the water levels of the two production wells and test well, initially on a monthly basis. Evaluation of this data will allow for prediction of well or aquifer deterioration over time.

- Data that is collected from the three wells should be incorporated into a regional data base, and then put into a regional ground water flow model.

2.0 INTRODUCTION

This report presents the results of the ground water supply development program for the Callamont Estates Development. Two production wells were drilled, constructed, and tested during this program. The location of both production wells and a third test well are shown on Figure 1. Both wells are located along Callahan Ranch Road, on the Mt. Rose Fan Area of Washoe County, approximately 10 miles southwest of downtown Reno, Nevada. Specifically, Production Well No. 1 (South) is located within the NE1/4 SW1/4 of Section 11, T.17N., R.19E, while Production Well No. 2 (North) is located within the NW1/4 NW1/4 of Section 11, T.17N., R.19E.

Prior to the drilling of the two production wells, an exploration/test well was drilled and completed to a depth of 800 feet, approximately 50 feet north of PW-1. Data collected during the drilling and air-lift testing of this well confirmed that the site was favorable for the development of a production well with a capacity of approximately 500 gpm. The confirmation of this site was based on geologic samples collected during the drilling program, downhole geophysical logging, and air-lift results of the constructed 6-inch diameter cased test well.


N
CALLAHAN RANCH RD
Gaging Sta
Whispering Pines Cem
Callamont Production Well No. 2 (North)
Callamont Production Well No. 1 (South)
Test Well
Callamont Estates Development
5600
5400
5610
5455
5952
5511 4WD
AquA
Hydrogeologic Consulting LLC
Figure 1 Location Map
1 Inch = 1,500feet

3.0 GEOLOGIC AND HYDROGEOLOGIC SETTING

This section presents a general overview of the geologic and hydrogeologic setting of the Mt. Rose Fan Area covered in this report. This area is located on the eastern flanks of the Sierra Nevada Mountain Range which was formed by intrusions of granitic rock. To the east of the proposed development is the Carson Range. This Range is part of the Basin and Range Province which makes up most of Nevada and Utah. "The mountain ranges in western Nevada are primarily composed of Mesozoic and early Tertiary intrusive rocks and tertiary volcanic rocks. The intervening basins consist of deep accumulations of early Cenozoic to Quaternary are sediments. Pleistocene age glaciation in the higher elevations west of the proposed development resulted in glacial outwash, debris flows, and flood materials being deposited on the eastern flank of the Carson Range and in the Washoe Valley Truckee Meadows area resulting in the development of the Mount Rose Fan complex." (Fault Investigation, Nortech, March 5, 2001).

The proposed development area also contains numerous north-south trending faults which are shown on the Washoe City Folio, Geologic Map, prepared by the Nevada Bureau of Mines and Geology. These faults may provide secondary permeability fractures to the granodiorite and andesitic volcanic rocks of the area which enable significant amounts of ground water to be conveyed via the fractures.

During the drilling of the three drill holes completed for this project, the drill cuttings revealed a significant thickness of andesitic volcanic rocks, which were interbedded with various alluvial deposits.

The Mt. Rose Fan Area during the past five years has seen extensive ground water development. In addition to the existing 200 or so domestic wells which have been drilled, there have been seven large diameter production wells, including the Callamont production wells. To date, the aquifer appears sufficient to meet the needs of the existing users.

4.0 WELL DRILLING, CONSTRUCTION, DEVELOPMENT, AND TESTING

This section presents results of the drilling and construction of the test well and two production wells that were completed under the water supply development program for Callamont Estates. The well drilling, construction, development, and testing activities were conducted by Lang Exploratory Drilling, Elko, Nevada, under the direct supervision of AquA Hydrogeologic Consulting, Reno, Nevada. The drilling, construction, and development activities took place during the period of March 29 through April 18, 2001. During this period AquA personnel documented all on-site activities. The following sub-sections describe the field activities in detail.

4.1 Test Well

The drilling and construction of the test well commenced on March 29, 2001 and was completed on April 2, 2001. This construction and testing program is summarized as follows:

A nominal 19-inch diameter borehole was drilled by a conventional mud-rotary drilling method to a depth of 60 feet, after which a 13-3/8 inch diameter blank steel surface casing was installed to total depth and cemented into place. A 12-1/4 inch diameter borehole was then drilled to a depth of 820 feet below ground surface using the flooded reverse drilling method. After completion of the borehole to a depth of 820 feet, a downhole geophysically survey was conducted. Based on results of drill cuttings and the geophysical survey, a test well design was detailed. This design included the installation of 6-inch diameter casing from ground surface to a depth of 800 feet. Blank casing was installed from ground surface to 400 feet, between 420 and 440 feet, and between 600 and 680 feet. The rest of the casing schedule included installation of 80-slot perforated casing from 400 to 420 feet, between 440 and 600 feet, and from 680 feet to total depth of 800 feet.

After the test well was developed, an air-lift testing program was conducted to determine ground water yield potential for this area. During the air-lift testing program, 81 gpm was produced with 20 feet of drawdown. This information provided a basis for confirming that this area had the potential for development of a production well capable of producing in excess of 500 gpm. All details of the drilling, construction, development, and air-lift testing of this test well are included in Appendix A.

4.2 Production Well No. 1 (South)

The drilling and construction of Production Well No. 1 commenced on April 3, 2001 and was completed on April 10, 2001. Highlights of the drilling, construction, and development program follows.

- A nominal 38-inch diameter borehole was drilled to thirteen feet below ground surface, then 33-inch diameter blank steel casing was cemented into place.

- After the surface casing was installed, a 29-inch diameter borehole was drilled to a depth of 100 feet with 22-inch diameter blank steel casing cemented into place.

- A nominal 19-inch diameter borehole was drilled to total depth of 910 feet. The design of the production well included the following casing schedule:

    - 14-inch diameter wall blank steel casing from ground surface to a depth of 400 feet,
    - 14-inch diameter 80-slot wire-wrapped screen from 400 to 540 feet,
    - 14-inch x 0.25-inch wall blank casing from 540 to 580 feet, and
    - 14-inch diameter 80-slot wire-wrapped screen from 580 to 900 feet.

- After the casing was installed, 1/4-inch by 3/8-inch gravel pack was installed in the annular space from 910 to 325 feet, then 1/8-inch by 1/4-inch gravel pack was installed from 325 feet to ground surface.

- Figure 2 is an as-built drawing of the constructed production well.

- A complete Test Well Log of Borehole and Well Construction Summary is contained in Appendix A.

The air-lift development program commenced with the well being air-lifted from total depth. This initial air-lift phase removed drilling fluid contained within the well casing and from the borehole wall, as water was drawn into the well casing area. After this initial phase, a drilling fluid dispersant product named Aqua Clear was jetted and swabbed into place opposite the screen sections of the well. The Aqua Clear was allowed to work on the borehole mud cake for twelve hours, then it was air-lifted from the well. Each 40-foot section of screen was air-lifted, until the water being discharged from the well was nearly sand free. A total of 46 hours was spent air-

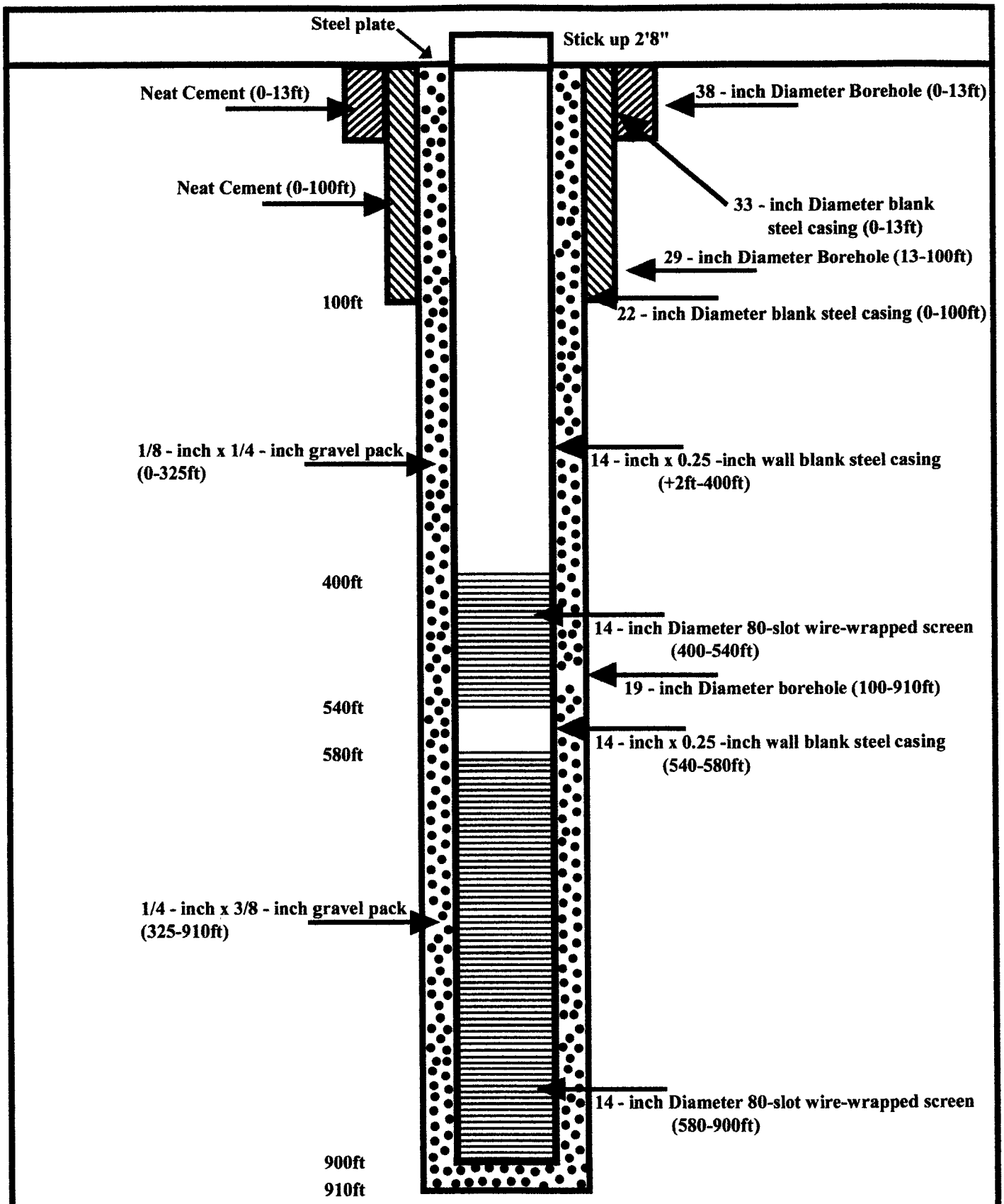


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Figure 2
Callamont Production Well No. 1 (South)
As-built Drawing **July 2001**

lifting the screen sections of the well. At the end of the air-lift development program, water level and discharge data collected indicated that the use of Aqua Clear and the air-lift program increased the well yield approximately 20 percent.

The well development program continued with the installation of a test pump capable of producing up to 1,500 gpm being installed at a depth of 560 feet bgs. The pump development program commenced with an aggressive surging of the well with an initial discharge rate of 300 gpm. The surging program and water discharge from the well was increased incrementally with time, until a maximum discharge from the well of 1,150 gpm was reached. After the initial surging at 300 gpm, the sand content within the water being discharged (as recorded by the Rossum sand tester) was below the Washoe County standard of 0.1 ppm at each incremental increase in discharge. At the end of the pump development program, ground water from this well contained no sand.

4.3 Production Well No. 2 (North)

The drilling and construction of Production Well No. 2 commenced on April 11, 2001 and was completed on April 18, 2001. A summary of the drilling and construction activity is described as follows:

- A nominal 38-inch diameter borehole was drilled to ten feet below ground surface, then 33-inch diameter blank steel casing was cemented into place.

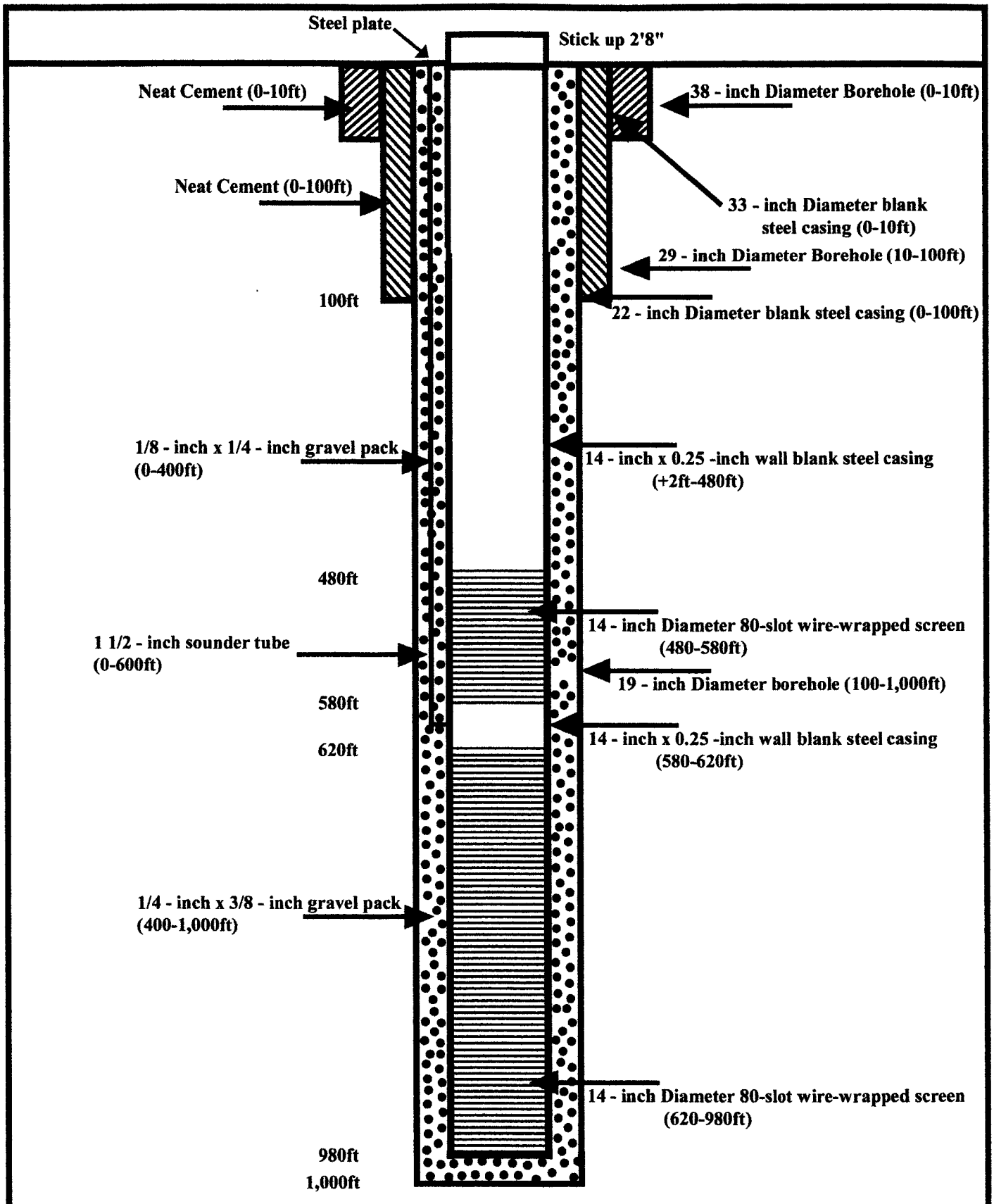
- After the surface casing was installed, a 29-inch diameter borehole was drill to a depth of 100 feet with 22-inch diameter blank steel casing cemented into place.

- A nominal 19-inch diameter borehole was then drilled to a depth of 1,000 feet. The design of the production well included the following casing schedule:

    - 14-inch x 0.25-inch diameter blank steel casing from ground surface to a depth of 480 feet,
    - 14-diameter 80-slot wire-wrapped screen from 480 to 580 feet,
    - 14-inch x 0.25-inch wall blank steel casing from 580 to 620 feet, and
    - 14-inch diameter 80-slot wire-wrapped screen from 620 to 980 feet.

- After the casing was installed, 1/4-inch by 3/8-inch gravel pack was installed in the annular space from 1,000 to 400 feet, then 1/8-inch by 1/4-inch gravel pack was installed from 400 feet to ground surface.

- Figure 3 is an as-built drawing of the constructed production well.
- A complete Log of Borehole and Well Construction Summary is contained in Appendix A.



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Hydrogeologic Consulting

Figure 3
Callamont Production Well No. 2 (North)
As-built Drawing **July 2001**

The well development program commenced with the well being air-lifted from total depth. This initial air-lift phase removed drilling fluid contained within the well casing and from the borehole wall, as water was drawn into the well casing area. After this initial phase, Aqua Clear was jetted and swabbed into place opposite the screen sections of the well. The Aqua Clear was allowed to work on the borehole mud cake for twelve hours, then it was air-lifted from the well. Each 40 foot section of screen was air-lifted, until the water being discharged from the well was nearly sand free. A total of 44 hours was spent air-lifting the screen sections of well PW-2. The well development program continued with the installation of a test pump capable of producing up to 1,500 gpm being installed at a depth of 580 feet bgs. The pump development program commenced with an aggressive surging of the well with an initial discharge rate of 200 gpm. The surging program and water discharge from the well was increased incrementally with time, until a maximum discharge from the well of 1,000 gpm was reached. Unlike Production Well No. 1 there were recordable amounts of sand (as measured by the Rossum sand tester) throughout the incremental increases in discharge. However, at the end of the pump development program, water discharge from the well was below the Washoe County standard of 0.1 ppm and the water discharging from the well was considered sand free.

5.0 AQUIFER TESTING

The aquifer testing program for both production wells included a three incremental step-drawdown test with each step having a duration of 100 minutes followed by a constant-discharge testing program. Production Well No.1 (South) was pump tested for ten days, while Production Well No. 2 (North) was pump tested for seven days. Each of the testing programs conducted on the respective production well is described in the following sections.

5.1 Production Well No. 1 (South)

The Production Well No. 1 step-drawdown pumping test was conducted on May 7, 2001. The testing program consisted of three steps, each 100 minutes in length. The discharge rates were 770, 950, and 1,100 gpm, respectively. Results of the step-drawdown test are summarized on Table 1. Based on drawdown data provided by the step test, a pumping rate of 800 gpm was chosen for the ten-day (240-hour) constant-discharge pumping test.

Table 1. Production Well No. 1 (South) Step-Drawdown Data

Step	Duration (minutes)	Discharge rate (gpm)	Drawdown After Step (feet)	Specific Capacity (gpm/ft.dd)
1	100	770	159.79	4.81
2	100	950	232.60	4.08
3	100	1,100	289.16	3.80

A ten-day constant-discharge pumping test was conducted beginning May 8, 2001 and ending on May18, 2001. A production pumping rate of 800 gpm was maintained for the duration of the testing period. Water levels were measured in the production well, the test well (located 50 feet away), and two domestic wells (located approximately 350 to 400 feet from the production well).

The ten-day constant-discharge pumping test commenced on May 8, 2001 at 0920 a.m. A pre-pumping water level was recorded at 146.30 feet at top of casing. During the ten-day test, the discharge rate was maintained at a nearly constant rate of 800 gpm. Depth to water at the end of the ten-day pumping period was 429.51 feet. A drawdown of 283.21 feet was calculated. This value indicated a specific capacity of 2.82 gpm/ft.dd.

The observation well used during this ten-day test was the six-inch test well (located 50 feet from the production well). Initial water level at the observation well was measured at 144.10 feet

below top of casing. The water level at the end of the ten-day test was measured at 288.29 feet indicating 144.19 feet of drawdown.

Of the two domestic wells which were monitored during the pumping period, one showed an apparent response to the production pumping. About four feet of drawdown was measured. Because both domestic wells were in use during the testing program, detailed analysis of the data collected from the wells could not be made with any degree of certainty.

The constant-discharge test data was analyzed using both Theis and Cooper-Jacob Methods. The Cooper-Jacob Method was used for this report, because it provided a graphical means of predicting long-term drawdown. The Cooper-Jacob Method is a valid method to be used for this analysis, because of the testing duration and the close proximity of the test well which was used as a observation well during the testing program.

During the test drawdown values for both of the monitoring wells produced the following transmissivity values when plotted on semi-log graph paper (Figure 4). For the production well, a transmissivity values of 4,184.42 gal/d/ft.dd was calculated; while for the test well, a transmissivity value of 623.14 gal/d/ft.dd was calculated.

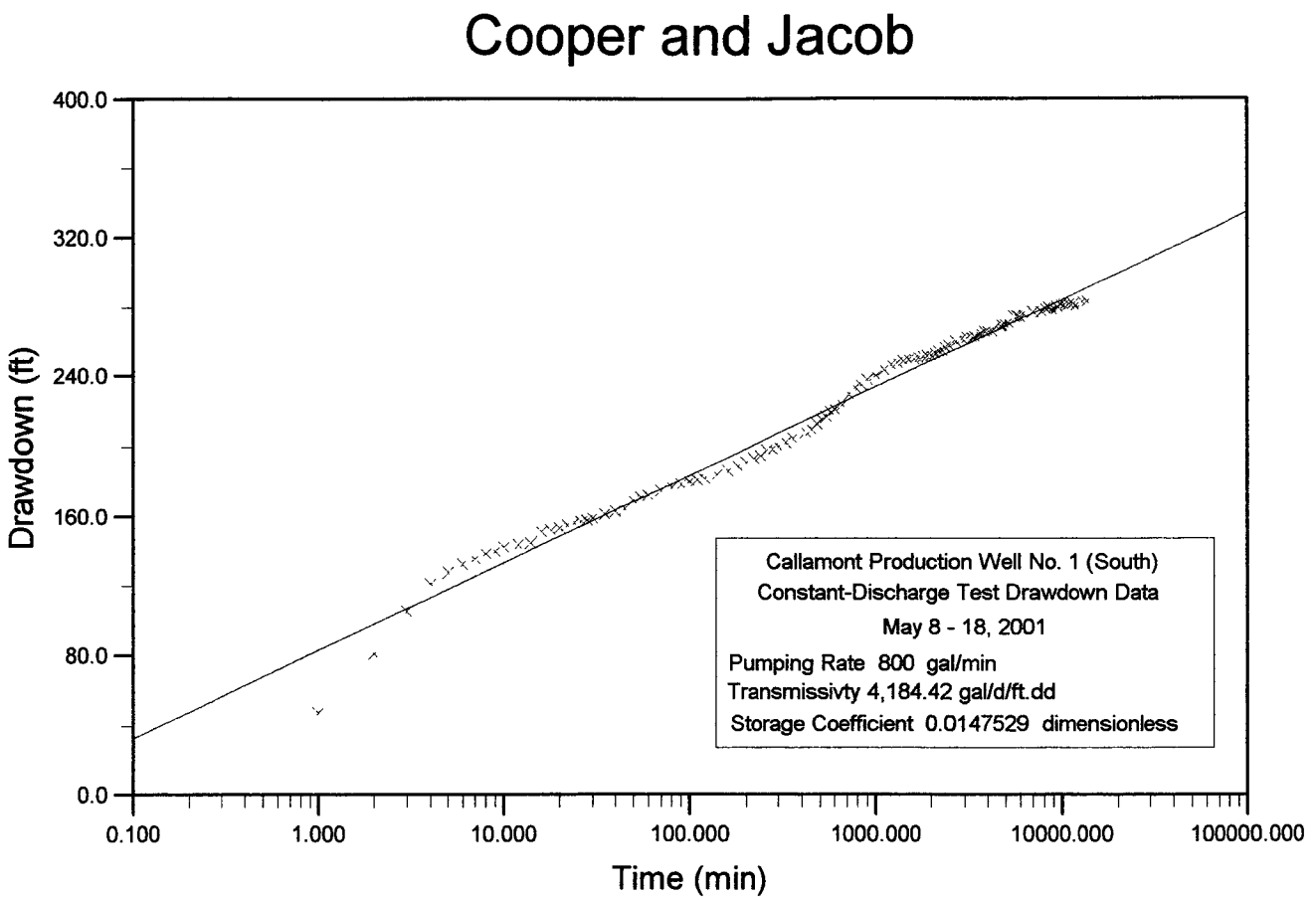
Storage coefficient values were calculated for both wells and produced the following values. For the production well a value of 0.0147529 was calculated. While the observation well data produced a value of 0.00004332. The production well value indicates an aquifer that is semi-confined, while the observation well data indicates an aquifer that has more confined properties. A possible reason for the range of values is the heterogeneity of the geologic material that was encountered during the drilling of both wells.

After the conclusion of the ten-day constant-discharge test, recovery water level data was collected from both wells for nearly four days. The transmissivity value for the production well was calculated to be 3,911 gal/d/ft.dd, while the value obtained from the observation well was 4,488 gal/d/ft.dd.

5.2 Production Well No. 2 (North)

A step-drawdown pumping test was conducted on Production Well No. 2 on May 26, 2001. The testing program consisted of three steps, each 100 minutes in length. The discharge rates were 400, 600, and 800 gpm, respectively. Results of the step-drawdown test is summarized on Table

Figure 4. Production Well No. 1 (South) and Test Well Pumping Tests Drawdown Graphs



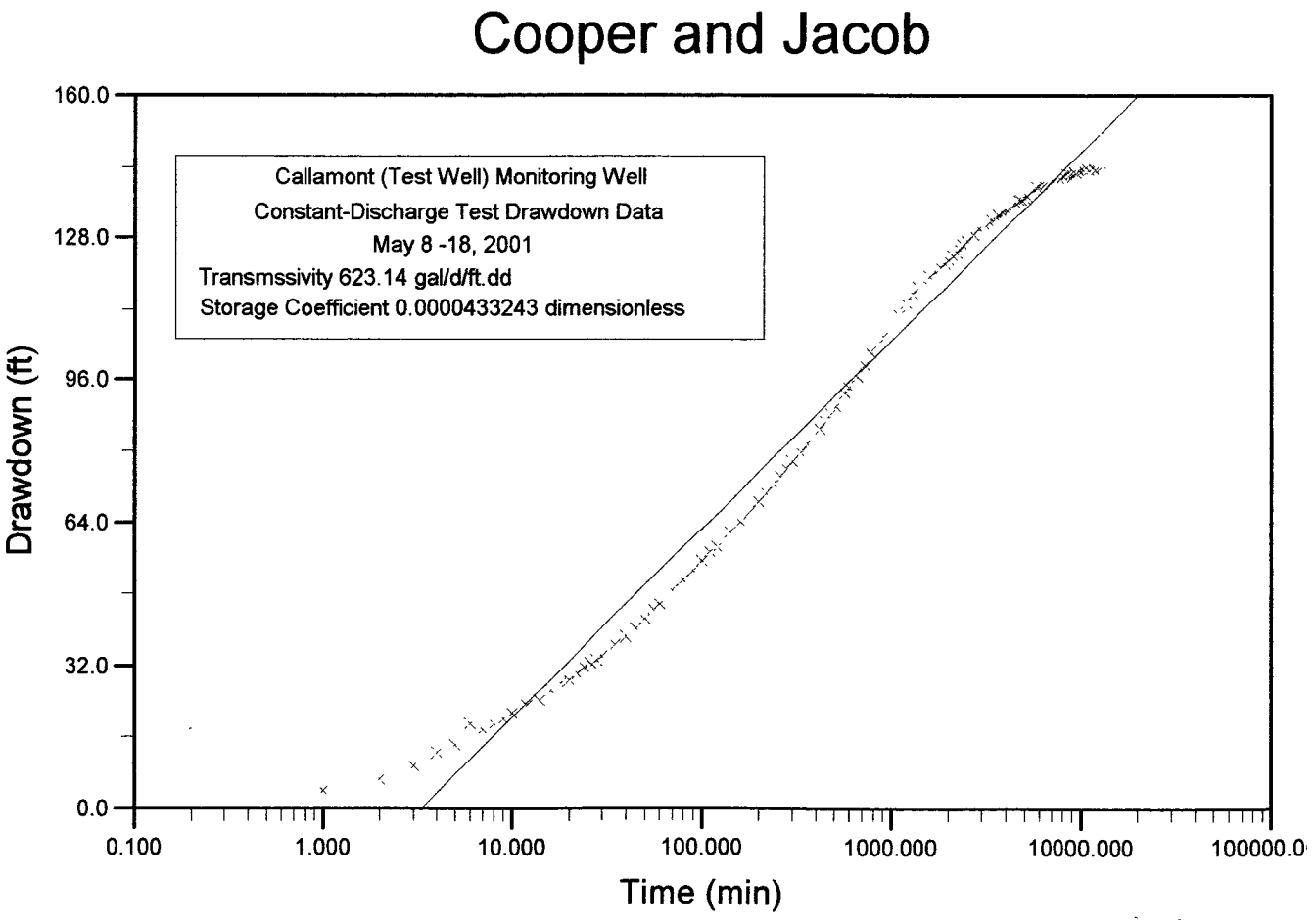
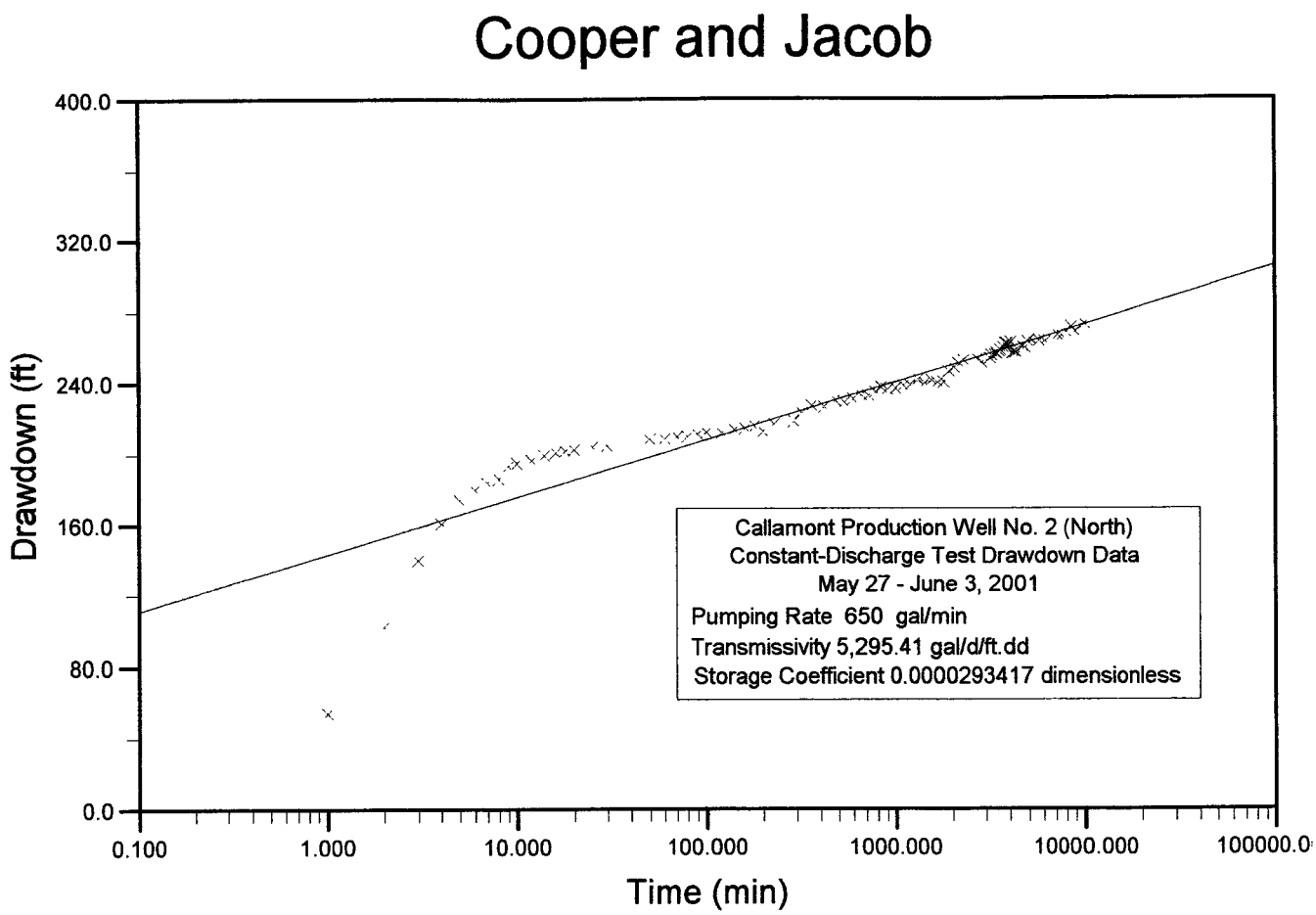


Figure 5. Production Well No. 2 (North) Pumping Tests Drawdown Graph



6.0 PRODUCTION WELL RATINGS

The following is the production pumping rating and pump setting that have been given to both of the Callamont production wells.

- Production Well No. 1 (South) has been given a pumping rating of 500 gpm, with the pump intake at 560 feet below ground surface. For specification purposes, a pumping water level of 400 feet below ground surface should be considered.

- Production Well No. 2 (North) has been given a pumping rating of 600 gpm, with the pump intake at 600 feet below ground surface. For specification purposes, a pumping water level of 460 feet below ground surface should be considered.

2. Based on drawdown data provided by the step test, a pumping rate of 650 gpm was chosen for the proposed ten-day (240-hour) constant-discharge pumping test.

Table 2. Production Well No. 2 (North) Step-Drawdown Data

Step	Duration (minutes)	Discharge Rate (gpm)	Drawdown After Step (feet)	Specific Capacity (gpm/ft.dd)
1	100	400	115.24	3.47
2	100	600	193.12	3.10
3	100	800	296.02	2.70

A ten-day constant-discharge pumping test was conducted beginning May 27, 2001 and ending on June3, 2001. A production pumping rate of 650 gpm was maintained for the duration of the testing period. The flow rate was measured by both an in-line totalizing meter and an orifice plate at the place where the water was discharged into Galena Creek. The constant discharge test was originally schedule to go ten days, but after seven days, the data which was being collected was sufficient to allow the pumping to be terminated early.

A pre-pumping water level was recorded at 150.36 feet at top of casing. Depth to water at the end of the seven-day pumping period was 423.25 feet. A drawdown of 272.89 feet was calculated. This value indicated a specific capacity of 2.38 gpm/ft.dd.

During the pumping of the production well, three nearby shallow domestic wells were monitored for possible pumping interference effects. No interference effects were recorded during the pumping program. While there was no water level changes in the northern shallow domestic wells, there was pumping interference effects being observed in Production Well No. 1 (South). During the seven-day pumping period, 5.80 feet of drawdown was observed in Production Well No. 1. When plotted on semi-log graph paper, the interference effects after 30 days of continuous pumping resulted in 10.4 feet of drawdown interference at the PW-1.

A transmissivity value of 5,295.41 gal/d/ft.dd. was calculated for Production Well No. 2, along with a storage coefficient value of 0.00002934 for the drawdown data. A semi-log graph of the drawdown data set is show in Figure 5.

After conclusion of the seven-day constant-discharge test, recovery water level data was collected for two days. The transmissivity value was calculated to be 5,535 gal/d/ft.dd.

7.0 WATER QUALITY

Prior to shutting off the test pump at the end of both constant-discharge tests, Washoe County personnel collected water quality samples and submitted them for laboratory analysis. Results from both production wells indicate excellent water quality which meets all State of Nevada Drinking Water Standards. Detailed results of the laboratory analysis are included in Appendix C.

8.0 REFERENCES

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Nevada Bureau of Mines and Geology, Washoe City Folio, Geologic Map, 1975

Nortech Geotechnical/Civil Consultants, Ltd, 2001, Fault Investigation 352+\- Acre Galena Property, Washoe County, Nevada, March 5, 2001

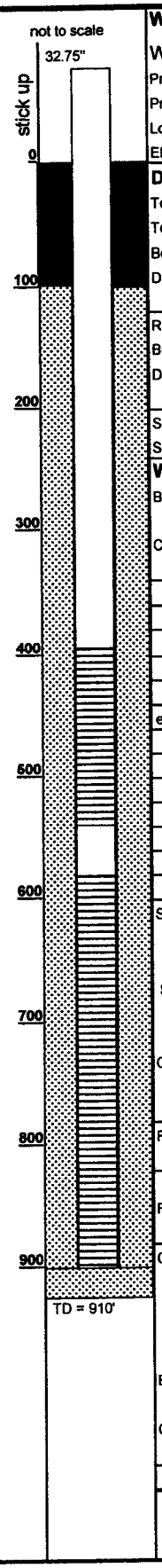
Washoe County Department of Public Works, Utility Division, 1993, St. James' Exploratory Drilling, October - December 1993

State of Nevada, Division of Water Resources, Well Logs

Personal Communication, Dan Dragan, Washoe County, April - June, 2001

Appendix A

Production Well No. 1, No. 2, and Test Well
Log of Boreholes and Well Construction Summary



WELL CONSTRUCTION SUMMARY

WELL NAME CP-1
Project: Callamont
Project #:
Location: Callahan Ranch Road
Elevation: 5,480

Coordinates: SE1/4 NW1/4, Section 11, T.17N, R19E.
Casing Stickup: 32.75"

DRILLING SUMMARY:

Total Depth-Borehole: 910'
Total Depth-Well: 900'
Borehole Diameter: 38", 29", 19"
Driller: Lang Drilling
Ron Behrandt, Tool Pusher
Rig Type: LM-120
Bit(s): 38", 29", 19"
Drilling Fluids: Bentonite Mud, with polymer.
Surface Casing: 0 - 100', 22-inch in dia.
Surface Seal: Neat Cement; 0 - 100'

WELL DESIGN:

Basis: Geologic Log Yes
Geophysical Log No

Casing String(s): C=Casing S=Screen

+3'	stick up				
C1	0	400.0			
S1	400.0	540.0			
C2	540 0	580.0			
S2	580.0	900.0			
end cap	900.0	900.5			

Screen. S1 14-inch diameter 80 Slot Wire
Wrap from 400.0 to 540.0 feet

Screen: S2 14-inch diameter 80 Slot Wire
Wrap from 580.0 to 900.0 feet

Centralizers: One approximately every 100'

Filter Pack: 910' to 325', Supreme 1/4" x 3/8"gravel.

Filter Pack: 325' to 80', Supreme 1/8" x 1/4"gravel.

Cement: Surface seal for well is with neat cement from 100' to 0'.

Bentonite:

Other:

CONSTRUCTION TIME LOG:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling:	04/03/01	3:00AM	04/06/01	11:45AM
Geophys Log:	none			
Casing:				
0-13': 33-inch	04/03/01	3:00AM	04/03/01	12:15PM
0 - 100': 22-inch	04/03/01	3:37PM	04/04/01	7:00AM
+3' - 900'; 14-inch	04/06/01	8:30PM	04/07/01	9:00AM
Filter Pack:	04/07/01	11:15AM	04/07/01	8:15PM
Airlift/Open Ended:	04/07/01	9:15PM	04/08/01	1:30AM
Jet Aqua Clear:	04/08/01	1:30AM	04/08/01	6:15AM
Swab Aqua Clear:	04/08/01	6:15AM	04/08/01	6:00PM
Airlift/Swab:	04/08/01	6:15PM	04/10/01	4:26PM
Airlift Pump Test	04/10/01	6:45PM	04/10/01	7:45PM
Lower Seal:				
Cementing:				

WELL DEVELOPMENT:

Started air lifting mud open ended 4-7-01 at 9:15PM, completed airlifting mud 4-8-01 at 1:30AM, jetted in Aqua Clear 4-8-01 at 1:30AM, jetted and swabbed in Aqua Clear from bottom to top, stopped 4-8-01at 6:15AM. Dry swabbed in Aqua Clear 4-8-01 at 6:15AM, stopped 4-8-01 at 6:00PM, allowing 12 hours for Aqua Clear to work on the mud cake. Started airlift swab developing 4-8-01 at 6:15PM, tripped pipe to bottom of hole (900') and started airlifting with swab. Swabbed pipe up and down 40' sections, working the way to top and bottom until discharge appeared clean. Then Airlift tested aquifer open ended 4-10-01 at 6:45PM, stopped 4-10-01 at 7:45PM . Start up static water level was 161.76', drawdown was 65.55 Feet after 60 minutes, average lift production rate was 483.5 gpm.

COMMENTS:

Drilled with conventional circulation from 0 to 130', switched to flooded reverse circulation for 130' to 910'. Surface Casing (22" diameter) set at 100' Below Ground Surface (BGS), with a 24" temporary stick up. Used 63 bags of Quick Gel for drilling mud to emplace Surface Casing. Set in Surface Casing with 200; 94 lb bags of neat cement, treated with 7; 50 lb bags of calcium chloride. The Surface Casing was cut off flush with the ground after the Production Well Casing (14" diameter) was installed. The Production Well Casing was set from +36" to 900.5' BGS. This includes the Production Well end cap, screen and casing assembly see construction diagram.

BOREHOLE LOG Owner: Well Number: **CP-1**

Project: Callamont Project Number: Page 1 of 8

Location: Calhan Ranch Rd. Driller: Lang Drilling, Ron Behrandt Date Time

Coordinates: Rig: LM-120 Start: 4/3/2001 3:00AM

Elevation: 5,480' Bits: 38", 29", 19" Finish: 4/6/2001 11:45AM

Total Depth: 910' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log NO

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject. gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
	5.00				0							25%	10%	10%		0 to 60': SURFACE ALLUVIUM, unconsolidated, sand, gravel, cobbles and boulders, dark grey to grey, occasionally brown, subrounded to subangular, mixed lithologies of predominantly granodiorite and andesite, clay content varies, clay is brown.
10																
	5.00				0							25%	10%	10%		0 to 20' interval is as above.
20																
	5.00				0							30%	10%	10%		20' to 30' interval is as above.
30																
	2.22				0							30%	10%	10%		30' to 40' interval is as above.
40																
	2.22				0							30%	10%	10%		40' to 50' interval is as above.
50																
	0.83				0							10%	10%	10%		50' to 60' interval is as above.
60																
	0.52				1							>5%	5%	10%		60' to 170' Mixed Colluvium, unconsolidated, occasionally dark brown, dark gray to gray chips with plagiclase feldspar, quartz, oligroclase feldspar, hornblende and mica, rounded to subangular, mixed lithologies of predominantly andesite and granodiorite, clay content varies brown clay decreases.
70																
	0.66				0							10%	5%	10%		70' to 80' interval is as above, but increasing sand content.
80																
	0.32				0							>5%	5%	5%		80' to 90' interval is as above, but coarse to medium sand, well sorted or poorly graded, clay and silt content drop off.
90																
	0.62				0							10%	5%	5%		90' to 100' interval is as above, but clay content increases.
100																
	1.67				0							10%	10%	5%		100' to 110' interval is as above, but medium gravel with sand.
	0.50															
110																
	2.00				0							5%	5%	10%		110' to 120' interval is as above, but now rounded to platy.
120																

BOREHOLE LOG Owner: Well Number: **CP-1**

Project: Callamont Project Number: Page 2 of 8

Location: Callhan Ranch Rd. Driller: Lang Drilling, Ron Behrandt Date Time

Coordinates: Rig: LM-120 Start: 4/3/2001 3:00AM

Elevation. 5,480' Bits: 38", 29", 19" Finish: 4/6/2001 11:45AM

Total Depth: 910' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: NO

Pen. R.		Circulation				Samples											Description
Depth	Penetration Rate, in feet/min	Inject. gpm	Return. gpm	Alteration	Rig Response (1 to 5)	Material	Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
																60' to 170' MIXED COLLUVIUM, unconsolidated, occasionally dark brown, dark gray to gray chips with plagiclase feldspar, quartz, oligioclase feldspar, hornblende and mica, rounded to subangular, mixed lithologies of predominantly andesite and granodiorite, clay content varies. 120' to 130' interval is coarse sand, well graded.
	1.11				1							5%	5%	15%		
130																
												25%	10%	5%		130' to 140' as above, but sand and gravel with increasing clay and silt content.
	0 83				0											
140																
	1 25															140' to 150' as above, but sand and gravel with decreasing clay content
					0							20%	10%	5%		
	1.00															
150																
	0.45															150' to 160' interval is as above, with increasing clay content, many clay balls, naturally rounded fragments, gravel with sand and clay.
					0							35%	10%	5%		
	1.25															
160																
	1.00															160' to 170' as above, decreasing clay content, clay color changes to tan, increasing coarse chips.
					0							20%	5%	10%		
	0.83															
170																
	1.00															170' to 290' SAND AND GRAVEL, unconsolidated, occasionally dark brown, dark gray to gray chips with feldspar and quartz, hornblende and mica, rounded to subangular, mixed lithologies of predminantly andesite and granodiorite, clay content varies
					0							10%	5%	5%		
	1.25															
180																
	1.25															180' to 190' interval is as above, but increasing clay content, decreasing chip size.
					0							15%	10%	5%		
	1.25															
190																
	1.25															190' to 200' interval is as above, but increasing clay content.
					0							30%	15%	5%		
	0.71															
200																
	0.71															200' to 210' interval is as above, but coarse sand and gravel with decreasing clay content.
					0							10%	5%	5%		
	1 00															
210																
	0.71															210' to 220' interval is as above, but sand, well sorted.
					0							5%	5%	15%		
	1.43															
220																
	1.43															220' to 230' interval is as above but increasing clay content, increaasing chip size, gravel with clay.
					0							20%	10%	5%		
	0.62															
230																
	0.62															230' to 240' interval is as above, but with increasing chip size, coarse gravel with clay.
					0							20%	5%	5%		
	0 71															
240																

BOREHOLE LOG Owner: Well Number: **CP-1**

Project: Callamont Project Number: Page 3 of 8

Location: Callahan Ranch Rd Driller: Lang Drilling, Ron Behrandt Date Time

Coordinates: Rig: LM-120 Start: 4/3/2001 3:00AM

Elevation. 5,480' Bits: 38", 29", 19" Finish: 4/6/2001 11:45AM

Total Depth: 910' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: NO

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject. gpm	Circulation Return. gpm	Alteration	Samples Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation
	0.28				0							10%	5%	10%		170' to 290' SAND AND GRAVEL, unconsolidated, occasionally dark brown, dark gray to gray, or white chips with feldspar and quartz, hornblende and mica, rounded to subangular, mixed lithologies andesite and granodiorite, clay content varies. 240' to 250' is sand and gravel.
	0.55															
250																
	0.62				0							5%	5%	10%		250' to 260', as above, but larger chips with decreasing fines, coarse gravel.
	0 55															
260																
	0 80				0							10%	5%	10%		260' to 270': as above but sand with increasing clay and sand content, sand and gravel.
	0 80															
270																
	0.55				0							20%	10%	10%		270' to 280': as above but increasing clay, light brown, increasing chip size, coarse gravel with sand and clay
	0 55															
280																
	0 62				0							20%	10%	10%		280 to 290' as above.
	0.62															
290																
	0.31				0							35%	0%	0%		290 to 320' ANDESITE, dark gray to grey, brown, fine grained chips, plagioclase feldspar, subangular to angular, decomposed material, increasing clay content.,
	0.31															
300																
	0.31				1							20%	0%	0%		300' to 310': as above, but decreasing clay content.
	0 14															
310																
	0.35				0							10%	0%	0%		310' to 320': ANDESITE, dark grey to grey, brown clay, increasing chip size, decreasing clay content, solid material.
	0.35															
320																
	0.38				0							55%	0%	0%		320 to 330' ANDESITE, brown to red brown, dark gray to gray, fine grained chips, plagioclase feldspar, subangular to angular, increasing clay content, decomposed material.
	0.25															
330																
	0 80				0							30%	15%	15%		330' to 440': SAND AND GRAVEL, with cobbles and boulders, gray to dark gray, brown, white, rounded to angular, contains naturally eroded surfaces, mixed lithologies, predominantly granodiorite and andesite, clay content varies 330' to 340' is sand and gravel with clay
	0.42															
340																
	0.71				0							20%	10%	10%		340' to 350': as above, but with decreasing clay content, decreasing chip size, sand with clay.
	0.71															
350																
	0.27				0							20%	5%	5%		350' to 360': as above but with decreasing silt and fine sand content.
	0.27															
360																

BOREHOLE LOG Owner: Well Number: **CP-1**

Project: Callamont Project Number: Page 4 of 8

Location: Callahan Ranch Rd. Driller: Lang Drilling, Ron Behrandt Date: Start: 4/3/2001 Finish: 4/6/2001 Time: Start: 3:00AM Finish: 11:45AM

Coordinates: Rig: LM-120

Elevation: 5,480' Bits: 38", 29", 19"

Total Depth: 910' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: NO

Depth	Pen R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
																330' to 440': SAND AND GRAVEL, with cobbles and boulders, gray to dark gray, brown, white, rounded to angular, contains naturally eroded surfaces, mixed lithologies, predominanatly granodiorite and andesite. 360' to 370' is sand.
	0.27				0							15%	5%	5%		
370																
																370' to 380': as above, but clay is red brown instead of brown.
	0.33				0							20%	10%	5%		
380																
																380' to 390' as above, same amount of clay content, but clay is now grey green.
	0.33				0							20%	10%	5%		
390																
																390' to 400': as above, but decreasing clay content, clay is brown, decreasing silt content, increasing fine sand content, larger chip fragments to 1/8"
	0.28				0							10%	5%	10%		
400																
																400' to 410': sand and gravel, with increasing clay content, clay is red brown, decreasing granodiorite content, increasing andesite content
	0.29				0							20%	5%	5%		
410																
																410' to 420': as above but sand with decreasing clay content, material is very fine grained, and predominantly granodiorite.
	0.34				0							10%	5%	15%		
420																
	1:40															420' to 430': as above but sand, with decreasing clay and granodiorite content, clay is brown and red brown.
					0							5%	5%	15%		
	0.12															
430																
																430' to 440': as above but with increasing clay content, clay is brown to light brown, .
	0.52				1							15%	10%	5%		
440																
																440' to 450': CLAY, brown, red brown, grey, many andesite framents, hole started to deviate, possibly fault gouge.
	0.52				1							55%	15%	10%		
450																
																450' to 500': SAND AND GRAVEL, with cobbles and boulders, gray to dark gray, brown, white, rounded to angular, contains naturally eroded surfaces, lithology is predominanatly andesite, clay content varies. 450 to 460 is a coarse gravel.
	0.55				0							20%	5%	5%		
460																
																460-470' as above but sand and gravel with small andesite chips and decreasing clay.
	0.55				0							10%	10%	10%		
470																
																470' to 480' as above
	0.38															
					0							10%	10%	10%		
	0.5															
480																

BOREHOLE LOG Owner:

Project: Callamont Project Number:

Location: Callahan Ranch Rd. Driller: Lang Drilling, Ron Behrandt

Coordinates: Rig: LM-120

Elevation: 5,480' Bits: 38", 29", 19"

Total Depth: 910' Fluid: Bentonite Mud, Reverse Circulation

Well Number: **CP-1**

Page 5 of 8

Date: Start: 4/3/2001 Finish: 4/6/2001

Time: 3:00AM 11:45AM

Geophysical Log: NO

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
490	0.50				0							10%	10%	10%		450' to 500' SAND AND GRAVEL, with cobbles and boulders, gray to dark gray, brown, white, rounded to angular, contains naturally eroded surfaces, lithology is predominanatly andesite, little to no granodiorite, clay content varies. 480' to 490' is a sand.
	0.42				0							20%	5%	10%		490' to 500' as above, but material is increasingly coarse, contains large fragments of andesite to 1/4" in size in lower portion of section, increasing clay content, sand and gravel with clay.
500	0.48				0							35%	0%	0%		500' to 540' ANDESITE, dark grey to grey, brown to red brown, decomposed material, increased clay content, fragments increase in size to a maximum of 1/2".
510	0.71				0							30%	0%	0%		510' to 520' as above, but decreasing clay content, increasing coarse fragments, andesite is occasionally vesicular.
520	0.30				1							20%	0%	0%		520' to 530' as above, but decreasing clay content, decreasing coarse fragments, solid material.
	0.38															
530	0.53				1							10%	0%	0%		530' to 540' as above, but with decreasing clay content.
540	0.48				0							10%	5%	10%		540' to 610' SAND AND GRAVEL, with cobbles and boulders, gray to dark gray, brown, white, rounded to angular, contains naturally rounded surfaces, lithology is predominanatly andesite, no granodiorite, clay content varies. 540 to 550 is a sand and gravel.
550	0.31				0							10%	10%	5%		550' to 560' as above but with increasing silt content.
560	0.53				0							5%	5%	5%		560' to 570' as above but with decreasing clay content, chips increasingly angular, coarse gravel and sand
570	0.50															
	0.53				0							40%	20%	10%		570' to 580' as above but with increasing clay content, decreasing fragment size and angularity, sand with clay.
580	0.42				0							20%	15%	10%		580' to 590' but with decreasing clay content, increased chip size.
590	0.38				0							5%	5%	10%		590' to 600' as above but with decreasing clay content, increasing fragment size to 3/4", increasing fragment angularity, decreasing sand content, coarse gravel.
600	0.45															

Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.

BOREHOLE LOG Owner: Well Number: **CP-1**

Project: Callamont Project Number: Page 6 of 8

Location: Callahan Ranch Rd. Driller: Lang Drilling, Ron Behrandt Date Time

Coordinates: Rig: LM-120 Start: 4/3/2001 3:00AM

Elevation: 5,480' Bits: 38", 29", 19" Finish: 4/6/2001 11:45AM

Total Depth: 910' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: NO

Depth	Pen R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation
	0.45															540' to 610' SAND AND GRAVEL, with cobbles and boulders, gray to dark gray, brown, white, rounded to angular, lithology is predominanatly andesite, no granodiorite, clay content varies. 600' to 610' is a sand and gravel
					0							10%	5%	5%		
	0.62															
610																
	0.55															610' to 630' ANDESITE, dark grey to grey, solid material, decreased clay content, fragments increase in size to a maximum of 1/2".
					1							10%	0%	0%		
	0.38															
620																
	0.42															620' to 630'
					0							15%	0%	0%		
	0.26															
630																
	0.21															630' to 680'. SAND AND GRAVEL, with cobbles and boulders, gray to dark gray, brown, white, rounded to angular, contains naturally eroded surfaces, lithology is predominanatly andesite, granodiorite content varies, clay content varies. 630' to 640' is a coarse gravel with sand
					1							10%	5%	15%		
	0.62															
640																
	0.42															640' to 650', as above, but decreasing clay content, increasing fine sand content, increasing granodiorite content, chips are very fine, well sorted or poorly graded sand.
					0							5%	5%	15%		
	0.71															
650																
	0.42															650' to 660' as above but decreasing fines content, no gronodiorite, mostly andesite, abundant large rounded fragments, coarse gravel with sand
					0							5%	5%	5%		
	0.45															
660																
	0.59															660' to 670' as above, but increasing sand content, sand with gravel
					0							5%	5%	10%		
	0.45															
670																
	0.45															670' to 680' as above, but with increasing clay content, chips becoming increasingly angular.
					0							20%	5%	10%		
	0.55															
680																
	0.45															680' to 700' ANDESITE, dark grey to grey, brown, mostly solid material, but occasionally decomposed, many large chips to 2" of angular andesite with clay balls, andesite is fine grained.
					0							20%	0%	0%		
	0.83															
690																
	0.55															690' to 700' as above
					0							20%	5%	10%		
	0.71															
700																
	0.55															700' to 770' SAND AND GRAVEL, with cobbles, gray to dark gray, brown, rounded to angular, lithology is predominanatly andesite, clay content varies. 700' to 710' is a gravel with sand.
					0							5%	5%	10%		
	0.55															
710																
	0.71															710' to 720' as above, but snad and gravel.
					0							5%	5%	10%		
	0.55															
720																

BOREHOLE LOG Owner: Well Number: **CP-1**

Project: Callamont Project Number: Page 7 of 8

Location. Callahan Ranch Rd. Driller: Lang Drilling, Ron Behrandt Date Time

Coordinates: Rig: LM-120 Start: 4/3/2001 3:00AM

Elevation. 5,480' Bits: 38", 29", 19" Finish: 4/6/2001 11:45AM

Total Depth. 910' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: NO

Depth	Pen R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
	0.45				0							20%	10%	5%		700' to 770' SAND AND GRAVEL, with cobbles, gray to dark gray, brown, rounded to angular, lithology is predominanatly andesite, clay content varies. 720' to 730' is a coarse gravel with sand, occasional fragments to 1/4", some fragments have natural erosion surfaces.
	0.50															
730																730' to 740' as above, but with decreasing clay content, some red chips in sample, sand and gravel.
	0.29				0							5%	5%	5%		
740																740' to 750' as above, but with increasing clay content
	0.37				0							10%	5%	5%		
750																750' to 760' as above, but with decreasing clay content, increasing fragment size, coarse gravel with sand .
	0.31				0							5%	5%	5%		
760																760' to 770' as above.
	0.29				0							5%	5%	5%		
770																770' to 790' ANDESITE; dark gray to gray, brown, clay content vanes, solid and decomposed material, appears to be fractured.
	0.25				1							10%	0%	0%		
780																780' to 800' ANDESITE, dark gray to gray, brick red, high clay content, solid and decomposed material, brick red clay zone.
	0.27				0							20%	0%	0%		
790																790' to 910' MULTICOLORED SAND AND GRAVEL, with cobbles, gray to dark gray, gray green, brown, red brown, rounded to angular, mixed lithologies, clay content varies. 790' to 800' is a medium gravel with sand, some fragments have natural erosion surfaces.
	0.14				0							5%	5%	10%		
800																800' to 810' as above, but sand and gravel.
	0.20				0							5%	5%	10%		
810																810' to 820' as above.
	0.29				0							5%	5%	15%		
820																820' to 830' as above.
	0.16				0							5%	5%	10%		
830																830' to 840' as above but clay and fine sand content increasing, and large chips to 1", sand and coarse gravel.
	0.38				0							10%	5%	15%		
	0.22															
840																

BOREHOLE LOG Owner: Well Number: **CP-1**

Project: Callamont Project Number: Page 8 of 8

Location: Callahan Ranch Rd Driller: Lang Drilling, Ron Behrandt Date Time

Coordinates: Rig: LM-120 Start: 4/3/2001 3:00AM

Elevation 5,480' Bits: 38", 29", 19" Finish: 4/6/2001 11:45AM

Total Depth: 910' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: NO

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
	0.50															790' to 910' MULTICOLORED SAND AND GRAVEL, with cobbles, gray to dark gray, gray green, brown, red brown, rounded to angular, mixed lithologies, clay content varies. 840' to 850' is a sand and gravel, decreasing clay, coarse chips to 1", some fragments have natural erosion surfaces.
					0							5%	5%	10%		
	0.38															
850																
																850' to 860' as above, but with increasing clay content, small chips to 1/4", sand with clay.
	0.50															
					0							25%	5%	5%		
	0.55															
860																
																860' to 870' as above, but with increasing clay content and increasing chip size, sand and gravel with clay.
	0.38															
					0							30%	5%	10%		
	0.45															
870																
																870' to 880' as above, but with decreasing clay content, increasing fragment size to 1", large chips of gray green material, coarse gravel with sand
	0.62															
					1							15%	5%	5%		
	0.83															
880																
																880' to 890' as above, but decreasing fines content, coarse gravel.
	0.45															
					0							5%	5%	5%		
	0.50															
890																
																890' to 900' as above but increasing clay content, decreasing fragment size, sand and gravel.
	0.71															
					3							15%	5%	10%		
	1.25															
900																
																900' to 910': as above .
	0.45															
					0							15%	5%	10%		
	0.62															
910																
																TOTAL DEPTH (TD) = 910' ON 04-06-01 @ 11:45AM
920																
930																
940																
950																
960																

Aquifer Test Data

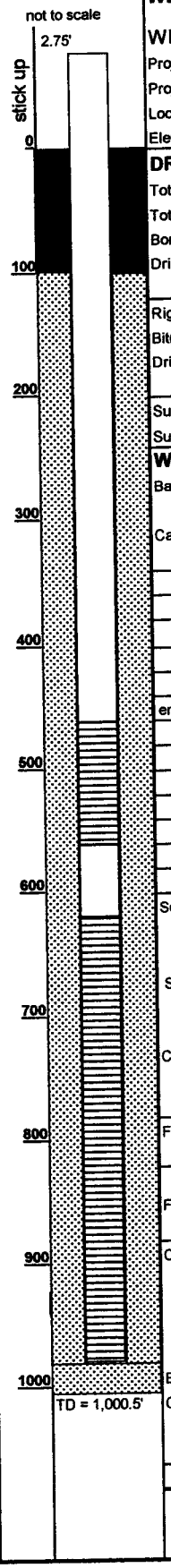
Project Callamont | Test Well CP-1 | Observation
Location Callahan Ranch Road | Pump On | Well ____ Dist. ____
Hydrogeologist DC, DC and RR. | Pump Off | Well ____ Dist. ____
Pump Contractor Lang Drilling | Last Record | Well ____ Dist. ____
Comments: water level measurments taken during development of CP-1

Time		Water Level			Discharge		Water Quality					Comments
Date/Clock	Total(sec)	Well CP-1	Well CT-1	Well____	Totalizer X___	Rate	Turbidity/Sand	Temp	pH	EC	TDS	
4-9-01, 08:25		283	185.11		387 gpm							water levels measured in
08:55			185.56									CT-1 during development in
09:43			186.32									CP-1.
11:15		283			340 gpm							
10:45			187.14									
12:48		283	189.39		387 gpm							flow rates are based on
13:37			189.94									mud tank volumn measurments
14:15		238			387 gpm							
15:38			190.91									
17:25		238	191.19		387 gpm							CP-1 water levels based on
18:30		267	191.41		387 gpm							air pressure measurments
19:26			192.71									on drill rig.
23:15		240			387 gpm							
23:40			195.60									
4-10-01, 01:40			196.10									
03:40			196.80									
06:00			197.40									
08:50			197.21									
11:30			196.80									
12:50			194.07									
13:55			191.04		150 gpm							
												4-10-01, 16:26 pump off.
16:30			186.09									tripping out development swab
16:34:00			180.11									
16:34:45			179.33									
16:35:30			178.98									
16:36:00			178.71									
16:37:22			178.50									
16:38:07			178.00									
16:39:38			177.50									
16:41:26			177.00									
16:43:44			176.50									
16:45:39			176.00									
16:48:46			175.50									
16:50:54			175.00									
16:54:08			174.50									
16:57:09			174.00									
17:02:53			173.00									
17:09:41			172.00									
17:30:00			169.87									tripping in open ended for
18:00:00			166.43									airlift test and to clean out
18:30:00			164.28									bottom of hole.
												on 4-11-01, swl = 144.98'
												at 5:14PM, in CT-1.

Aquifer Test Data

Project Calamont | Test Well CP-1 | Observation
Location Callahan Ranch Road | Pump On 6:42PM | Well ____ Dist. ____
Hydrogeologist DC, DC and RR. | Pump Off 7:42PM | Well ____ Dist. ____
Pump Contractor Lang Drilling | Last Record ____ | Well ____ Dist. ____
Comments: water level measurments taken during airlifting of CP-1, original water levels taken from the drill table, the adjusted by 4.67 feet to ground level.

Time		Water Level			Discharge		Water Quality					Comments
Date/Clock	Elapsed	Well CP-1	Well CT-1	Well____	Totalizer X___	Rate	Turbidity/Sand	Temp	pH	EC	TDS	
4-10-01	0:00:00				487 gpm							start up swl = 161.76'
	01:42	150.03										waited for system to unload.
	01:53	150.53										elapsed time is in minutes
	02:30	151.48										and seconds from on time.
	03:00	156.53										
	03:40	165.34										flow rates are based on
	05:00	196.34										mud tank volume measurments
	05:30	201.29										
	06:00	202.63										
	06:30	203.68										
	07:00	204.23										
	07:30	203.68										
	08:00	204.73										
	08:30	205.78										
	09:00	206.93										
	09:30	208.63										
	10:00	209.63										
	11:00	211.08										
	12:00	212.36										
	13:00	213.49										
	14:00	214.34										
	15:00	215.05										
	17:00	216.19										
	19:00	217.30										
	21:00	218.22										
	23:00	218.94										
	25:00	219.65										
	27:00	220.34										
	29:00	220.97										
	31:00	221.59										
	35:00	222.54			480 gpm							
	40:00	223.71										
	45:00	224.75										
	50:00	225.59										
	55:00	226.25										
	60:00	227.34										
												on 4-11-01, swl = 144.98
												at 5:14PM, in CT-1.



WELL CONSTRUCTION SUMMARY

WELL NAME CP-2
Project: Callamont
Project #:
Location: Callahan Ranch Road
Elevation: 5515'

Coordinates: NW 1/4 NW 1/4, Section 11, T17N, R19E
Casing Stickup: 33"

DRILLING SUMMARY:

Total Depth-Borehole: 1,000.5'
Total Depth-Well: 980.0'
Borehole Diameter: 38", 29", 19"
Driller: Lang Drilling
Ron Behreandt, Tool Pusher
Rig Type: LM-120
Bit(s): 38", 29", 19"
Drilling Fluids: Bentonite Mud, with polymer.
Surface Casing: 0 - 100', 22-inch in dia.
Surface Seal: Neat Cement; 0 - 100'

WELL DESIGN:

Basis: Geologic Log Yes __
Geophysical Log Yes __

Casing String(s): C=Casing S=Screen

2.75'	-	stick	up		-		
C1	-	0	-	480.0	-		
S1	-	480.0	-	580.0	-		
C2	-	580.0	-	620.0	-		
S2	-	620.0	-	980.0	-		
end cap	-	980.0	-	980.5	-		

Screen: S1 14-inch diameter 080 Slot Wire Wrap from 480.0 to 580.0 feet

Screen: S2 14-inch diameter 080 Slot Wire Wrap from 620.0 to 980.0 feet

Centralizers: One approximately every 100'

Filter Pack: 1,000.5' to 400' SRI 1/4" X 3/8"gravel.

Filter Pack: 400' to 80', SRI 1/8" x 1/4"

Cement: Surface seal for well is with neat cement from 100' to 0'.

Bentonite:

Other: 1 1/2-inch sounding tube was installed in annular space & attached to well casing at 600'.

CONSTRUCTION TIME LOG:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling:	04/11/01	8:50PM	04/14/01	8:27AM
Geophys Log:	04/14/01	8:05PM	04/14/01	9:25PM
Casing:				
0-10': 33-inch	04/11/01	1:31PM	04/11/01	3:19PM
0 - 100': 22-inch	04/11/01	8:30PM	04/04/01	8:00AM
+3' - 980'; 14-inch	04/14/01	11:30PM	04/15/01	10:15AM
Filter Pack:	04/15/01	10:55AM	04/15/01	9:15PM
Airlift/Open Ended:	04/15/01	10:38PM	04/16/01	9:45PM
Jet Aqua Clear:	04/16/01	2:45AM	04/16/01	6:30AM
Swab Aqua Clear:	04/16/01	8:20AM	04/16/01	8:32PM
Airlift/Swab:	04/16/01	8:32PM	04/18/01	4:05PM
Airlift Pump Test	04/18/01	6:22PM	04/18/01	7:22PM
Lower Seal:				
Cementing:				

WELL DEVELOPMENT:

Started air lifting mud open ended 4-15-01 at 22:38, done airlifting mud 4-16-01 at 21:45, jetted in Aqua Clear 4-16-01 at 2;45, jetted and swabbed in Aqua Clear from bottom to top, stopped 4-16-01at 6:30. Dry swabbed in Aqua Clear 4-16-01 at 08:20, stopped 4-16-01 at 20:32, allowing 12 hours for Aqua Clear to work on the mud cake. Started airlift swab developing 4-16-01 at 20:32, tripped pipe to bottom of hole (980') and started airlifting with swab. Swabbed pipe up and down 40' sections, working the way to top and bottom until discharge appeared clean and left >0.4 fines in an Imhoff Cone. Then Airlift tested aquifer open ended 4-18-01 at 18:22, stopped 4-18-01 at 19:22 . Initial static water level was 152.26', water level was 261.35 after 60 minutes (drawdown 109.09'), average lift production rate was 458 gpm.

COMMENTS:

Drilled with convetional circulation from 0 to 120', switched to flooded reverse circulation for 120' to 1,000.5' Surface Casing (22" diameter) set at 100' Below Ground Surface (BGS), with a 24" temporary stick up. Used 73 bags of Quick Gel for drilling mud to emplace Surface Casing. Set in Surface Casing with 203; 94 lb bags of neat cement, treated with 7; 50 lb bags of calcium chloride. The Surface Casing was cut off flush with the ground after the Production Well Casing (14" diameter) was installed. The Production Well Casing was set from +33" to 980.5' BGS. This includes the Production Well end cap, screen and casing assembly see construction diagram. Static water level at completion of video survey (4/21/01) was 142.32' from top of casing. A 1 1/2-inch flush threaded sounding tube was installed in the annular space and attached to the well casing at 600 feet. An opening was made in the well casing and the sounding tube attached. This allows for unrestricted water level measurements.

BOREHOLE LOG Owner: Well Number: **CP-2**

Project: Callamont Project Number: Page 1 of 9

Location: Callahan Ranch Rd Driller: Lang Drilling, Ron Behrandt Date Time

Coordinates: NW 1/4 Sec. 11 Rig: LM-120 Start: 4/11/2001 8:50PM

Elevation: 5,515' Bits: 38", 29", 19" Finish: 4/14/2001 8:27AM

Total Depth: 1,000.5' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: Yes

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject. gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
																0 to 90' SURFACE ALLUVIUM, unconsolidated, sand, gravel, cobbles and boulders, dark gray to gray, brown to red brown, white, subrounded to platy, contains naturally eroded surfaces, mixed lithologies of predominantly granodiorite and andesite, occasional tuff or siltstone, clay content vanes, clay is brown.
	0 33				0							15%	20%	10%		
10																
																10' to 20' interval is as above, increasing andesite, decreasing tuff or siltstone.
	0 33				0							10%	15%	10%		
20																
																20' to 30' interval is as above.
	0.29				0							10%	15%	10%		
30																
																30' to 40' interval is as above, but decreasing fine content
	0.29				0							5%	10%	10%		
40																
																40' to 50' interval is as above.
	0.77				0							10%	15%	10%		
50																
																50' to 60' interval is as above.
	0.45				0							15%	20%	20%		
60																
																60' to 70' interval is as above but fines content decreases, material is rounded to subrounded, predominantly andesite and granodiorite.
	1.00				1							5%	5%	20%		
70																
																70' to 80' interval is as above
	0 40				0							5%	5%	20%		
80																
																80' to 90' as above.
	0.62				0							5%	5%	20%		
90																
																90' to 250' SAND AND GRAVEL, unconsolidated, dark gray to gray, brown to red brown, white, occasional hornblende, quartz and mica, rounded to subangular, contains naturally eroded surfaces, mixed lithologies of predominantly andesite and granodiorite, clay content varies.
	0.62				0							5%	10%	20%		
100																
																100' to 110' interval is as above.
	0 67				0							5%	5%	20%		
110																
																110' to 120' interval is as above.
	1.67				0							10%	10%	20%		
120																

BOREHOLE LOG Owner: Well Number: **CP-2**

Project: Callamont Project Number: Page 2 of 9

Location: Callahan Ranch Rd. Driller: Lang Drilling, Ron Behrandt Date Time

Coordinates: NW 1/4 Sec 11 Rig: LM-120 Start: 4/11/2001 8:50PM

Elevation: 5,515' Bits: 38", 29", 19" Finish: 4/14/2001 8:27AM

Total Depth: 1,000.5' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: Yes

Depth	Pen. R. Penetration Rate, In feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
																90' to 250' SAND AND GRAVEL, unconsolidated, dark gray to gray, brown to red brown, white, occasional hornblende, quartz and mica, rounded to subangular, contains naturally eroded surfaces, mixed lithologies of predominantly andesite and granodiorite, clay content varies. 120' to 130' interval same as 110' to 120' interval
	1.11				0							10%	10%	20%		
130																130' to 140' as above
	1.11				0							10%	10%	20%		
140																140' to 150' as above, but increasing clay content, mostly rounded fragments, sand with clay
	0.83				0							35%	10%	15%		
150																150' to 160' interval is as above, with increasing platy fragments, sand with gravel.
	0.62				0							20%	5%	15%		
160																160' to 170' as above, increasing platy fragments, large rounded coarse chips to 1/2", sand and coarse gravel with clay.
	1.25				0							20%	10%	10%		
170																170' to 180' as above but decreasing clay content, increasing amount of platy andesite fragments.
	1.11				0							5%	5%	5%		
180																180' to 190' interval is as above, but increasing clay content, decreasing chip size, abundant quartz and granodiorite, sand with clay.
	1.11				0							45%	15%	15%		
190																190' to 200' interval is as above.
	0.78				0							45%	15%	15%		
200																200' to 210' interval is as above, but with decreasing fines content.
	0.36				0							25%	15%	10%		
210																210' to 220' interval is as above.
	0.78				0							10%	5%	10%		
220																220' to 230' interval is as above but increasing clay content, decreasing granodiorite content.
	0.77				0							15%	5%	10%		
230																230' to 240' interval is as above.
	1.25				0							20%	10%	10%		
240																

BOREHOLE LOG Owner: Well Number: **CP-2**

Project: Callamont Project Number: Page 3 of 9

Location. Callahan Ranch Rd. Driller: Lang Drilling, Ron Behrandt Date Time

Coordinates. NW 1/4 Sec. 11 Rig: LM-120 Start: 4/11/2001 8:50PM

Elevation: 5,515' Bits: 38", 29", 19" Finish: 4/14/2001 8:27AM

Total Depth: 1,000.5' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: Yes

Depth	Pen R. Penetration Rate, In feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
																90' to 250' SAND AND GRAVEL, unconsolidated, dark gray to gray, brown to red brown, white, occasional hornblende and mica, rounded to subangular, contains naturally eroded surfaces, mixed lithologies of predominantly andesite and granodiorite, clay content varies. 240' to 250' is sand with clay.
	1.00				0							20%	10%	10%		
250																250' to 290' CLAY, medium plasticity, slow dilantancy, brown to dark brown, gray to gray green, content of coarse materials varies, chip lithology varies, possibly gouge
	1.25				0							50%	15%	5%		
260																260' to 270' as above but with increasing clay content, increasing andesite content.
	0.59				0							80%	10%	5%		
270																270' to 280' as above but decreasing clay content, increasing granodiorite and quartz content.
	0.62				0							50%	20%	10%		
280																280 to 290' as above, mixed lithologies.
	0.67				0							50%	10%	10%		
290																290' to 400' SAND AND GRAVEL, unconsolidated, dark gray to gray, brown to red brown, white, occasional hornblende, quartz and mica, rounded to subangular, contains naturally eroded surfaces, mixed lithologies of predominantly andesite and granodiorite, clay content varies 290' to 300' is sand and gravel with clay.
	0.83				0							20%	5%	10%		
300																300' to 310' as above, but increasing clay content, smaller fragments, sand with clay.
	0.50				0							30%	10%	15%		
310																310' to 320' as above but decreasing clay content.
	0.67				0							20%	10%	10%		
320																320 to 330' as above but increasing clay content, increasing granodiorite content.
	0.50				0							40%	15%	15%		
330																330' to 340' as above but fragments increasing in size to 1/4", sand and gravel with clay.
	0.83				0							40%	15%	15%		
340																340' to 350' as above.
	1.11				0							40%	15%	15%		
350																350' to 360' as above but decreasing fines content and chip size, sand with clay
	0.67				0							20%	10%	10%		
360																

BOREHOLE LOG Owner: Well Number: **CP-2**

Project: Callamont Project Number: Page 4 of 9

Location: Callahan Ranch Rd. Driller: Lang Drilling, Ron Behrandt Date Time

Coordinates: NW 1/4 Sec 11 Rig: LM-120 Start: 4/11/2001 8:50PM

Elevation: 5,515' Bits: 38", 29", 19" Finish: 4/14/2001 8:27AM

Total Depth: 1,000.5' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: Yes

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
	0.77				0							10%	10%	15%		290' to 400' SAND AND GRAVEL, unconsolidated, dark gray to gray, brown to red brown, white, occasional hornblende, quartz and mica, rounded to subangular, contains naturally eroded surfaces, mixed lithologies of predominantly andesite and granodiorite, clay content vanes. 360' to 370' is sand with clay.
370																
																370' to 380' as above but decreasing clay, fragment size increases up to 1/4", predominantly andesite, clay is red brown to brown.
	0.62				0							5%	5%	10%		
380																
																380' to 390' as above.
	0.30				0							5%	5%	10%		
390																
																390' to 400' as above.
	0.45				3							5%	5%	10%		
400																
																400' to 450' ANDESITE, dark gray to gray, brown to red brown, solid and decomposed material, increased clay content, fragments increase in size to a maximum of 1/2". 400' to 410' is decomposed material with solid material, high clay content, fragments up to 1"
	0.43				0							50%	0%	0%		
410																
																410' to 420' as above but fragments up to 1/4", decomposed material.
	0.46				0							50%	0%	0%		
420																
																420' to 430' as above but decreasing clay content, increasing fragment size up to 3", solid material.
	0.23				0							25%	0%	0%		
430																
																430' to 440' as above but with increasing clay content, clay is brown to red brown, coarse fragments to 1.5".
	0.50				0							30%	0%	0%		
440																
																440' to 450' as above but coarse fragments to 1"
	0.42				0							20%	0%	0%		
450																
																450' to 480' SAND AND GRAVEL, unconsolidated, multicolored, rounded to subangular, contains naturally eroded surfaces, various lithologies also andesite and granodiorite, clay content varies. 450' to 460' is sand.
	0.55				1							10%	10%	20%		
460																
																460-470' as above but increasing clay content.
	0.32				1							15%	10%	20%		
470																
																470' to 480' as above but subrounded to platy with increasing andesite content.
	0.30				2							10%	5%	15%		
480																

BOREHOLE LOG Owner: Well Number: **CP-2**

Project: Callamont Project Number: Page 5 of 9

Location: Callahan Ranch Rd. Driller: Lang Drilling, Ron Behrandt Date Time

Coordinates: NW 1/4 Sec. 11 Rig: LM-120 Start: 4/11/2001 8:50PM

Elevation: 5,515' Bits: 38", 29", 19" Finish: 4/14/2001 8:27AM

Total Depth: 1,000.5' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: Yes

Depth	Pen. R: Penetration Rate, in feet/min	Circulation: Inject, gpm	Circulation: Return, gpm	Alteration	Rig Response (1 to 6)	Samples: Material	Samples: Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on brt, psi, rotation.
																480' to 550' ANDESITE, dark gray to gray, brown to red brown, solid and decomposed material, clay content varies, sporadically fractured, fragments increase in size to a maximum of 2". 480' to 490' is solid material, low clay content, fragments up to 1/2".
	0.28				0							10%	0%	0%		
490																
																490' to 500' as above but increasing clay content, larger number of coarse fragments to 1/4", decomposed material
	0.34				0							50%	0%	0%		
500																
																500' to 510' decreased clay content, fractured, fragments increase in size to a maximum of 1", chips are angular to platy, solid material, fine grained, non vesicular.
	0.43				1							20%	0%	0%		
510																
																510' to 520' as above, but decreasing clay content
	0.28				2							15%	0%	0%		
520																
																520' to 530' as above
	0.20				1							15%	0%	0%		
530																
																530' to 540' as above but with decreasing clay content, clay is large fragments to 2" of indurated to friable red brown clay, possibly fracture fill
	0.26				2							10%	0%	0%		
540																
																540' to 550' interval as above
	0.23				1							10%	0%	0%		
550																
																550' to 600': SAND AND GRAVEL, with cobbles, multicolored, gray to dark gray, gray green, brown to red brown, white, rounded to angular, contains naturally rounded surfaces, lithology is mixed, clay content varies 550 to 560 is a sand and gravel
	1.00				0							30%	20%	15%		
560																
																560' to 570' as above but occasional brick red fragments, clay content increases, clay is brown.
	1.00				0							35%	25%	29%		
570																
																570' to 580' as above but with decreasing clay content, clay is red brown and gray green, predominant lithology is granodiorite
	0.77				0							20%	10%	10%		
580																
																580' to 590' interval as above but with increasing clay content, clay is gray.
	0.83				0							30%	15%	15%		
590																
																590' to 600' as above but with increasing clay content, fragment size medium, decreasing fragment content.
	0.43				0							40%	10%	10%		
600																

BOREHOLE LOG Owner: Well Number: **CP-2**

Project: Callamont Project Number: Page 6 of 9

Location: Callahan Ranch Rd. Driller: Lang Drilling, Ron Behrandt Date Time

Coordinates: NW 1/4 Sec. 11 Rig: LM-120 Start: 4/11/2001 8:50PM

Elevation: 5,515' Bits: 38", 29", 19" Finish: 4/14/2001 8:27AM

Total Depth: 1,000.5' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: Yes

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
																600' to 630' CLAY, medium to low plasticity, slow dilantancy, brown to red brown, chip lithology varies, possibly gouge.
	0.43				0							55%	20%	0%		
610																
																610' to 620' interval as above but few fragments.
	0.67				0							55%	20%	0%		
620																
																620' to 630' interval as above but increase in fragment content and size, fragment size up to 1", fragments are angular to platy.
	0.62				1							60%	25%	0%		
630																
																630' to 1000.5' SAND AND GRAVEL, with cobbles, multicolored, gray to dark gray, gray green, brown to red brown, white, rounded to angular, contains naturally eroded surfaces, lithology is mixed, andesite and granodiorite content varies, clay content varies. 630' to 640' is sand and gravel with clay, high clay content, medium sized fragments up to 1/4".
	0.83				1							45%	15%	5%		
640																
																640' to 650' as above, but decreasing clay content, decreasing fines content, increasing andesite content.
	0.48				0							40%	10%	5%		
650																
																650' to 660' interval is as above but decreasing clay, clay is brown to red brown, gray to gray green, chips are multicolored, sand and gravel with clay
	0.55				0							30%	5%	10%		
660																
																660' to 670' interval is as above.
	0.83				0							15%	5%	10%		
670																
																670' to 680' interval is as above, but with increasing fragment size, multicolored sand and gravel.
	0.50				0							15%	5%	10%		
680																
																680' to 690' interval is as above but with decreasing clay content, increasing sand content.
	0.67				0							10%	10%	15%		
690																
																690' to 700': interval is as above but with increasing fines, also increasing large fragments, coarse gravel with sand.
	0.77				0							20%	15%	20%		
700																
																700' to 770' interval is as above but decreasing fines.
	0.62				0							15%	10%	10%		
710																
																710' to 720' as above, but sand and gravel.
	0.66				0							5%	5%	10%		
720																

BOREHOLE LOG Owner: Well Number: **CP-2**

Project: Callamont Project Number: Page 7 of 9

Location: Callahan Ranch Rd Driller: Lang Drilling, Ron Behrandt Date Time

Coordinates: NW 1/4 Sec. 11 Rig: LM-120 Start: 4/11/2001 8:50PM

Elevation: 5,515' Bits: 38", 29", 19" Finish: 4/14/2001 8:27AM

Total Depth: 1,000.5' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: Yes

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
	0.91				0							5%	10%	19%		630' to 1000.5' SAND AND GRAVEL, with cobbles, multicolored, gray to dark gray, gray green, brown to red brown, white, rounded to angular, contains naturally eroded surfaces, lithology is mixed, andesite and granodiorite content varies, clay content varies. 720' to 730' is coarse sand and gravel with red chips with very little clay.
730																
	1.11				0							20%	10%	10%		730' to 740' interval is as above but with increasing clay content.
740																
	0.83				0							35%	15%	5%		740' to 750' as above, but with increasing clay content decreasing sand content, sand and gravel with clay .
750																
	0.91				1							10%	10%	10%		750' to 760' interval is as above but with decreasing clay content, increasing sand content, increasing fragment size to 1/2", coarse gravel with sand.
760																
	1.11				0							40%	10%	15%		760' to 770' interval is as above but increasing clay content, clay is brown to light brown, decreasing fragment content and size, sand and gravel with clay.
770																
	0.52				1							10%	5%	10%		770' to 780' interval is as above but decreasing clay content, increasing fragment content, coarse gravel with sand.
780																
	0.83				1							30%	10%	10%		780' to 790' interval as above but increased clay content, clay is dark orange brown, sand and gravel with clay.
790																
	0.83				1							10%	5%	10%		790' to 800' interval as above but decreasing clay content, clay is gray to gray green, sand and gravel.
800																
	0.52				1							20%	10%	10%		800' to 810' interval as above but increasing clay
810																
	0.52				2							5%	5%	10%		810' to 820' interval is as above but decreasing clay and fragment size.
820																
	1.00				0							10%	5%	10%		820' to 830' interval is as above.
830																
	0.55				0							15%	5%	10%		830' to 840' interval is as above but increasing clay, clay is orange brown.
840																

BOREHOLE LOG

Owner:

Well Number: **CP-2**

Project: Callamont

Project Number:

Page 8 of 9

Location: Callahan Ranch Rd.

Driller: Lang Drilling, Ron Behrandt

Date / Time

Coordinates: NW 1/4 Sec. 11

Rig: LM-120

Start: 4/11/2001 8:50PM

Elevation: 5,515'

Bits: 38", 29", 19"

Finish: 4/14/2001 8:27AM

Total Depth: 1,000.5'

Fluid: Bentonite Mud, Reverse Circulation

Geophysical Log: Yes

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
850	0.35				0							15%	5%	10%		630' to 1000.5' SAND AND GRAVEL, with cobbles, multicolored, gray to dark gray, gray green, brown to red brown, white, rounded to angular, contains naturally eroded surfaces, lithology is mixed, andesite and granodionte content varies, clay content varies. 840' to 850' is coarse gravel and sand.
860	0.44				0							20%	10%	10%		850' to 860' interval is as above but with increasing clay content, clay is dark brown, sand and gravel.
870	0.77				0							45%	15%	20%		860' to 870' interval is as above but with increasing clay content and decreasing chip size, sand with clay.
880	0.62				1							40%	10%	20%		870' to 880' interval is as above but with decreasing clay content, clay is orange brown.
890	0.91				0							30%	10%	5%		880' to 890' interval is as above but decreasing clay content, also many red brown chips, clay is brown.
900	0.37				0							10%	10%	10%		890' to 900' interval is as above but decreasing clay content, sand and gravel
910	0.34				1							5%	5%	10%		900' to 910' interval is as above but decreasing fines content, sand and gravel.
920	0.62				0							5%	5%	5%		910' to 920' interval is as above.
930	0.50				0							5%	5%	10%		920' to 930' interval is as above.
940	0.55				0							5%	5%	5%		930' to 940' interval is as above.
950	0.83				0							10%	10%	10%		940' to 950' interval is as above but increasing clay content, clay is orange brown.
960	0.45				1							10%	5%	5%		950' to 960' interval is as above but decreasing fines content, fragments increasing in size to 1/2", coarse gravel and sand.

Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation

BOREHOLE LOG Owner:

Well Number: **CP-2**

Project: Callamont Project Number:

Page 9 of 9

Location: Callahan Ranch Rd Driller: Lang Drilling, Ron Behrandt

Date Time

Coordinates: NW 1/4 Sec. 11 Rig: LM-120 Start: 4/11/2001 8:50PM

Elevation: 5,515' Bits: 38", 29", 19" Finish: 4/14/2001 8:27AM

Total Depth: 1,000 5' Fluid: Bentonite Mud, Reverse Circulation

Geophysical Log: Yes

Pen. R.		Circulation				Samples											Description
Depth	Penetration Rate, in feet/min	Inject, gpm	Return, gpm	Alteration	Rig Response (1 to 5)	Material	Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
																630' to 1000.5' SAND AND GRAVEL, with cobbles, multicolored, gray to dark gray, gray green, brown to red brown, white, rounded to angular, contains naturally eroded surfaces, lithology is mixed, andesite and granodiorite content varies, clay content varies. 960' to 970' is sand and gravel, with occasional cinders.
					0							5%	5%	10%		
970																970' to 980' interval is as above but with no clay or silt content, increasing fragment size to 1", andesite content increases, some pieces of red cinder.
					0							0%	0%	10%		
980																980' to 990' interval is as above but with decreasing fragment size to 1/4", lithology becoming very mixed.
					0							0%	0%	15%		
990																990' to 1000.5' interval is as above but with decreasing clay content
					0							0%	0%	5%		
1000																TOTAL DEPTH = 1,000.5 ON 4-14-01 @ 8:27AM
1010																
1020																
1030																
1040																
1050																
1060																
1070																
1080																

Aquifer Test Data

Project Callamont
Location Callahan Ranch Road
Hydrogeologist DC and RR.
Pump Contractor Lang Drilling

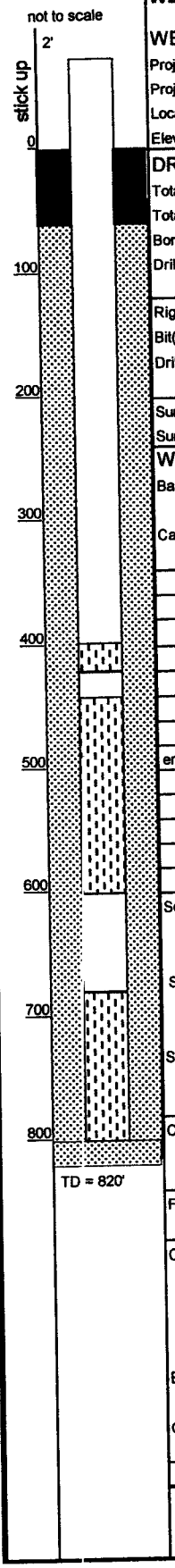
Test Well CP-2
Pump On 6:22PM
Pump Off 7:27PM
Last Record

Observation Well ____ Dist. ____
Well ____ Dist. ____
Well ____ Dist. ____

Comments: water level measurments taken during airlifting of CP-2, original water levels taken from the drill table, then adjusted by 4.54 feet to ground level.

Time		Water Level			Discharge		Water Quality					Comments
Date/Clock	Elapsed	Well CP-2	Well ___	Well____	Totalizer X___	Rate	Turbidity/Sand	Temp	pH	EC	TDS	
4-17-01: 18:22	0:00:00				458 gpm							start up swl = 152.26'
	05:59											waited for system to unload.
	06:43	208.36										elapsed time is in minutes
	07:15	213.76										and seconds from on time.
	07:45	220.61										
	08:15	225.81										flow rates are based on
	08:45	229.56										mud tank volume measurments
	09:15	232.96										
	09:45	235.11										
	10:15	237.36										
	10:45	238.66										4-21-01 Static Water Level
	11:15	240.86										in CP-2 = 142.72'
	11:45	242.36										
	12:15	243.66										
	12:45	244.76										
	13:15	245.76										
	13:45	246.56										
	14:15	247.26										
	14:45	247.76										
	15:15	248.46										
	15:45	248.86										
	16:15	249.36										
	16:45	249.76										
	17:45	250.65										
	18:55	251.36										
	19:45	251.91										
	20:45	252.46										
	21:45	253.06										
	22:45	253.51										
	23:45	253.86										
	24:45	254.26			458 gpm							
	25:45	254.51										
	26:45	254.71										
	27:45	255.16										
	30:00	256.02										
	32:00	256.48										
	34:00	256.80										
	36:00	257.09										
	38:00	257.40										
	40:00	257.72										
	45:00	258.90										
	50:00	259.44										
	55:00	259.84										
	60:00	260.35										

WELL CONSTRUCTION SUMMARY



WELL NAME CT-1
Project: Callamont
Project #:
Location: Callahan Ranch Road
Elevation: 5480 ft.

Coordinates: SE1/4 NW1/4, Section 11, T.17N., R.19E.
Casing Stickup: 24"

DRILLING SUMMARY:

Total Depth-Borehole: 820'
Total Depth-Well: 800'
Borehole Diameter: 19", 12 3/4",
Driller: Lang Drilling
Ron Behrandt, Tool Pusher
Rig Type: LM-120
Bit(s): 19", 12 3/4"
Drilling Fluids: Bentonite Mud, with polymer.
Surface Casing: 13 3/8"; 0 - 60'
Surface Seal: Neat Cement; 0 - 60'

WELL DESIGN:

Basis: Geologic Log y
Geophysical Log y

Casing String(s): C=Casing S=Screen

+2'	stick	up			
C1	0	400.0			
S1	400.0	420.0			
C2	420.0	440.0			
S2	440.0	600.0			
C3	600.0	680.0			
S3	680.0	800.0			
end cap	800.0	800.5			

Screen: S1 80 Slotted perforated casing From 400.0 to 420.0 feet BGS

Screen: S2 80 Slotted perforated casing From 440.0 to 600.0 feet BGS

Screen: S3 80 Slotted perforated casing From 680.0 to 800.0 feet BGS

Centralizers: One approximately every 100'

Filter Pack: 810' to 100', Supreme 1/8" x 1/4"gravel.

Cement: Surface seal for test well was with neat cement from 100' to 0'.

Bentonite:

Other:

CONSTRUCTION TIME LOG:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling:	03/29/01	7:30AM	03/30/01	6:00PM
Geophys Log:	03/30/01	7:30PM	03/30/01	9:30PM
Casing:				
13 3/8 -inch: 0-60'	03/29/01	10:00AM	03/29/01	1:30PM
6-inch: +2' -800'	03/31/01	12:30AM	03/31/01	3:00PM
Lower Seal:				
Filter Pack:	03/31/01	12:00PM	03/31/01	11:30PM
Airlift/Open Ended:	04/01/01	2:30AM	04/01/01	7:45AM
Jet Aqua Clear:	04/01/01	7:45AM	04/01/01	8:45AM
Swab Aqua Clear:	04/01/01	8:45AM	04/01/01	10:45AM
Airlift/Swab:	04/01/01	10:45AM	04/02/01	11:15AM
Airlift Pump Test				
Cementing:				

WELL DEVELOPMENT:

Started developing 4-1-01 at 10:45AM, tripped pipe to bottom of hole (800') and started airlifting with swab. Swabbed pipe up and down 20' sections, working the way to top and bottom until discharge appeared clean. Jetted and Swabbed in Aqua Clear from bottom to top. Airlifted out Aqua Clear and developed with swab. Then Airlift tested aquifer open ended.

COMMENTS:

Drilled with convetional circulation from 0 to 180', switched to flooded reverse circulation for 180' to 810'. Surface Casing (13 3/8" diameter) set at 60' Below Ground Surface (BGS), with a 24" temporary stick up. Used 55 bags of Quick Gel for drilling mud to emplace Surface Casing. Set in Surface Casing with 49; 94 lb bags of neat cement, treated with 4; 50 lb bags of calcium chloride. The Surface Casing was cut off flush with the ground after the Test Well Casing (6" diameter) was installed. The Test Well Casing was set from +24" to 800.5' BGS. This includes the Test Well end cap, screen and casing assembly see construction diagram. SWL 145 ft

BOREHOLE LOG Owner:

Project: Callamont Project Number:

Location: Callahan Ranch Rd. Driller: Lang Drilling, Ron Behrandt

Coordinates: Rig: LM-120

Elevation: 5,480' Bits: 19", 12 3/4"

Total Depth: 820' Fluid: Bentonite Mud, Reverse Circulation

Well Number: CT-1

Page 1 of 7

Date Time

Start: 3/29/2001 7:30AM

Finish: 3/31/2001 6:00PM

Geophysical Log: YES

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
	1.18				0							15%	10%	5%		0 to 60' SURFACE ALLUVIUM, unconsolidated, sand, gravel, cobbles and boulders, dark grey to grey, occasionally brown, subrounded to subangular, mixed lithologies of predominantly granodiorite and andesite, clay content varies.
10																0 to 20' interval is as above but sand and gravel with increasing clay content.
	1.18				0							20%	10%	5%		
20																20' to 30' interval is as above.
	1.11				0							20%	10%	5%		
30																30' to 40' interval is as above.
	1.11				0							15%	10%	5%		
40																40' to 50' interval is as above, but coarse sand.
	1.18				0							10%	5%	10%		
50																50' to 60' interval is as above, but sand and gravel.
	1 18				0							5%	5%	10%		
60																60' to 160' Mixed Colluvium, unconsolidated, occasionally dark brown, dark gray to gray chips with plagiclase feldspar, quartz, oligioclase feldspar, hornblende and mica, rounded to subangular, mixed lithologies of predominantly andesite and granodiorite, clay content varies.
	no data				3							>5%	5%	5%		
70																70' to 80' interval is as above, but sand.
	no data													5%		
80																80' to 90' interval is as above, but coarse sand.
	2.5															
90																90' to 100' interval is as above, but coarse sand.
	2.5															
100																100' to 110' interval is as above, but coarse sand with occasional gravel.
	1.18															
110																110' to 120' interval is as above, but coarse sand, increased clay content, bit plugged at 120'.
	1.18												5%			
120																

BOREHOLE LOG Owner:

Project: Callamont Project Number:

Location: Callahan Ranch Rd. Driller: Lang Drilling

Coordinates: Rig: LM-120

Elevation: 5,480' Bits. 19", 12 3/4"

Total Depth: 820' Fluid: Bentonite Mud, Reverse Circulation

Well Number: CT-1

Page 2 of 7

	Date	Time
Start:	3/29/2001	7:30AM
Finish:	3/31/2001	6:00PM

Geophysical Log: YES

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
130	0.58															60' to 160' MIXED COLLUVIUM, unconsolidated, occasionally dark brown, dark gray to gray chips with plagiclase feldspar, quartz, oligioclase feldspar, hornblende and mica, rounded to subangular, mixed lithologies of predominantly andesite and granodiorite, clay content varies. 120' to 130' interval is coarse sand.
140	0.58											5%	5%			130' to 140' as above, but sand and gravel with increasing clay and silt content
150	0.83											25%	10%	5%		140' to 150' as above, but sand and gravel with increasing clay and silt content.
160	0.83											30%	10%	5%		150' to 160' interval is as above, with increasing clay content.
170	0.83															160' to 280' SAND AND GRAVEL, unconsolidated, occasionally dark brown, dark gray to gray chips with plagiclase feldspar, quartz, oligioclase feldspar, hornblende and mica, rounded to subangular, mixed lithologies of predminantly andesite and granodiorite, clay content vanes.
180	0.83											5%				170' to 180' interval is as above, but sand and gravel, with increasing clay content.
190	0.83											15%				180' to 190' interval is as above, but increasing clay content, chips are large and angular.
200	0.83											10%				190' to 200' interval is as above, but decreasing clay content, increasing granodiorite content.
210	0.83											5%				200' to 210' interval is as above, but coarse sand and gravel with decreasing clay content.
220	0.83											5%				210' to 220' interval is as above, but sand.
230	0.83											5%				220' to 230' interval is as above, but sand and gravel with high granodiorite content.
240	0.83											5%				230' to 240' interval is as above, but with decreasing granodiorite content.

Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.

BOREHOLE LOG Owner:

Project: Callamont Project Number:

Location: Callahan Ranch Rd. Driller: Lang Drilling

Coordinates. Rig: LM-120

Elevation: 5,480' Bits: 19", 12 3/4"

Total Depth: 820' Fluid: Bentonite Mud, Reverse Circulation

Well Number: CT-1

Page 3 of 7

Date Time

Start: 3/29/2001 7:30AM

Finish: 3/31/2001 6:00PM

Geophysical Log: YES

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
																160' to 280' SAND AND GRAVEL, unconsolidated, occasionally dark brown, dark gray to gray, or white chips with plagiclase feldspar, quartz, oligioclase feldspar, hornblende and mica, rounded to subangular, mixed lithologies andesite and granodiorite, clay content varies.
	0.83											5%				
250																250' to 260' as above, but chips are increasingly angular.
	0.83											5%				
260																260' to 270' as above but sand with increasing clay content.
	0.74											10%	5%			
270																270' to 280' as above.
	0 74											15:%	5%			
280																280 to 340' ANDESITE, decomposed, dark gray to brown, fine grained chips, plagioclase feldspar, subangular to angular, increasing clay content.
	1.3											30%				
290																290' to 300' as above.
	1.3											25%				
300																300' to 310' as above.
	1.43											25%				
310																310' to 320' as above
	1.43											25%				
320																320' to 330' as above.
	1											25%				
330																330 to 340' ANDESITE, solid material, dark gray to gray, fine grained chips, plagioclase feldspar, subangular to angular, decreasing clay content.
	1											10%				
340																340' to 420' SAND AND GRAVEL, with cobbles and boulders, gray to dark gray, brown, white, rounded to angular, mixed lithologies, predominantly granodiorite and andesite.
	1.54											30%	5%	10%		
350																350' to 360' as above but with decreasing clay content.
	1.54											25%	5%	10%		
360																

BOREHOLE LOG

Project: Callamont
Location: Callahan Ranch Rd.
Coordinates:
Elevation: 5,480'
Total Depth: 820'

Owner:
Project Number:
Driller: Lang Drilling
Rig: LM-120
Bits: 19", 12 3/4"
Fluid: Bentonite Mud, Reverse Circulation

Well Number: CT-1
Page 4 of 7
Date / Time
Start: 3/29/2001 7:30AM
Finish: 3/31/2001 6:00PM

Geophysical Log: YES

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Samples Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
																Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
																340' to 420' SAND AND GRAVEL, with cobbles and boulders, gray to dark gray, brown, white, rounded to angular, mixed lithologies, predominanatly granodiorite and andesite.
	1.18											20%	5%	5%		
370																370' to 380' as above, but with large angular fragments of graondiorite, and angular small grained sediments. May indicated boulders of granodiorite associated with gravels
	1.18											20%	5%	10%		
380																380' to 390' SAND AND GRAVEL, gray to dark gray, brown, white, mostly rounded but with occasional subangular fragments, decreasing clay content.
	1.43											15%	5%	5%		
390																390' to 400' as above, but medium to fine quartz sand, rounded to subangular.
	1.43											15%	5%	10%		
400																400' to 410' as above but sand and gravel, with minor clay content.
	1.11											10%	5%	5%		
410																410' to 420' as above but sand and gravel, with increasing clay content.
	1 11											40%	10%	5%		
420																420 to 438' ANDESITE, solid material, dark gray to gray, fine grained chips, plagioclase feldspar, subangular to angular, decreasing clay content, lots of rig chatter from 420' to 438'.
	0.89				3											
430																430' to 440' as above, but changes back to sedimentary material at 438'.
	0.89				2							5%				
440																438' to 500' SAND AND GRAVEL, with cobbles and boulders, gray to dark gray, brown, white, rounded to angular, lithology is predominanatly andesite, very little clay.
	1.82															
450																450' to 460' as above with increasing andesite chip, andesite is very fine grained.
	1 82											5%	10%	15%		
460																460-470' as above but with large corase grained andesite chips and minor clay
	1.11											5%	10%	15%		
470																470' to 480' as above.
	1.11											5%	10%	15%		
480																

BOREHOLE LOG Owner: Well Number: **CT-1**

Project: Callamont Project Number: Page 5 of 7

Location. Callahan Ranch Rd. Driller: Lang Drilling Date Time

Coordinates: Rig: LM-120 Start: 3/29/2001 7:30AM

Elevation: 5,480' Bits. 19", 12 3/4" Finish: 3/31/2001 6:00PM

Total Depth: 820' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: YES

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
490												5%				438' to 500' SAND AND GRAVEL, with cobbles and boulders, gray to dark gray, brown, white, rounded to angular, lithology is predominanatly andesite, coarse grained, large chips, very little clay.
500												5%				490' to 500' as above.
510												10%				500' to 520' ANDESITE, dark grey to grey, brown, decomposed material, increased clay content.
520												30%				510' to 520' as above.
530												5%	5%	5%		520' to 600' SAND AND GRAVEL, with cobbles and boulders, gray to dark gray, lithology is predominanatly andesite, coarse grained, large chips, clay content varies.
540												5%	5%	5%		530' to 540' as above, but with increasing clay content, and larger percentage of rounded material.
550												5%				540' to 550' as above with large chips of andesite with clay balls.
560												>5%		10%		550' to 560' as above but with increasing sand content.
570														5%		560' to 570' as above with coarse gravel and sand sized chips, no clay.
580														5%		570' to 580' as above
590														5%		580' to 590' some coarse sand and gravel with chips of andesite.
600												35%	10%	5%		590' to 600' as above but with increasing clay content.

Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.

BOREHOLE LOG Owner:

Project: Callamont Project Number:

Location: Callahan Ranch Rd. Driller: Lang Drilling

Coordinates: Rig: LM-120

Elevation: 5,480' Bits: 19", 12 3/4"

Total Depth: 820' Fluid: Bentonite Mud, Reverse Circulation

Well Number: CT-1

Page 6 of 7

Date Time

Start: 3/29/2001 7:30AM

Finish: 3/31/2001 6:00PM

Geophysical Log: YES

Pen. R.		Circulation			Samples												Description
Depth	Penetration Rate, in feet/min	Inject, gpm	Return, gpm	Alteration	Rig Response (1 to 5)	Material	Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.
												10%				600' to 620' ANDESITE, dark grey to grey, brown, mostly solid material, but occasionally decomposed, many large chips of angular andesite with clay balls, andesite is fine grained.
610																
												5%				610' to 620' as above but decreasing clay content.
620																
					1							5%				620' to 640' SAND AND GRAVEL, with cobbles, gray to dark gray, white, rounded to angular, mixed lithologies, predominanatly granodiorite and andesite, clay content vanes.
630																
												5%				630' to 640' hard drilling, large chips, increasing clay content, granodiorite in chips.
640																
					3							10%				640' to 680' ANDESITE, dark grey to grey, brown, mostly solid material, but occasionally decomposed, many large chips of angular andesite with clay balls, andesite is fine grained.
650																
												10%				650' to 660' as above.
660																
												10%				660' to 670' as above.
670																
												10%				670' to 680' as above.
680																
												5%	5%	10%		680' to 780' SAND AND GRAVEL, with cobbles, gray to dark gray, rounded to angular, lithology is predominanatly andesite, clay content varies, andiesite chips are vesicular and contain occasional clay filling of vesicles.
690																
												5%	5%	10%		690' to 700' as above, but chips increasing in size.
700																
												5%	5%	10%		700' to 710' as above.
710																
												5%	5%	10%		710' to 720' as above.
720																

BOREHOLE LOG Owner: Well Number: **CT-1**

Project: Callamont Project Number: Page 7 of 7

Location: Callahan Ranch Rd. Driller: Lang Drilling Date Time

Coordinates: Rig: LM-120 Start: 3/29/2001 7:30AM

Elevation: 5,480' Bits: 19", 12 3/4" Finish: 3/31/2001 6:00PM

Total Depth: 820' Fluid: Bentonite Mud, Reverse Circulation Geophysical Log: YES

Depth	Pen. R. Penetration Rate, in feet/min	Circulation Inject, gpm	Circulation Return, gpm	Alteration	Rig Response (1 to 5)	Samples Material	Samples Water (pH,EC,T)	Stratigraphy	Symbol	Lithology	USCS	Clay%	Silt%	fine sand %	Graphic	Description
730																680' to 810' SAND AND GRAVEL, gray to dark gray, rounded to angular, predominantly andesite, vesicular, with some clay fill in vesicles, from 720' to740' gravel is coarse with little sand and no clay, good groundwater potential.
740																730' to 740' as above.
750												20%	5%	5%		740' to 750' as above, but with increasing clay and sand content .
760												25%	5%	5%		750' to 760' as above, but with increasing clay content .
770												25%	5%	5%		760' to 770' as above.
780												15%	5%	5%		770' to 780' as above, but with decreasing clay content and increasing gravel content.
790												15%				780' to 800' ANDESITE, dark gray to gray, brick red, high clay content, solid and decomposed material, brick red clay zone.
800												5%				790' to 800' as above, but with decreasing clay.
810												10%		0		800' to 810' as above, but with decreasing clay content and much coarse gravel .
820																810' to 820' SAND, multicolored, increasing fines content.
830																**TOTAL DEPTH OF BOREHOLE = 820' ON 03-30-01 @ 6:00PM.**
840																

Note: Describe cuttings (including observations from driller, rig and shacker screen. Also note changes in drilling methods and drilling parameters including cfm, psi, weight on bit, psi, rotation.

Aquifer Test Data

Project Callamont | Test Well CT-1 | Observation
Location Callahan Ranch Road | Pump On _____ | Well _____ | Dist. _____
Hydrogeologist DC and RR | Pump Off _____ | Well _____ | Dist. _____
Pump Contractor Lang Drilling | Last Record _____ | Well _____ | Dist. _____
Comments Airlift Test, open ended at 750', at 81 gpm.

Time		Water Level			Discharge		Water Quality					Comments
Date/Clock	Total(sec)	Well CT-1	Well	Well	Totalizer X	Rate	Sand	Temp	pH	EC	TDS	
4/1/2001	0	145.5										initial static water level
	30											waiting for system to unload.
	58	150.4										
	75	out top										water blows out sounder pipe.
	122	150										
	172	150										
	191	152.2										
	210	155										
	229	156.7										
	240	157.9										
	255	158.4										
	270	160.1										
	285	160.6										
	300	161.4										
	318	162.2										
	330	162.6										
	345	162.65										
	390	163.6										
	415	164										
	428	164.1										
	450	164.2										
	459	164.2										
	480	164.35										
	510	164.5										
	540	164.8										
	570	164.8										air-lifting 81 gpm
	630	164.9										end of test.

Appendix B

Pumping Tests Data Sheets

Aqua Hydrogeologic Consulting
P.O. Box 18793
Reno, Nevada 89511
ph (775) 250-9700

Time-Drawdown plot with discharge

Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 10-day Constant-Discharge Pumping Data	Test conducted on: May 8 -18, 2001
Callamont Production Well No. 1 (South)	Callamont Production Well No 1 (South)

Static water level: 146.30 ft below datum

	Pumping test duration [min]	Water level [ft]	Drawdown [ft]	
1	1.00	193.85	47.55	
2	2.00	227.17	80.87	
3	3.00	251.89	105.59	
4	4.00	267.62	121.32	
5	5.00	274.11	127.81	
6	6.00	278.74	132.44	
7	7.00	281.97	135.67	
8	8.00	284.84	138.54	
9	9.00	286.06	139.76	
10	10.00	288.47	142.17	
11	12.00	289.76	143.46	
12	14.00	290.87	144.57	
13	16.00	297.36	151.06	
14	18.00	298.36	152.06	
15	20.00	299.51	153.21	
16	22.00	301.13	154.83	
17	24.00	302.56	156.26	
18	26.00	303.06	156.76	
19	28.00	303.85	157.55	
20	30.00	305.07	158.77	
21	35.00	305.47	159.17	
22	40.00	309.12	162.82	
23	45.00	310.49	164.19	
24	50.00	315.58	169.28	
25	55.00	317.37	171.07	
26	60.00	318.41	172.11	
27	70.00	321.17	174.87	
28	80.00	323.00	176.70	
29	90.00	324.79	178.49	
30	100.00	326.37	180.07	
31	110.00	327.26	180.96	
32	120.00	328.23	181.93	
33	140.00	330.52	184.22	
34	160.00	332.46	186.16	
35	180.00	335.25	188.95	
36	200.00	337.12	190.82	
37	220.00	339.59	193.29	
38	240.00	341.09	194.79	
39	260.00	344.21	197.91	
40	280.00	344.92	198.62	
41	300.00	346.18	199.88	
42	330.00	348.51	202.21	
43	360.00	350.62	204.32	
44	420.00	354.28	207.98	
45	450.00	355.74	209.44	
46	480.00	359.04	212.74	
47	510.00	361.47	215.17	
48	540.00	362.87	216.57	
49	570.00	365.41	219.11	
50	600.00	366.95	220.65	

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Reno, Nevada 89511
ph.(775) 250-9700

Time-Drawdown plot with discharge

Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 10-day Constant-Discharge Pumping Data	Test conducted on: May 8 -18, 2001
Callamont Production Well No. 1 (South)	Callamont Production Well No 1 (South)

Static water level: 146.30 ft below datum

	Pumping test duration [min]	Water level [ft]	Drawdown [ft]	
51	660.00	369.53	223.23	
52	720.00	375.58	229.28	
53	780.00	379.34	233.04	
54	840.00	380.80	234.50	
55	900.00	383.99	237.69	
56	1000.00	386.34	240.04	
57	1100.00	389.82	243.52	
58	1200.00	392.61	246.31	
59	1300.00	393.86	247.56	
60	1400.00	394.83	248.53	
61	1500.00	395.58	249.28	
62	1600.00	395.98	249.68	
63	1700.00	396.62	250.32	
64	1800.00	397.37	251.07	
65	1900.00	397.80	251.50	
66	2000.00	398.23	251.93	
67	2100.00	399.58	253.28	
68	2200.00	400.48	254.18	
69	2290.00	401.09	254.79	
70	2370.00	402.88	256.58	
71	2500.00	403.77	257.47	
72	2700.00	406.20	259.90	
73	2900.00	407.89	261.59	
74	3100.00	408.56	262.26	
75	3300.00	408.24	261.94	
76	3400.00	408.92	262.62	
77	3580.00	410.32	264.02	
78	3670.00	411.00	264.70	
79	3850.00	411.82	265.52	
80	4030.00	411.85	265.55	
81	4210.00	412.18	265.88	
82	4450.00	415.14	268.84	
83	4690.00	415.14	268.84	
84	4720.00	415.04	268.74	
85	4800.00	415.36	269.06	
86	5000.00	415.79	269.49	
87	5140.00	417.33	271.03	
88	5560.00	420.82	274.52	
89	5770.00	420.83	274.53	
90	5920.00	420.58	274.28	
91	6280.00	421.62	275.32	
92	7000.00	423.40	277.10	
93	7440.00	422.01	275.71	
94	7752.00	423.37	277.07	
95	8050.00	425.44	279.14	
96	8410.00	425.83	279.53	
97	8770.00	424.55	278.25	
98	9100.00	424.43	278.13	
99	9370.00	426.33	280.03	
100	9800.00	427.73	281.43	

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P.O. Box 18793
Reno, Nevada 89511
ph.(775) 250-9700

Time-Drawdown plot
with discharge

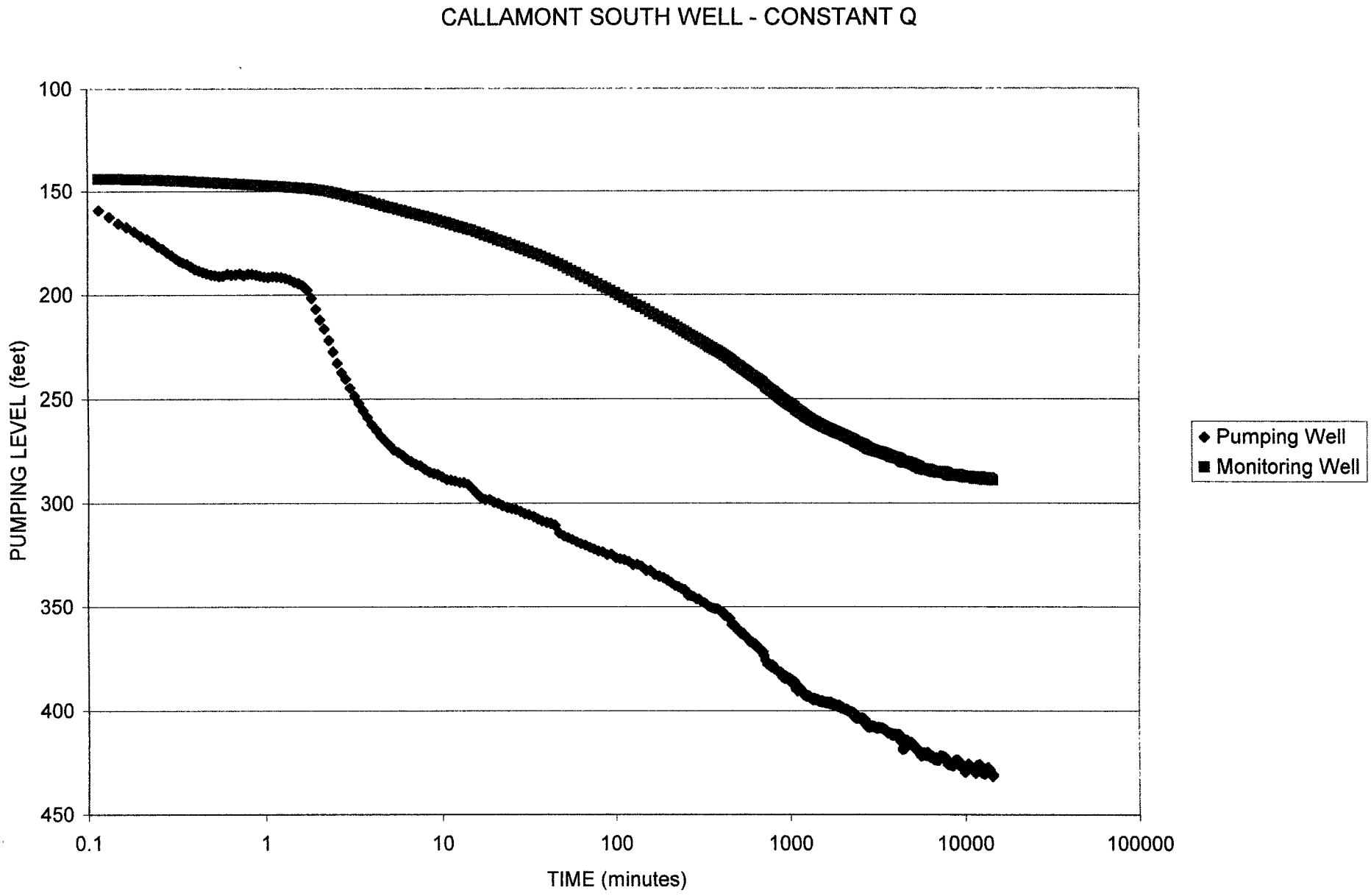
Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 10-day Constant-Discharge Pumping Data	Test conducted on: May 8 -18, 2001
Callamont Production Well No. 1 (South)	Callamont Production Well No 1 (South)

Static water level: 146.30 ft below datum

	Pumping test duration [min]	Water level [ft]	Drawdown [ft]
101	10250.00	427.30	281.00
102	10850.00	427.83	281.53
103	11460.00	428.18	281.88
104	11740.00	426.62	280.32
105	12960.00	429.16	282.86
106	13247.00	429.51	283.21
107	13997.00	430.58	284.28
108	14440.00	430.69	284.39


CALLAMONT SOUTH WELL - CONSTANT Q
PUMPING LEVEL (feet)
100
150
200
250
300
350
400
450
0.1
1
10
100
1000
10000
100000
TIME (minutes)
Pumping Well
Monitoring Well

Aqua Hydrogeologic Consulting
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ph.(775) 250-9700

Well performance test
Determination of specific capacity

Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 10-day Constant-Discharge Recovery Data	Test conducted on: May 8 18, 2001
Callamont Production Well No. 1 (South)	Callamont Production Well No. 1

	Discharge [U.S.gal/min]	Water level below datum [ft]	Drawdown [ft]	
1	14321.00	295.64	149.34	
2	14322.00	277.66	131.36	
3	14323.00	278.88	132.58	
4	14324.00	278.02	131.72	
5	14325.00	275.11	128.81	
6	14326.00	273.28	126.98	
7	14327.00	271.27	124.97	
8	14328.00	269.37	123.07	
9	14329.00	268.15	121.85	
10	14330.00	267.47	121.17	
11	14332.00	265.42	119.12	
12	14334.00	263.37	117.07	
13	14336.00	261.15	114.85	
14	14338.00	260.00	113.70	
15	14340.00	258.78	112.48	
16	14345.00	255.62	109.32	
17	14350.00	253.14	106.84	
18	14360.00	248.58	102.28	
19	14370.00	244.59	98.29	
20	14380.00	241.51	95.21	
21	14390.00	238.24	91.94	
22	14400.00	236.01	89.71	
23	14410.00	233.71	87.41	
24	14420.00	231.34	85.04	
25	14440.00	277.75	131.45	
26	14460.00	224.01	77.71	
27	14480.00	221.46	75.16	
28	14500.00	218.94	72.64	
29	14520.00	216.57	70.27	
30	14547.00	211.53	65.23	
31	14597.00	207.36	61.06	
32	14697.00	200.71	54.41	
33	14797.00	195.60	49.30	
34	14897.00	191.40	45.10	
35	14997.00	187.80	41.50	
36	15097.00	184.70	38.40	
37	15197.00	182.00	35.70	
38	15297.00	179.60	33.30	
39	15497.00	175.42	29.12	
40	15697.00	171.80	25.50	
41	15897.00	168.80	22.50	
42	16097.00	166.10	19.80	
43	16297.00	163.76	17.46	
44	16497.00	161.70	15.40	
45	16697.00	159.90	13.60	
46	16897.00	158.25	11.95	
47	17097.00	156.80	10.50	
48	17297.00	155.50	9.20	
49	17497.00	154.30	8.00	
50	17697.00	153.18	6.88	

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ph (775) 250-9700

Well performance test
Determination of specific capacity

Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 10-day Constant-Discharge Recovery Data	Test conducted on: May 8 18, 2001
Callamont Production Well No. 1 (South)	Callamont Production Well No. 1

	Discharge [U.S.gal/min]	Water level below datum [ft]	Drawdown [ft]	
51	17897.00	152.20	5.90	
52	18097.00	151.30	5.00	
53	18297.00	150.50	4.20	
54	18497.00	149.70	3.40	
55	18647.00	149.30	3.00	
56	20087.00	144.60	-1.70	

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ph.(775)250-9700

Pumping test analysis
Time-Drawdown plot
with discharge

Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 7-day Constant-Discharge	Test conducted on: May 27 - June 3, 2001
Production Well No. 2 (North)	Callamont Production Well No. 2 (North)

Static water level: 150.36 ft below datum

	Pumping test duration [min]	Water level [ft]	Drawdown [ft]
1	1.00	204.80	54.44
2	2.00	252.67	102.31
3	3.00	290.53	140.17
4	4.00	311.31	160.95
5	5.00	234.15	83.79
6	6.00	330.18	179.82
7	7.00	334.19	183.83
8	8.00	336.42	186.06
9	9.00	343.51	193.15
10	10.00	345.24	194.88
11	12.00	346.92	196.56
12	14.00	349.57	199.21
13	16.00	351.22	200.86
14	18.00	352.01	201.65
15	20.00	352.69	202.33
16	25.00	354.12	203.76
17	30.00	354.77	204.41
18	50.00	358.40	208.04
19	60.00	358.79	208.43
20	70.00	359.75	209.39
21	80.00	359.84	209.48
22	90.00	361.20	210.84
23	100.00	362.24	211.88
24	120.00	362.02	211.66
25	140.00	363.78	213.42
26	160.00	364.55	214.19
27	180.00	365.68	215.32
28	200.00	363.78	213.42
29	230.00	366.90	216.54
30	260.00	365.97	215.61
31	290.00	368.48	218.12
32	320.00	373.24	222.88
33	360.00	377.07	226.71
34	420.00	376.32	225.96
35	480.00	380.12	229.76
36	540.00	378.83	228.47
37	600.00	380.83	230.47
38	660.00	383.06	232.70
39	720.00	382.84	232.48
40	780.00	384.81	234.45
41	840.00	387.53	237.17
42	900.00	386.21	235.85
43	1000.00	386.82	236.46
44	1100.00	388.43	238.07
45	1200.00	388.61	238.25
46	1320.00	391.80	241.44
47	1440.00	389.86	239.50
48	1560.00	391.69	241.33
49	1680.00	390.14	239.78
50	1800.00	390.32	239.96

P.O. Box 18793 Reno, Nevada 89511 ph.(775)250-9700	Time-Drawdown plot with discharge	Project: Callamont Estates Evaluated by: David Carlson

Pumping Test No. 7-day Constant-Discharge	Test conducted on: May 27 - June 3, 2001
Production Well No. 2 (North)	Callamont Production Well No. 2 (North)

Static water level: 150.36 ft below datum

	Pumping test duration [min]	Water level [ft]	Drawdown [ft]	
51	1920.00	396.45	246.09	
52	2040.00	398.52	248.16	
53	2160.00	401.24	250.88	
54	2280.00	402.78	252.42	
55	2700.00	403.46	253.10	
56	2880.00	401.39	251.03	
57	3180.00	404.00	253.64	
58	3240.00	405.61	255.25	
59	3360.00	406.00	255.64	
60	3420.00	406.83	256.47	
61	3480.00	406.54	256.18	
62	3540.00	407.30	256.94	
63	3600.00	408.55	258.19	
64	3660.00	409.69	259.33	
65	3720.00	410.12	259.76	
66	3780.00	411.48	261.12	
67	3840.00	412.37	262.01	
68	3900.00	412.20	261.84	
69	3960.00	410.94	260.58	
70	4020.00	412.41	262.05	
71	4080.00	413.16	262.80	
72	4140.00	406.72	256.36	
73	4200.00	407.15	256.79	
74	4260.00	407.87	257.51	
75	4320.00	407.33	256.97	
76	4680.00	410.41	260.05	
77	4800.00	409.76	259.40	
78	4950.00	413.27	262.91	
79	5100.00	414.99	264.63	
80	5700.00	413.88	263.52	
81	6120.00	413.41	263.05	
82	7140.00	416.99	266.63	
83	7560.00	416.53	266.17	
84	7950.00	418.92	268.56	
85	8550.00	421.36	271.00	
86	9010.00	418.85	268.49	
87	10010.00	423.25	272.89	

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Reno, Nevada 89511
ph.(775) 250-9700

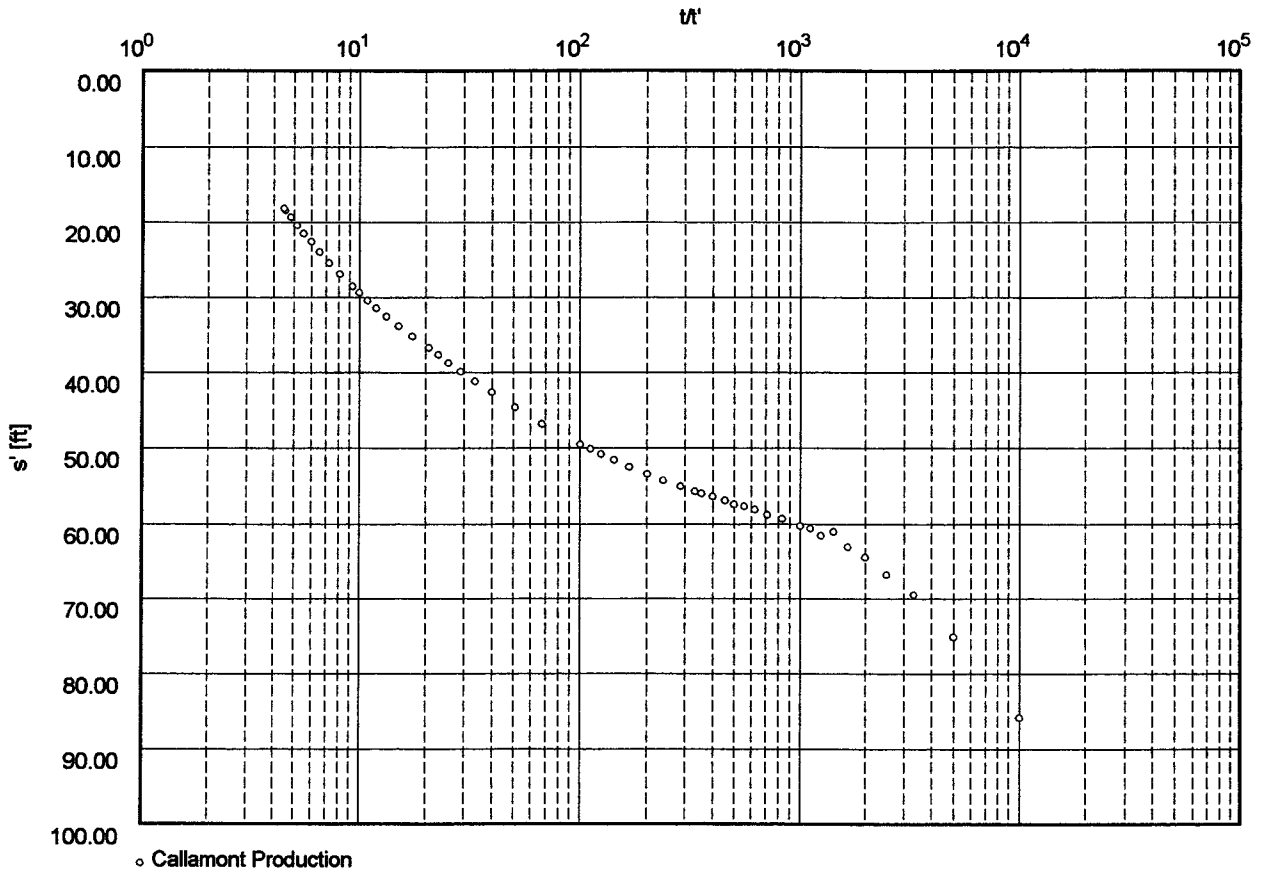
Recovery method after
THEIS & JACOB
Confined aquifer

Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 7-day Constant-discharge Recovery Data	Test conducted on:
Callamont Production Well No. 2 (North)	
Discharge 650.00 U.S.gal/min	

Pumping test duration: 10000.00 min



Transmissivity [ft²/min]: 9.26×10^{-1}

Aqua Hydrogeologic Consulting
P.O. Box 18793
Reno, Nevada 89511
ph.(775) 250-9700

Recovery method after
THEIS & JACOB
Confined aquifer

Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 7-day Constant-discharge Recovery Data	Test conducted on:
Callamont Production Well No. 2 (North)	Callamont Production Well No. 2 (North)
Discharge 650.00 U.S.gal/min	
Static water level: 150.36 ft below datum	Pumping test duration: 10000.00 min

	Time from end of pumping [min]	Water level [ft]	Residual drawdown [ft]
1	1.00	236.22	85.86
2	2.00	225.61	75.25
3	3.00	219.85	69.49
4	4.00	217.16	66.80
5	5.00	214.82	64.46
6	6.00	213.45	63.09
7	7.00	211.40	61.04
8	8.00	211.90	61.54
9	9.00	210.93	60.57
10	10.00	210.64	60.28
11	12.00	209.67	59.31
12	14.00	209.17	58.81
13	16.00	208.52	58.16
14	18.00	208.09	57.73
15	20.00	207.84	57.48
16	22.00	207.30	56.94
17	25.00	206.83	56.47
18	28.00	206.36	56.00
19	30.00	206.14	55.78
20	35.00	205.46	55.10
21	42.00	204.67	54.31
22	50.00	203.84	53.48
23	60.00	202.87	52.51
24	70.00	201.94	51.58
25	80.00	201.25	50.89
26	90.00	200.57	50.21
27	100.00	199.92	49.56
28	150.00	197.26	46.90
29	200.00	195.00	44.64
30	257.00	193.00	42.64
31	307.00	191.50	41.14
32	357.00	190.24	39.88
33	407.00	189.05	38.69
34	457.00	187.97	37.61
35	507.00	187.01	36.65
36	607.00	185.49	35.13
37	707.00	184.15	33.79
38	807.00	182.89	32.53
39	907.00	181.81	31.45
40	1007.00	180.73	30.37
41	1107.00	179.76	29.40
42	1207.00	178.86	28.50
43	1407.00	177.27	26.91
44	1607.00	175.80	25.44
45	1807.00	174.39	24.03
46	2007.00	173.03	22.67
47	2207.00	171.93	21.57
48	2407.00	170.86	20.50
49	2607.00	169.71	19.35
50	2807.00	168.78	18.42

Aqua Hydrogeologic Consulting
P.O. Box 18793
Reno, Nevada 89511
ph.(775) 250-9700

Recovery method after
THEIS & JACOB
Confined aquifer

Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 7-day Constant-discharge Recovery Data	Test conducted on:
Callamont Production Well No. 2 (North)	Callamont Production Well No. 2 (North)
Discharge 650.00 U.S.gal/min	
Static water level: 150.36 ft below datum	Pumping test duration: 10000.00 min

	Time from end of pumping [min]	Water level [ft]	Residual drawdown [ft]	
51	2867.00	168.52	18.16	

Aqua Hydrogeologic Consulting
P.O. Box 18793
Reno, Nevada 89511
ph.(775)250-9700

Time-Drawdown plot

Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 10-day Constant-Discharge	Test conducted on: May 8 - 18, 2001
Test Well Drawdown Data Set	Callamont Estates Test Well
	Distance from the pumping well 50.00 ft

Static water level: 144.10 ft below datum

	Pumping test duration [min]	Water level [ft]	Drawdown [ft]
1	1.00	148.13	4.03
2	2.00	150.62	6.52
3	3.00	153.65	9.55
4	4.00	156.51	12.41
5	5.00	158.32	14.22
6	6.00	160.10	16.00
7	7.00	161.83	17.73
8	8.00	163.02	18.92
9	9.00	164.22	20.12
10	10.00	165.42	21.32
11	12.00	167.26	23.16
12	14.00	168.46	24.36
13	16.00	160.64	16.54
14	18.00	172.15	28.05
15	20.00	172.89	28.79
16	22.00	174.39	30.29
17	24.00	175.92	31.82
18	26.00	176.68	32.58
19	28.00	177.47	33.37
20	30.00	178.28	34.18
21	35.00	180.83	36.73
22	40.00	182.58	38.48
23	45.00	184.38	40.28
24	50.00	186.50	42.40
25	55.00	188.63	44.53
26	60.00	189.70	45.60
27	70.00	192.84	48.74
28	80.00	195.01	50.91
29	90.00	197.20	53.10
30	100.00	199.39	55.29
31	110.00	201.52	57.42
32	120.00	202.60	58.50
33	140.00	206.02	61.92
34	160.00	208.34	64.24
35	180.00	210.72	66.62
36	200.00	212.90	68.80
37	220.00	214.86	70.76
38	240.00	216.77	72.67
39	260.00	218.62	74.52
40	280.00	220.20	76.10
41	300.00	221.79	77.69
42	330.00	223.82	79.72
43	360.00	225.71	81.61
44	420.00	229.02	84.92
45	450.00	230.63	86.53
46	480.00	232.38	88.28
47	510.00	234.06	89.96
48	570.00	237.00	92.90
49	600.00	238.34	94.24
50	660.00	240.69	96.59

Aqua Hydrogeologic Consulting
P.O. Box 18793
Reno, Nevada 89511
ph.(775)250-9700

Time-Drawdown plot

Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 10-day Constant-Discharge	Test conducted on: May 8 - 18, 2001
Test Well Drawdown Data Set	Callamont Estates Test Well
	Distance from the pumping well 50.00 ft

Static water level: 144.10 ft below datum

	Pumping test duration [min]	Water level [ft]	Drawdown [ft]	
51	720.00	243.43	99.33	
52	780.00	246.06	101.96	
53	840.00	248.08	103.98	
54	900.00	250.07	105.97	
55	1000.00	252.78	108.68	
56	1100.00	254.87	110.77	
57	1200.00	257.62	113.52	
58	1300.00	259.55	115.45	
59	1400.00	261.12	117.02	
60	1500.00	262.48	118.38	
61	1600.00	263.59	119.49	
62	1700.00	264.60	120.50	
63	1800.00	265.45	121.35	
64	1900.00	266.37	122.27	
65	2000.00	267.10	123.00	
66	2100.00	268.05	123.95	
67	2200.00	268.83	124.73	
68	2290.00	269.51	125.41	
69	2370.00	270.46	126.36	
70	2500.00	271.36	127.26	
71	2700.00	272.90	128.80	
72	2900.00	274.32	130.22	
73	3100.00	275.19	131.09	
74	3300.00	275.74	131.64	
75	3400.00	276.04	131.94	
76	3580.00	276.73	132.63	
77	3670.00	277.15	133.05	
78	3850.00	277.85	133.75	
79	4030.00	278.27	134.17	
80	4210.00	278.62	134.52	
81	4450.00	280.06	135.96	
82	4720.00	280.64	136.54	
83	4800.00	280.64	136.54	
84	5000.00	281.05	136.95	
85	5140.00	281.53	137.43	
86	5560.00	283.16	139.06	
87	5770.00	283.59	139.49	
88	5920.00	283.73	139.63	
89	6280.00	284.07	139.97	
90	7000.00	285.13	141.03	
91	7440.00	285.02	140.92	
92	7753.00	285.41	141.31	
93	8050.00	286.18	142.08	
94	8410.00	286.56	142.46	
95	8770.00	286.33	142.23	
96	9100.00	286.17	142.07	
97	9370.00	286.79	142.69	
98	9800.00	287.29	143.19	
99	10250.00	287.49	143.39	
100	10850.00	287.49	143.39	

P.O. Box 18793
Reno, Nevada 89511
ph (775)250-9700

Time-Drawdown plot

Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 10-day Constant-Discharge

Test conducted on: May 8 - 18, 2001

Test Well Drawdown Data Set

Callamont Estates Test Well

Distance from the pumping well 50.00 ft

Static water level: 144.10 ft below datum

	Pumping test duration [min]	Water level [ft]	Drawdown [ft]
101	11460.00	288.06	143.96
102	11740.00	287.39	143.29
103	12960.00	288.47	144.37
104	13247.00	288.29	144.19
105	14440.00	288.92	144.82

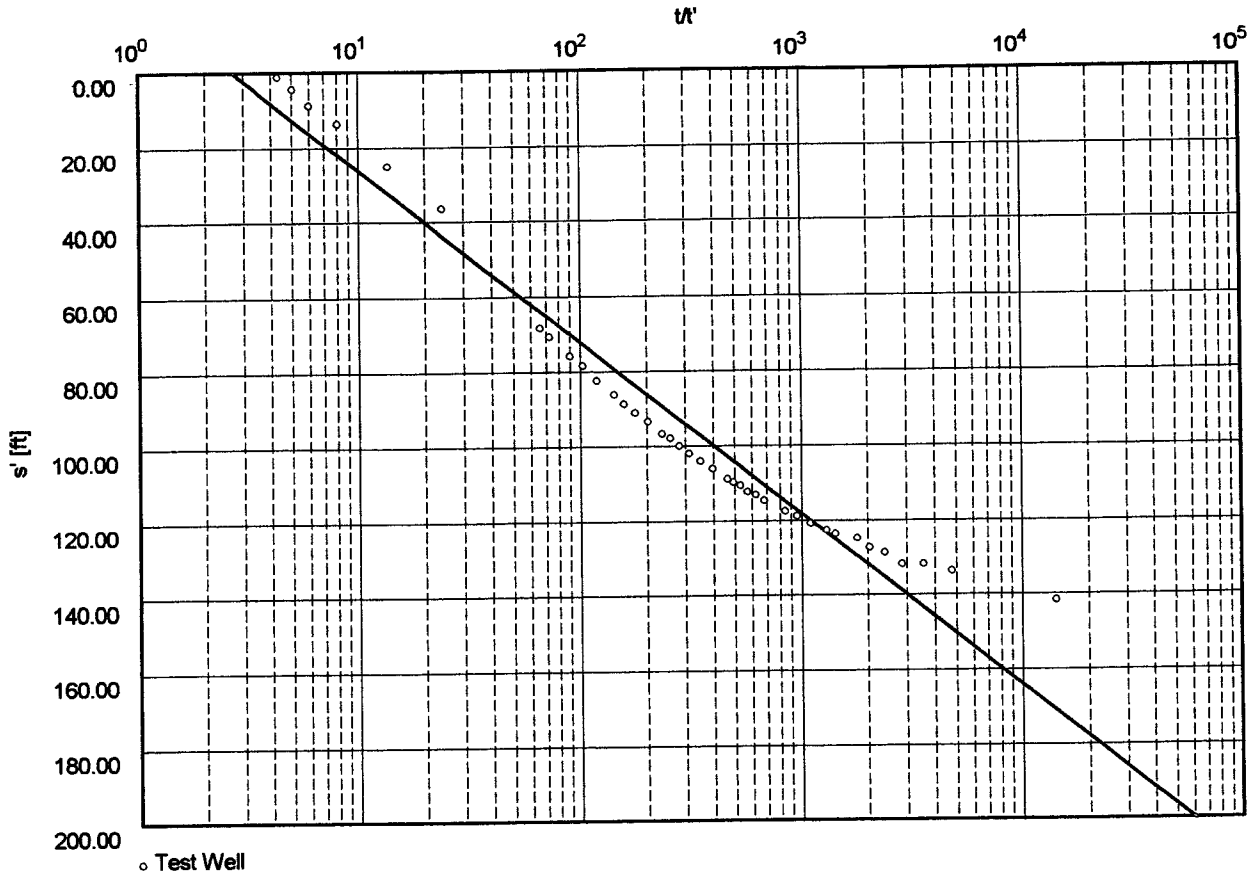
P.O. Box 18793
Reno, Nevada 89511
ph.(775) 250-9700

Recovery method after
THEIS & JACOB
Confined aquifer

Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 10-day Constant-Discharge Recovery Data	Test conducted on: May 8 - 18, 2001
Test Well Drawdown Recovery Data	
Discharge 800.00 U.S.gal/min	
	Pumping test duration: 14319:00 min



Transmissivity [ft²/min]: 4.26×10^{-1}

Aqua Hydrogeologic Consulting
P.O. Box 18793
Reno, Nevada 89511
ph.(775) 250-9700

Recovery method after
THEIS & JACOB
Confined aquifer

Project: Callamont Estates

Evaluated by: David Carlson

Pumping Test No. 10-day Constant-Discharge Recovery Data	Test conducted on: May 8 - 18, 2001
Test Well Drawdown Recovery Data	Test Well
Discharge 800.00 U.S.gal/min	Distance from the pumping well 50.00 ft
Static water level: 144.10 ft below datum	Pumping test duration: 14319.00 min

	Time from end of pumping [min]	Water level [ft]	Residual drawdown [ft]	
1	1.00	285.92	141.82	
2	3.00	278.11	134.01	
3	4.00	276.20	132.10	
4	5.00	276.20	132.10	
5	6.00	272.91	128.81	
6	7.00	271.57	127.47	
7	8.00	269.04	124.94	
8	10.00	267.94	123.84	
9	11.00	266.82	122.72	
10	13.00	264.97	120.87	
11	15.00	263.03	118.93	
12	17.00	261.66	117.56	
13	21.00	258.72	114.62	
14	23.00	257.13	113.03	
15	25.00	256.32	112.22	
16	27.00	254.64	110.54	
17	29.00	253.77	109.67	
18	31.00	252.92	108.82	
19	36.00	250.17	106.07	
20	41.00	248.24	104.14	
21	46.00	246.21	102.11	
22	51.00	244.13	100.03	
23	56.00	241.98	97.88	
24	61.00	240.87	96.77	
25	71.00	237.47	93.37	
26	81.00	235.11	91.01	
27	91.00	232.70	88.60	
28	101.00	230.24	86.14	
29	121.00	226.43	82.33	
30	141.00	222.55	78.45	
31	161.00	219.94	75.84	
32	201.00	214.84	70.74	
33	221.00	212.59	68.49	
34	621.00	180.83	36.73	
35	1131.00	169.47	25.37	
36	2031.00	157.70	13.60	
37	2861.00	152.69	8.59	
38	3551.00	148.53	4.43	
39	4341.00	145.27	1.17	
40	5701.00	143.48	-0.62	

Appendix C

Water Quality Data

MONTGOMERY WATSON LABORATORIES
a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Washoe County Dept. of Water
Resources
4930 Energy Way

Reno , NV 89502-4106

Attention: John Hulett
Fax: (775) 954-4610

HDS Hillary Strayer
Project Manager

Report#: 80431
DRINKING

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report,QC Summary,Data Report,Hits Report, totaling 4 page[s].

MONTGOMERY WATSON LABORATORIES CHAIN OF CUSTODY RECORD

80431

555 E. Walnut St., Pasadena, CA 91101
(626) 568-6400 (800) 566-5227

MWLABS USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED/LOGGED IN BY: NR

SAMPLE TEMP, RECEIPT AT LAB: 6 °C

BLUE ICE: FROZEN ___ PARTIALLY FROZEN ___ THAWED ✓

TO BE COMPLETED BY SAMPLER:

PROJECT NAME: Washoe County DWR

PROJECT JOB # / P.O.#:

SAMPLER(S): PRINTED NAME AND SIGNATURE: John Hulett

REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES ☐ (check for yes)

ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)

TIME	DATE	LOCATION	IDENTIFIER	GRAB	COMP	Radon	SAMPLER COMMENTS
11:00	5-29-01	Callamont North		X		X	(1 of 2) Bad Kerr

This portion can be removed for Recipient's records

5-29-01 FedEx Tracking Number 820294090 30

Sender's Name: John Hulett Phone: 702 954-4

Company: WASHOE CTY DEPT OF WATER RES

Address: 4930 EN ROY WAY

Dept./Floor/Suite/Room

City: RENO State: NV ZIP: 89502

Email Billing Reference

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:		John Hulett	WCDWR	5-29-01	14:00
RECEIVED BY:	NR	N Rodriguez		5-30-01	10AM
RELINQUISHED BY:					
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

C-O-C# _____

: ıtgomery Watson Laboratori
555 E. Walnut St., Pasadena, CA 91101
PHONE: 626-568-6400/FAX: 626-568-6324

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Washoe County Dept. of Water Resources
4930 Energy Way
Reno, NV 89502-4106
Attn: John Hulett
Phone: (775) 954-4625

Customer Code: WASHOE
PO#: 179701
Group#: 80431
Project#: DRINKING
Proj Mgr: Hillary Strayer
Phone: (626) 568-6412

The following samples were received from you on **05/30/01**. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Montgomery Watson Laboratories.

Sample#	Sample Id	Matrix	Sample Date
	Tests Scheduled		
2105300143	CALLAMOUT NORTH	Water	29-may-2001 11:00:00
	@RN		

Test Acronym Description

Test Acronym	Description
@RN	Radon 222

MONTGOMERY WATSON LABORATORIES
a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory Data Report #80431

Washoe County Dept. of Water Resources
John Hulett
4930 Energy Way
Reno , NV 89502-4106

Samples Received

05/30/01

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
CALLAMOUT NORTH (2105300143) Sampled on 05/29/01 11:00								
				Radon 222				
	05/30/01 00:00	142902	(SM7500RN)	Radon 222	760	pCi/l	50	1
	05/30/01 00:00	142902	(SM7500RN)	Radon 222, Two Sigma Error	24	pCi/l	0.0000	1

MONTGOMERY WATSON LABORATORIES
a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory
QC Report
#80431

Washoe County Dept. of Water Resources

QC Ref #142902 Radon 222

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Radon 222	1000	1070	107.0	(80.00 - 120.00)	
LCS2	Radon 222	1000	1050	105.0	(80.00 - 120.00)	1.9
MBLK	Radon 222	ND				

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

MONTGOMERY WATSON LABORATORIES
a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Washoe County Dept. of Water
Resources
4930 Energy Way

Reno , NV 89502-4106

Attention: John Hulett
Fax: (775) 954-4610

HDS Hillary Strayer
Project Manager

Report#: 79361
DRINKING

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report,QC Summary,Data Report,Hits Report, totaling 4 page[s].

MONTGOMERY WATSON LABORATORIES CHAIN OF CUSTODY RECORD

555 E. Walnut St., Pasadena, CA 91101
(626) 568-6400 (800) 566-5227

MWLABS USE ONLY:

LOGIN COMMENTS:

SAMPLES CHECKED/LOGGED IN BY:

SAMPLE TEMP, RECEIPT AT LAB: 5°C (Compliance: 4 +/- 2*C)

SAMPLES RECEIVED DAY OF COLLECTION? ☐ (check for yes)

BLUE ICE: FROZEN ___ PARTIALLY FROZEN ___ THAWED ___

TO BE COMPLETED BY SAMPLER:

TAT requested: STD X 1 week ___ 3 day ___ 1 day ___

COMPLIANCE SAMPLES ☐ (check for yes)
- Requires state forms ☐
NON-COMPLIANCE SAMPLES ☐

REGULATION: ___
(SDWA, Phase V, NPDES, FDA, ...)

CLIENT or PROJECT NAME: Washoe County DWR

PROJECT JOB # / P.O.#:

REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES ☐ (check for yes)

ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)

SAMPLER(S): PRINTED NAME AND SIGNATURE: John Hulett

TIME	DATE	SITE NAME or LOCATION	IDENTIFIER, STATE ID #	MATRIX *	GRAB	COMP	Radon	SAMPLER COMMENTS
11:00	5/9/01	Callamont South (1)		RGW	X		X	

* MATRIX TYPES:

Reported by Volume:
RSW = Raw Surface Water
RGW = Raw Ground Water
FW = Other Finished Water
CFW = Chlor(am)inated Finished Water
SW = Storm Water
WW = Other Waste Water
CWW = Chlorinated Waste Water

Reported by Weight:
SO = Soil
SL = Sludge

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:		John Hulett	WCDWR	5-9-01	13:00
RECEIVED BY:		M. McKee	MI-CA	5-10-1	
RELINQUISHED BY:					
RECEIVED BY:					

C-O-C# ___

Montgomery Watson Laboratories
555 E. Walnut St., Pasadena, CA 91101
PHONE: 626-568-6400/FAX: 626-568-6324

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Washoe County Dept. of Water Resources
4930 Energy Way
Reno, NV 89502-4106
Attn: John Hulett
Phone: (775) 954-4625

Customer Code: WASHOE
PO#: 179701
Group#: 79361
Project#: DRINKING
Proj Mgr: Hillary Strayer
Phone: (626) 568-6412

The following samples were received from you on **05/10/01**. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Montgomery Watson Laboratories.

Sample#	Sample Id	Matrix	Sample Date
	Tests Scheduled		
2105100246	CALLAMONT SOUTH 1	Water	09-may-2001 11:00:00
	@RN		

Test Acronym Description

Test Acronym	Description
@RN	Radon 222

MONTGOMERY WATSON LABORATORIES
a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory Data Report #79361

Washoe County Dept. of Water Resources
John Hulett
4930 Energy Way
Reno , NV 89502-4106

Samples Received

05/10/01

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
CALLAMONT SOUTH 1 (2105100246) Sampled on 05/09/01 11:00								
				Radon 222				
	05/11/01 00:00	141493	(SM7500RN	) Radon 222	1000	pCi/l	50	1
	05/11/01 00:00	141493	(SM7500RN	) Radon 222, Two Sigma Error	29	pCi/l	0.0000	1

MONTGOMERY WATSON LABORATORIES
a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory
QC Report
#79361

Washoe County Dept. of Water
Resources

QC Ref #141493 Radon 222

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Radon 222	1000	1010	101.0	(80.00 - 120.00)	
LCS2	Radon 222	1000	1050	105.0	(80.00 - 120.00)	3.9
MBLK	Radon 222	ND				

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

IN TRIPLICATE
(PLEASE PRINT OR TYPE)

NEVADA STATE HEALTH LABORATORY
University of Nevada School of Medicine/385
Reno, Nevada 89557
(775) 688-1335

149711

WATER CHEMISTRY ANALYSIS:

Attn: Fees may apply to some types of samples.

All of the information below must be filled in or the analysis will not be performed.

01 MAY -9 PM 1:53

State Nevada County Washoe
Township ...... Range ...... Section ......
General Location Callahan Ranch Road
Source Address Callamont South (#1)

TYPE OF ANALYSIS:

☒ Check here for ROUTINE DOMESTIC ANALYSIS.
Circle the constituents needed for PARTIAL ANALYSIS.

SAMPLING INSTRUCTIONS:

The sample submitted must be representative of the source. Spring and surface water samples should be as free of dirt and debris as possible. Wells should be pumped thoroughly before sampling, changing the water in the casing at least three times. Product water from filters should be sampled after running for about ten (10) minutes.

Sampled by John Hulett Date 5-9-01
Owner Washoe County Phone ......
Address P.O. Box 11130
City Reno State Nevada

REASON FOR ANALYSIS:

- ☐ Loan
- ☐ Personal health reasons
- ☐ Purchase of the property
- ☐ Rental or sale of property
- ☐ Subdivision approval
- ☒ Other SDWA

USE OF WATER:

- ☒ Domestic drinking water
- ☐ Geothermal
- ☐ Industrial or mining
- ☐ Irrigation
- ☐ Other ......

Initials ......

SOURCE OF WATER:

Filter ☐ Yes ☐ No
Public ☐ Yes ☐ No
Spring ......
Well X Depth ...... ft.
Hot ...... Cold ......
IN USE: ☐ Yes ☒ No

Type ......
Name ......
Surface ......
Casing diameter ...... in.
Casing depth ...... ft.

REPORT TO:

Name Terri Svetich (Washoe County)
Address P.O. Box 11130
City Reno
State Nevada Zip 89520-0027

The results below are representative only of the sample submitted to this laboratory.

FOR LABORATORY USE ONLY

0.0657 220 0.71 29.6 6.6 0.0 634 149711

Constituent	ppm	Constituent	ppm	Constituent	ppm	Constituent	S.U.
T.D.S. @ 180° C.	186	Chloride	1	Iron	0.07	Color	5
Hardness	103	Nitrate -N	0.1	Manganese	0.01	Turbitity	0.4
Calcium	20	Alkalinity	132	Copper	0.01	pH	8.00
Magnesium	13	Bicarbonate	161	Zinc	0.00	EC	262
Sodium	15	Carbonate	0	Barium	0.08	SI@20C	-0.10
Potassium	5	Fluoride	0.07	Boron	0.0		
Sulfate	5	Arsenic	< 0.003	Silica	63		
NO_2	<0.01	MBAS	<0.1	CN^-	<0.005	gross α	4±3 pCi/L
						gross β	8±2 pCi/L

PRINT OTHER DESIRED CONSTITUENTS BELOW

Constituent	ppm
Cd	<0.001
Cr	<0.001
Hg	<0.0005
Se	<0.001
Sb	<0.001
Be	<0.001
Ni	<0.001
Tl	<0.0005

Fee ......
Collected by ......
PWS I.D. ......
SDWA — Pri. ...... Sec. ......
1st ...... 2nd ...... 3rd ......
Date Rec'd ...... Init. ......

Remarks
• Collected during 10 day pump test of New Callamont well
• Sample collected @ 11:00
6-6-01
6-20-01
6-19

(Rev. 6/

IN TRIPLICATE
(PLEASE PRINT OR TYPE)

NEVADA STATE HEALTH LABORATORY
iversity of Nevada School of Medicine/385
Reno, Nevada 89557
(775) 688-1335

149712

WATER CHEMISTRY ANALYSIS:

ttn: Fees may apply to some types of samples.

01 MAY -3 PM 1:53

STATE LABORATORY

All of the information below must be filled in or the analysis will not be performed.

TYPE OF ANALYSIS:

☐ Check here for ROUTINE DOMESTIC ANALYSIS.
Circle the constituents needed for PARTIAL ANALYSIS.

State Nevada County Washoe
Township ..... Range ..... Section .....
General Location Callahan Ranch Rd.
Source Address Callamont South

SAMPLING INSTRUCTIONS:

The sample submitted must be representative of the source. Spring and surface water samples should be as free of dirt and debris as possible. Wells should be pumped thoroughly before sampling, changing the water in the casing at least three times. Product water from filters should be sampled after running for about ten (10) minutes.

Time Coll: 11:00
Sampled by John Hulett Date 5-9-01
Owner ..... Phone .....
Address .....
City ..... State .....

REASON FOR ANALYSIS:

☐ Loan
☐ Personal health reasons
☐ Purchase of the property
☐ Rental or sale of property
☐ Subdivision approval
☒ Other SDWA
Kit "C" TBLANK050901B

USE OF WATER:

☐ Domestic drinking water
☐ Geothermal
☐ Industrial or mining
☐ Irrigation
☐ Other .....
Initials .....

REPORT TO:

Name Terri Svetich (Washoe County DWR)
Address P.O. Box 11130
City Reno
State NV Zip 89520-0027

SOURCE OF WATER:

Filter ☐ Yes ☐ No
Public ☐ Yes ☐ No
Spring .....
Well (A) Depth ..... ft.
Hot ..... Cold .....
IN USE: ☐ Yes (X) No

Type .....
Name .....
Surface .....
Casing diameter ..... in.
Casing depth ..... ft.

The results below are representative only of the sample submitted to this laboratory.

FOR LABORATORY USE ONLY

Constituent	ppm	Constituent	ppm	Constituent	ppm	Constituent	S.U.
T.D.S. @ 180° C.		Chloride		Iron		Color	
Hardness		Nitrate		Manganese		Turbitity	
Calcium		Alkalinity		Copper		pH	
Magnesium		Bicarbonate		Zinc			
Sodium		Carbonate		Barium			
Potassium		Fluoride					
Sulfate		Arsenic				Phase I, II, III	NOT DETECTED
						THM's	See Attached Sheet
						Unregulated	

PRINT OTHER DESIRED CONSTITUENTS BELOW

Constituent	ppm

Fee .....
Collected by .....
PWS I.D. .....
SDWA — Pri. ..... Sec. .....
1st ..... 2nd ..... 3rd .....
Date Rec'd ..... Init. .....

Remarks .....
Delivered By _____
Received By: _____ RESULTS REPORTED
Condition: ☐ Sealed ☐ Unsealed
☐ Broken ☐ Leaking JUN 12 2001
Temp.: _____
Holding Time OK: ☐ Yes ☐ No
[ ] Preserved Correctly: _____

VOC only

Jm 5/11/01

ppm = parts per million, milligrams per liter; S.U. = Standard Units

(Rev. 6/99)

UNIVERSITY OF NEVADA
SCHOOL OF MEDICINE

Nevada State Health Laboratory
1660 N. Virginia St./MS 385
Reno, Nevada 89503-1783
(775) 688-1335
FAX: (775) 688-1460

5/11/01

Lab ID: 149712
Sample Type: SDWA

Date Sampled : 5/09/01
Date Received: 5/09/01

OWNER:
WCWRD
PO BOX 11130
RENO
NV, 89520

SAMPLE INFORMATION
Township: Range: Section:
General Location: CALLAHAN RANCH RD
Source Address: CALLAMONT SOUTH #1
Customer ID:

REPORT TO:
TERRI SVETICH
WCWRD
PO BOX 11130
RENO
NV, 89520

ANALYSES PERFORMED

Routine	:	SOCs	:
Tr. Metals - 2:		VOCs	: 1
Tr. Metals - 5:		A/B	:
MBAS	:	Partial:	
Nitrite	:		

COMMENTS:

The results below are representative only of the sample submitted to this laboratory.

Regulated Volatile Organic Compound Laboratory Data

Vinyl chloride:	< .0005 ppm	1,2-Dichloropropane:	< .0005 ppm
Benzene:	< .0005 ppm	Ethylbenzene:	< .0005 ppm
Carbon tetrachloride:	< .0005 ppm	Monochlorobenzene:	< .0005 ppm
1,2-Dichloroethane:	< .0005 ppm	1,2,-Dichlorobenzene:	< .0005 ppm
Trichloroethylene:	< .0005 ppm	Styrene:	< .0005 ppm
1,4-Dichlorobenzene:	< .0005 ppm	Tetrachloroethylene:	< .0005 ppm
1,1-Dichloroethylene:	< .0005 ppm	Toluene:	< .0005 ppm
1,1,1-Trichloroethane:	< .0005 ppm	Trans-1,2-Dichlorethyl.:	< .0005 ppm
Cis-1,2-Dichlorethylene:	< .0005 ppm	Xylenes (total):	< .0005 ppm
Dichloromethane:	< .0005 ppm	1,2,4-Trichlorobenzene:	< .0005 ppm
1,1,2-Trichloroethane:	< .0005 ppm		

Trihalomethane Laboratory Data

Chloroform:	< .0005 ppm	Dibromochloromethane:	< .0005 ppm
Bromodichloromethane:	< .0005 ppm	Bromoform:	< .0005 ppm

ppm = parts per million, milligrams per liter

Remarks No unregulated Compound found

RESULTS REPORTED 5/11/01

JUN 12 2001

IN TRIPLICATE
(PLEASE PRINT OR TYPE)

NEVADA STATE HEALTH LABORATORY
University of Nevada School of Medicine/385
Reno, Nevada 89557
(775) 688-1335

150033

WATER CHEMISTRY ANALYSIS:

Attn: Fees may apply to some types of samples.

01 MAY 2 PM 12:05

All of the information below must be filled in or the analysis will not be performed.

TYPE OF ANALYSIS:

☒ Check here for ROUTINE DOMESTIC ANALYSIS.
Circle the constituents needed for PARTIAL ANALYSIS.

State Nevada County Washoe
Township 17 Range 19 Section 11
General Location Callahan Ranch Rd
Source Address Callamont North well

SAMPLING INSTRUCTIONS:

The sample submitted must be representative of the source. Spring and surface water samples should be as free of dirt and debris as possible. Wells should be pumped thoroughly before sampling, changing the water in the casing at least three times. Product water from filters should be sampled after running for about ten (10) minutes.

Sampled by John Hulett Date 5-29-01
Owner Washoe County Phone
Address P.O. Box 11130
City Reno State Nevada

REASON FOR ANALYSIS:

- ☐ Loan
- ☐ Personal health reasons
- ☐ Purchase of the property
- ☐ Rental or sale of property
- ☐ Subdivision approval
- ☐ Other

USE OF WATER:

- ☒ Domestic drinking water
- ☐ Geothermal
- ☐ Industrial or mining
- ☐ Irrigation
- ☐ Other
- Initials

K.t 052901

REPORT TO:

Name Terri Svetich (Washoe County)
Address P.O. Box 11130
City Reno
State Nevada Zip 89520-0027

SOURCE OF WATER:

Filter ☐ Yes ☐ No
Public ☐ Yes ☐ No
Spring
Well ✓ Depth ft.
Hot Cold
IN USE: ☐ Yes ☒ No

Type
Name
Surface
Casing diameter in.
Casing depth ft.

The results below are representative only of the sample submitted to this laboratory.

FOR LABORATORY USE ONLY

Constituent	ppm	Constituent	ppm	Constituent	ppm	Constituent	S.U.
0.1798	188	0.79	29.8	5.6	0.0	232	150033
T.D.S. @ 180° C.	177	Chloride	1	Iron	0.02	Color	3
Hardness	93	Nitrate -N	0.1	Manganese	0.02	Turbitity	0.4
Calcium	19	Alkalinity	112	Copper	0.00	pH	8.11
Magnesium	11	Bicarbonate	137	Zinc	0.01	EC	225
Sodium	13	Carbonate	0	Barium	0.07	SI@20C	-0.08
Potassium	4	Fluoride	0.05	Boron	0.1		
Sulfate	3	Arsenic	< 0.003	Silica	64		
NO_2	<0.01	MBAS	<0.1	CN^-	<0.005	gross α	3 ± 3
						gross β	5 ± 2

PRINT OTHER DESIRED CONSTITUENTS BELOW

Constituent	ppm
Cd	<0.001
Cr	<0.001
Hg	<0.000
Se	<0.001
Sb	<0.001
Be	<0.001
Ni	<0.001
Tl	<0.0005

Fee
Collected by
PWS I.D.
SDWA — Pri. Sec.
1st 2nd 3rd
Date Rec'd Init.

Remarks J-7-25-01 JR 7/19/01 J-7-25-01 JR
* Collected from new Callamont North well during 10 Day pumptest
* No PWS No. at this time

ppm = parts per million, milligrams per liter; S.U. = Standard Units

(Rev 6.

IN TRIPLICATE
(PLEASE PRINT OR TYPE)

NEVADA STATE ~~HEALTH LA~~BORATORY
University of Nevada School of Medicine/385
Reno, Nevada 89557
(775) 688-1335

150034

WATER CHEMISTRY ANALYSIS:

Attn: Fees may apply to some types of samples.

All of the information below must be filled in or the analysis will not be performed.

01 JUN 22 PM 12:05

DATE
RATORY

TYPE OF ANALYSIS:

☐ Check here for ROUTINE DOMESTIC ANALYSIS.
Circle the constituents needed for PARTIAL ANALYSIS.

State Nevada County Washoe
Township 17 Range 19 Section 11 3
General Location Callahan Ranch Rd
Source Address Callamont North well

SAMPLING INSTRUCTIONS:

The sample submitted must be representative of the source. Spring and surface water samples should be as free of dirt and debris as possible. Wells should be pumped thoroughly before sampling, changing the water in the casing at least three times. Product water from filters should be sampled after running for about ten (10) minutes.

Sampled by John Hulett Date 5-29-01
Owner Washoe County Phone
Address P.O. Box 11130
City Reno State Nevada

REASON FOR ANALYSIS:

☐ Loan
☐ Personal health reasons
☐ Purchase of the property
☐ Rental or sale of property
☐ Subdivision approval
☐ Other

USE OF WATER:

☒ Domestic drinking water
☐ Geothermal
☐ Industrial or mining
☐ Irrigation
☐ Other
Initials Kit 05291

SOURCE OF WATER:

Filter ☐ Yes ☐ No
Public ☐ Yes ☐ No
Spring
Well ✕ Depth ft.
Hot Cold
IN USE: ☐ Yes ☒ No

Type
Name
Surface
Casing diameter in.
Casing depth ft.

REPORT TO:

Name Terri Svetich (Washoe County)
Address P.O. Box 11130
City Reno
State Nevada Zip 89520-0027

The results below are representative only of the sample submitted to this laboratory.

FOR LABORATORY USE ONLY

Constituent	ppm	Constituent	ppm	Constituent	ppm	Constituent	S.U.
T.D.S. @ 180° C.		Chloride		Iron		Color	
Hardness		Nitrate		Manganese		Turbitity	
Calcium		Alkalinity		Copper		pH	
Magnesium		Bicarbonate		Zinc			
Sodium		Carbonate		Barium		Phase I, II, V	
Potassium		Fluoride				THM	
Sulfate		Arsenic				Unregulated	
NO3		MBAS		CN-		gross α	
						gross β	

PRINT OTHER DESIRED CONSTITUENTS BELOW

Constituent	ppm
Cd	
Cr	
Hg	
Se	
Sb	
Be	
Ni	
Tl	

NOT DETECTED - see attached sheet

Fee
Collected by
PWS I.D.
SDWA — Pri. Sec.
1st 2nd 3rd
Date Rec'd Init.

Remarks
* Collected from new Callamont North well during 10 Day pump test
* no PWS No. at this time

6/6/01

RESULTS REPORTED
JUL 03 2001

VOC only

SOC# 150035

ppm = parts per million, milligrams per liter. S.U. = Standard Units

(Rev 8/96)

UNIVERSITY OF NEVADA
SCHOOL OF MEDICINE

Nevada State Health Laboratory
1660 N. Virginia St./MS 385
Reno, Nevada 89503-1783
(775) 688-1335
FAX: (775) 688-1460

6/15/01

Lab ID: 150034
Sample Type: SDWA

Date Sampled : 5/29/01
Date Received: 5/29/01

OWNER:
WCWRD
PO BOX 11130
RENO
NV, 89520

REPORT TO:
COMPTROLLER
WCWRD
PO BOX 11130
RENO
NV, 89520

SAMPLE INFORMATION
Township: 17 Range: 19 Section: 11
General Location: CALLAHAN RANCH RD
Source Address: CALLAMONT NORTH WELL
Customer ID: (SOC #150035)

ANALYSES PERFORMED

Routine	:	SOCs	:
Tr. Metals - 2:		VOCs	: 1
Tr. Metals - 5:		A/B	:
MBAS	:	Partial:	
Nitrite	:		

COMMENTS: VOC

The results below are representative only of the sample submitted to this laboratory.

Regulated Volatile Organic Compound Laboratory Data

Vinyl chloride:	< .0005 ppm	1,2-Dichloropropane:	< .0005 ppm
Benzene:	< .0005 ppm	Ethylbenzene:	< .0005 ppm
Carbon tetrachloride:	< .0005 ppm	Monochlorobenzene:	< .0005 ppm
1,2-Dichloroethane:	< .0005 ppm	1,2,-Dichlorobenzene:	< .0005 ppm
Trichloroethylene:	< .0005 ppm	Styrene:	< .0005 ppm
1,4-Dichlorobenzene:	< .0005 ppm	Tetrachloroethylene:	< .0005 ppm
1,1-Dichloroethylene:	< .0005 ppm	Toluene:	< .0005 ppm
1,1,1-Trichloroethane:	< .0005 ppm	Trans-1,2-Dichlorethyl.:	< .0005 ppm
Cis-1,2-Dichlorethylene:	< .0005 ppm	Xylenes (total):	< .0005 ppm
Dichloromethane:	< .0005 ppm	1,2,4-Trichlorobenzene:	< .0005 ppm
1,1,2-Trichloroethane:	< .0005 ppm		

Trihalomethane Laboratory Data

Chloroform:	< .0005 ppm	Dibromochloromethane:	< .0005 ppm
Bromodichloromethane:	< .0005 ppm	Bromoform:	< .0005 ppm

ppm = parts per million, milligrams per liter

Remarks No unregulated Compound detected

Jan 6/15/01

P.O. Box 18793
Reno, NV 89511
Phone (775) 250-9700
Email: DavidECarlson@email.msn.com