Summary of Exploration Drilling, Test Well Construction and Pumping Tests Dry Valley Hydrographic Basin Washoe County, Nevada

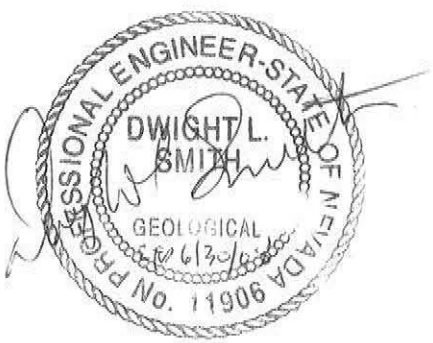
Prepared for:
Intermountain Water Supply, Ltd.
Reno, Nevada

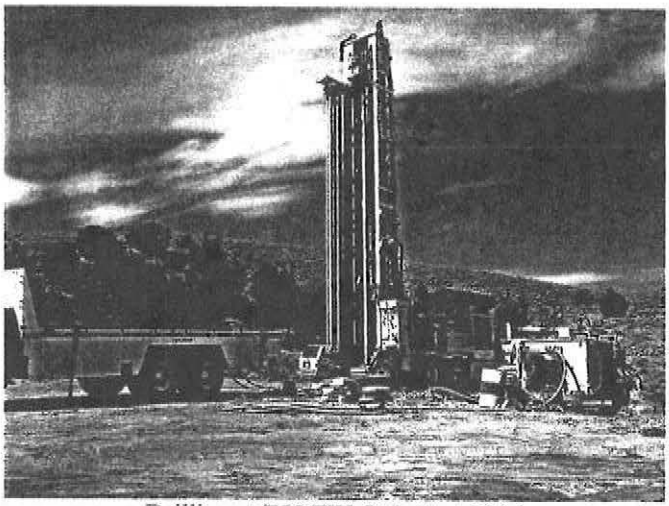
Prepared by:
Interflow Hydrology, Inc.
Truckee, CA

Lower Dry Valley

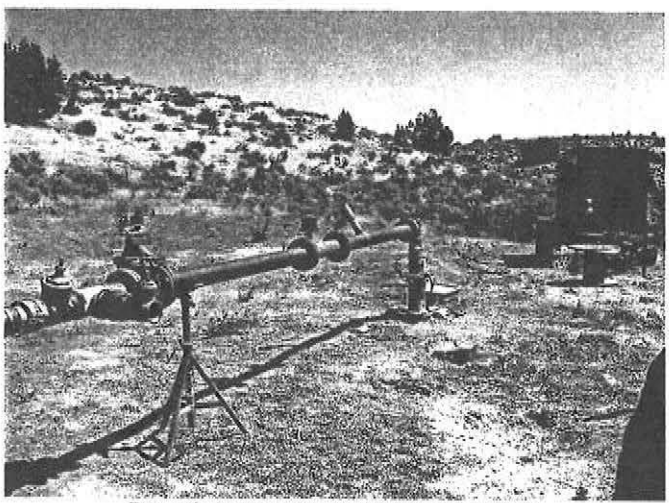
Dwight L. Smith, PE, RG
Principal Hydrogeologist

November 2006





Drilling at DV-TW-5, August 2006



Pumping Test at DV-TW-3, July 2006

Capped Artesian Well DV-TW-1

Table of Contents

Background 1
Geology and Aquifers..... 1
Drilling and Well Construction 6
Aquifer Testing 9
Water Quality..... 14
Production Well Recommendations and Predicted Yields 15
Summary 18
References 19

Tables

Table 1 – Summary of IWS Dry Valley Test Well Construction 8
Table 2 – Summary of IWS Dry Valley Aquifer Testing 10
Table 3 – Summary of Transmissivity Calculations 12
Table 4 – Summary of Test Well Efficiency and Est. Production Well Yields 12
Table 5 – Summary of Test Well Water Quality 15
Table 6 – Summary of Predicted Production Well Yield 17
Table 7 – Water Chemistry Mixing Scenarios 17

Figures

Figure 1 – Dry Valley Test Well Locations 2
Figure 2 – Geologic Map of Lower Dry Valley (Henry and others 2006) 4
Figure 3 – Geologic Cross Sections through Lower Dry Valley 5

Appendices

A. Geologic & Electric Logs
B. Aquifer Testing Data & Plots
C. Water Chemistry Reports

Summary of Exploration Drilling, Test Well Construction and Pumping Tests, Dry Valley Washoe County, Nevada

Background

Intermountain Water Supply, Ltd. (IWS) has completed five test wells in Dry Valley, Washoe County, Nevada. This report summarized drilling, test well construction, pumping tests, and water quality testing. IWS is developing the ground water resources of Dry Valley for importation to northern Reno (Lemmon Valley), Nevada, and the data collected from the IWS test well drilling program will be used for siting and design of production wells.

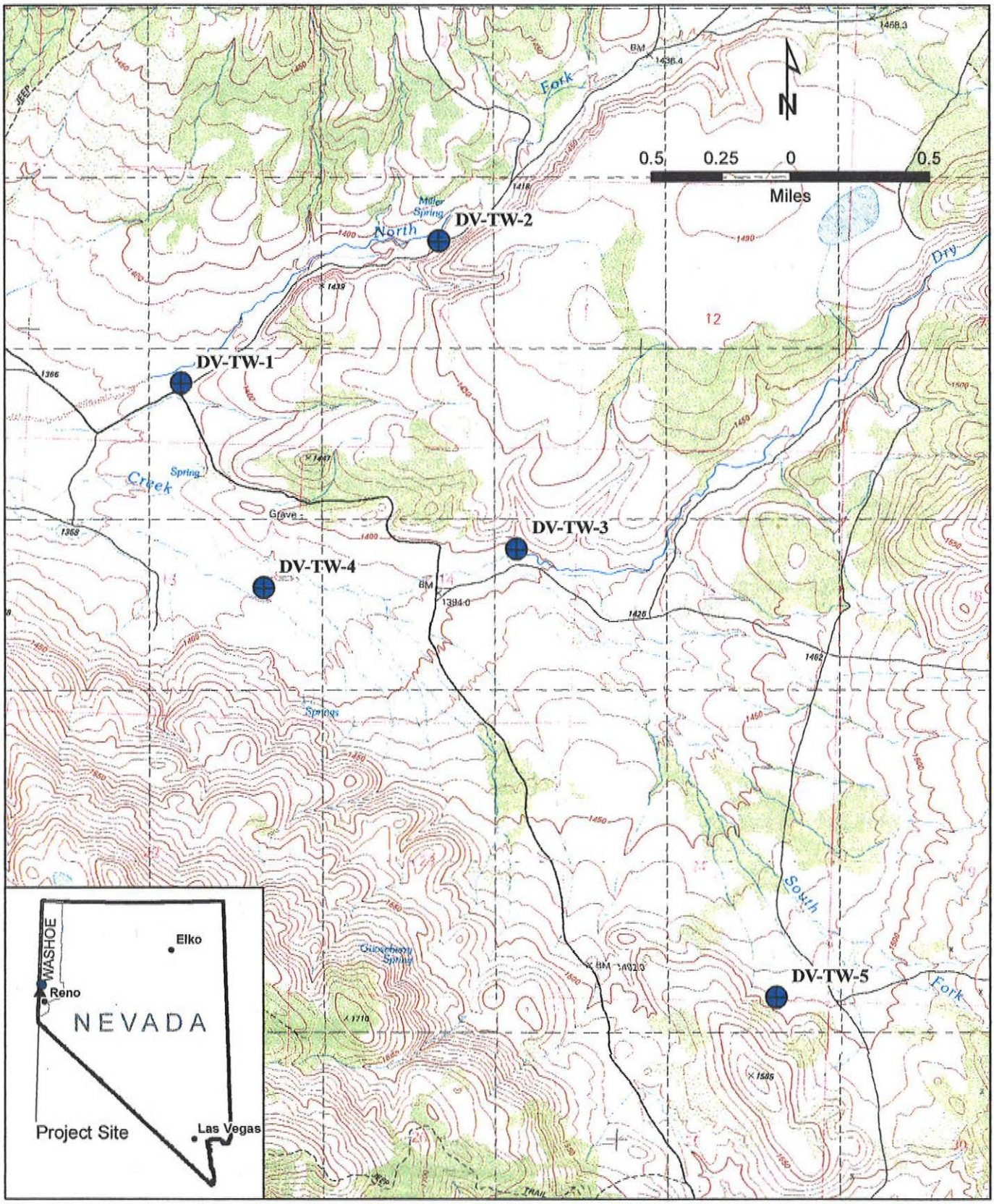
The IWS test wells are located on the eastern side of lower Dry Valley (Figure 1). The test wells have been sited to explore ground water production from the valley floor basin-fill materials and from fractured volcanic bedrock. Test wells DV-TW-1 and 5 are located on BLM land, and wells DV-TW-2, 3, and 4 are located on easements obtained on private property (lands presently a part of the Winnemucca Ranch).

The first test well (DV-TW-1) was completed in the summer of 2004. Three additional test wells (DV-TW-2, 3 and 4) were constructed in the summer of 2005, and a fifth test well was completed in the summer of 2006. Pumping tests were performed following well construction to gain preliminary data on well yield, aquifer parameters, and ground water quality. In the summer of 2006, 10-day constant-rate pumping tests were performed on all the test wells, to further examine aquifer characteristics.

Geology and Aquifers

Three aquifer systems have been identified in the IWS drilling program. A shallow unconfined alluvial aquifer system exists at the lower valley floor and along the main stream corridors (Dry Valley Creek and North Fork of Dry Valley Creek) (Figure 2). The Quaternary alluvium is relatively thin, probably no greater than 100 to 200 feet in thickness, and is underlain by Tertiary sedimentary deposits. These older Tertiary sedimentary deposits comprise a majority of the "basin-fill", extending to deeper than 700 feet at the eastern side of the valley floor. Deeper aquifers within the Tertiary sediments are confined, producing flowing artesian conditions at test wells DV-TW-1, 2 and 4.

Fractured volcanic bedrock is also identified as an aquifer in Dry Valley. Volcanic rocks are observed in the hills surrounding the valley floor. These rocks are at least 800 to 1,000 feet in thickness, as penetrated in test wells DV-TW-3 and 5.



InterFlow Hydrology, Inc.
(530) 582-1622

DIGITAL MAPPING SOLUTIONS
(530) 582-4117
WWW.DIGITALMAPPINGSOLUTIONS.COM

dry_valley_test_wells.mxd

DRY VALLEY

Figure 1
Test Well Location Map

DRY VALLEY WASHOE COUNTY NEVADA

DATE	11/10/06
SCALE	1 : 30,000
PROJECTION	UTMZONE11NAD27
DATA SOURCE	USGS
MAPPED BY	mandeno

Drilling along the major faults in the volcanic rocks has encountered significant yield to wells, which indicates a significant presence of fracture flow in the basin. Two components of the Walker Lane regional shear zone pass through Dry Valley. The Walker Lane structure extends southeast along western Nevada for several hundred miles. Extending in a northwest-southeast orientation through the eastern, higher altitude, portions of the basin is the Warm Springs Fault Zone (Henry and others, 2004). Extending through the valley floor is a parallel structure, the Honey Lake – Bedell Flat Fault Zone (Henry and others, 2004). These shear zones are comprised of many individual faults over of a ½ to 1 mile width. Hinz (2004) determined 4.6 to 10.6 miles of right lateral movement along the Honey Lake – Bedell Flat component of the Walker Lane fault zone.

All five test wells are generally situated along the Honey Lake – Bedell Flat fault zone, and test wells DV-TW-3 and 5 are specifically sited on interpreted faults in the volcanic rocks. Test well DV-TW-1 and 4 have mildly geothermal water temperatures, which is also interpreted to be associated with deep water circulation along the Honey Lake – Bedell Flat fault zone.

Underlying the volcanic rocks are Cretaceous granite and Mesozoic (Jurassic?) metavolcanic basement rock (Figure 3). These rocks were not encountered within the depths drilled. Fracture flow through the deeper basement rock, particularly along the shear zone, is possible, but not tested in the IWS test well program.

Of considerable aid during siting test wells for the IWS program was detailed geologic field mapping being conducted by the Nevada Bureau of Mines and Geology (NBMG) for the western part of Dry Valley. Field mapping was ongoing in 2004 and 2005, and available for review in draft form. This geologic mapping is now published as NBMG Open File Report 06-14 (Henry and others, 2006). A portion of this published map and geologic cross-sections are shown in Figures 2 and 3.

The Henry and others (2006) work has shed a great deal of light on the geologic structure and stratigraphy of Dry Valley. Henry and others (2006) describes the Quaternary alluvium as a thin unit (generally consistent with other published work), but the Tertiary non-welded tuffs of Gross and others (2000) mapped near the state line are defined by Henry and others (2006) as Pliocene to late Miocene sedimentary deposits, consisting of interbedded sandstone, conglomerate, diatomite, and diatomaceous siltstone, with some tuffaceous sandstone units. The sedimentary deposits are interpreted as approximately 2,600 feet in thickness near the NV-CA state line (Figure 3). Wells on the valley floor, including those tested by the USGS (Berger and others, 2004) near the NV-CA state line, tap the upper-most portion of the Pliocene to late Miocene sedimentary deposits. Based on the lithologic descriptions of Henry and others (2006), this sedimentary sequence should not be interpreted to be impermeable to ground water flow, which has been as suggested by some investigators (Gross, 2004; and Berger and others 2004). Interbedded diatomaceous and tuffaceous units may have relatively low transmissivity, but the sandstone and conglomerate units may have significant transmissivity.

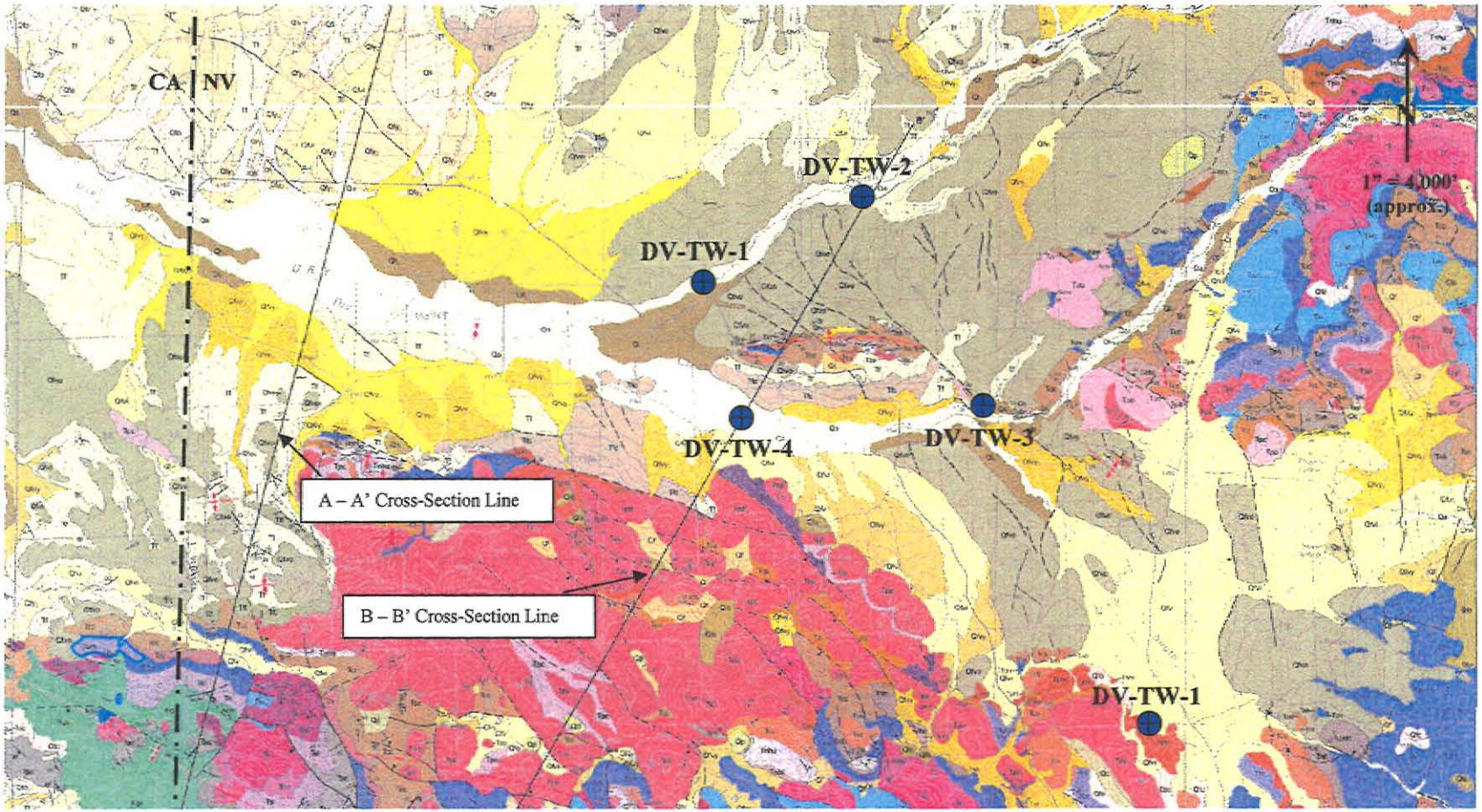


Figure 2 – IWS Test Well Locations Overlaid on a Portion of Henry and others (2006) Geologic Map (Labels Added). Note: Test Wells DV-TW-2 and 4 are situated on Cross Section Line B-B'. For Geologic Unit Descriptions and Map Legend refer to Henry and others (2006).

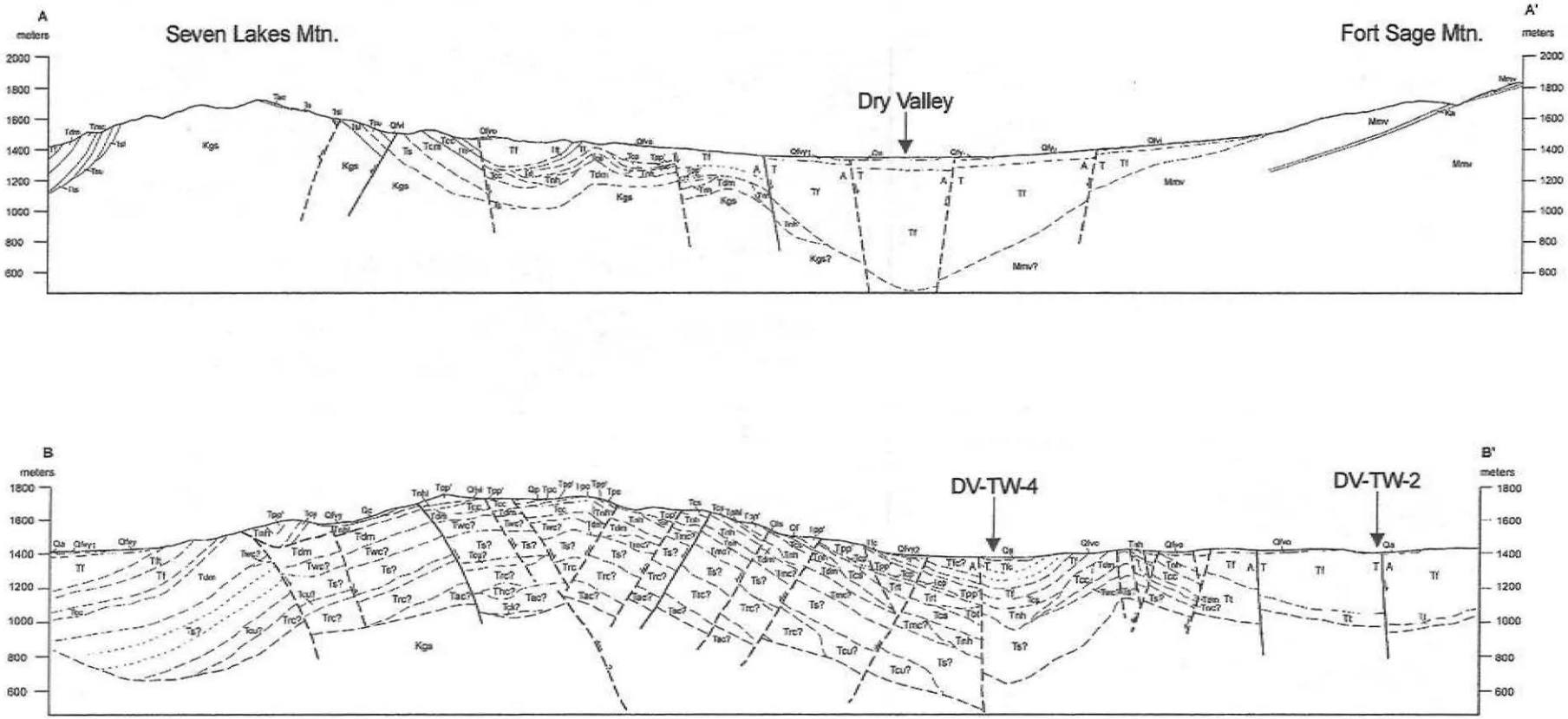


Figure 3 – Geologic Cross Sections A-A' (N15°E, approx. ½ mile east of the NV-CA state line), and B-B' (N30°E, approx. 3 miles east of the NV-CA state line) from Henry and others (2006). Note: Location references added.

Also of particular note, is Henry and others (2006) interpretations of a thick sequence of volcanic rocks underlying the sedimentary deposits encountered on the east side of the valley floor. At test well DV-TW-4, Henry and others (2006) cross-section B-B' interprets approximately 650 to 1,600 feet of volcanic rocks underlying at about 850 feet of Tertiary sedimentary deposits (Figure 3). Test well DV-TW-4 was drilled to 720 feet in depth.

Henry and others (2006) determined that the Tertiary sedimentary deposits have been structurally deformed into a syncline structure (bent into a U-shape). Stratigrahic correlations in the sedimentary strata encountered in test wells DV-TW-1 and 4 indicate that DV-TW-1 penetrates deeper into the Tertiary sedimentary sequence. The deeper units were observed to be coarser grained and appear better for water production. The DV-TW-4 site only penetrated the upper sedimentary strata which are finer grained, and in bulk function more as an aquitard. Test wells drilled in Dry Valley by the U.S. Geologic Survey (USGS) near the NV-CA state line also probably only penetrate the upper Tertiary sedimentary strata.

The depths of production wells at the DV-TW-1 and 4 should be extended in order to fully penetrate deeper sedimentary units, and IWS should consider advancing pilot boreholes deeper into the underlying volcanic rocks to explore additional volcanic rock yield.

Drilling and Well Construction

Drilling was conducted using conventional mud-rotary drilling methods. Humboldt Drilling of Winnemucca Nevada drilled the first test well, and McKay Drilling of Reno, Nevada drilled the four subsequent test wells. All boreholes for the test wells were electric logged by Dewey Data Electric Logging Services. Cuttings were collected at 10-feet intervals by the drillers, and washed and retained in chip trays by Interflow Hydrology.

Test well depths ranged from 710 to 1,000 feet, and all test wells are 6-inches in diameter. Boreholes were approximately 9 7/8 inches in diameter. A minus 3/8 inch pea gravel material was used as gravel pack. Table 1 presents a summary of test well construction and the geology encountered. Geologic cutting descriptions and copies of electric logs are contained in Appendix A. A brief discussion of drilling and well construction at each test well location follows.

DV-TW-1

Drilled in the summer of 2004 to a depth of 718 feet, this test well is completed in Tertiary sedimentary deposits. The well is located on the eastern valley floor, adjacent to the North Fork of Dry Valley Creek, up-gradient of the confluence with the main stem of Dry Valley Creek (Figure 1). The well is constructed with a 100-foot sanitary seal and 6-inch diameter steel casing, with mill-slot perforated intervals from 110 to 240 feet and 500 to 700 feet. The well was developed air-lifting and swabbing, using both with the drill rig and a development rig. DV-TW-1 has significant artesian flow, estimated at 50

gallons per minute (gpm), with up to 9.1 psi pressure (21.0 feet) of head measured in August, 2004 (Interflow Hydrology, 2004).

Quaternary alluvium is interpreted to have been encountered in the upper 35 feet, and perhaps deeper (Appendix A). A volcanic tuff lens was entered at 224 to 228 feet in depth, and a thin basalt flow was encountered at 291-300 feet. At 510 feet in depth, the Tertiary sedimentary deposits became coarser grained. Volcanic rock or basement rocks were not encountered at the depth drilled.

DV-TW-2

This test well was drilled in the summer of 2005 along the North Fork of Dry Valley Creek, approximately 1 mile up-gradient of DV-TW-1 (Figure 1). The test well was constructed with 6-inch diameter casing, a 100-foot sanitary seal, and mill-slot perforated intervals from 120 to 260 feet, 300 to 360 feet, 620 to 640 feet and 700 to 780 feet. The well was developed by air-lifting until clear water was produced. This well also has an artesian flow of approximately 10 gpm, and the pressure head was measured at 6.4 psi (14.8 feet) in August 2006.

Drilling encountered Quaternary alluvium to approximately 140 feet in depth. Tertiary sedimentary deposits were then penetrated to a depth of 630 feet. Volcanic rock was encountered below 630 feet to the depth drilled of 800 feet (Appendix A).

DV-TW-3

Test well DV-TW-3 was drilled in the summer of 2005 along the main stem of Dry Valley Creek, approximately 1/4 mile east of the main road (Figure 1). Drilling was in volcanic rocks, including several different tuff strata (Appendix A). Significant fractured zones were encountered and this test well has proved to be the highest yielding in the test well program (pumped at 410 gallons per minute - gpm). The well was completed with 6-inch diameter casing, a 100-foot sanitary seal, and mill-slot perforated zones from 110 to 350 feet and 460 to 540 feet. The well was developed by air-lifting until clear water was produced. The static water level in June 2006 was 9.0 feet below the top of casing.

DV-TW-4

Drilled in the summer of 2005, this test well is situated along Dry Valley Creek on the valley floor, approximately 3/4 mile south of DV-TW-1 and 1 mile west of DV-TW-3 (Figure 1). Drilling encountered Quaternary alluvium for the upper 75 feet, underlain by Tertiary sedimentary deposits to total depth drilled of 720 feet. The electric log does not indicate that the lower coarser-grained sedimentary strata were encountered, as encountered at DV-TW-1 (Appendix A). DV-TW-4 is located near the trough of the syncline structure defined by Henry and others (2006), and the upper finer-grained strata appear to be at least 200 feet deeper.

Table 1 - Summary of IWS Dry Valley Test Well Construction.

Test Well No.	Location (¼ ¼ Sec. T, R)	Date Drilled (start of work)	Well Depth (ft)	General Geology	Diameter (inches)	Perforated Zones (mill-slotted) (ft)	Sanitary Seal Depth (ft)	Static Water Level (ft below top of casing)
DV-TW-1	SW SE 10, 24N, 18E	5-21-04	718	0 to 35 ft: Quaternary alluvium 35 to 720 ft: Tertiary sediments	6	110 to 240 500 to 700	100	-21.0 (artesian head)
DV-TW-2	NE NW 11, 24N, 18E	5-4-05	800	0 to 140 ft: Quaternary alluvium 140 to 630 ft: Tertiary sediments 630 to 800 ft: Volcanic Tuff	6	120 to 260 300 to 360 620 to 640 700 to 780	100	-14.9 (artesian head)
DV-TW-3	SE NE 14, 24N, 18E	6-20-05	710	0 to 710 ft: Volcanic Tuffs	6	110 to 350 460 to 540	100	9.0
DV-TW-4	NE SE 15, 24N, 18E	7-28-05	720	0 to 75 ft: Quaternary alluvium 75 to 720 ft: Tertiary sediments	6	60 to 380 440 to 460 630 to 670	50	-4.9 (artesian head)
DV-TW-5	SE SE 24, 24N, 18E	7-12-06	1,000	0 to 1,000 ft: Volcanic Tuff	6	70 to 1,000	50	51.9

DV-TW-4 was constructed of 6-inch diameter casing, a 50-foot sanitary seal, and perforated intervals from 60 to 380, 440 to 460, and 630 to 670 feet in depth. The well was developed by air-lifting until clear water was produced. The well has a minor artesian flow of about ½ gpm, with a pressure head of 2.1 psi (4.9 feet) measured in August, 2006.

DV-TW-5

Well DV-TW-5 was drilled in the summer of 2006 to a depth of 1,000 feet. This well is located near the southern edge of the basin, approximately ¾ miles north of the hydrographic divide between Dry Valley and Bedell Flat (Figure 1). Drilling was in moderately fractured volcanic tuff rocks. The well was constructed of 6-inch diameter casing, with a 50 foot sanitary seal, and mill-slot perforated casing from 70 to 1,000 feet in depth. The well was developed by air-lifting, along with chemical aid in breaking down drilling additives. Quick Gel had been used to overcome a reported loss of circulation at about 500 feet in depth. Upon pumping, the well was still producing very cloudy water, and the test well does appear to be fully developed, with possible formation damage (plugging by drilling mud – bentonite and/or Quick Gel). The static water level in September of 2006 was 51.9 feet below the top of casing.

Aquifer Testing

Step-drawdown and constant-rate pumping tests were conducted on all test wells. Pump equipment was operated by Carson Pump of Carson City, Nevada. Interflow Hydrology performed data collection during pumping tests, with assistance from TRC - VPoint Engineers, Reno, Nevada. Common to all pumping tests were background water level measurements from all completed wells made prior to pumping, transducer-recorder and manual water level measurements made during testing, flow rate measurement using total-volume flow meters, and recovery water level monitoring following the pumping periods. The durations of constant-rate tests in 2004 and 2005 were approximately 24 hours. The durations of constant-rate pumping tests in 2006 were approximately 10 days.

Summaries of pumping test results and aquifer transmissivity calculations are presented in Tables 2 through 4, and relied upon Cooper-Jacob (1946) and Theis (1935) analytical methods. Reference is made to Driscoll (1986) for an explanation of methods utilized. The Aquifer^{Win32} software package (Rumbaugh, 2005) was utilized for Theis (1935) analyses. Pumping test results are discussed below. More detailed aquifer testing data is contained in Appendix B.

Testing of DV-TW-1

Test Well DV-TW-1 has an artesian head in range of 6.5 to 9.1 psi (15.0 to 21.0 feet above ground surface). When uncapped, the well initially produces a flow of about 50 gpm, of mildly geothermal water (85°F). Pumping ranged from 111 to 305 gpm. The long-term test was conducted at an average constant rate of approximately 145 gpm. Pumping began on August 9, 2006, however, on August 14 the flow valve was tampered with (closed down). August 15, the valve was readjusted to approximately 150 gpm and

Table 2 - Summary of IWS Test Well DV-TW-1 through DV-TW-5 Aquifer Testing.

Well	Step Drawdown Test					Constant-Rate Testing				
	Date	Rate (gpm)	Drawdown (feet)	Specific Capacity (gpm/ft)	Specific Drawdown (ft/gpm)	Date	Rate* (gpm)	Duration (hours)	Drawdown** (feet)	Specific Capacity (gpm/ft)
DV-TW-1	8/16/2004	111	76.9	1.44	0.69	6/24/2004	112.7	24	88.82	1.27
		210	121.6	1.73	0.58	8/9/2006	129.3/147.2	335	246.02	0.88
		304	196.02	1.55	0.64					
DV-TW-2	6/20/2005	160	83.77	1.91	0.52	6/21/2005	200	24	164.66	1.21
		220	134.06	1.64	0.61	9/5/2006	133/145	264	206.26	0.64
		250	229.17	1.09	0.92					
DV-TW-3	7/26/2005	150	7.89	19.01	0.05	7/28/2005	300	24	46.6	6.44
		205	12.38	16.56	0.06	7/19/2006	410	241	165.9	2.47
		260	18.58	13.99	0.07					
		322	25.34	12.71	0.08					
DV-TW-4	9/9/2005	30	100.34	0.30	3.34	8/18/2005	30	12	95.5	0.31
		47	195.21	0.24	4.15	9/26/2006	49.2	240	439.1	0.11
		60	299.42	0.20	4.99					
DV-TW-5	10/9/2006	100	110	0.91	1.10	10/11/2006	94.2	240	301	0.31
		120	234.3	0.51	1.95					
		140	320.5	0.44	2.29					
		150	416.2	0.36	2.77					

* First number is for entire pumped period, second number is for late-time flow rate

** Including artesian head above top of casing

pumping continued for nine days at this rate. The final pumping water level was approximately 225 feet below the top of casing. The pumping water level response approximately follows a Theis (theoretical) drawdown relationship (Appendix B), and water level recovery to flowing artesian conditions occurred after 26 days.

The average of transmissivity determined from the aquifer testing is approximately 80 ft^2/day. Step-drawdown testing indicates that the well efficiency is probably less than 66%, not unusual for a small diameter well constructed with mill-slot perforated casing (versus more efficient well screen). A larger diameter and more efficiently constructed production well, of similar depth, would probably be capable of producing a long-term yield of 350 gpm (Table 4).

Temperature data collected during pumping of DV-TW-1 indicates that the geothermal water source is the deeper confined aquifer that also produces the artesian flow. Water temperatures during long-term pumping reached approximately 80°F, with a mild declining trend.

Testing of DV-TW-2

Test Well DV-TW-2 was pumped at rates between 160 to 250 gpm. Under static conditions, the well has an artesian head of approximately 6.4 psi (14.8 feet), and produces an artesian flow of approximately 10 gpm when uncapped.

Long-term testing at a flow rate of 150 gpm began on September 5, 2006, but after 7 days of pumping the pump broke and had to be replaced. The test was restarted on September 18, 2006. The flow meter became plugged after 8 days of pumping, but was replaced without pumping interruption. A mild decrease in flow occurred for a couple days when the meter was plugged, so testing was extended an additional day beyond the planned end of testing (11 days total pumped in the restart test).

The long-term testing indicates that a mild negative boundary condition occurred approximately 3 days into the pumping test, however, the late-time drawdown data still fits a Theis theoretical drawdown curve reasonably well (Appendix B). Artesian flowing conditions returned approximately 12.5 days after pumping.

The average aquifer transmissivity derived from long-term testing is approximately 108 ft^2/day, using the late-time (boundary effect) data (Appendix B, and Table 3). The test well efficiency is estimated at less than 46% and a larger diameter production well at this location should be capable of producing approximately 500 gpm (Table 4). Because of the mild negative boundary effect, long-term production may need some recovery time (non-pumping periods), and pumping water levels should be monitored carefully.

Table 3 - Summary of Transmissivity Calculations from Aquifer Testing

Well	24-hr Constant Rate Testing		10-day Constant Rate Testing			
	Rate (gpm)	T (Cooper-Jacob) (ft^2/day)	Rate (gpm)	T Cooper-Jacob Solution[1] (ft^2/day)	T Theis Solution[2] (ft^2/day)	T Theis-Recovery Data Solution (ft^2/day)
DV-TW-1	100	117.6	147.2	69.3	120.7	48.0
DV-TW-2	200	185.7	145.0	53.3 - 196.8	178.1	91.2 - 195.1
DV-TW-3	300	320.8	410.0	82.7 - 498.9	922.8	83.2
DV-TW-4	30	264.7	49.2	20.4	27.0	22.6
DV-TW-5	NA	NA	94.2	12.3 - 81.1	97.0	293.9

1 Cooper and Jacob (1946)
2 Theis, C.V (1935)

Table 4 - Summary of Aquifer Transmissivity, Test Well Efficiency, and Estimated Production Well Yields

Test Well No.	Calculated Aquifer Transmissivity (T) (ft^2/day) (Average of Theis, Theis Recovery, and Copper-Jacob Methods Determined from Long-Term Constant Rate Testing)	Estimated Test Well Efficiency (E) $E = 100/(1+CQ/B)$ Q = flow rate in gpm Coefficients B and C Determined from Step Drawdown Testing				Estimated Production and Associated Drawdown from 14-inch Diameter Production Wells $S = BQ+CQ^2$ $C_{14inch} = C_{6inch}(d_6/d_{14})^2$ Q = flow rate (gpm) s = drawdown (ft)		
		B	C	Q	E	C_{14inch}	Q	s
DV-TW-1	79.3	0.42	0.0007	304	<66%	0.00013	350	235
DV-TW-2	107.5	0.30	0.0014	250	<46%	0.00026	500*	215
DV-TW-3	710 (early time) 83 (late time)	0.032	.00135	322	<42%	0.00025	1,000*	282
DV-TW-4	23.3	1.9	0.0479	60	<40%	0.0088	100**	278
DV-TW-5	89 (early time)*** 12.3 (late time)	.05	0.0167	140	<74%	0.00545	200*	222

* Production well yield may be as high as 1,000 gpm, but long-term yield possibly constrained by limitations of fracture flow.
** A deeper test and production well at this location would likely encounter well yields similar to Test Well DV-TW-1.
*** Not including the Theis recovery solution (293.9 ft^2/day).

Testing of DV-TW-3

Test Well DV-TW-3 was pumped at rates ranging from 150 to 410 gpm. The production capacity is quite good for a 6-inch diameter test well. The static water level is approximately 9 feet below land surface.

During the long-term pumping test, the rate of drawdown stayed relatively constant, which is a deviation from Theis drawdown theory (drawdown rate should decrease as a log function of time). The drawdown data plotted on a semi-log graph (Appendix B) does not show an abrupt shift from theoretical, but a curving deviation from Theis. This may be a negative boundary effect, or may reflect the aquifer hydraulics of fracture flow system, versus uniform porous medium upon which the Theis relationship is derived. However, it appears that some fracture zone dewatering may have occurred, due to a lack of full recovery to starting static water levels within 3 weeks following pumping (22 ft of residual drawdown remained).

Care will need to be taken to prevent over pumping of the fractured bedrock aquifer at this location. The local aquifer transmissivity is relatively high (920 ft^2/day based on Theis), but regionally, the fracture system appears to have some limitations to sustained pumping at high rates and the late-time drawdown trend produces a transmissivity of approximately 83 ft^2/day, similar to other test well locations (Table 3).

The DV-TW-3 test well efficiency is estimated to be less than 42% (Table 4), not surprising based on the well construction materials (mill slot perforated casing) and pumped rates. A larger diameter production well at this location will likely be able to 1,000 gpm, but recovery time will need to be integrated into the long-term pumping plan.

Testing of DV-TW-4

Test Well DV-TW-4 is completed in the basin-fill and because of the syncline bedding structure discussed in the Geology section, this test well taps only the upper (lower transmissivity) strata of the Tertiary sedimentary deposits. The static water level is approximately 2.1 psi (4.8 feet above top of casing), and when uncapped, the well produces a small (0.5 gpm) artesian flow. The artesian flow is also mildly geothermal at this location (81°F).

This test well was pumped at rates ranging from 30 to 60 gpm. The long-term pumping test was conducted at 49.2 gpm, producing a final drawdown after 10 days of pumping of 439 feet. The pumping drawdown data very closely fits a Theis theoretical drawdown tend (Appendix B). The transmissivity is approximately 23 ft^2/day (Table 3). The water temperature during the long-term pumping test was approximately 73°F, with a mild decreasing trend.

The well efficiency is estimated to be less than 40% (Table 4), and a larger diameter production well construction well built at this location to the same depth is estimated to produce at 100 gpm. However, a well constructed several hundred feet deeper would

likely have similar production capabilities as observed at, and predicted for, test well DV-TW-1 (150 gpm test well yield, and 350 gpm production well yield).

Testing of DV-TW-5

Test Well DV-TW-5 is completed in fractured volcanic bedrock. The static water level is approximately 51.9 feet in depth. This test well was pumped at rates between approximately 94 to 150 gpm. The rate of drawdown increased rapidly for flow rates over 100 gpm. The water discharged during pumping was very turbid, but gradually cleared during the course of pumping, and DV-TW-5 is not believe to be adequately developed (possible formation damage - plugging).

A long-term constant rate test (10 days) was conducted at 94 gpm, with a final pumping water level of 354 feet in depth. At approximately 3 days into pumping, the drawdown data deviates from a Theis trend, which is interpreted to be a negative boundary effect. However, the time-drawdown rate remained relatively constant throughout the test (Appendix B). Water levels in the well recovered very quickly to within about 15 feet of starting static water level, but did not fully recover within two weeks following pumping (drawdown residual of approximately 15 ft). Some degree of dewatering of fracture zones appears evident, and some recovery intervals will need to be integrated into the long-term pumping plan. The rapid initial recovery response appears unusual (Appendix B), and could be further evidence of formation damage.

The test well efficiency is estimated to be less than 74%, and the average transmissivity is approximately 89.0 ft^2/day (Table 3). However, the Theis recovery data solution produced a noticeably higher T value of 293.9 ft^2/day, while the late-time T was calculated at 12.3 ft^2/day due to the negative boundary effect (Appendix B). Estimated yield for a larger diameter production well at this location is 200 gpm (Table 4), but could be higher if formation damage has indeed present at this test well.

Water Quality

Water samples were collected after varying durations of pumping from the test wells. All samples were analyzed for major cation and anion compounds (bicarbonate, calcium, chloride, fluoride, magnesium, nitrate, potassium, sodium and sulfate), alkalinity, pH, total dissolved solids (TDS), turbidity, color, MBAS surfactants, and trace elements including arsenic, barium, copper, iron, lead, manganese, and zinc. Laboratory reports are presented in Appendix C, and a partial summary of testing result is presented in Table 5.

Water quality results meet current state and federal drinking water standards, with the exception of the arsenic contents at test wells DV-TW-2, 3 and 4. Arsenic concentrations in all tested samples ranged from 0.003 to 0.019 milligrams per liter (mg/L), and blending of ground water from all five wells sites would produce an average arsenic content close to the current drinking water standard of 0.010 mg/L (discussed later in this report).

The pH of water samples from DV-TW-1 was slightly elevated at 8.6. Early samples from DV-TW-3 and 4 also contained mildly elevated iron, but decreased to within acceptable concentrations after further pumping.

Table 5 – Summary of Ground Water Quality Testing from IWS Test Wells*

Site	Sample Date	Duration Pumped (days)	Ave. Flow (gpm)	TDS (mg/L)	pH	Cl (mg/L)	F (mg/L)	As (mg/L)	Fe (mg/L)	Mn (mg/L
DV-TW-1	6/17/2004	1	50	240	8.43	8.8	0.21	0.005	0.1	0.011
	6/25/2004	1	111	210	8.54	10	0.27	0.005	0.06	0.011
	8/9/2006	0.1	146	220	8.57	9.8	0.4	0.005	0.08	0.014
	8/10/2006	1	137	210	8.66	9.6	0.4		0.07	0.012
	8/23/2006	**14**	**129**	**200**	8.62	**9.5**	**0.5**	**0.006**	**0.1**	**0.015**
DV-TW-2	6/22/2005	1	200	280	8.27	21	0.54	0.015	0.11	0.026
	9/7/2006	2	187	290	8.04	25	0.5	0.018	0.26	0.029
	9/8/2006	3	183	280	8.09	24	0.5	0.019	0.05	0.022
	9/19/2006	1	149	230	8.16	12	0.3	0.013	0.22	0.011
	9/22/2006	4	148	220	8.33	13	0.4	0.013	0.05	0.01
	9/29/2006	**10**	**148**	**230**	**8.10**	**14**	**0.4**	**0.014**	**0.05**	**0.009**
DV-TW-3	7/29/2005	1	300	250	7.81	15	0.43	0.009	0.36	0.018
	7/19/2006	0.1	400	270	7.80	14	0.2	0.012	0.13	0.006
	7/21/2006	2	403	250	7.81	14	0.2	0.012	0.05	0.007
	7/24/2006	**5**	**409**	**250**	**7.71**	**14**	**0.2**	**0.012**	**0.08**	**0.006**
DV-TW-4	8/18/2005	0.3	35	240	8.45	6.2	1	0.016	0.98	0.064
	9/28/2006	2	46	230	8.40	5.5	0.9	0.011	0.24	0.043
	10/6/2006	**10**	**50**	**250**	**8.29**	**5.0**	**0.61**	**0.018**	**0.11**	**0.041**
DV-TW-5	10/10/2006	0.1	100	300	7.73	29	0.2	0.003	1.8	0.28
	10/16/2006	6	92	240	7.80	18	0.3	0.004	1.2	0.068
	10/20/2006	**10**	**94**	**250**	**7.40**	**19**	**0.3**	**0.003**	**0.13**	**0.032**

* red values indicate above primary or secondary drinking water standard.

Production Well Recommendations and Predicted Yields

Rates of test well pumping were dependent on the pump capacity and depth setting, aquifer characteristics, and well efficiency. Being small diameter wells with limited open area (perforated casing versus screen), the well efficiency of the test wells is expected to low (head losses are significant as water flows from the aquifer into the well). Well efficiencies can improve with construction of larger diameter production wells utilizing continuous-slot well screen.

Estimates of test well efficiency, larger diameter production well yield, and associated drawdown have been made using a step-drawdown data analysis method presented in Roscoe Moss Company (1990, pp. 102-107). Results are summarized in the Table 4. Estimates of well efficiency assume no turbulent flow into the well, and in reality maybe lower than calculated. These computations assume that the production wells will be 14-inches in diameter and have only minor well efficiency losses. A constraint on allowable drawdown was imposed at 300 feet.

This method of estimating well efficiency has inherent uncertainty, as well efficiency head losses and aquifer flow losses may not be partitioned as simply as defined in the governing equation (Table 4). Professional judgment and experience has been applied, along with consideration of other available data, and the well efficiency based calculations appear to provide reasonable predictions.

The production well diameter may be modified from 14 inches to correspond with predicted well yields, but will need to be at least 10 to 12 inches inside diameter to accommodate submersible pumps of sufficient horse power for transmission of water in the pipeline.

Production wells at sites 1, 2 and 4 are recommended to be drilled deeper than the test wells, particularly the DV-TW-4 site. At this location, only the upper strata of the Tertiary sedimentary deposits were penetrated. A production well at this location should extend to the deeper (coarser grained) Tertiary sedimentary strata and perhaps the underlying volcanic bedrock. Telescoping to smaller diameter casing (8 to 10 inches) below 700 feet (deep pump setting) may also be considered, particularly for sites 1, 2 and 4, where deeper production well construction is recommended.

Considering the aquifer testing data, test well construction, geologic interpretations, and well efficiency computations, production well yields are predicted at each test well site (Table 6). Preliminary recommendations for recovery (non-pumping) periods are incorporated for long-term management of pumping at wells sites 2, 3 and 5.

Three of the five test wells have arsenic contents that slightly exceed the current state and federal drinking water standard of 0.010 mg/L. Water from a production well in Bedell Flat will also be integrated with the Dry Valley water in the transmission pipeline. Bedell Flat arsenic content is reported as non-detect to 0.005 mg/L (Interflow Hydrology, 2003). Several blending scenarios have been examined (Table 7), suggesting that the blended water quality at full production of 2,000 af/yr from Dry Valley and 200 af/yr from Bedell Flat will range from 0.0096 to 0.0123 mg/L. Treatment to reduce the arsenic content may be required at certain wells (DV-TW-2 and 4) to insure that the blended water quality meets drinking water standards. Production from Dry Valley at less than 2,000 af/yr could meet the arsenic standards, if pumping preference is given to the wells with the lowest arsenic content (Wells 1 and 5, with a mixed portion of water from Well 3). For example, 1,535 af/yr produced from the three best quality wells in Dry Valley would produce a blended arsenic content of 0.0067 mg/L.

The production well depth at DV-TW-4 is recommended to be deeper, and the production wells will be pumped at differing rates than the test wells. The DV-TW-1 test well which penetrates the lower Tertiary sediments has low arsenic content, and similar waters could possibly be encountered at depth in DV-TW-4. Chemistry will need to be further assessed from the production well water, and blending scenarios updated. If arsenic reduction is necessary, possible scenarios include treatment at an individual well head, or treatment of combined flows at the booster pump or at the point of connection with the

distribution system (personal communication, TRC-VPoint). Alternatively, additional production well sites could be pursued to replace sites with elevated arsenic.

Table 6 – Summary of Production Well Recommendations and Predicted Yields

Site	Well Depth (ft)	Test Well Yield* (gpm)	Est. Production Well Yield - Maximum (gpm)	Notes	Est. Annual Potential Production – Maximum with Recovery (af/yr)
DV-1	1,000 to 1,500	145	350	Deepen to penetrate entire deep (coarser) Tertiary sedimentary deposits. Also, consider extending depth into underlying volcanic rock bedrock.	565
DV-2	800 to 1,200	150	500	Consider extending depth to further penetrate fractured volcanic bedrock. Plan for at least 25% recovery time over the long-term.	605
DV-3	700	410	1,000	Same depth as test well. Plan to hydrofracture the volcanic bedrock to increase permeability near the well. Plan for at least 50% recovery time over the long-term.	800
DV-4	1,500	50	250	Deepen to penetrate deep (coarser) Tertiary sedimentary deposits. Also, consider extending depth into underlying volcanic rock bedrock.	400
DV-5	1,000	95	200	Same depth as test well (shallower possible). Plan to hydrofracture the volcanic bedrock to increase permeability near the well. Plan for at least 50% recovery time over the long-term.	160
Total			*2,300 gpm*		*2,530 af/yr*

* Ten day constant-rate test

Table 7 – Water Chemistry Mixing Scenarios at 2,000 af/yr Production from Dry Valley (DV) and 200 af/yr from Bedell Flat

Scenario	Description	As (mg/L)	Fe (mg/L)	TDS (mg/L)	pH	Mn (mg/L)	F (mg/L)
A	All DV wells pumped at 79.1% of production potential – Table 5	0.0110	0.083	227.01	8.08	0.016	0.38
B	DV Wells 1 and 5 pumped at 100% of Table 5, Wells 2, 3 and 4 at 70.6%	0.0103	0.085	223.09	8.11	0.016	0.38
C	DV Wells 1, 3 and 5 pumped at 100% of Table 5, Wells 2 and 4 at 47.3%	0.0099	0.086	224.38	8.06	0.014	0.35
D	DV Wells 2 - 5 pumped at 100%, with 6.2% from Well 4 (max. arsenic scenario)	0.0123	0.079	233.52	7.96	0.016	0.35
E	DV Wells 1, 3, 5 pumped at 100%, Well 2 at 78.5%, Well 4 not pumped (min. arsenic scenario).	0.0096	0.081	222.66	8.05	0.011	0.34

Summary

Five test wells have been constructed by IWS in Dry Valley. Two are completed in Tertiary sedimentary deposits on the valley floor, two are completed in fractured volcanic rock, and one is completed in a combination of sedimentary deposits and fractured volcanic rock. All test wells are completed along the Honey Lake – Bedell Flat regional fault zone.

The highest yielding test well (DV-TW-3) is completed in fractured volcanic rock, and was pumped at 410 gpm. The lowest yielding test well (DV-TW-4) is completed in Tertiary sedimentary deposits and was pumped at 50 gpm. Recently published geologic mapping of Dry Valley along with borehole logs indicate that a production well at the DV-TW-4 location, if deepened, could encounter coarser grained sedimentary strata and underlying volcanic rock, producing increased well yield. The other three test wells produce in the range 100 to 250 gpm.

Three of the five test wells have flowing artesian conditions with pressure heads measured in the range of 2.1 to 9.1 psi (4.9 to 21.0 feet). Two of artesian wells are completed fully in the Tertiary sedimentary strata, and artesian water is mildly geothermal (80-85°F), indicative of deeper water circulation along fault zones.

Production well capacities at the test well locations are estimated to have a combined maximum pumping rate of approximately 2,300 gpm, which is approximately 85% greater than the constant rate pumping required to generate a 2,000 af/yr (1,240 gpm). However, recovery time ranging from 25% to 50% is recommended for long-term operation at 3 of the 5 five well sites due to negative boundary effects (a degree of aquifer dewatering) observed during long-term pumping tests. Factoring in the recommended recovery times, the annual projected well field capacity is 2,530 af/yr, or approximately 26.5% above the planned production of 2,000 af/yr. The predicted well field capacity does not indicate whether additional water could be developed and is not associated with the water budget or perennial yield, but does indicate that the five wells appear to have reasonable capacity to deliver the planned production quantity.

Water quality from the test wells is generally good, with an average total dissolved solids content of approximately 240 mg/L. Arsenic content is slightly elevated at three of the five test wells. Well field operations can likely overcome slightly elevated arsenic contents up to at least 75% of the planned production of 2,000 af/yr. However, to achieve the maximum planned yield, some arsenic treatment (reduction) may be required for one or more wells, or alternative production well locations may need to be pursued.

Monitoring of pumping water levels will be important in all wells, particularly the wells completed in the fractured volcanic rock aquifer. Monitoring of arsenic contents will also be needed, particularly during start-up, as some variability in arsenic contents was observed during pumping tests.

References

Berger, D.L., Maurer, D.K., Lopes, T.J., and Halford, K.J., 2004, Estimates of Natural Ground-water Discharge and Characterization of Water Quality in Dry Valley, Washoe County, West-Central Nevada, 2002-2003, USGS Scientific Investigations Report 2004-5155, 39 p.

Cooper, H.H., and Jacob, C.E., 1946, A Generalized Graphical Method for Evaluating Formation Constants and Summarizing Well-Field History; Trans. Amer. Geophysical Union, V 27, pp. 526-534.

Driscoll, F.G., 1987, Groundwater and Wells, 2nd Edition, published by Johnson Division, St. Paul, MN.

Grose, T.L.T., Mergner, M., Moar, R.R., Saucedo, G.J., and Little, J.D., 2000, Geologic Map of the Chilcoot 15' Quadrangle, Lassen and Plumas Counties, California: California Division of Mines and Geology, DMG Open-file Report 2000-23, 1:62,500 scale.

Grose, T.L.T., 2004, Geologic Report on the Long Valley / Dry Valley Ground Water Project, Lassen County, California, prepared for the Lassen County Department of Community Development.

Henry, C., Faulds, J., dePolo, C., and Davis, D., 2004b, Geology of the Dogskin Mountain Quadrangle: northern Walker Lane, Nevada: Nevada Bureau of Mines and Geology, text for Open File Report OF-03-16, 24. p.

Henry and others, C., Faulds, J., dePolo, C., and Davis, D., 2004a, Preliminary Geologic Map of the Dogskin Mountain Quadrangle, Washoe County, Nevada: Nevada Bureau of Mines Open File Report OF-03-16, 1:24,000 scale.

Henry, C., Ramelli, A.R., and Faulds, J.E., 2006a, Preliminary Geologic Map of the Seven Lakes Mountain Quadrangle, Washoe County, Nevada and Lassen County, California: Nevada Bureau of Mines Open File Report OF-06-14, 1:24,000 scale.

Henry, C., Ramelli, A.R., and Faulds, J.E., 2006b, Seven Lakes Mountain Quadrangle, Rock Descriptions: Nevada Bureau of Mines Open File Report OF-06-14, 11 p.

Hinz, N., 2004, Tertiary Volcanic Stratigraphy of the Diamond and Fort Sage Mountains, Northern California and Western Nevada – Implications for Development of the Northern Walker Lane: University of Nevada, Reno, Master Thesis.

Interflow Hydrology, Inc, 2003, Hydrogeology of Bedell Flat and Potential for Ground Water Development, Washoe County, Nevada.

Interflow Hydrology, Inc, 2004, Test Well Completion Report, Dry Valley Test Well No. 1, Washoe County, Nevada.

Interflow Hydrology, Inc, 2005, Numeric Ground-Water Flow Modeling, Dry Valley Hydrographic Basin, Washoe County, Nevada.

Roscoe Moss Company, 1990, Handbook of Ground Water Development, published by John Wiley & Sons.

Rumbaugh, J., 2005, Aquifer^{Win32} Aquifer Test Analysis Software, published by Environmental Simulations, Inc., Reinholds, PA.

Theis, C.V., 1935, The Relationship Between the Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Ground-Water Storage, Transcripts of the American Geophysical Union, V. 16, pp. 519-524.

Appendix A
Geologic & Electric Logs

DRY VALLEY TEST WELL NO. 1 (DV-TW-1)
Logged by: D. Smith
Drilling Commenced: May 21, 2004
Driller: Humboldt Drilling
Drilling Method: Mud Rotary (6-inch diameter borehole)

Depth (ft)	Time	Description
0	5-21-04 12:00	0 – 35: Brown Cobby Slighty Silty SAND, angular to subrounded predominantly volcanic derived (basalt).
20		
40		35 – 45: Brn. Gravelly CLAYEY SAND, w/est. 30% med. plastic clay.
60		45 – 55: Gravelly SAND, subangular to subrounded, minor clay stringers. 55 – 65: Gravelly CLAYEY SAND, 10-15% clay.
80	13:15	65 – 85: Brn. Gravelly Silty SAND.
100	13:35	85 – 90: Brown Gravelly Sandy CLAY. 90 – 101: Brn. Gravelly CLAYEY SAND, with est. 15% med. plastic clay (clay stringers). 101 – 104: Brown Gravelly Sandy CLAY. 104 – 120: Gravelly CLAYEY SAND, with est. 15% clay.
120	14:10	120 – 135: Reddish Brn. Gravelly Sandy CLAY.
140	14:30	135 – 150: Brn. Gravelly CLAYEY SAND, with est. 20% med. plastic clay.
160	14:50	150 – 170: Brn. Slightly Clayey GRAVELLY SAND, subangular to subrounded, gravel and coarse sand is predominantly basalt in med to fine grained lithic and quartz sand. 170 – 180: Brn. Gravelly CLAYEY SAND, with est. 20%.
180	15:05	180 – 195: Gravelly Sandy CLAY
200		195 – 224: Slightly Clayey GRAVELLY SAND, coarse grained, angular to subrounded sand particles, majority drk gray basalt, with yellow, white and pink feldspar, and clear quartz.
220	15:55	224 – 228: Lt. Reddish Gray TUFF (chips, micaeous, glassey). 228 – 254: Gray Slightly Clayey GRAVELLY SAND, same as 195 to 224 ft.
240		254 – 257: Lt. Gray Sandy CLAY. 257 – 261: SAND, same as 228 – 254.

260	16:45		261 – 291: Reddish Brn. Sandy CLAY.
280			
			291 – 300: BASALT (cuttings are chips, hard – slow drilling).
300	5-22-04 9:45	. . . . .	300 – 315: Gravelly CLAYEY SAND with est. 15% gray clay.
		. . . . .	315 – 335: Slightly Clayey Gravelly SAND, angular to subangular predominantly volcanic rock particles.
320		. . . . .	
		. . . . .	
			335 – 361: Sandy CLAY with est. 50% med. plastic clay.
340	10:20		
360	10:30	. . . . .	361 – 385: Brn. SAND, fine to coarse grained angular to subrounded predominantly gray basalt particles with some feldspar and qtz.
		. . . . .	
380	10:50	. . . . .	
		. . . . .	385 – 405: Brn. CLAYEY GRAVELLY SAND w/est. 20% clay.
400	11:15	. . . . .	
		. . . . .	405 – 425: Brn. CLAYEY SAND with occasional boulders (410).
420	11:45		
			425 – 440: Sandy CLAY with est. 50% low-med plastic clay.
440	12:10	o o o o	440 – 450: Brn. Clayey GRAVEL with est. 25% med plastic clay, subrounded gravel to ½-inch plus, dk. Gray volcanic.
			450 – 455: Sandy CLAY, 50% med plastic clay.
		. . . . .	455 – 495: Gravelly SAND, fine grained sand with subrounded-subangular coarse sand and gravel to 3/8-inch, predominantly basalt, with feldspar and quartz in fine sand.
460		. . . . .	
		. . . . .	
480	12:45	. . . . .	
			495 – 505: Brown Sandy CLAY, with est. 60% low plastic clay.
500	13:00		
		. . . . .	505 – 515: Gray Silty SAND.
		. . . . .	515 – 565: SAND, fine to coarse grained, moderately well sorted, large fraction subrounded, w/est. 50% volcanic rock fragments (mostly basalt), 25% quartz, and 25% feldspar.
520		. . . . .	

540	13:45		540: Clay strata noted from E-log (est. less than 5-ft thick).
560			565 – 600: Gray Slightly Clayey Slightly Gravelly Silty SAND, subrounded to subangular, roughly even proportions of lithic (volcanic – basalt), feldspar, and quartz.
580	14:05		575: Clay strata noted from E-log (est. less than 5-ft thick).
600			600 – 610: Grayish Brn. Sandy CLAY.
620			610 – 637: Grayish Brn. CLAYEY SAND w/est. 35% med. plastic clay.
640			637 – 658: Dark Brown Sandy CLAY, soft, low to med plastic, 70% fines.
660			658 – 685: Grayish Brn. Slightly Clayey Slightly Gravelly SAND, predominantly subangular and coarse grained basalt particles.
680	16:00		685 – 690: Gray Sandy CLAY w/est. 50% med. plastic clay.
700	16:20		690 – 702: Grayish Brn. Slightly Gravelly SAND, fine to coarse grained, mostly drk gray volcanic particles. 702 – 718: Sandy CLAY
720			

Notes:

1. Total Depth Drilled = 718 ft.
2. Electric Logging by Dewey Data on 5-23-04, including natural gamma, SP, Point Resistance, Lateral Log, 16-inch Resistivity, and 64-inch Resistivity.
3. 6-inch diameter well completed to 700 ft in reamed borehole (12-inch diameter).
4. First water encountered at 5 ft below ground surface.
5. Static water level in completed well = 9.1 psi (22 ft above land surface).
6. Artesian flow of approx. 40 gpm (temperature = 85°F).

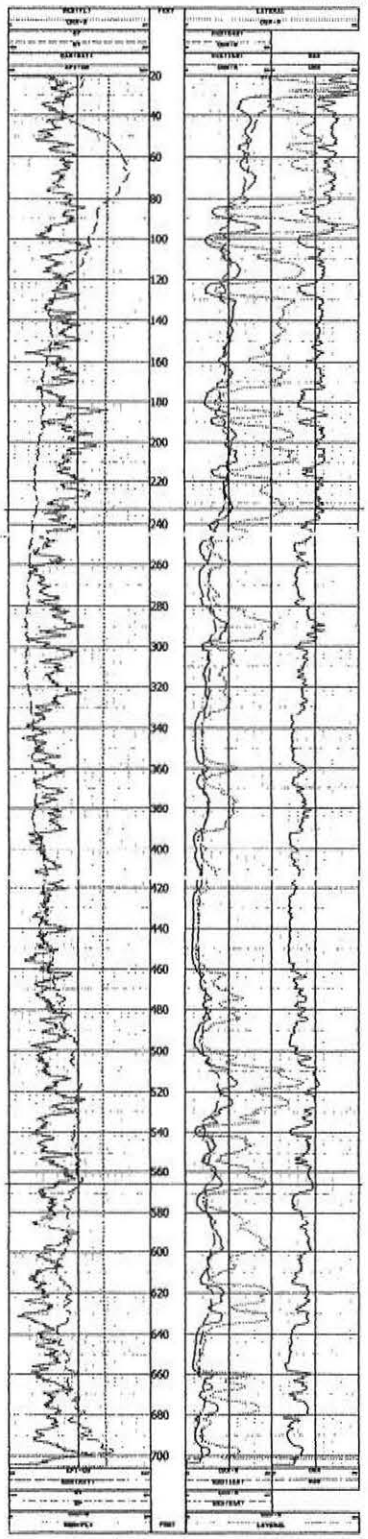
Dewey Data

I.M.W.S.-2004

COMPANY	: INTERMOUNTAIN WATER SUPPLY		OTHER SERVICES:		
WELL	: I.M.W.S.-2004		INVOICE		
LOCATION/FIELD	: DOYLE		92304		
COUNTY	: WASHOE		400		
STATE	: NV				
SECTION	: N/A	TOWNSHIP : N/A		RANGE : N/A	
DATE	: 09/23/04	PERMANENT DATUM	: G.L.		
DEPTH DRILLER	: 700 FT			KB	: N/A
LOG BOTTOM	: 705.90	LOG MEASURED FROM	: G.L.	DF	: N/A
LOG TOP	: -2.10	DRL MEASURED FROM	: G.L.	GI	: N/A
CASING DIAMETER	: DOW	LOGGING UNIT	: 9		
CASING TYPE		FIELD OFFICE	: CENTRAL CAL		
CASING THICKNESS		RECORDED BY	: OSHANROLYZE		
BIT SIZE	: 6	BOREHOLE FLUID	: N/A	FILE	: ORIGINAL
MAGNETIC DECL	: 0	RM	: 81	TYPE	: 6044A
MATRIX DENSITY	: 2.71	RM TEMPERATURE	: 70		
NEUTRON MATRIX	: Dolomite	MATRIX DELTA T	: 64	THRESH	: 6000

WATER QUALITY.
HUMIDITY

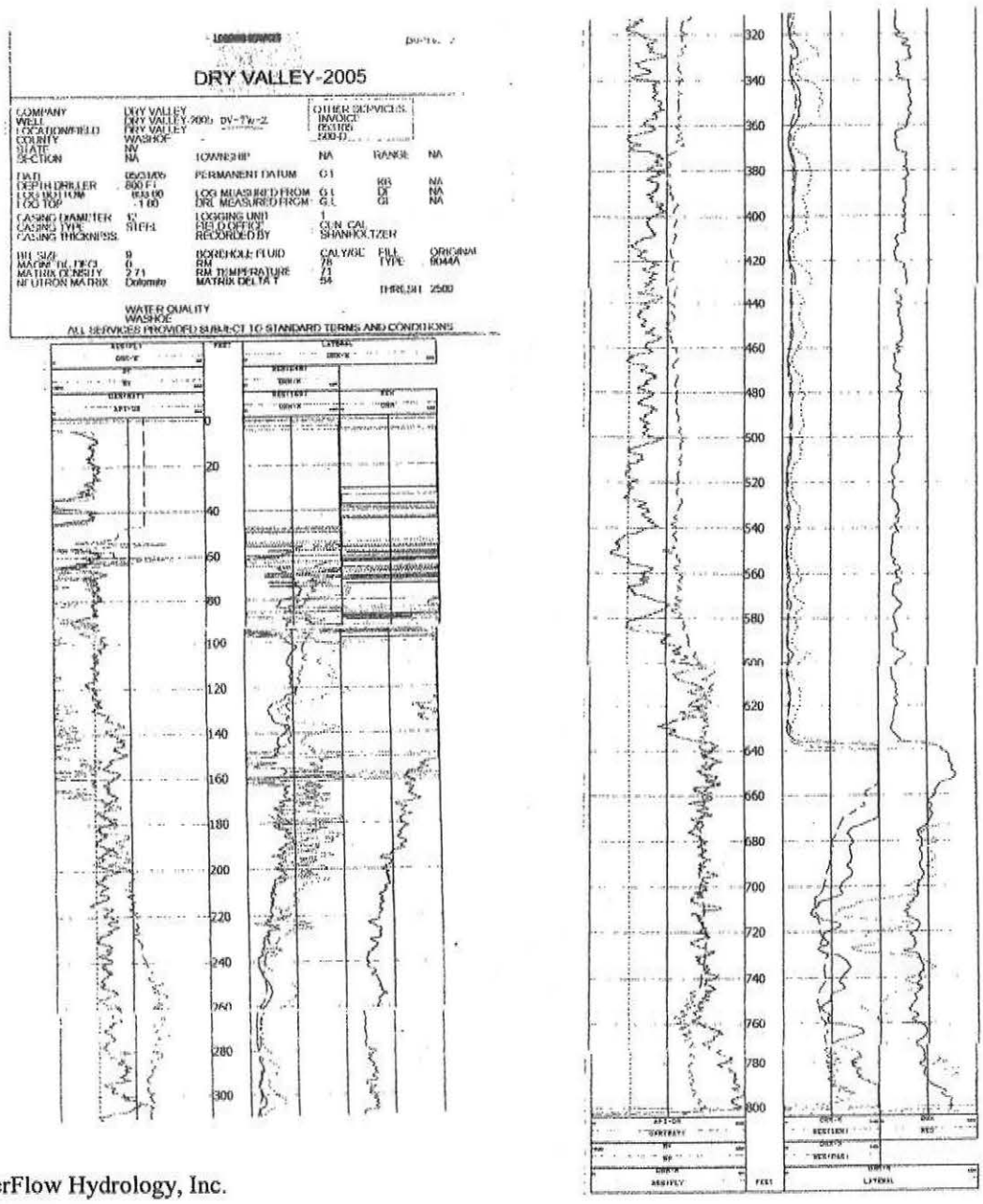
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



DRY VALLEY TEST WELL NO. 2 (DV-TW-2)

Notes by: D. Smith
Driller: MacKay Drilling, Reno, NV
Drilling Commenced: May 4, 2005
Drilling Completed: May 27, 2005
Depth Drilled = 803 ft
Electric Loggged: May 31, 2005 by Dewey Data
Drilling Method: Mud Rotary (9-7/8 inch borehole)
Cuttings collected by MacKay Drilling at 10-ft intervals

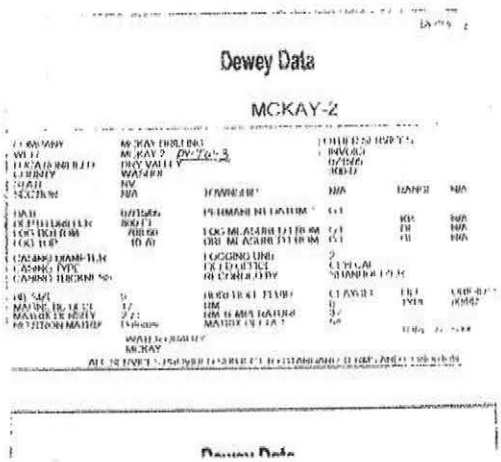
0 - 35	Gray gravelly clayey sand (Qa).
35 - 140	Dk. gray gravelly sand, subrounded to angular vol. rock clasts (Qa/Tf ?)
140 - 235	Dk. gray gravelly snad, angular clasts, occasional whitish diatomeous siltstone fragments (Tf).
235 - 395	Gray slightly clayey gravelly and weakly cemented sandstone (Tf).
395 - 635	Gray slightly gravelly weakly cemented sandstone with subrounded vol. clasts (Tf). Occasionally gravelly, occasional diatomeous siltstone fragments. Occasional minor low plastic clay content.
635 - 803	Reddish brown ash flow tuff – rhyolite(?) (Nine Hill Tuff – Tnh)

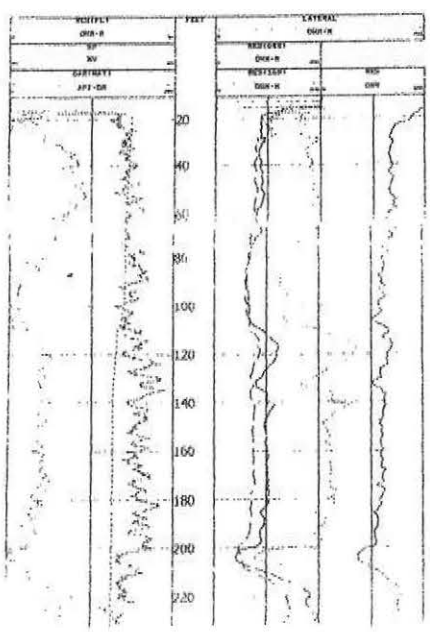


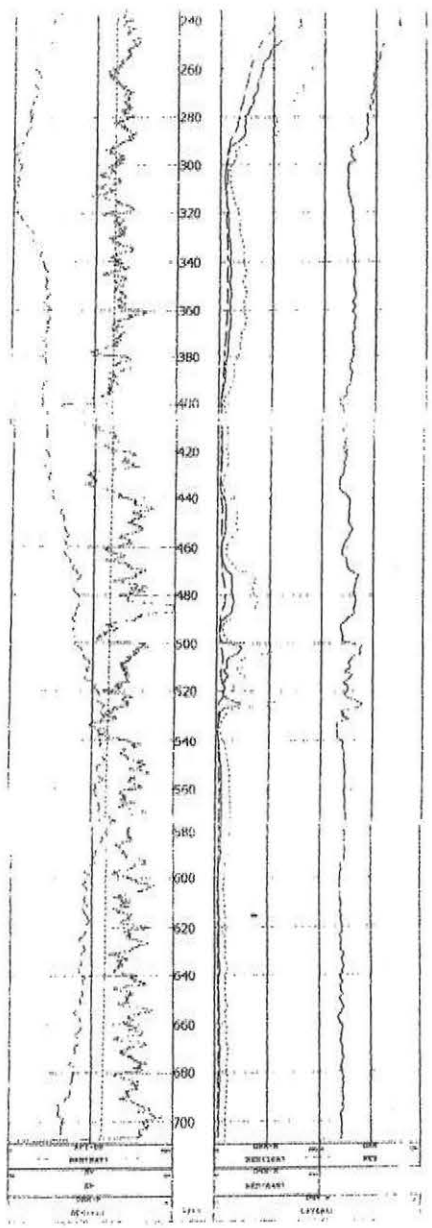
DRY VALLEY TEST WELL NO. 3 (DV-TW-3)

Notes by: D. Smith
Driller: MacKay Drilling, Reno, NV
Drilling Commenced: June 15, 2005
Drilling Completed: July 14, 2005
Depth Drilled = 710 ft
Electric Loggged: July 15, 2005 by Dewey Data
Drilling Method: Mud Rotary (9-7/8 inch borehole)
Cuttings collected by MacKay Drilling at 10-ft intervals

0 – 20	Reddish brown weathered volcanic rock overburden.
20 - 197	Pinkish gray ash flow tuff (Tuff of Chimney Spring - Tcs).
197 - 295	Light gray to cream colored ash flow tuff (Tuff of Campbell Creek - Tcc), clayey zones at 270 to 280 ft.
295 - 495	Gray tuff, becoming very clayey below 340 ft.at slightly clayey gravelly and weakly cemented sandstone (Tuff of Dogskin Mountain – Tdm).
495 – 710	Gray to pinkish gray, minor clayey zones, ash flow tuff (Tuff of Mine Canyon – Tmc).



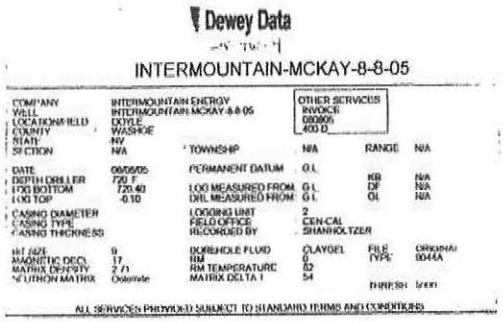




DRY VALLEY TEST WELL NO. 4 (DV-TW-4)

Notes by: D. Smith
Driller: MacKay Drilling, Reno, NV
Drilling Commenced: June 21, 2005
Drilling Completed: August 7, 2005
Depth Drilled = 720 ft
Electric Loggged: August 8, 2005 by Dewey Data
Drilling Method: Mud Rotary (9-7/8 inch borehole)
Cuttings collected by MacKay Drilling at 10-ft intervals

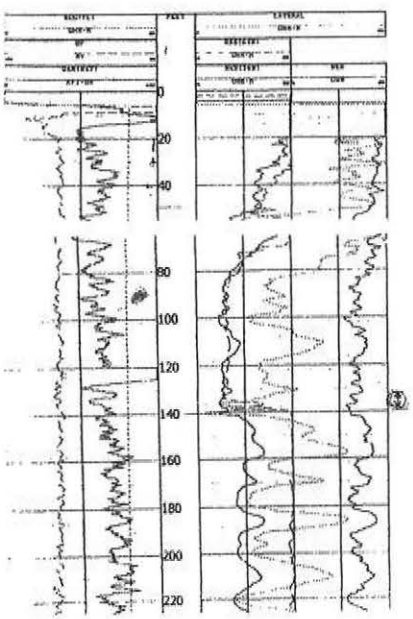
0 – 75 to 140	Gray slightly clayey and silty gravelly sand – Quaternary alluvium (Qa), subrounded to angular clasts.
75 to 140 – 720	Gray weakly cemented clayey gravelly (tuffaceous) sandstone, with interbedded zones of cleaner sandstone and higher clay content strata (Pliocene-Miocene Sedimentary Deposits – Tf).

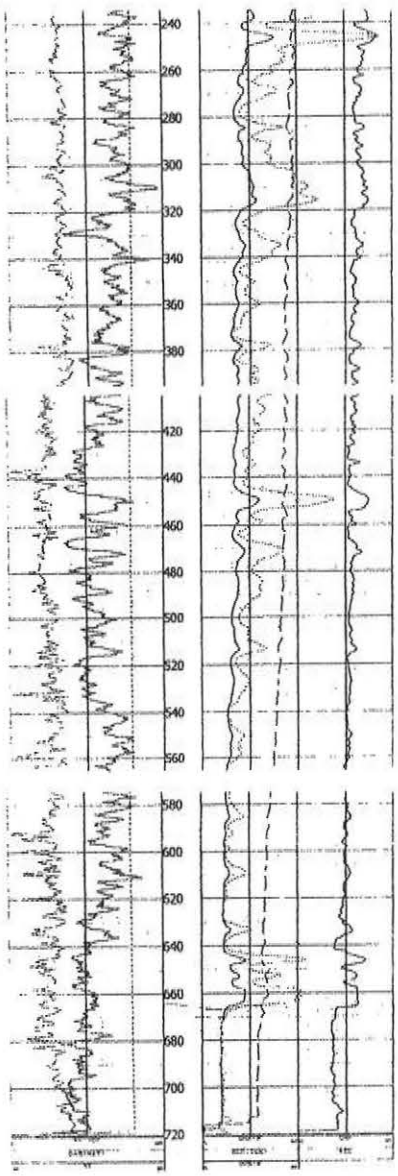

Dewey Data

INTERMOUNTAIN-MCKAY-8-8-05

COMPANY	INTERMOUNTAIN ENERGY	OTHER SERVICES			
WELL	INTERMOUNTAIN MCKAY-8-8-05	INVOICE			
LOCATION/FIELD	DOYLE	080805			
COUNTY	WASHOE	400 D			
STATE	NV				
SECTION	N/A	TOWNSHIP	N/A	RANGE	N/A
DATE	08/08/05	PERMANENT DATUM	G.L.		
DEPTH DRILLER	720 ft			KB	N/A
LOG BOTTOM	720.40	LOG MEASURED FROM	G.L.	DF	N/A
LOG TOP	-0.10	DRL MEASURED FROM	G.L.	GL	N/A
CASING DIAMETER		LOGGING UNIT	2		
CASING TYPE		FIELD OFFICE	CEN-CAL		
CASING THICKNESS		RECORDED BY	SHANHOLTZER		
BIT SIZE	9	BOREHOLE FLUID	CLAYGEL	FILE TYPE	ORIGINAL 0044A
MAGNETIC DECL	17	RM	0		
MATRIX DENSITY	2.71	RM TEMPERATURE	62		
SOLUTION MATRIX	Dolomite	MATRIX DELTA T	54		

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

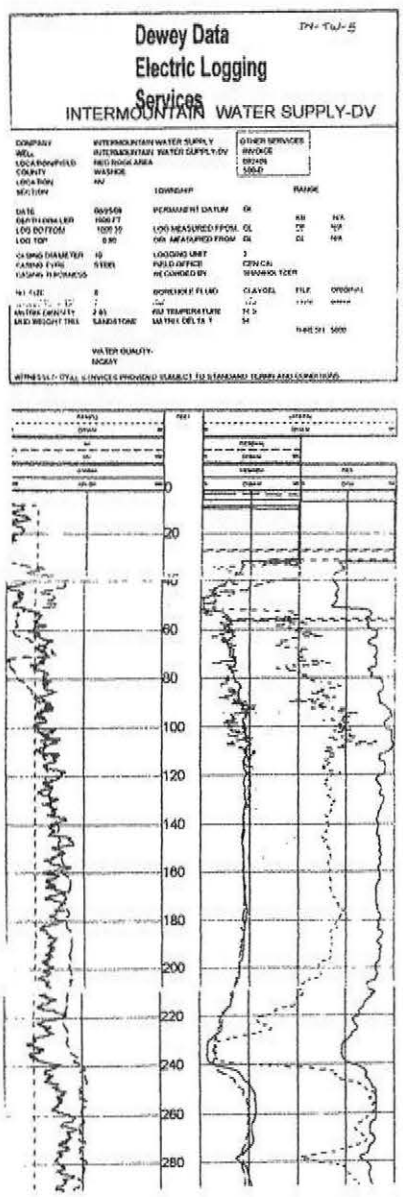


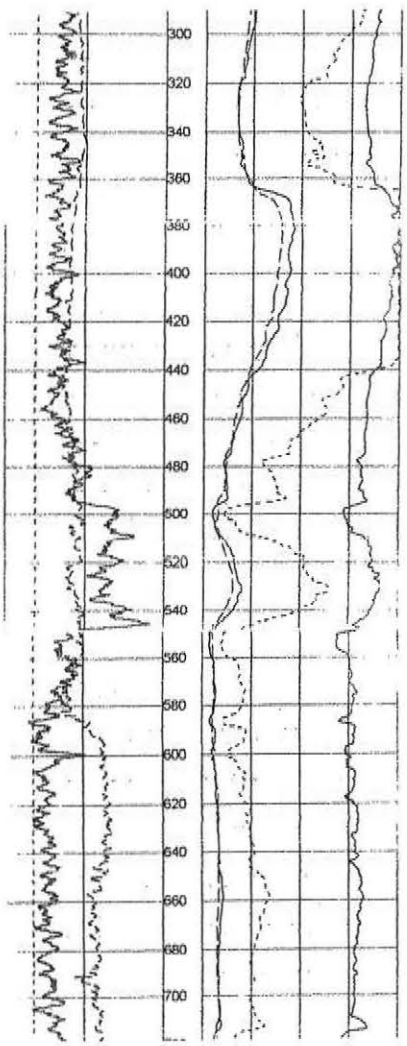


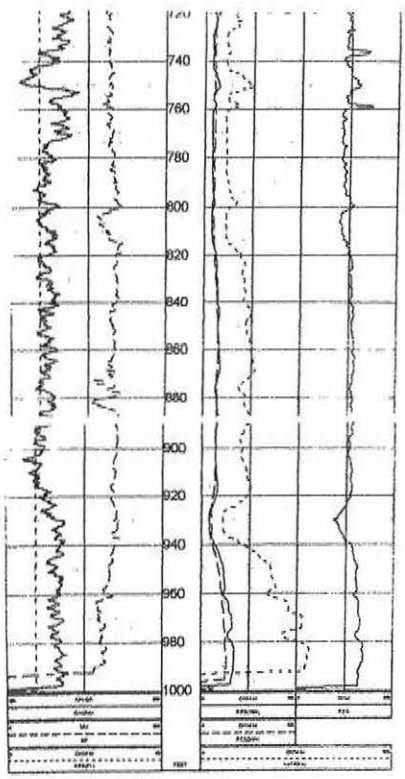
DRY VALLEY TEST WELL NO. 5 (DV-TW-5)

Notes by: D. Smith
Driller: MacKay Drilling, Reno, NV
Drilling Commenced: July 16, 2005
Drilling Completed: August 24, 2005
Depth Drilled = 1,000 ft
Electric Loggged: August 25, 2006 by Dewey Data
Drilling Method: Air Rotary to 245 ft, Mud Rotary (9-7/8 inch borehole)
Cuttings collected by MacKay Drilling at 10-ft intervals

0 - 10	Gray weathered volcanic rock overburden. angular clasts.
10 - 230	Light Gray ash flow tuff (Tuff of Painted Hills – Tphl), soft and clayey.
230 - 580	Reddish gray and pinkish gray ash flow tuff (Tuff of Chimney Spring – Tcs), with abundant quartz and sanidine. Dark red clay strata on top of unit, otherwise low clay content.
580 - 1000	Gray ash flow tuff (Tuff of Campbell Creek ?), with quartz phenocrysts, clayey in lower 20 ft.







Appendix B
Aquifer Testing Data & Plots

Project Name: **Intermountain Water Supply, Ltd.**
Water Level Data Collected for: **DV Test Well #1 - Pumping Well**
Distance from pumped Well: 0 ft
Pumping Well: **DV Test Well #1**
Location: Dry Valley
Average Pumped Rate: 129.3 gpm (Average for 14 days pumping - See NOTE below
Total Depth: 720 ft Perf Zones: 110-240, 500-700
Diameter: 6 inches
Land Surface Elevation: 4520 ft
Measuring Point (MP): Top of Casing
MP Above Land Surface: 1.7 ft Note: Pressure Gage Reference = 0.9 ft above ground (0.8 ft below top of casing)
Pump Depth below MP: 404 ft
Data Collected By: DS/HS
Type of Aquifer Test: Constant Discharge and Recovery
Start Time: 11:15 Start Date: 8/9/2006
End Time: 10:20 End Date: 8/23/2006
Duration (Days): 14.0
Observation Wells: DV-TW #2, #3 and #4 - No Response to Pumping
Pre-test Static Water Level (ft): -15.35 (artesian)
Transducer Depth Below WL (ft): 196.90 (15-min intervals)
Measurement Method: Down-hole pressure transducer and water level meter
NOTE: Flow constant at 147.2 gpm for last 9 days of pumping

Manual Field Measurments

Date/Time	Elapsed Time (mins)	Depth to Water (ft)	Drawdown (ft)	Discharge Totalizer (gals)	Comments/Observations
7/18/2006 11:40		-14.2			6.5 psi, Adjusted Reference to Top of Casing
7/19/2006 15:19		-14.86			6.8 psi
7/21/2006 8:32		-15.34			7.0 psi
7/24/2006 11:52		-16.5			7.5 psi
7/26/2006 8:30		-16.73			7.6 psi
8/3/2006 10:50		-16.5			7.5 psi
8/5/2006 12:20		-15.35			7.0 psi
8/8/2006 12:00					Installing Pump-100+ gpm Artesian Flow Reported
8/9/2006 11:20	0	0.00	15.35	2,154,700	Flowing at Start of Pumping, Meter Rate = 150 gpm
8/9/2006 11:22	2	22.75	38.10		Note: Drawdown adjusted for prior artesian head
8/9/2006 11:24	4	26.65	42.00		
8/9/2006 11:26	6	28.59	43.94		
8/9/2006 11:28	8	31.00	46.35		
8/9/2006 11:30	10	31.13	46.48		
8/9/2006 11:32	12	32.29	47.64		
8/9/2006 11:34	14	33.16	48.51		
8/9/2006 11:36	16	33.81	49.16		
8/9/2006 11:38	18	34.50	49.85		
8/9/2006 11:40	20	35.16	50.51		
8/9/2006 11:45	25	36.45	51.80		
8/9/2006 11:50	30	37.67	53.02		
8/9/2006 11:55	35	38.71	54.06		
8/9/2006 12:00	40	39.50	54.85		
8/9/2006 12:05	45	40.57	55.92		
8/9/2006 12:10	50	41.42	56.77		
8/9/2006 12:15	55	42.23	57.58		
8/9/2006 12:20	60	43.11	58.46		
8/9/2006 12:30	70	44.41	59.76		
8/9/2006 12:40	80	45.71	61.06		
8/9/2006 12:50	90	47.00	62.35		
8/9/2006 13:00	100	48.25	63.60	2,169,300	Reset Transducer @ 250' (Approx.)
8/10/2006 9:05	1305	100.62	115.97	2,334,500	
8/14/2006 9:15	7075	91.30	106.65	2,836,000	Flow dimenished over weekend, reset to
8/14/2006 9:25	7085	95.37	110.72		150 gpm - restart of constant rate testing
8/15/2006 8:40	8480	150.64	165.99	3,030,500	Reset Transducer @300' (Approx.)
8/18/2006 9:35	12855	197.87	213.22	3,657,900	
8/21/2006 9:40	17180	222.75	238.10	4,318,300	
8/23/2006 10:05	20085	230.66	246.01	4,751,200	
8/23/2006 10:20	20100	230.67	246.02	4,753,400	Stop Pumping & Start Recovery Monitoring

Manual Field Measurments

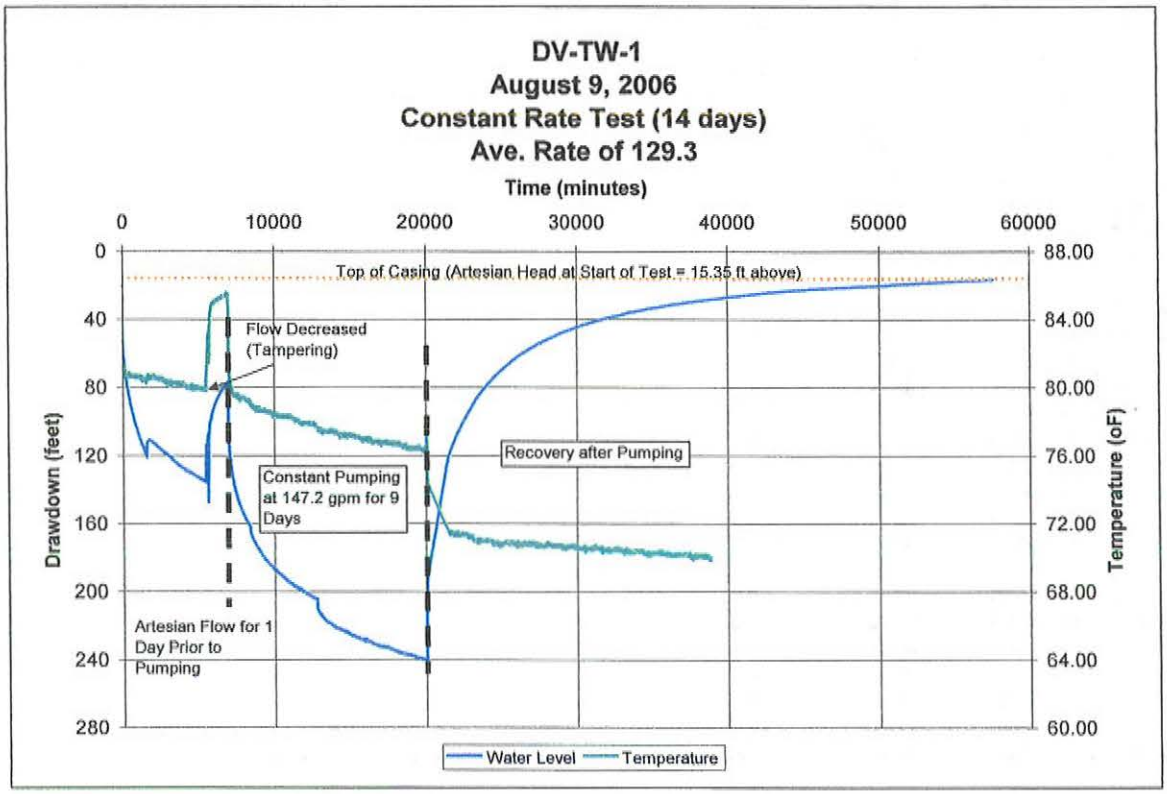
Date/Time	Elapsed Time (mins)	Depth to Water (ft)	Drawdown (ft)	Discharge Totalizer (gals)	Comments/Observations
8/23/2006 10:25	20105	197.30	212.65		
8/23/2006 10:26	20106	195.57	210.92		
8/23/2006 10:27	20107	194.69	210.04		
8/23/2006 10:28	20108	194.84	210.19		
8/23/2006 10:29	20109	194.19	209.54		
8/23/2006 10:30	20110	193.54	208.89		
8/23/2006 10:31	20111	193.00	208.35		
8/23/2006 10:32	20112	192.36	207.71		
8/23/2006 10:33	20113	191.82	207.17		
8/23/2006 10:34	20114	191.34	206.69		
8/23/2006 10:35	20115	190.90	206.25		
8/23/2006 10:36	20116	190.33	205.68		
8/23/2006 10:37	20117	189.92	205.27		
8/23/2006 10:38	20118	189.50	204.85		
8/23/2006 10:39	20119	189.08	204.43		
8/23/2006 10:40	20120	188.62	203.97		
8/23/2006 10:42	20122	187.97	203.32		
8/23/2006 10:44	20124	187.20	202.55		
8/23/2006 10:46	20126	186.56	201.91		
8/23/2006 10:48	20128	185.80	201.15		
8/23/2006 10:50	20130	185.26	200.61		
8/23/2006 10:55	20135	183.60	198.95		
8/23/2006 11:05	20145	182.10	197.45		
8/23/2006 11:10	20150	179.72	195.07		
8/23/2006 11:20	20160	177.49	192.84		Reset Transducer @ 175' (Approx.)
8/31/2006 10:55	31655	28.68	44.03		
9/5/2006 12:00	38920	12.94	28.29		Pull Recorder (WL 93.4' Above Transducer)
9/7/2006 12:00	41800	10.00	25.35		
9/8/2006 10:15	43135	8.86	24.21		
9/10/2006 9:00	45940	6.95	22.30		
9/18/2006 11:45	57625	1.41	16.76		Replace Cap (Not Flowing)

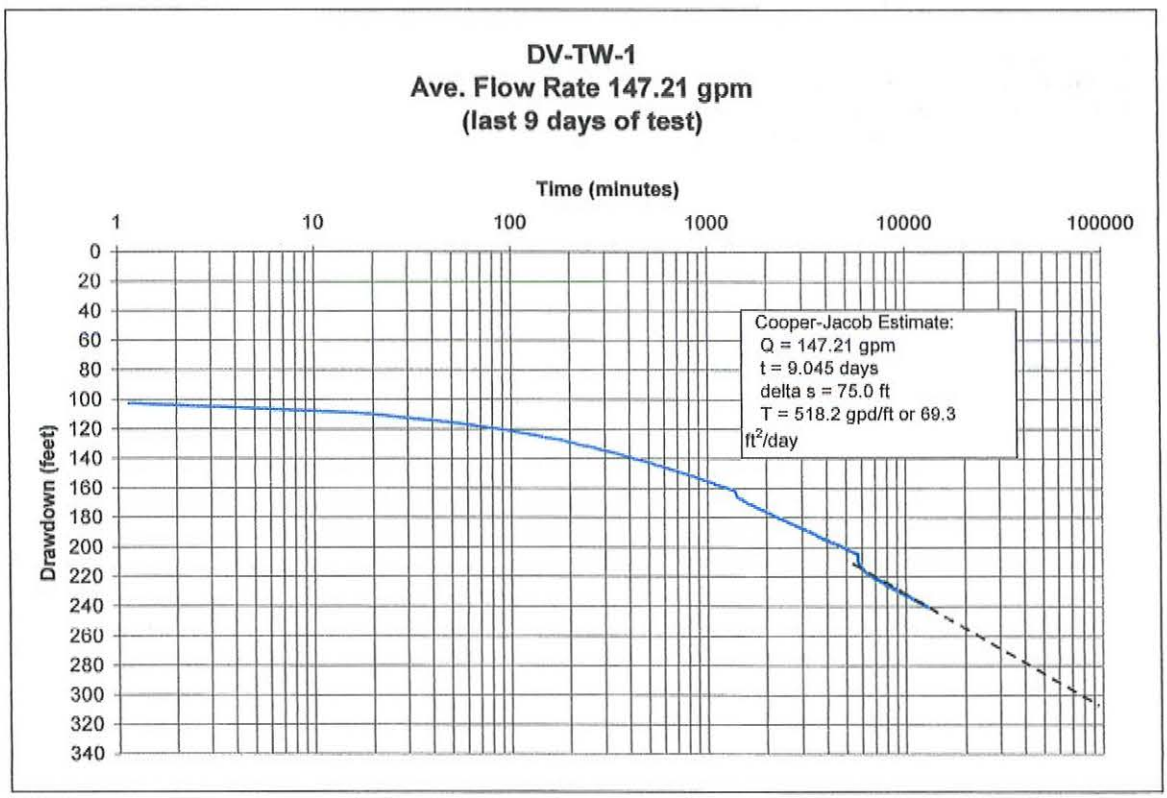
Observation Well Notes:

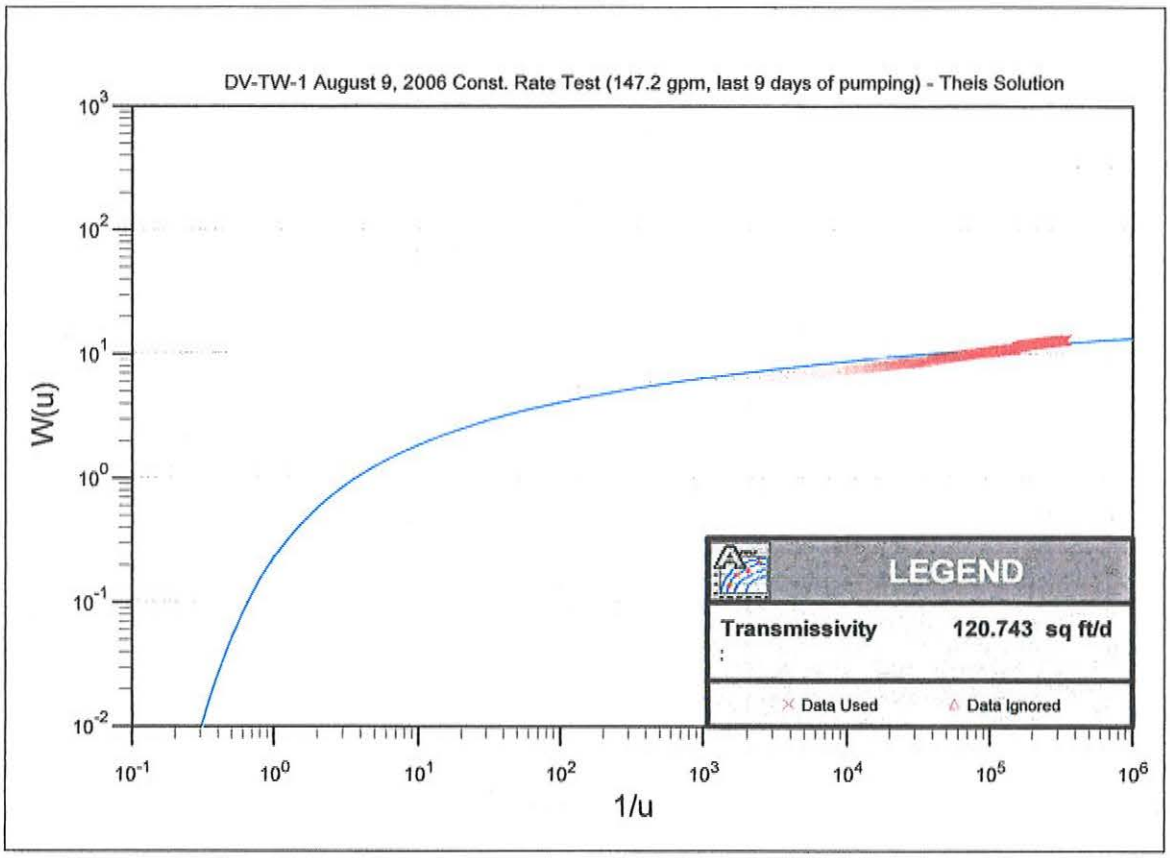
DV-TW-2 Artesian Head Remained Constant at 6.4 psi

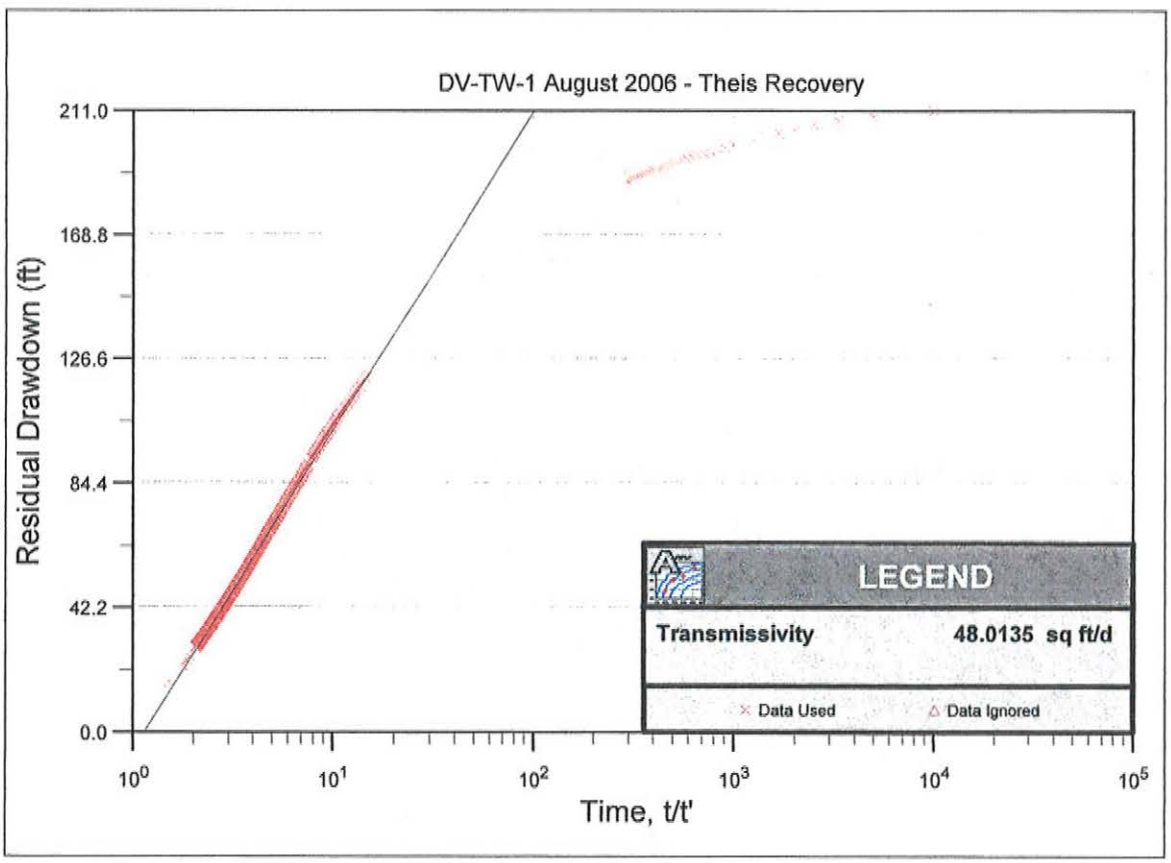
DV-TW-4 Artesian Head Remained Constant at 2.0 - 2.1 psi

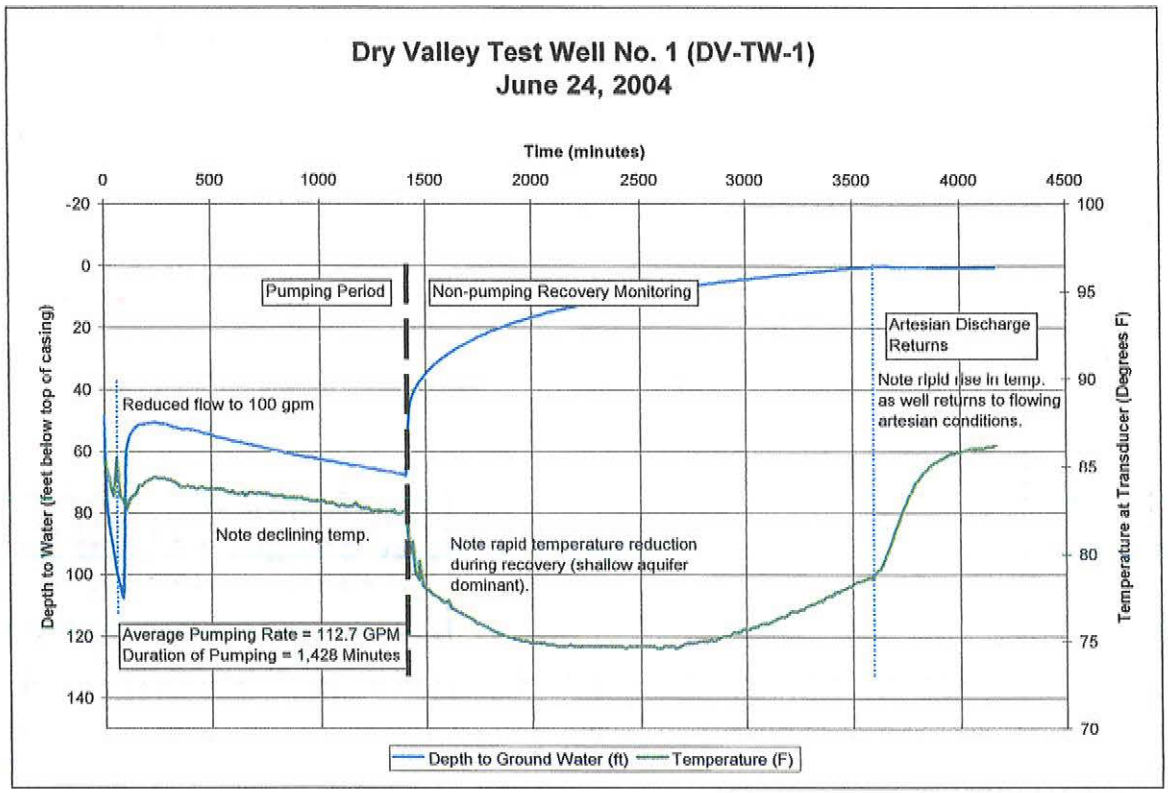
DV-TW-3 Recovery Water Level Monitoring On-going (no DV-TW-1 pumping effect observed)

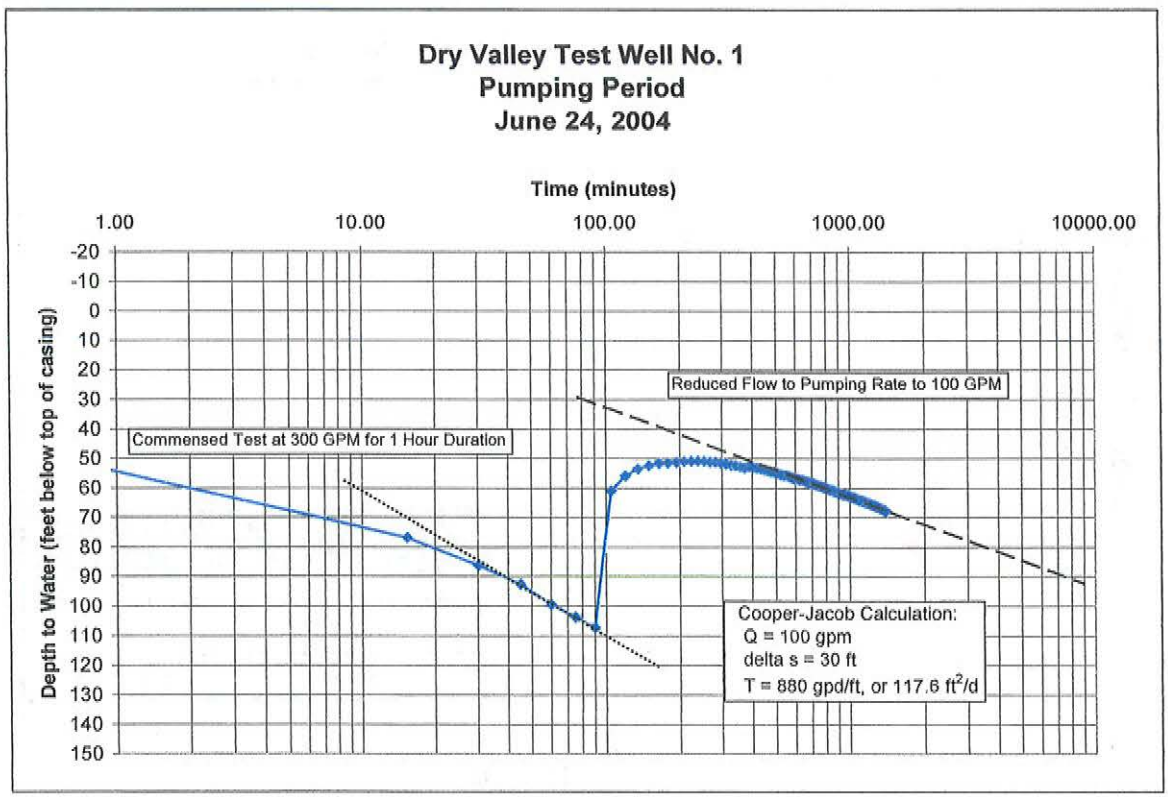

DV-TW-1
August 9, 2006
Constant Rate Test (14 days)
Ave. Rate of 129.3
Time (minutes)
0
10000
20000
30000
40000
50000
60000
Drawdown (feet)
0
40
80
120
160
200
240
280
Temperature (oF)
88.00
84.00
80.00
76.00
72.00
68.00
64.00
60.00
Top of Casing (Artesian Head at Start of Test = 15.35 ft above)
Flow Decreased (Tampering)
Recovery after Pumping
Constant Pumping at 147.2 gpm for 9 Days
Artesian Flow for 1 Day Prior to Pumping
Water Level
Temperature

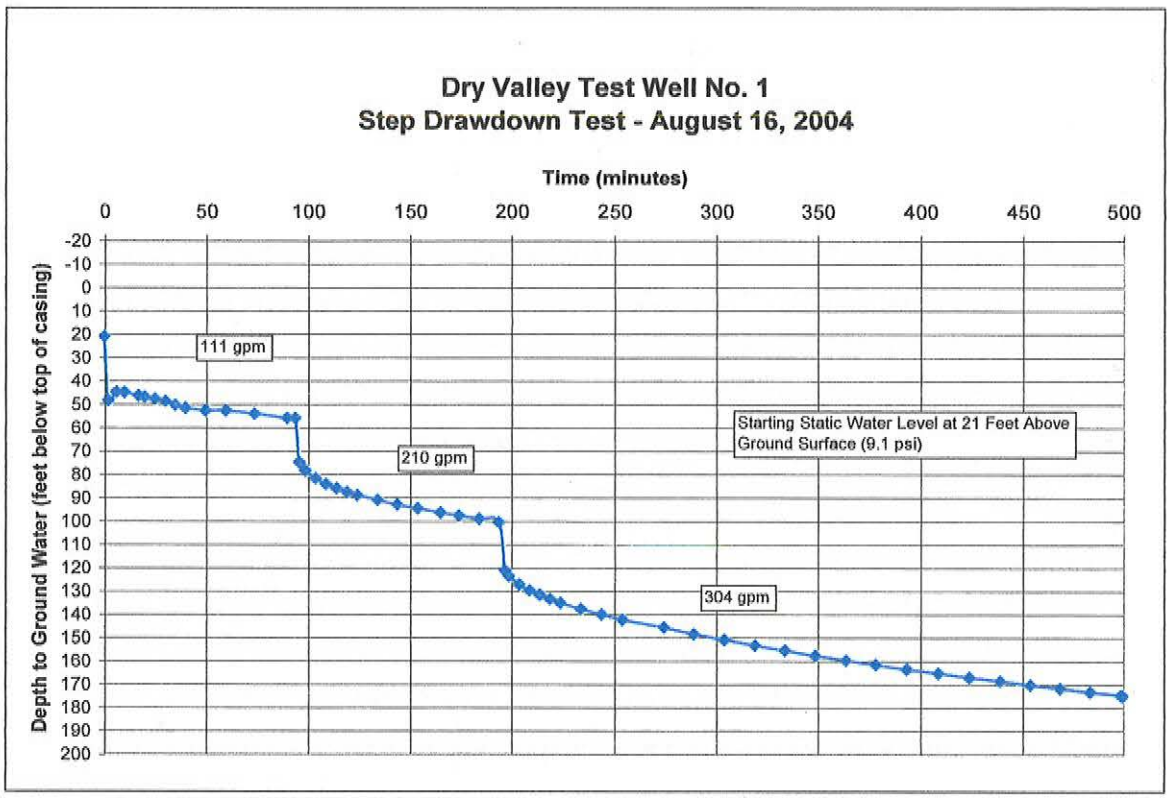

DV-TW-1
Ave. Flow Rate 147.21 gpm
(last 9 days of test)
Time (minutes)
1
10
100
1000
10000
100000
Drawdown (feet)
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
Cooper-Jacob Estimate:
Q = 147.21 gpm
t = 9.045 days
delta s = 75.0 ft
T = 518.2 gpd/ft or 69.3 ft²/day

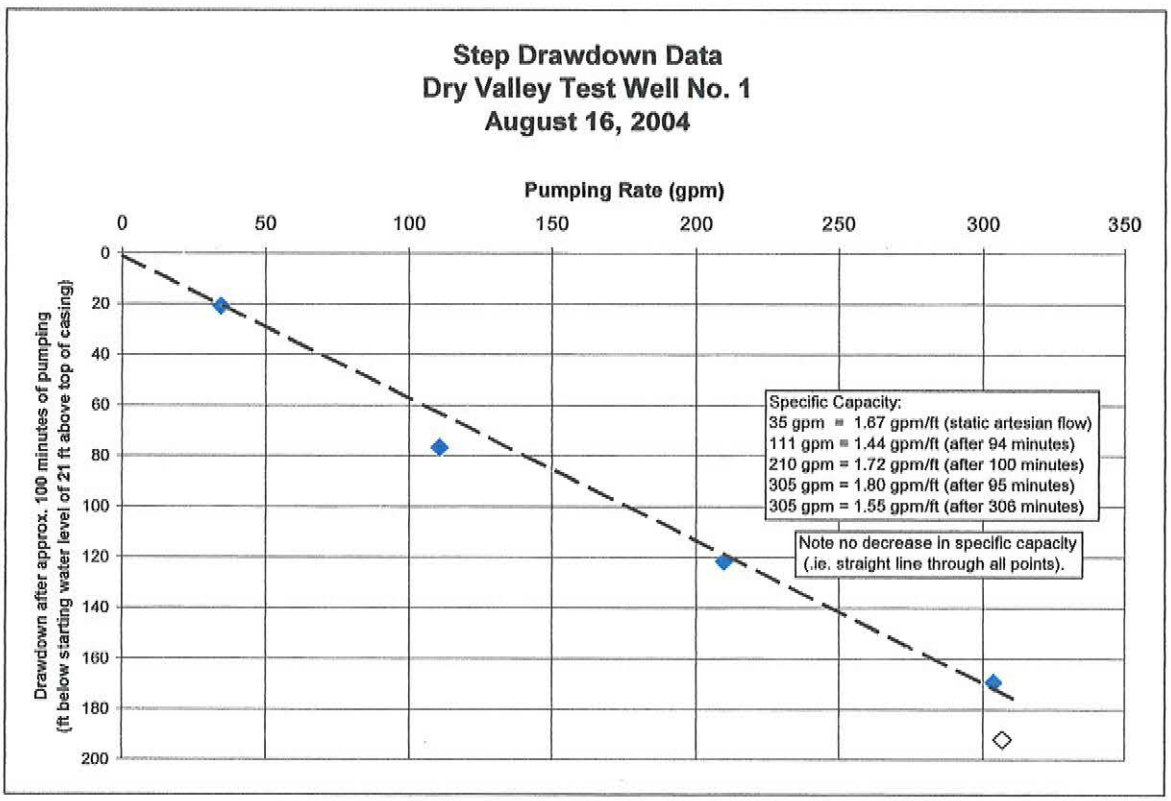

DV-TW-1 August 9, 2006 Const. Rate Test (147.2 gpm, last 9 days of pumping) - Theis Solution
W(u)
1/u
LEGEND
Transmissivity 120.743 sq ft/d
Data Used
Data Ignored

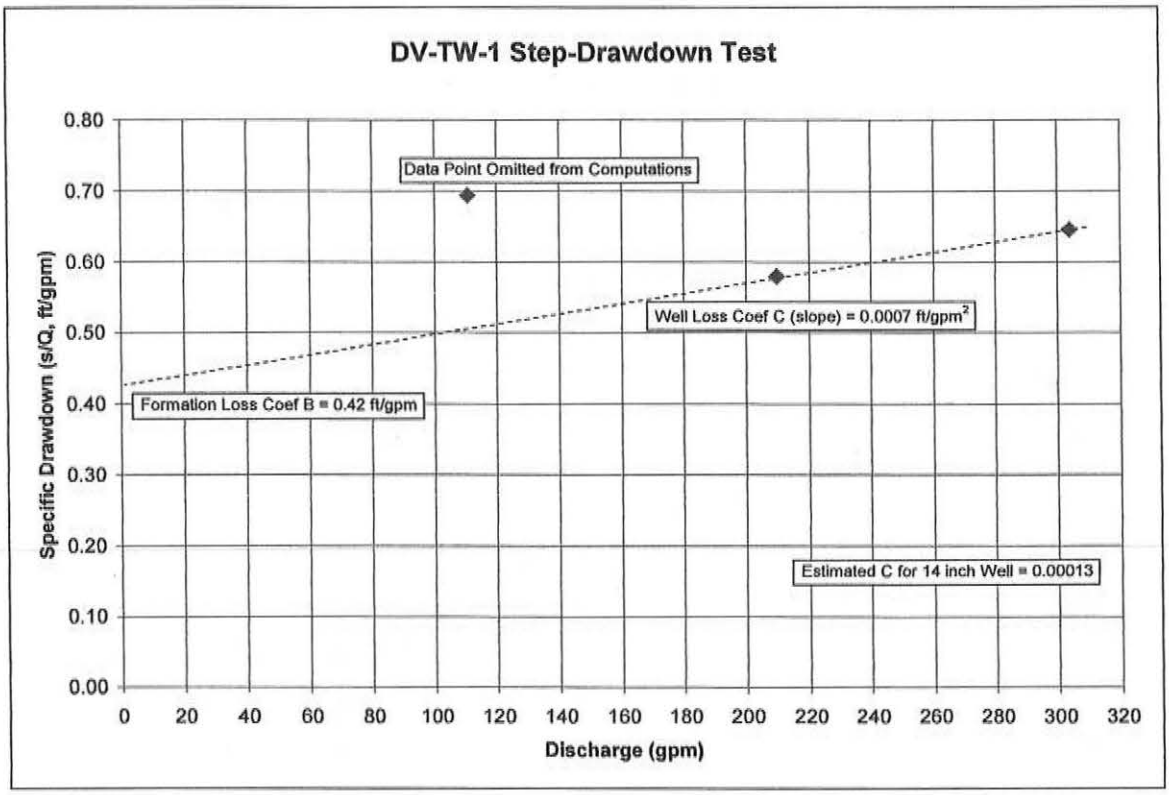

DV-TW-1 August 2006 - Theis Recovery
Residual Drawdown (ft)
211.0
168.8
126.6
84.4
42.2
0.0
Time, t/t'
LEGEND
Transmissivity 48.0135 sq ft/d
Data Used
Data Ignored


Dry Valley Test Well No. 1 (DV-TW-1)
June 24, 2004
Time (minutes)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
-20
0
20
40
60
80
100
120
140
Depth to Water (feet below top of casing)
100
95
90
85
80
75
70
Temperature at Transducer (Degrees F)
Pumping Period
Non-pumping Recovery Monitoring
Artesian Discharge Returns
Note rapid rise in temp. as well returns to flowing artesian conditions.
Reduced flow to 100 gpm
Note declining temp.
Note rapid temperature reduction during recovery (shallow aquifer dominant).
Average Pumping Rate = 112.7 GPM
Duration of Pumping = 1,428 Minutes
Depth to Ground Water (ft)
Temperature (F)


Dry Valley Test Well No. 1
Pumping Period
June 24, 2004
Time (minutes)
1.00
10.00
100.00
1000.00
10000.00
-20
-10
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
Depth to Water (feet below top of casing)
Reduced Flow to Pumping Rate to 100 GPM
Commensed Test at 300 GPM for 1 Hour Duration
Cooper-Jacob Calculation:
Q = 100 gpm
delta s = 30 ft
T = 880 gpd/ft, or 117.6 ft²/d


Dry Valley Test Well No. 1
Step Drawdown Test - August 16, 2004
Time (minutes)
0 50 100 150 200 250 300 350 400 450 500
Depth to Ground Water (feet below top of casing)
-20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
111 gpm
210 gpm
304 gpm
Starting Static Water Level at 21 Feet Above Ground Surface (9.1 psi)


Step Drawdown Data
Dry Valley Test Well No. 1
August 16, 2004
Pumping Rate (gpm)
0 50 100 150 200 250 300 350
Drawdown after approx. 100 minutes of pumping (ft below starting water level of 21 ft above top of casing)
0 20 40 60 80 100 120 140 160 180 200
Specific Capacity:
35 gpm = 1.67 gpm/ft (static artesian flow)
111 gpm = 1.44 gpm/ft (after 94 minutes)
210 gpm = 1.72 gpm/ft (after 100 minutes)
305 gpm = 1.80 gpm/ft (after 95 minutes)
305 gpm = 1.55 gpm/ft (after 306 minutes)
Note no decrease in specific capacity (.ie. straight line through all points).


DV-TW-1 Step-Drawdown Test
Specific Drawdown (s/Q, ft/gpm)
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
Discharge (gpm)
Data Point Omitted from Computations
Well Loss Coef C (slope) = 0.0007 ft/gpm²
Formation Loss Coef B = 0.42 ft/gpm
Estimated C for 14 inch Well = 0.00013

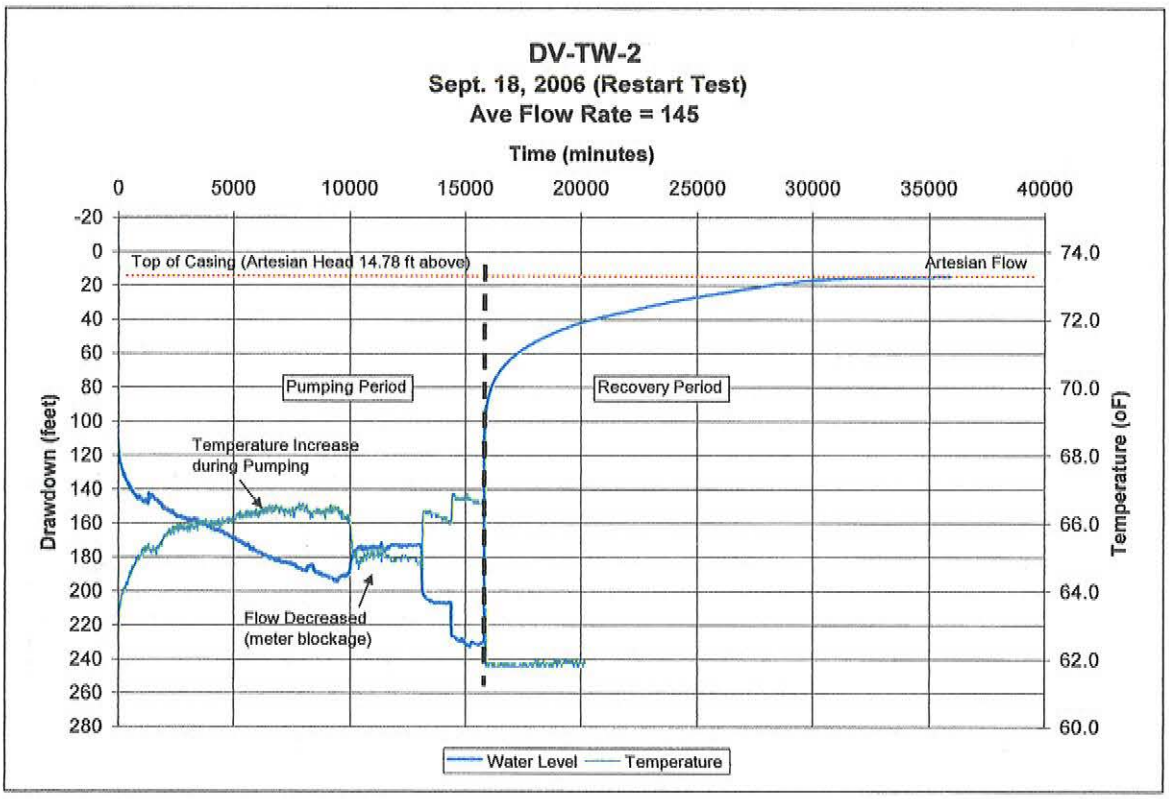
Project Name: **Intermountain Water Supply, Ltd.**
Water Level Data Collected for: **DV Test Well #2 - Pumping Well**
Distance from pumped Well: 0 ft
Pumping Well: **DV Test Well #2**
Location: Dry Valley
Average Pumped Rate: 132.9 gpm Estimated that meter was not operating for 1.5 days
Total Depth: 800 ft Perf Zone: 120-780 ft
Diameter: 6 inch
Land Surface Elevation: 4,635 ft
Measuring Point (MP): Top of Casing
MP Above Land Surface: 1.40
Pump Depth below MP: 400.00
Data Collected By: DS/HS
Type of Aquifer Test: Constant Discharge and Recovery (Second Test)
Start Time: 10:10 Start Date: 9/18/2006
End Time: 10:45 End Date: 9/29/2006
Duration (Days): 11.0
Note: Initially pumped from 9/05/06 to 9/12/06, until pump broke
Pre-test Static Water Level (ft): -14.78 (6.4 psi)
Transducer Depth Below WL (ft): 374.40 (initial setting)
Measurement Method: Down-hole pressure transducer and water level meter

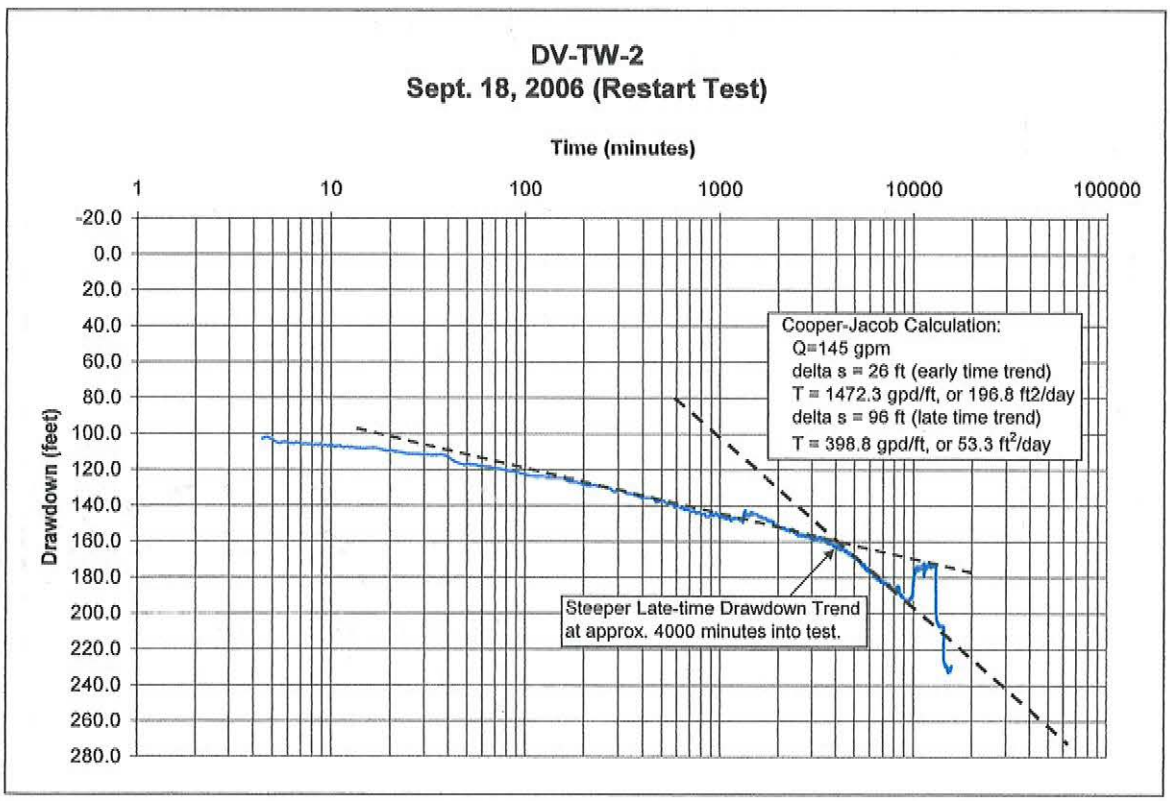
Manual Field Measurments

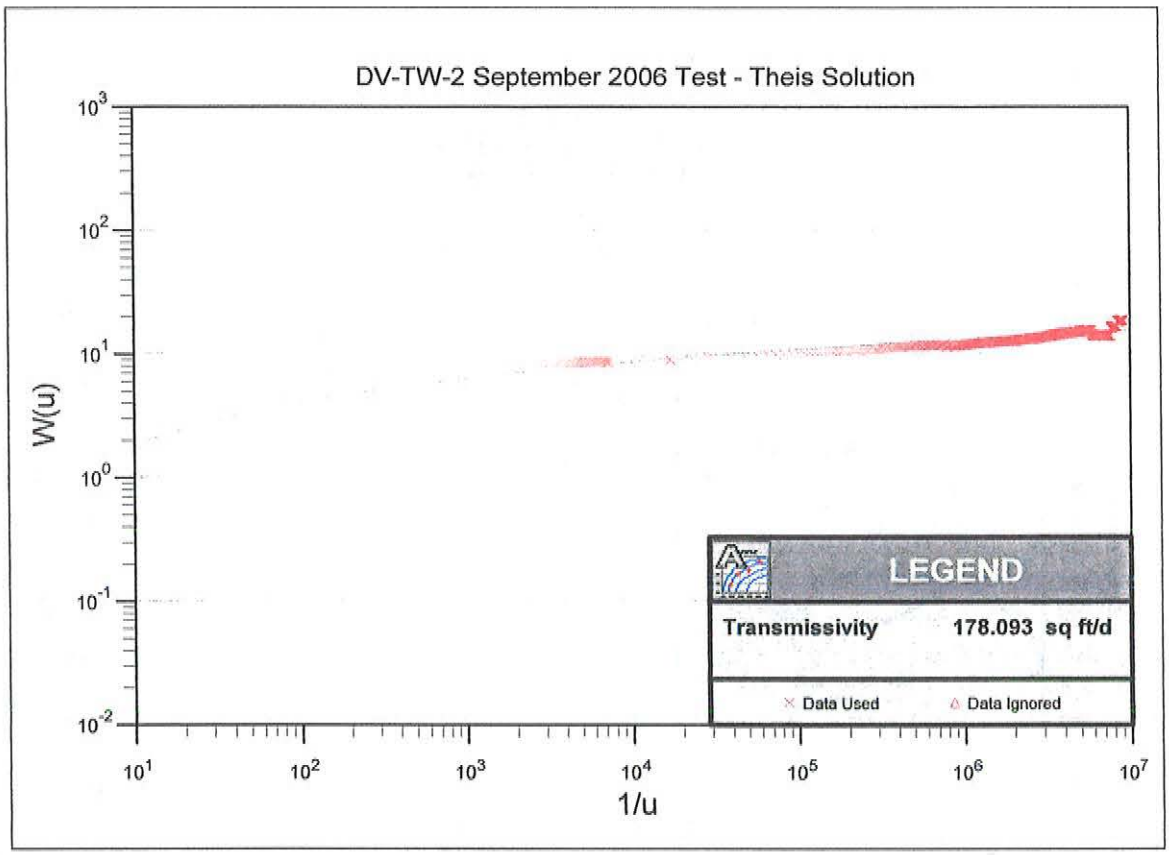
Date/Time	Elapsed Time (mins)	Depth to Water (ft)	Drawdown (ft)	Discharge Totalizer Flow Meter #1(gals)	Discharge Average (gpm)	Comments/Observations
9/5/2006 0:00	Started first pumping test at 200 gpm. On the 4th day of pumping, the pump started to fail (gradual flow decrease). The pump stopped operating on the 7th day. Pumping terminated on 9/12/2006.					
SECOND TEST						
9/18/2006 10:10		0.00	14.78	24,633,807		
9/18/2006 10:20	0	0.00	14.78		150	Logger @15 sec. Intervals
9/18/2006 10:22	2	110.00	124.78			
9/18/2006 10:25	5	89.95	104.73			
9/18/2006 10:30	11	90.41	105.19			
9/18/2006 10:32	12	-				Reset logger to 2 min. intervals
9/18/2006 10:37	17	94.36	109.14			
9/18/2006 10:40	20	95.06	109.84			
9/18/2006 10:50	30	97.13	111.91			Reset logger to 5 min. intervals
9/18/2006 11:00	40	98.97	113.75			
9/18/2006 11:03	43	-				
9/18/2006 11:10	50	102.97	117.75			Reset logger to 15 min. intervals
9/18/2006 11:20	60	104.21	118.99			
9/18/2006 11:30	70	-		24,644,512	153	
9/18/2006 11:32	72	105.50	120.28			
9/19/2006 14:00	1660	113.12	127.90		149	
9/22/2006 10:25	5765	161.92	176.70	25,487,500	146	Increased Flow to 150
9/25/2006 12:20	10200	163.98	178.76	26,049,800		
9/26/2006 9:58	11498	162.14	176.92			Meter not working
9/26/2006 10:25	11525	-				Switch Probes (Probe set @ 72.4)
9/26/2006 12:40	11660	159.37	174.15			
*** BEFORE SWITCH OF FLOW METER - NEW 3" FLOW METER TOTALIZER READS 158,000 GAL 162 PSI ***						
9/27/2006 13:00	13120	159.00	173.78		126	FM #1= 126 gpm FM #2= 116 gpm
9/27/2006 13:10	13130	-				Unplugged Flow Meter, Increased Flow
9/27/2006 14:00	13180	184.00	198.78		149.7	FM #1= 149.7 gpm FM #2= 143 gpm
9/28/2006 6:30	14170	192.00	206.78			
9/28/2006 10:40	14420	191.48	206.26		144	FM #1= 144 gpm FM #2= 128 gpm

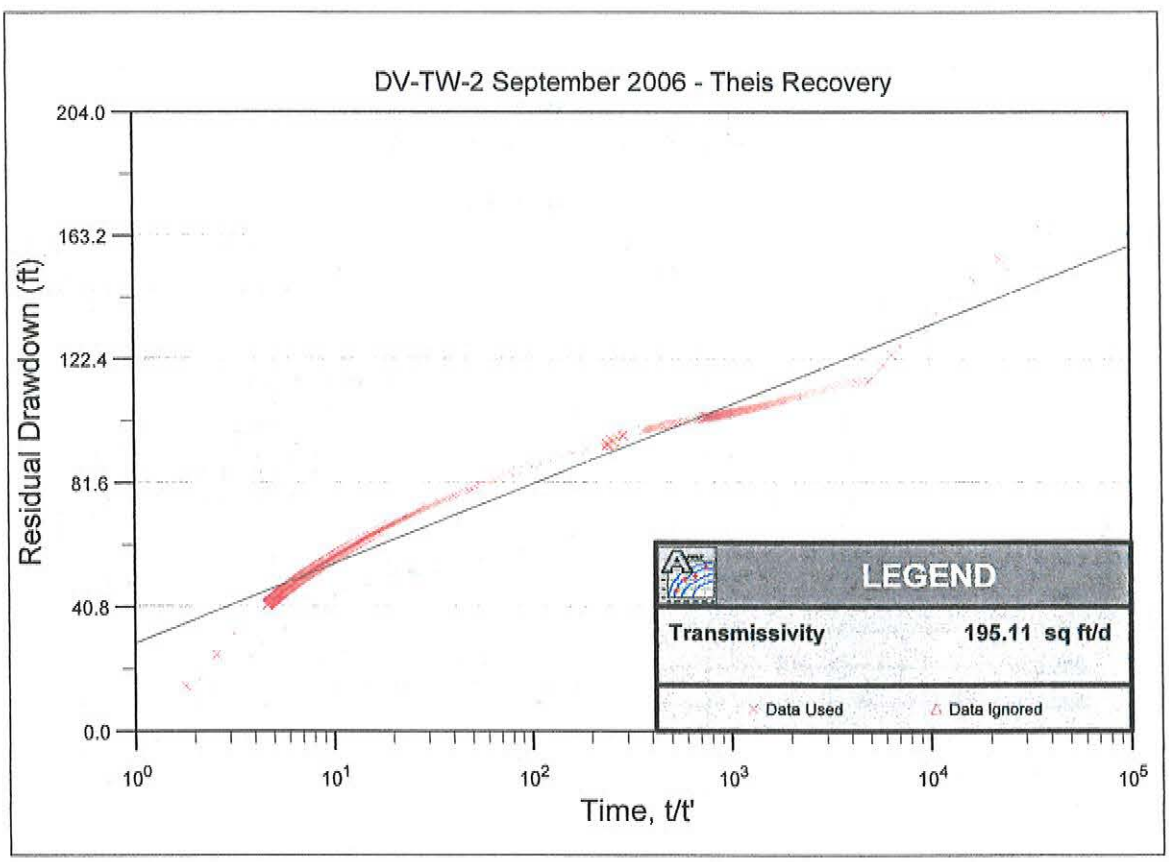
Manual Field Measurments

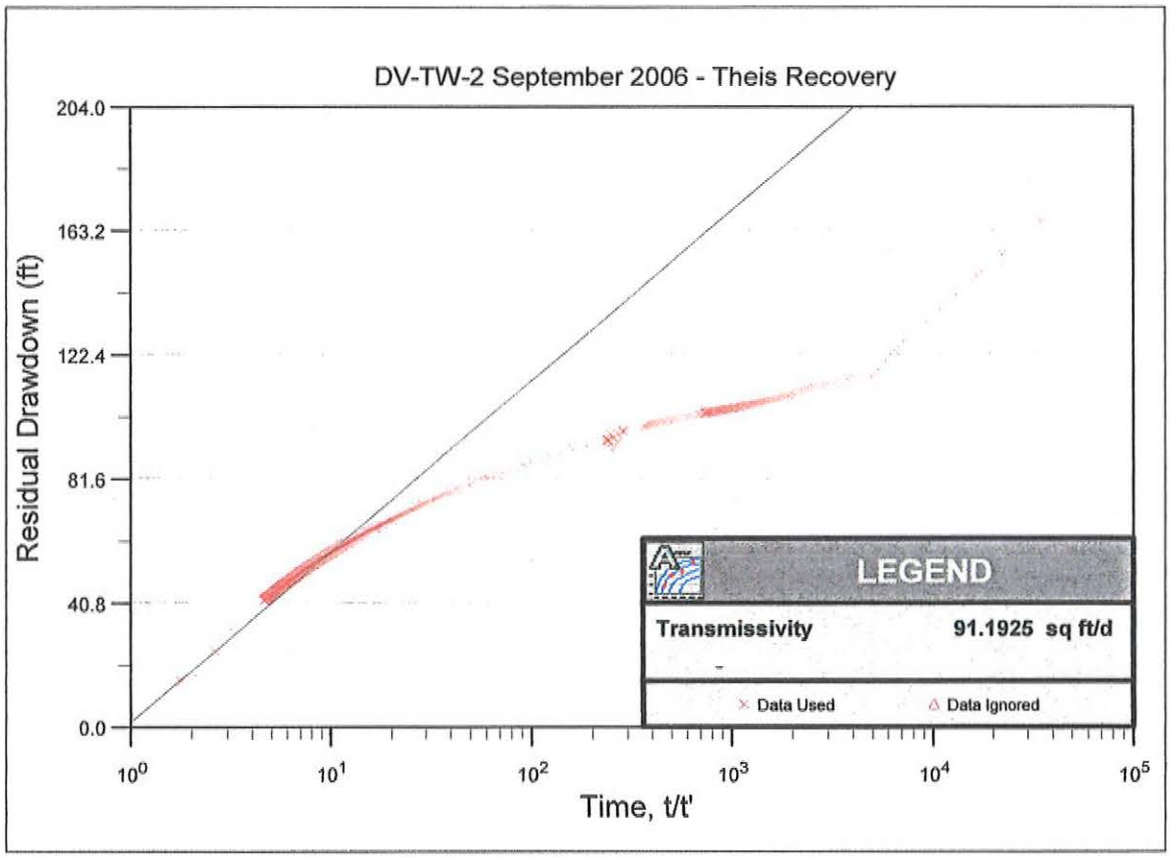
Date/Time	Elapsed Time (mins)	Depth to Water (ft)	Drawdown (ft)	Discharge Totalizer Flow Meter #1(gals)	Discharge Average (gpm)	Comments/Observations
9/29/2006 10:45	15865	214.38		26,456,400	150	Start Recovery (Logger @ 15 sec. intervals)
9/29/2006 10:47	15867	99.69	114.47			FM #1= 26,456,400
9/29/2006 10:49	15869	97.90	112.68			FM #2= 522,400
9/29/2006 10:51	15871	95.61	110.39			FM #1= 150 gpm FM #2= 135 gpm
9/29/2006 10:53	15873	93.60	108.38			
9/29/2006 10:55	15875	92.14	106.92			
9/29/2006 10:57	15877	91.03	105.81			
9/29/2006 10:59	15879	90.22	105.00			
9/29/2006 11:01	15881	89.62	104.40			
9/29/2006 11:03	15883	89.01	103.79			
9/29/2006 11:05	15885	88.50	103.28			Reset logger to 1 min. intervals
9/29/2006 11:10	15890	87.42	102.20			
9/29/2006 11:15	15895	86.30	101.08			
9/29/2006 11:20	15900	85.35	100.13			
9/29/2006 11:25	15905	84.76	99.54			
9/29/2006 11:35	15915	83.27	98.05			Reset logger to 15 min. intervals
9/29/2006 11:45	15925	81.91	96.69			Probe raised 100 ft
10/2/2006 11:45	20245	28.34	43.12			FM #2 removed
10/4/2006 13:50	23250	16.94	31.72			
10/6/2006 10:35	25935	10.2	24.98			
10/9/2006 10:55	30275	2.04	16.82			Remove Transducer
10/13/2006 9:53	35973	0	14.78			Flowing
Observation Well Notes:						
DV-TW-1						
9/5/2006 12:00		12.94				Recovering from previous pumping test
9/7/2006 12:00		10				
9/8/2006 10:15		8.86				
9/10/2006 9:00		6.95				
9/18/2006 11:45		1.41				
DV-TW-3						
9/5/2006 14:37		24.8				Recovering from previous pumping test
9/7/2006 11:30		24.26				
9/8/2006 9:45		23.73				
9/10/2006 9:30		23.24				
9/18/2006 9:40		21.7				
DV-TW-4		psi				
8/8/2006 13:38		2.1				Artesian Head
8/9/2006 13:40		2.15				
8/10/2006 9:35		2.2				
8/14/2006 9:50		2.2				
8/15/2006 9:35		2.2				
8/18/2006 9:50		2.19				
8/21/2006 10:15		2.19				
8/23/2006 12:15		2.15				
9/5/2006 14:21		2.12				
9/7/2006 11:45		2.12				
9/8/2006 10:00		2.11				
9/10/2006 9:15		2.11				
9/18/2006 12:00		2.11				

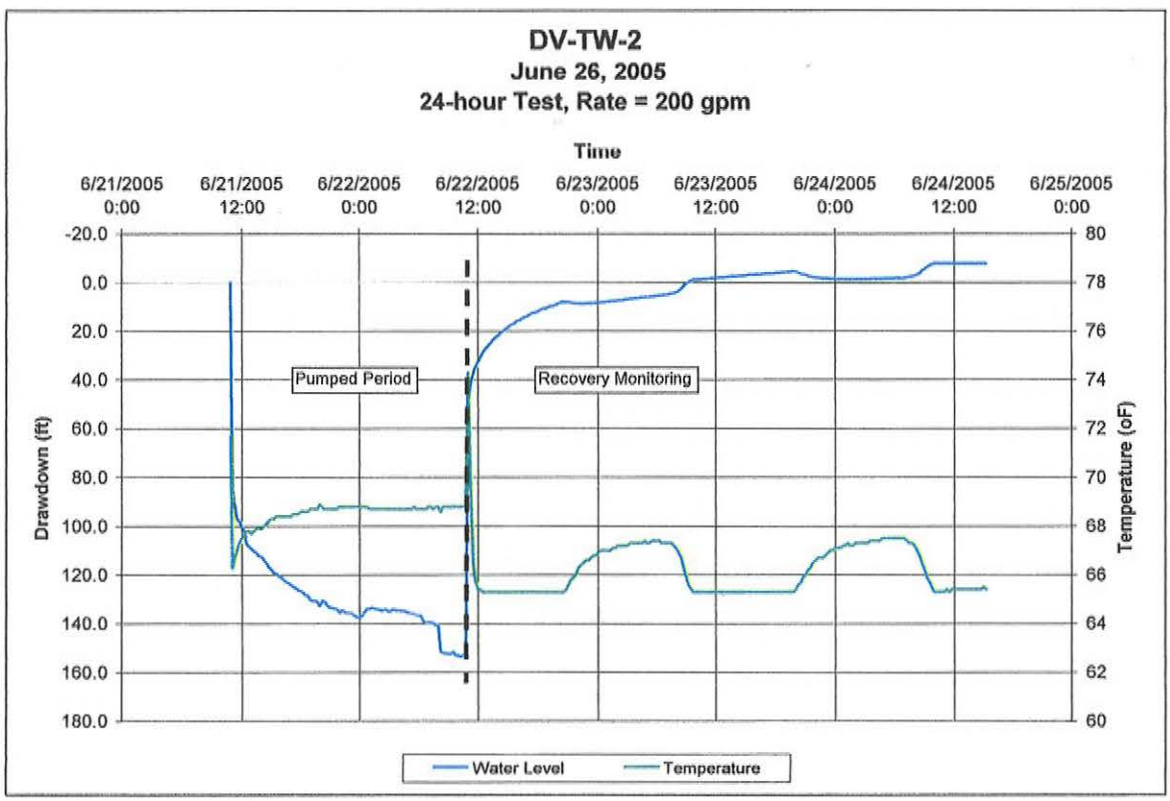

DV-TW-2
Sept. 18, 2006 (Restart Test)
Ave Flow Rate = 145
Time (minutes)
0
5000
10000
15000
20000
25000
30000
35000
40000
Top of Casing (Artesian Head 14.78 ft above)
Artesian Flow
Pumping Period
Recovery Period
Temperature Increase during Pumping
Flow Decreased (meter blockage)
Drawdown (feet)
Temperature (oF)
-20
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
74.0
72.0
70.0
68.0
66.0
64.0
62.0
60.0
Water Level
Temperature

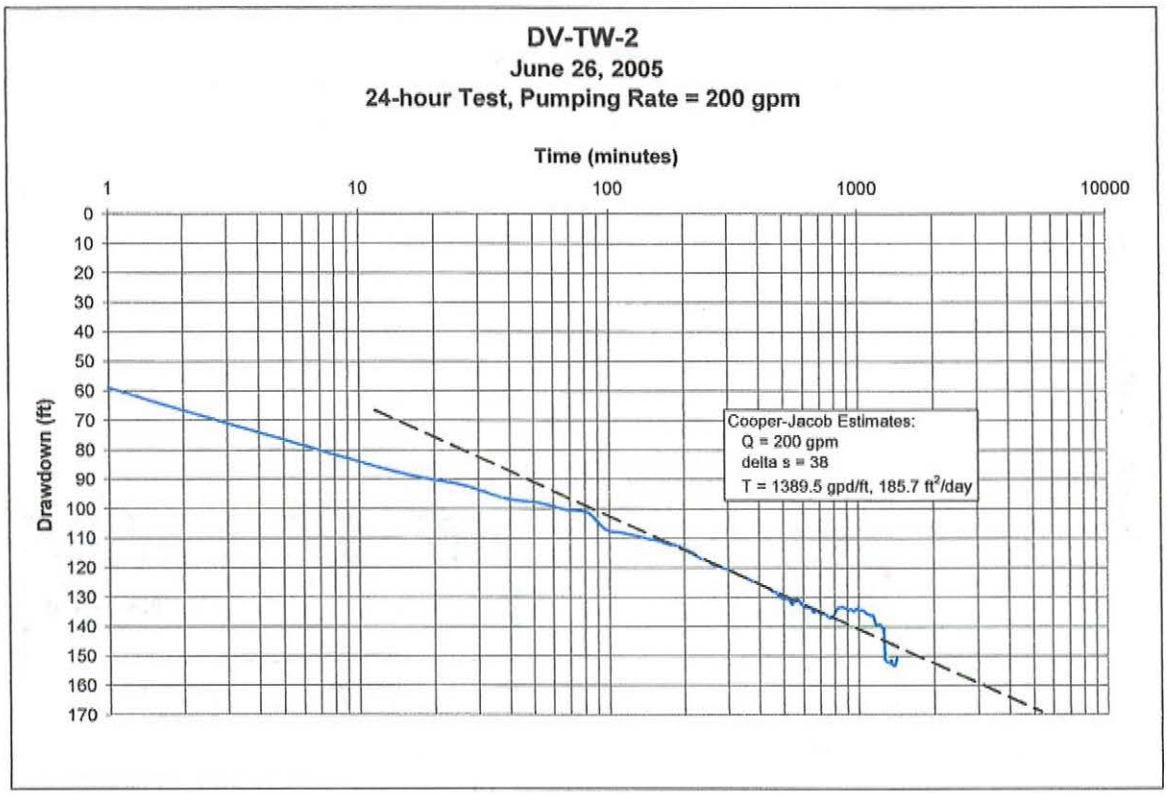

DV-TW-2
Sept. 18, 2006 (Restart Test)
Time (minutes)
1
10
100
1000
10000
100000
Drawdown (feet)
-20.0
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
160.0
180.0
200.0
220.0
240.0
260.0
280.0
Cooper-Jacob Calculation:
Q=145 gpm
delta s = 26 ft (early time trend)
T = 1472.3 gpd/ft, or 196.8 ft2/day
delta s = 96 ft (late time trend)
T = 398.8 gpd/ft, or 53.3 ft²/day
Steeper Late-time Drawdown Trend at approx. 4000 minutes into test.

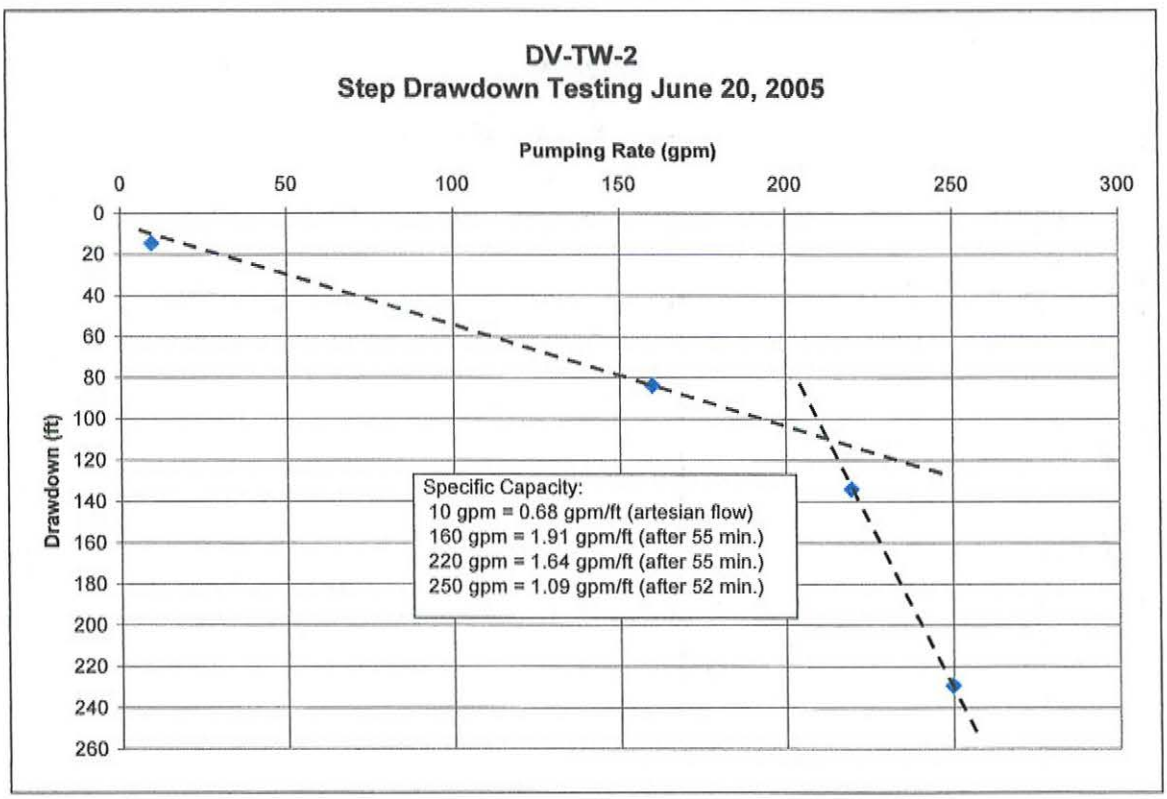

DV-TW-2 September 2006 Test - Theis Solution
W(u)
1/u
LEGEND
Transmissivity 178.093 sq ft/d
Data Used
Data Ignored

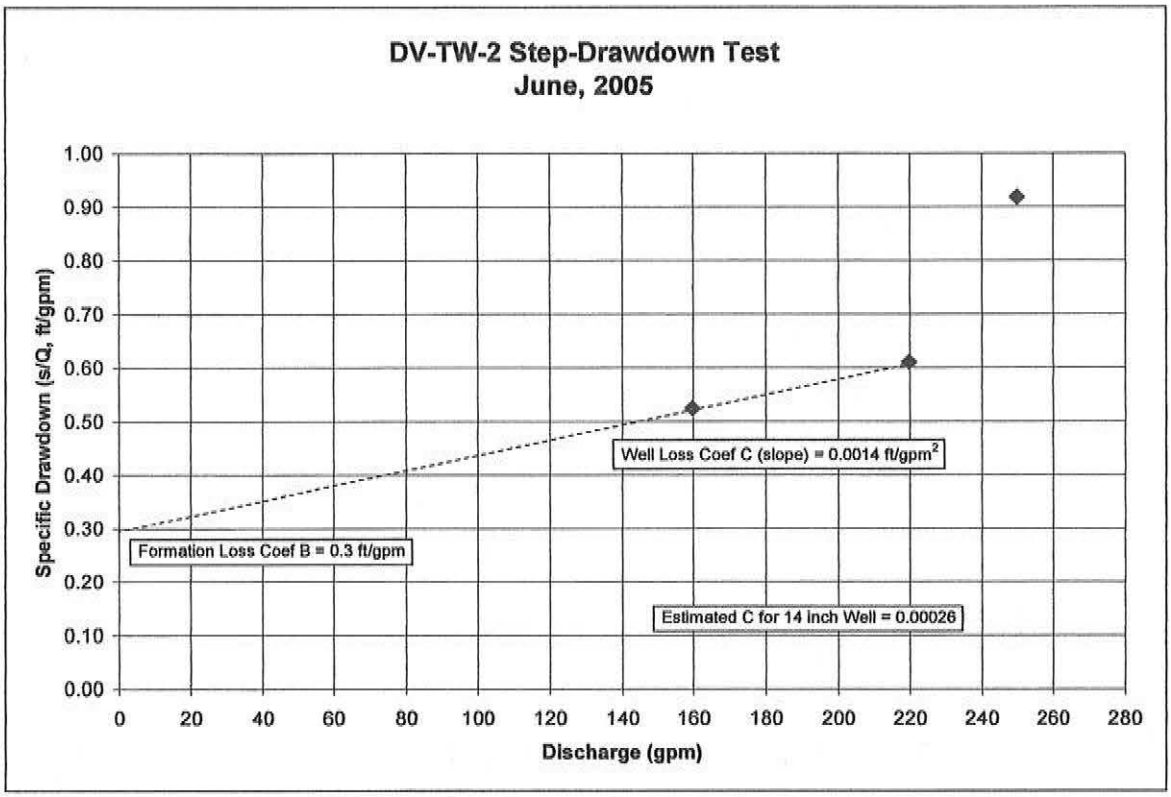

DV-TW-2 September 2006 - Theis Recovery
Residual Drawdown (ft)
Time, t/t'
LEGEND
Transmissivity 195.11 sq ft/d
Data Used
Data Ignored


DV-TW-2 September 2006 - Theis Recovery
Residual Drawdown (ft)
204.0
163.2
122.4
81.6
40.8
0.0
10^0
10^1
10^2
10^3
10^4
10^5
Time, t/t'
LEGEND
Transmissivity
91.1925 sq ft/d
Data Used
Data Ignored


DV-TW-2
June 26, 2005
24-hour Test, Rate = 200 gpm
Time
6/21/2005 0:00
6/21/2005 12:00
6/22/2005 0:00
6/22/2005 12:00
6/23/2005 0:00
6/23/2005 12:00
6/24/2005 0:00
6/24/2005 12:00
6/25/2005 0:00
Drawdown (ft)
-20.0
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
160.0
180.0
Temperature (oF)
80
78
76
74
72
70
68
66
64
62
60
Pumped Period
Recovery Monitoring
Water Level
Temperature


DV-TW-2
June 26, 2005
24-hour Test, Pumping Rate = 200 gpm
Time (minutes)
1
10
100
1000
10000
Drawdown (ft)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
Cooper-Jacob Estimates:
Q = 200 gpm
delta s = 38
T = 1389.5 gpd/ft, 185.7 ft²/day


DV-TW-2
Step Drawdown Testing June 20, 2005
Pumping Rate (gpm)
0
50
100
150
200
250
300
Drawdown (ft)
0
20
40
60
80
100
120
140
160
180
200
220
240
260
Specific Capacity:
10 gpm = 0.68 gpm/ft (artesian flow)
160 gpm = 1.91 gpm/ft (after 55 min.)
220 gpm = 1.64 gpm/ft (after 55 min.)
250 gpm = 1.09 gpm/ft (after 52 min.)


DV-TW-2 Step-Drawdown Test
June, 2005
Specific Drawdown (s/Q, ft/gpm)
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
Discharge (gpm)
Well Loss Coef C (slope) = 0.0014 ft/gpm²
Formation Loss Coef B = 0.3 ft/gpm
Estimated C for 14 inch Well = 0.00026

Project Name: **Intermountain Water Supply, Ltd.**
Water Level Data Collected for: **DV Test Well #3 - Pumping Well**
Distance from pumped Well: 0.0 ft
Pumping Well: **DV Test Well #3**
Location: Dry Valley
Average Pumped Rate: 410.0 gpm
Total Depth: 710 ft Perf Zone: 110 - 540 ft
Diameter: 6"
Land Surface Elevation: 4,605 ft
Measuring Point (MP): Top of Casing
MP Above Land Surface: 1.5 ft
Pump Depth below MP: 214 ft
Data Collected By: DS/HS
Type of Aquifer Test: Step-test, Constant Discharge and Recovery
Start Time: 14:00 Start Date: 7/19/2006
End Time: 14:00 End Date: 7/29/2006
Duration (Days): 10.0
Pre-test Static Water Level (ft): 9.60
Transducer Depth Below WL (ft): 151.00
Measurement Method: Down-hole pressure transducer and water level meter

Manual Field Measurments

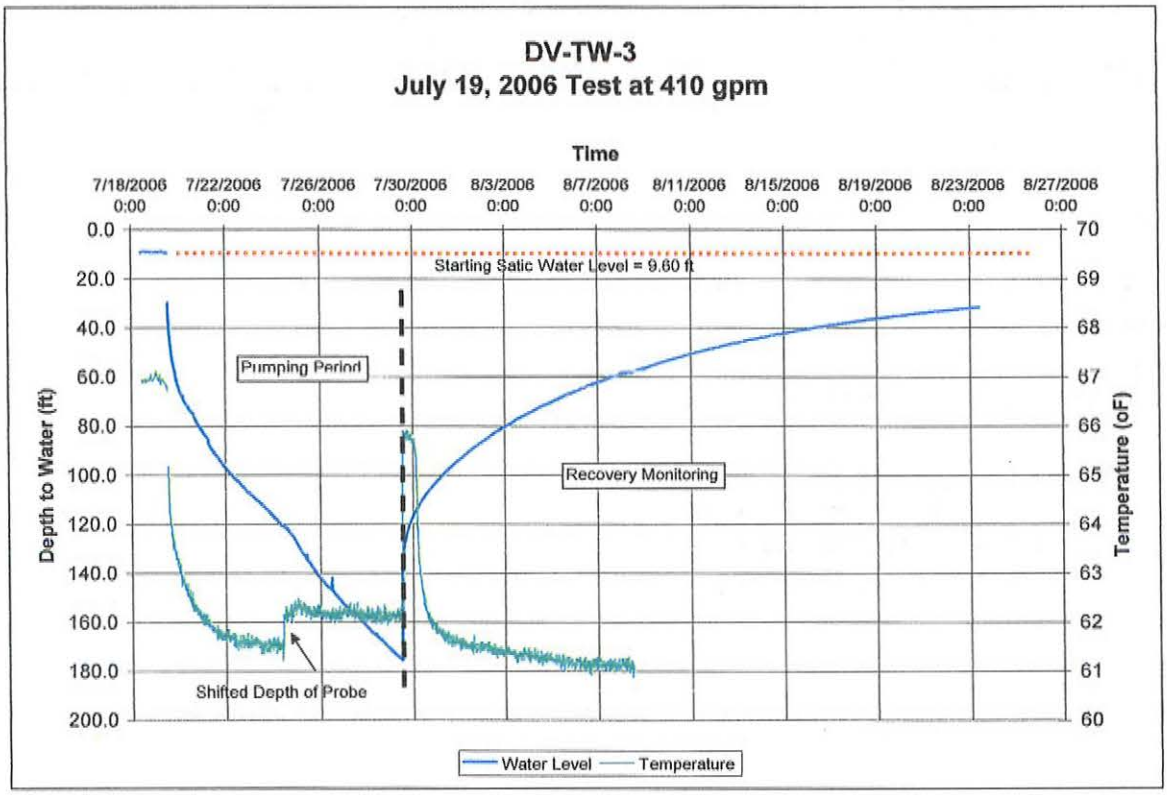
Date/Time	Elapsed Time (mins)	Depth to Water (ft)	Drawdown (ft)	Discharge Totalizer (gals)	Discharge Average (gpm)	Comments/Observations
7/19/2006 14:00	0	9.6	0			Start CD Test
7/19/2006 14:02	2	21.12	11.52			
7/19/2006 14:03	4	22.15	12.55			
7/19/2006 14:05	5	23.49	13.89			
7/19/2006 14:07	7	24.58	14.98	2,414,600		2414600 @ 2:07
7/19/2006 14:13	13	27.63	18.03			
7/19/2006 14:15	15	27.91	18.31			
7/19/2006 14:17	17	29.01	19.41			
7/19/2006 14:20	20	29.98	20.38			
7/19/2006 14:25	25	31.10	21.5			
7/19/2006 14:31	31	32.16	22.56			
7/19/2006 14:45	45	35.58	25.98			2:50 collected sample for H_2O chem
7/19/2006 15:00	60	37.75	28.15			
7/19/2006 15:03	63	60.00	50.4	2,623,300	421	2623300 at 56 min
7/21/2006 7:30	2490	86.26	76.66	3,599,800	370	
7/21/2006 7:45	2505				400	
7/24/2006 10:45	7005	122.20	112.6			
7/24/2006 10:47	7007			5,462,500	380	probe = 39.5'
7/24/2006 11:05	7025					Restart transducer
7/24/2006 11:15	7035					Water chem sample
7/26/2006 8:00	9720	146.73	137.13			
7/29/2006 14:00	14400					Start recovery (Carson Pump turned off)

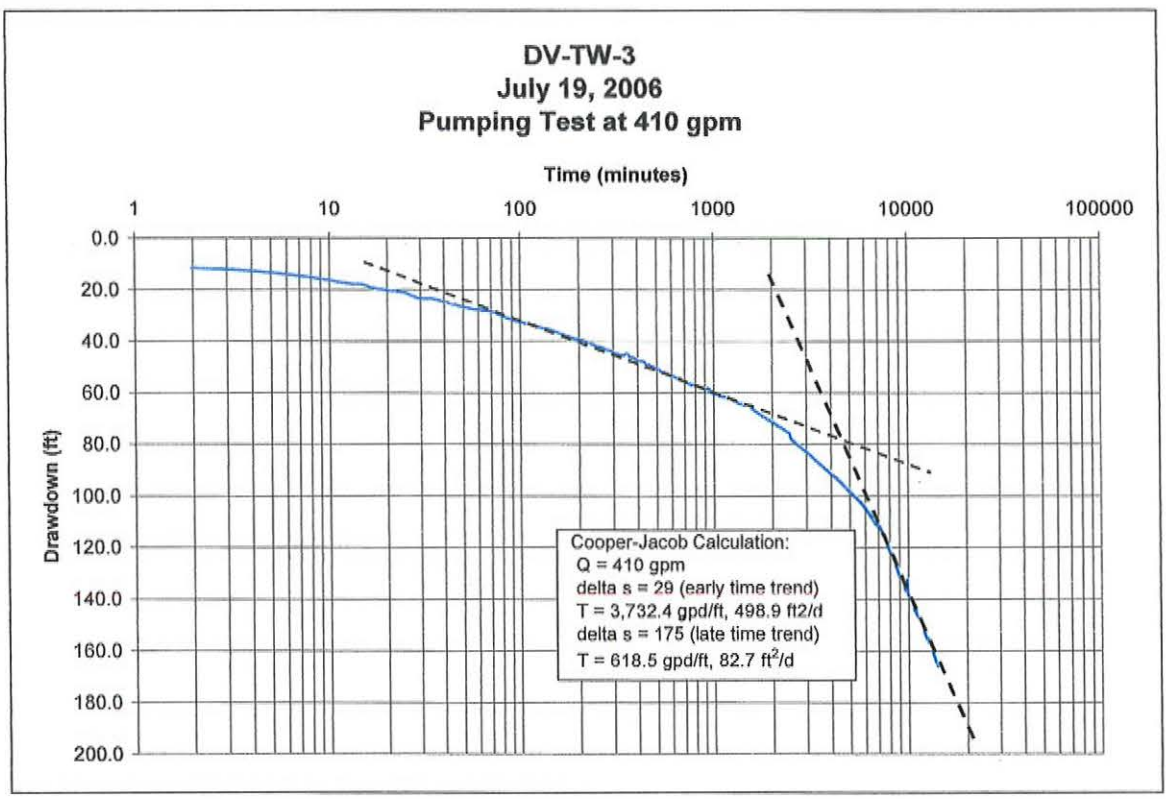
Manual Field Measurments

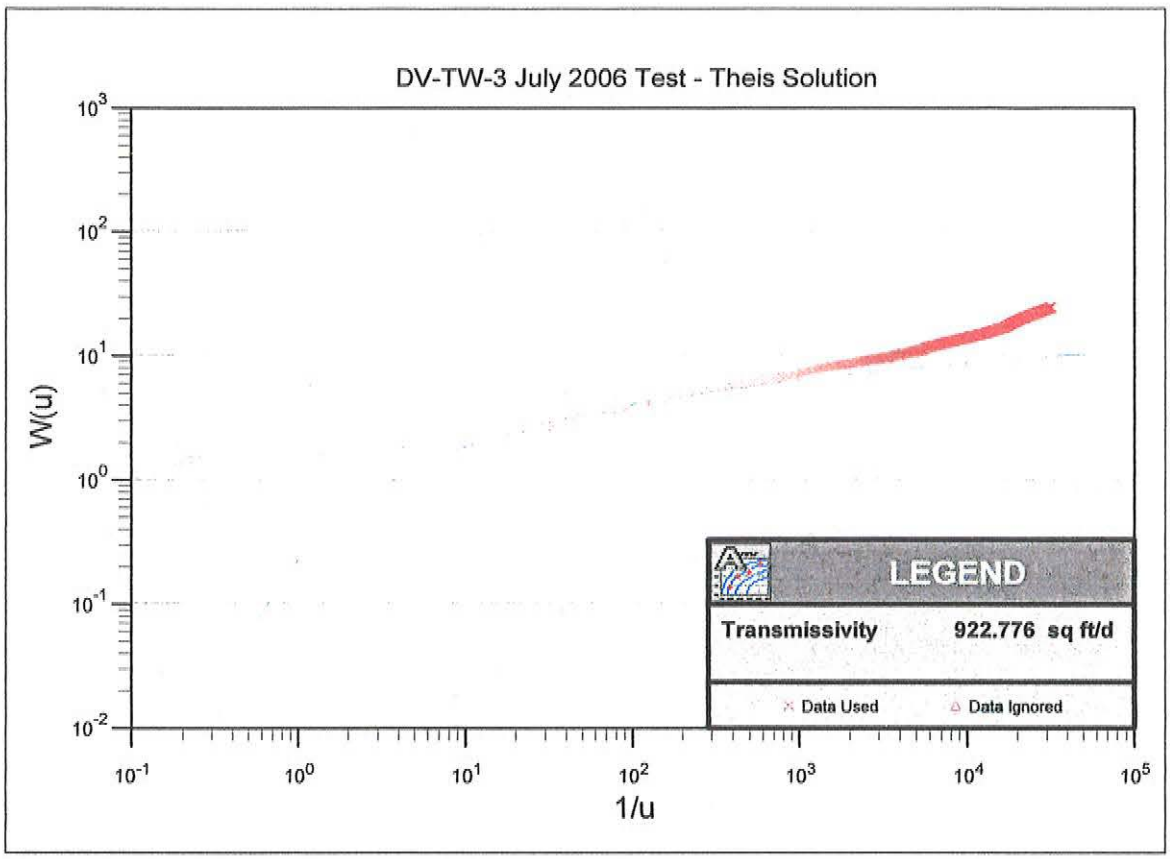
Date/Time	Elapsed Time (mins)	Depth to Water (ft)	Drawdown (ft)	Discharge Totalizer (gals)	Discharge Average (gpm)	Comments/Observations
7/29/2006 16:10	14530	130.29	120.69	8,318,400		74.1' above probe
7/31/2006 10:35	17075	100.57	90.97			
8/3/2006 10:10	21370	79.50	69.9			
8/5/2006 11:40	24340	69.51	59.91			
8/8/2006 0:00	27960	57.78	48.18			
9/5/2006 14:37	69157	24.80	15.2			
9/18/2006 9:40	87580	21.70	12.1			
9/26/2006 11:55	99235	20.52	10.92			
10/9/2006 11:55	117955	19.07	9.47			

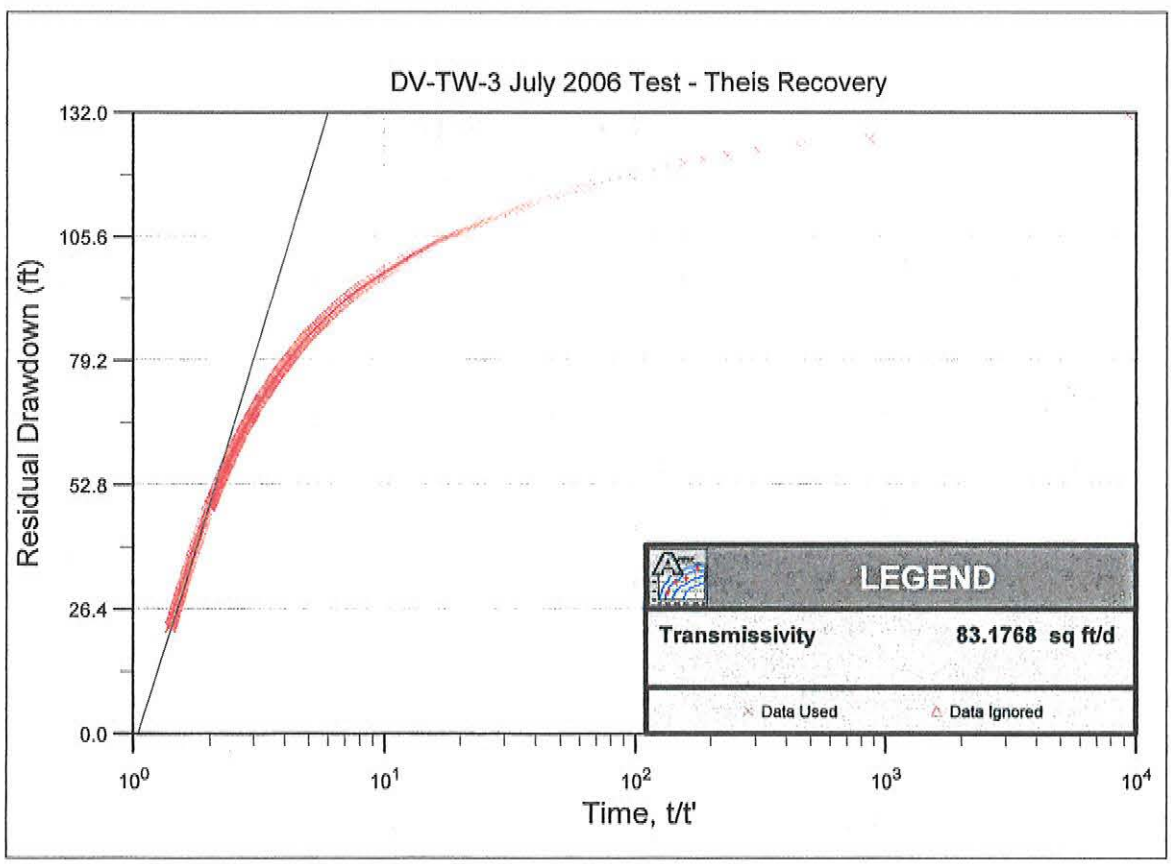
Observation Welll Notes:

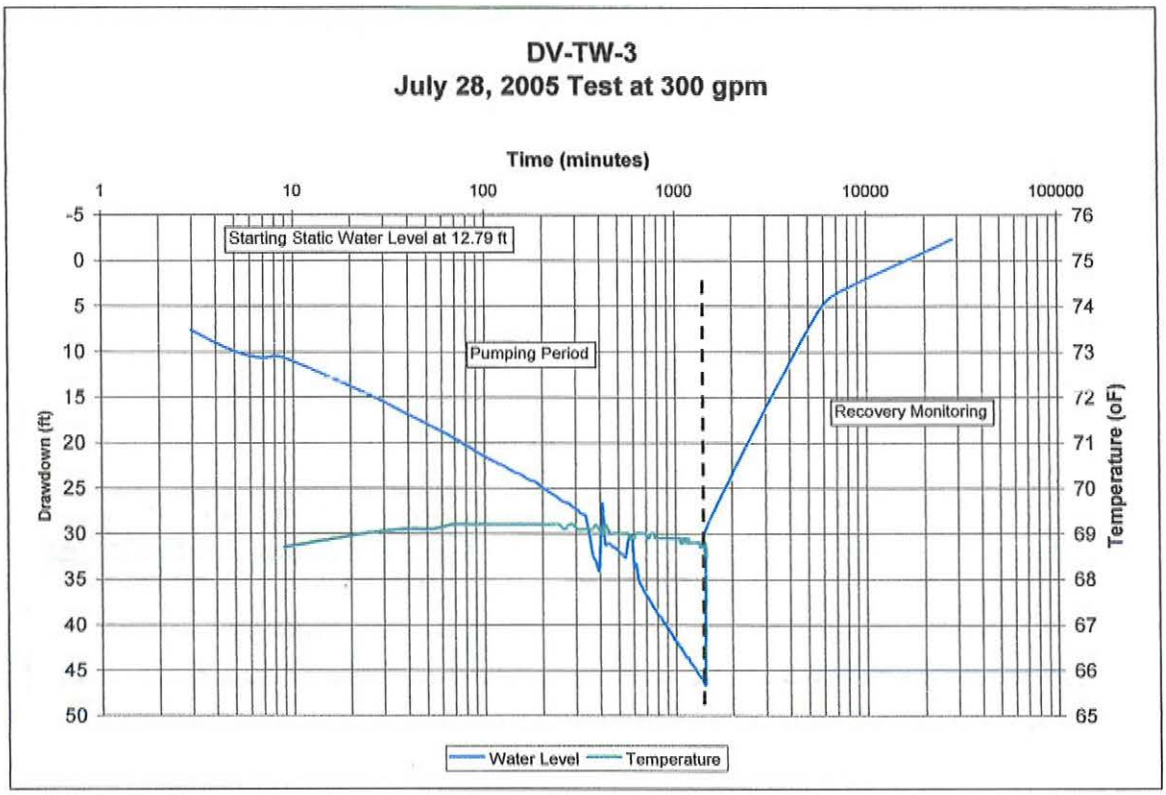
DV-TW-1	6.8 increasing to 7.6 psi during testing
DV-TW-2	6.2 to 6.25 psi throughtout testing
DV-TW-4	2.0 to 2.1 psi throughtout testing

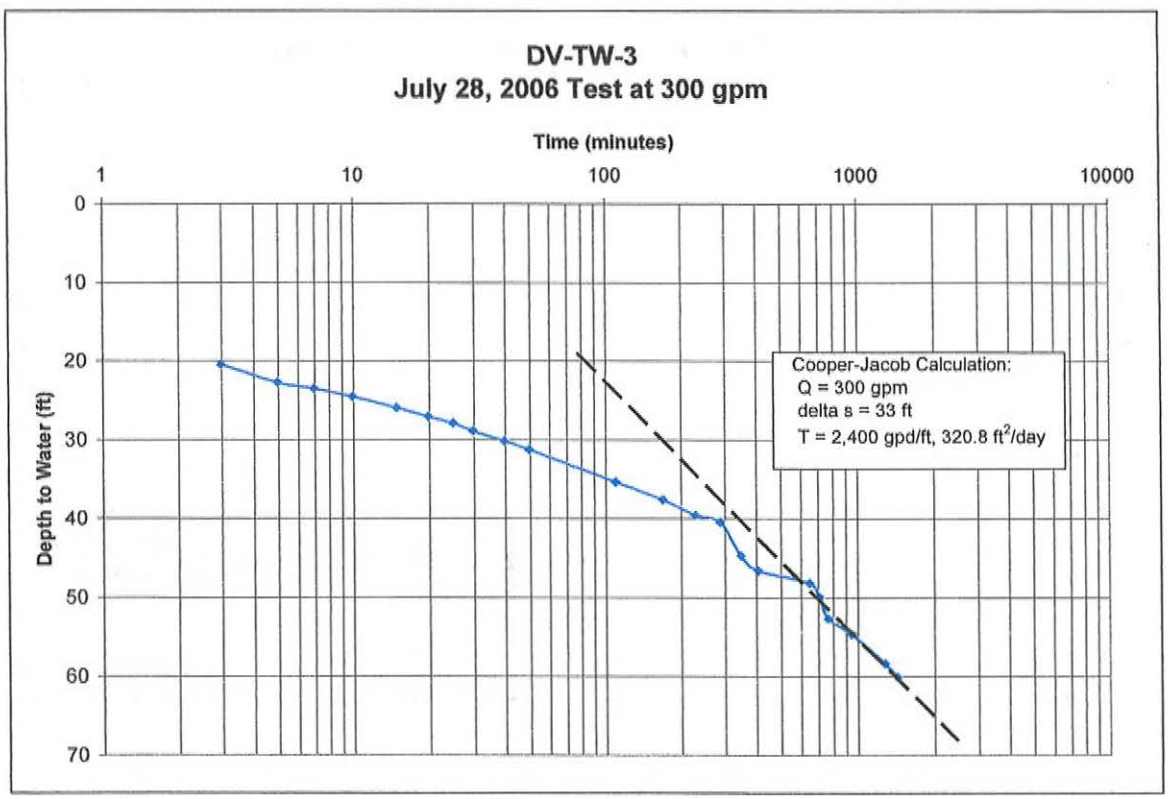

DV-TW-3
July 19, 2006 Test at 410 gpm
Time
7/18/2006 0:00
7/22/2006 0:00
7/26/2006 0:00
7/30/2006 0:00
8/3/2006 0:00
8/7/2006 0:00
8/11/2006 0:00
8/15/2006 0:00
8/19/2006 0:00
8/23/2006 0:00
8/27/2006 0:00
Depth to Water (ft)
Temperature (oF)
Starting Satic Water Level = 9.60 ft
Pumping Period
Recovery Monitoring
Shifted Depth of Probe
Water Level
Temperature

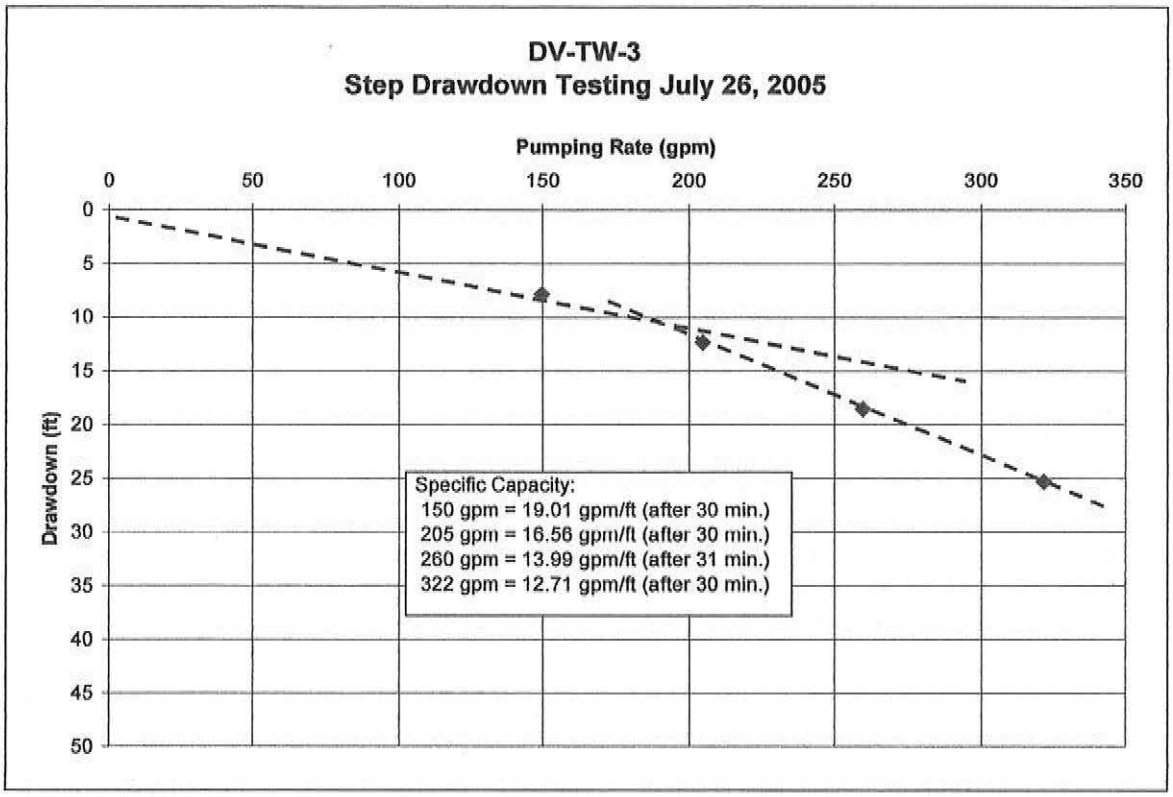

DV-TW-3
July 19, 2006
Pumping Test at 410 gpm
Time (minutes)
Drawdown (ft)
Cooper-Jacob Calculation:
Q = 410 gpm
delta s = 29 (early time trend)
T = 3,732.4 gpd/ft, 498.9 ft2/d
delta s = 175 (late time trend)
T = 618.5 gpd/ft, 82.7 ft²/d

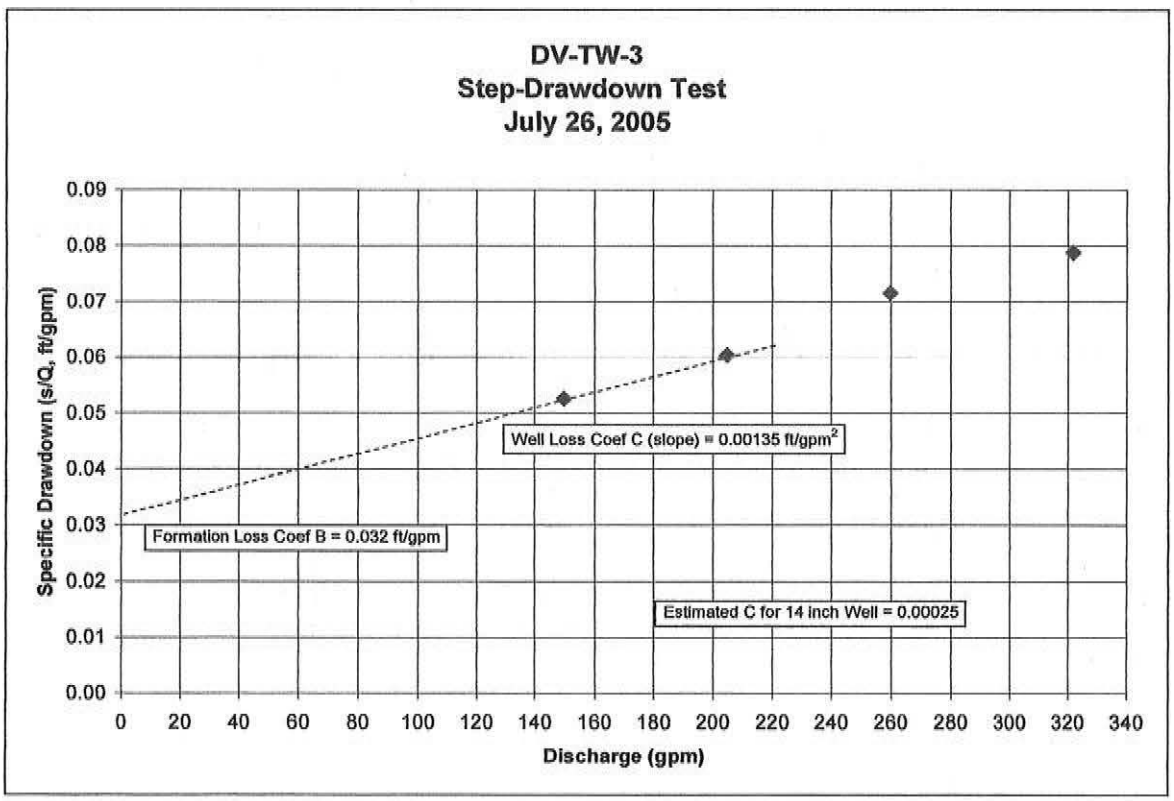

DV-TW-3 July 2006 Test - Theis Solution
W(u)
1/u
LEGEND
Transmissivity 922.776 sq ft/d
Data Used
Data Ignored


DV-TW-3 July 2006 Test - Theis Recovery
Residual Drawdown (ft)
Time, t/t'
LEGEND
Transmissivity 83.1768 sq ft/d
Data Used
Data Ignored


DV-TW-3
July 28, 2005 Test at 300 gpm
Time (minutes)
1
10
100
1000
10000
100000
-5
0
5
10
15
20
25
30
35
40
45
50
Drawdown (ft)
76
75
74
73
72
71
70
69
68
67
66
65
Temperature (oF)
Starting Static Water Level at 12.79 ft
Pumping Period
Recovery Monitoring
Water Level
Temperature


DV-TW-3
July 28, 2006 Test at 300 gpm
Time (minutes)
1
10
100
1000
10000
0
10
20
30
40
50
60
70
Depth to Water (ft)
Cooper-Jacob Calculation:
Q = 300 gpm
delta s = 33 ft
T = 2,400 gpd/ft, 320.8 ft²/day


DV-TW-3
Step Drawdown Testing July 26, 2005
Pumping Rate (gpm)
0
50
100
150
200
250
300
350
Drawdown (ft)
0
5
10
15
20
25
30
35
40
45
50
Specific Capacity:
150 gpm = 19.01 gpm/ft (after 30 min.)
205 gpm = 16.56 gpm/ft (after 30 min.)
260 gpm = 13.99 gpm/ft (after 31 min.)
322 gpm = 12.71 gpm/ft (after 30 min.)


DV-TW-3
Step-Drawdown Test
July 26, 2005
Specific Drawdown (s/Q, ft/gpm)
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
Well Loss Coef C (slope) = 0.00135 ft/gpm²
Formation Loss Coef B = 0.032 ft/gpm
Estimated C for 14 inch Well = 0.00025
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
Discharge (gpm)

Project Name: **Intermountain Water Supply, Ltd.**
Water Level Data Collected for: **DV Test Well #4 - Pumping Well**
Distance from pumped Well: 0 ft
Pumping Well: **DV Test Well #4**
Location: Dry Valley
Average Pumped Rate: 49.2 gpm
Total Depth: 720 ft Perf Zone: 70-670 ft
Diameter: 6 inches
Land Surface Elevation:
Measuring Point (MP): Top of Casing
MP Above Land Surface: 4,510 ft
Pump Depth below MP: 504.00
Data Collected By: DS/HS
Type of Aquifer Test: Constant Discharge and Recovery
Start Time: 11:03 Start Date: 9/26/2006
End Time: 12:12 End Date: 10/6/2006
Duration (Days): 10.0
Pre-test Static Water Level (ft): 2.11 psi (flowing approximately 1/2 gpm at start of test)
Transducer Depth Below WL (ft): 436.10 (initial setting)
Measurement Method: Down-hole pressure transducer and water level meter

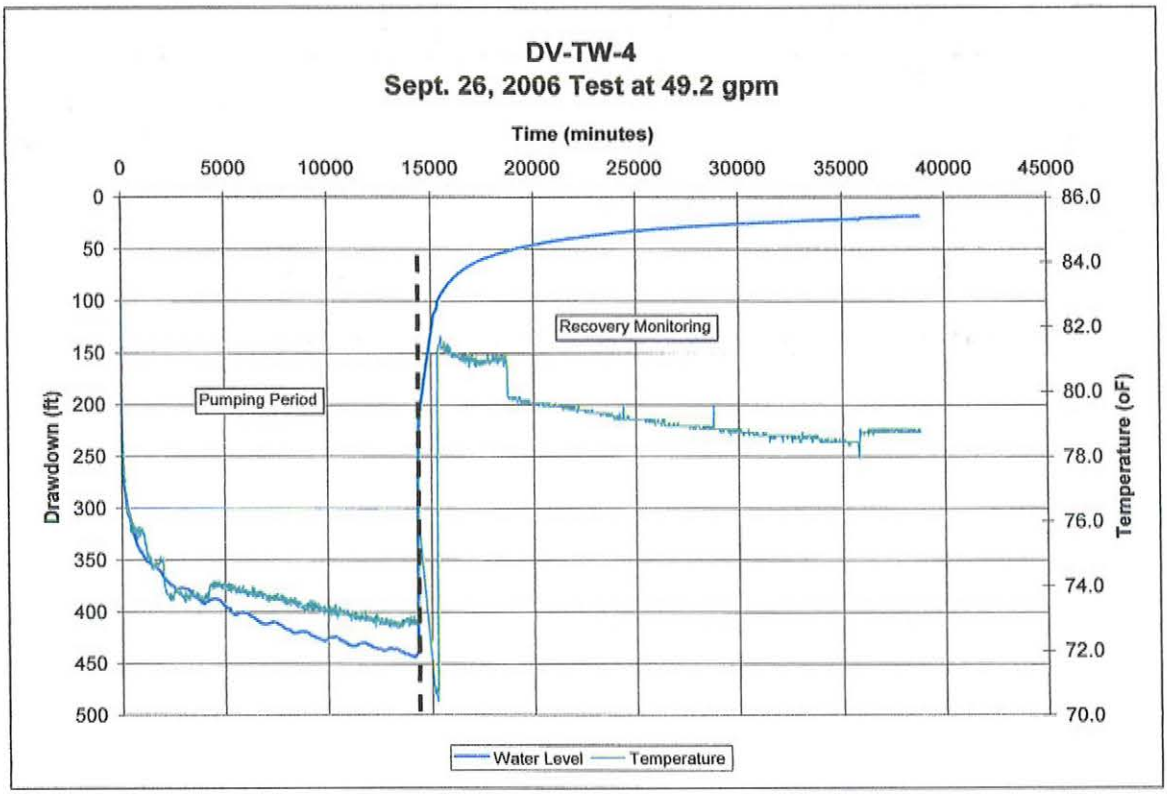
Manual Field Measurments

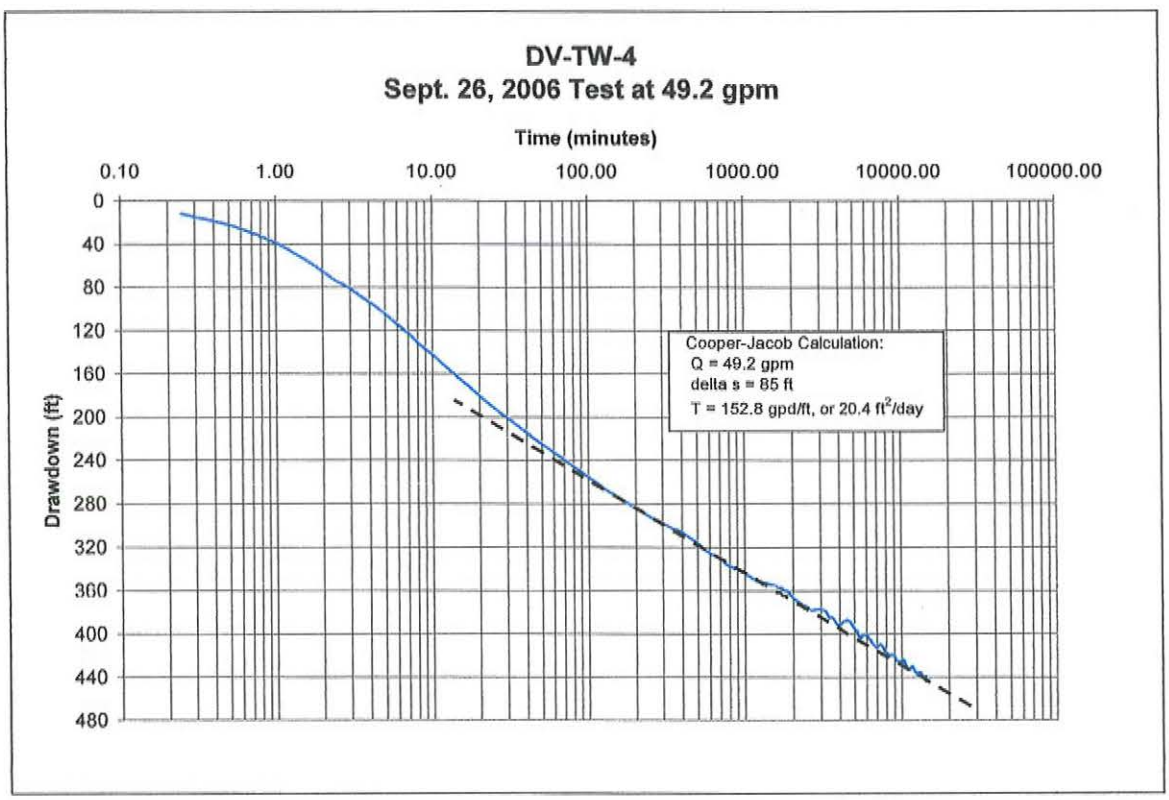
Date/Time	Elapsed Time (mins)	Depth to Water (ft)	Drawdown (ft)	Discharge Totalizer (gals)	Discharge Average (gpm)	Comments/Observations
9/26/2006 10:45						Install Probe
		-	-	1,518,135		Logger @ 15 sec. Intervals
9/26/2006 11:10	0.0	0.00	4.87			Flowing 1/4 to 1/2 gpm
9/26/2006 11:13	3.0	80.72	85.59			
9/26/2006 11:15	5.5	109.46	114.33		58	
9/26/2006 11:20	10.0	142.87	147.74		52	
9/26/2006 11:23	13.0	-	-			Switch to 2 min. intervals on logger
9/26/2006 11:25	15.0	165.77	170.64			
9/26/2006 11:30	20.0	181.61	186.48		51	
9/26/2006 11:40	30.0	202.86	207.73		50	Reset logger to 5 min. intervals
9/26/2006 12:10	60.0	235.41	240.28		49	Reset logger to 15 min. intervals
9/26/2006 12:55	105.0	260.64	265.51		48	
9/27/2006 9:25	1335.0	347.80	352.67	1,579,700	46	WL 88.3' above probe
9/28/2006 10:20	2830.0	369.80	374.67	1,647,700	48	WL 66.3' above probe
9/29/2006 9:55	4245.0	384.50	389.37	1,717,200	50	WL 51.6' above probe (Dropped Probe 50 ft)
10/2/2006 11:10	8640.0	382.30	387.17	1,940,100	52	WL 53.8' above probe
10/4/2006 13:35	11665.0	392.90	397.77	2,093,700	51	WL 43.2 above probe
10/6/2006 11:00	14390.0	-	-	2,230,700		Start Recovery
10/6/2006 11:14	14404.0	286.86	291.73			Reset logger to 15 sec. Intervals
10/6/2006 11:16	14406.0	278.35	283.22			
10/6/2006 11:18	14408.0	272.80	277.67			
10/6/2006 11:20	14410.0	266.23	271.10			
10/6/2006 11:25	14415.0	257.20	262.07			
10/6/2006 11:30	14420.0	249.31	254.18			
10/6/2006 11:35	14425.0	242.28	247.15			
10/6/2006 11:40	14430.0	230.90	235.77			

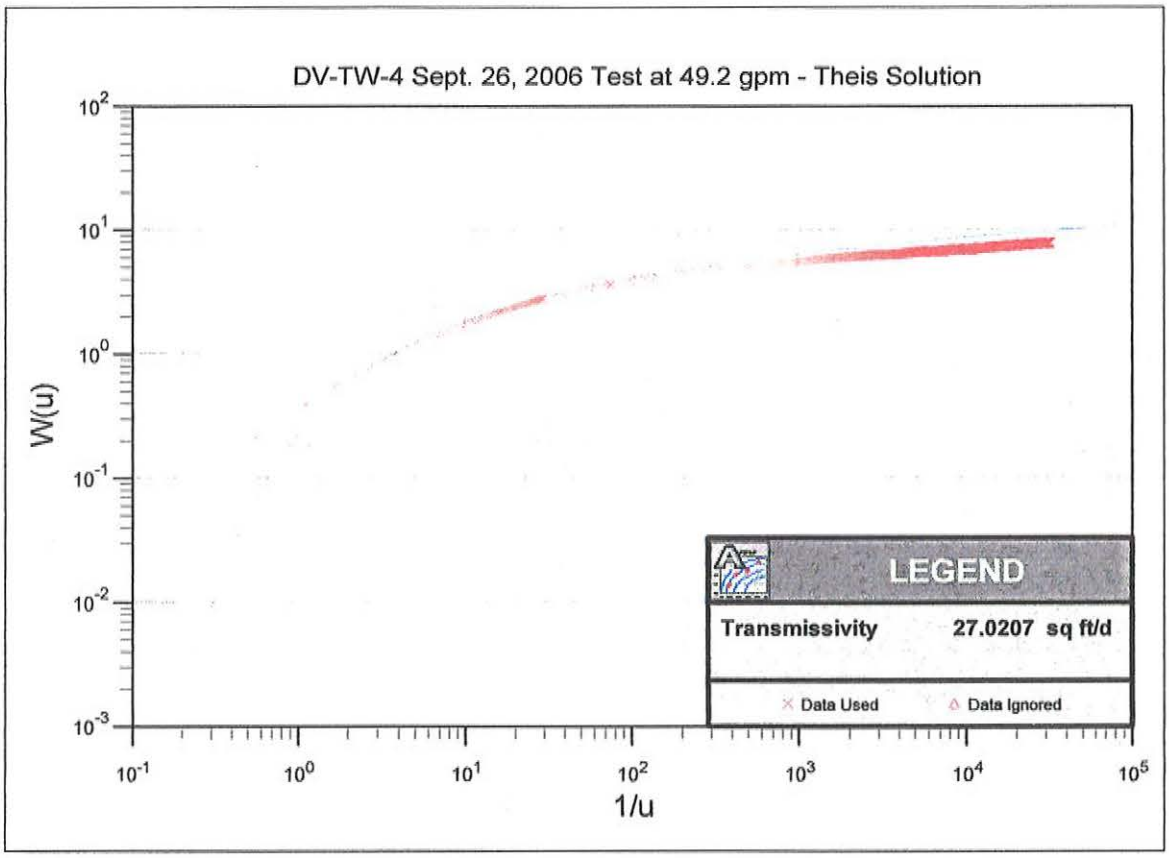
Manual Field Measurments

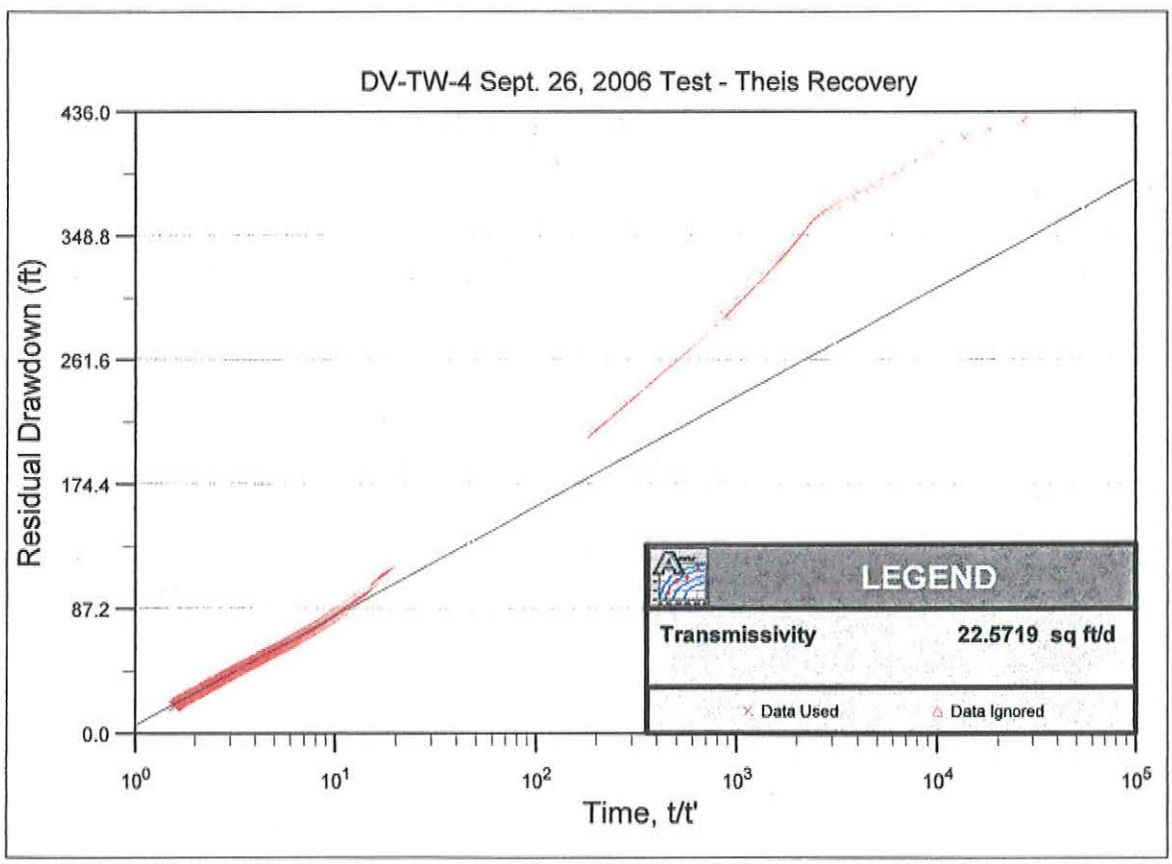
Date/Time	Elapsed Time (mins)	Depth to Water (ft)	Drawdown (ft)	Discharge Totalizer (gals)	Discharge Average (gpm)	Comments/Observations
10/6/2006 11:50	14440	221.12	225.99			
10/6/2006 12:00	14450	212.94	217.81			Reset logger to 15 min. Intervals
10/9/2006 11:20	18730	47.77	52.64			Switch probes (WL= 33.4' above new probe)
10/13/2006 10:07	24417	29.26	34.13			
10/16/2006 11:41	28831	22.43	27.30			
10/19/2006 9:55	33045	18.36	23.23			
10/23/2006 10:30	38840	13.94	18.81			Remove Recorder

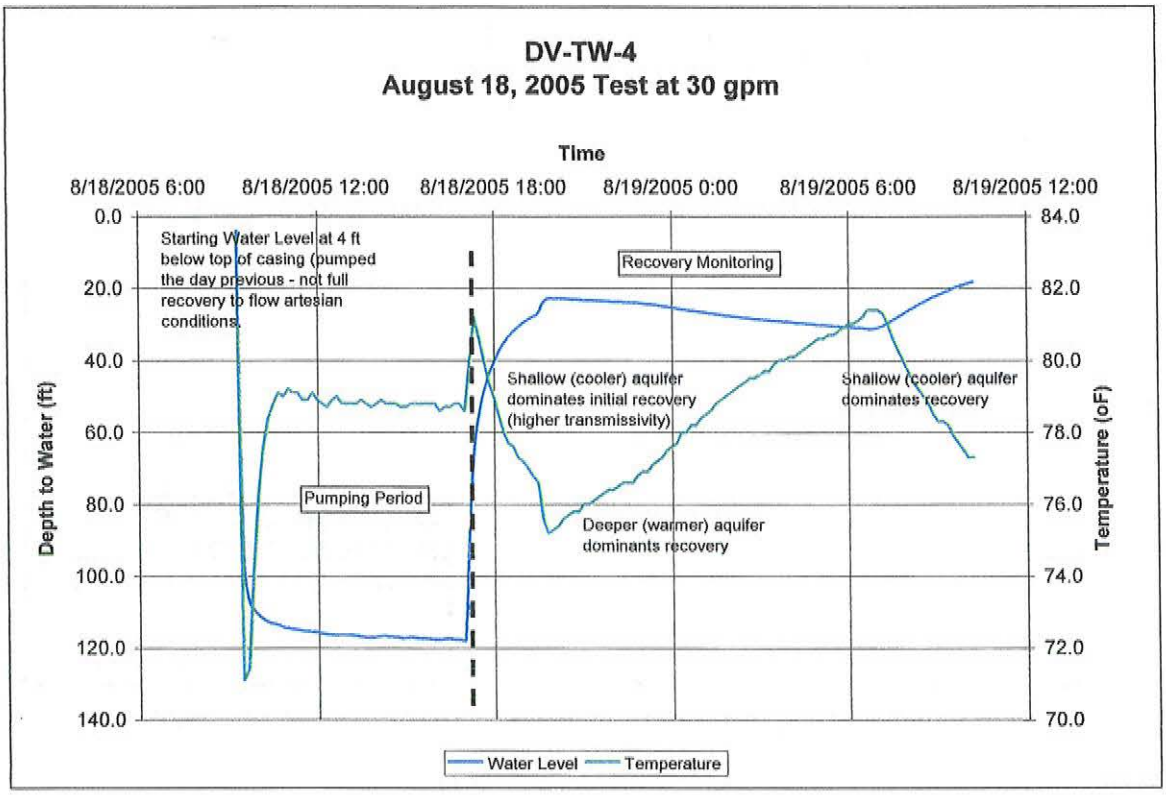
Observation wells recovering from previous pumping tests, no observed DV-TW-4 pumping effects.

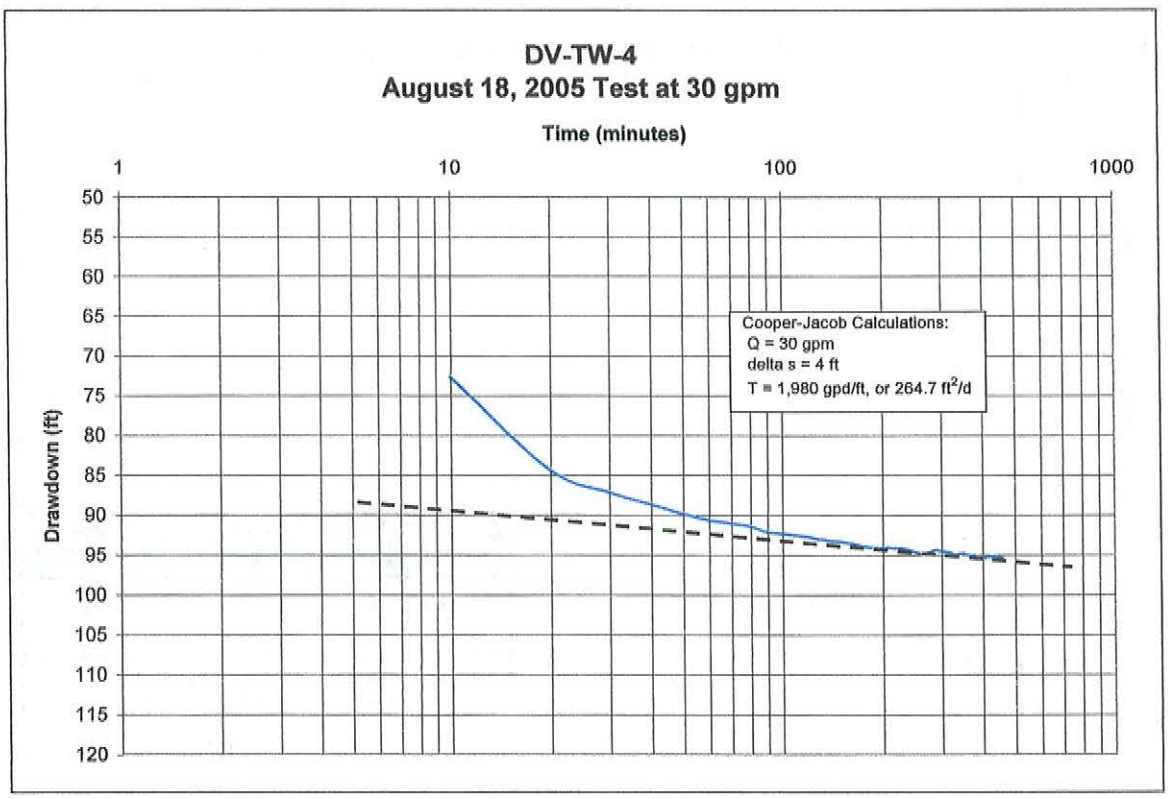

DV-TW-4
Sept. 26, 2006 Test at 49.2 gpm
Time (minutes)
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
Drawdown (ft)
0
50
100
150
200
250
300
350
400
450
500
Temperature (oF)
86.0
84.0
82.0
80.0
78.0
76.0
74.0
72.0
70.0
Recovery Monitoring
Pumping Period
Water Level
Temperature

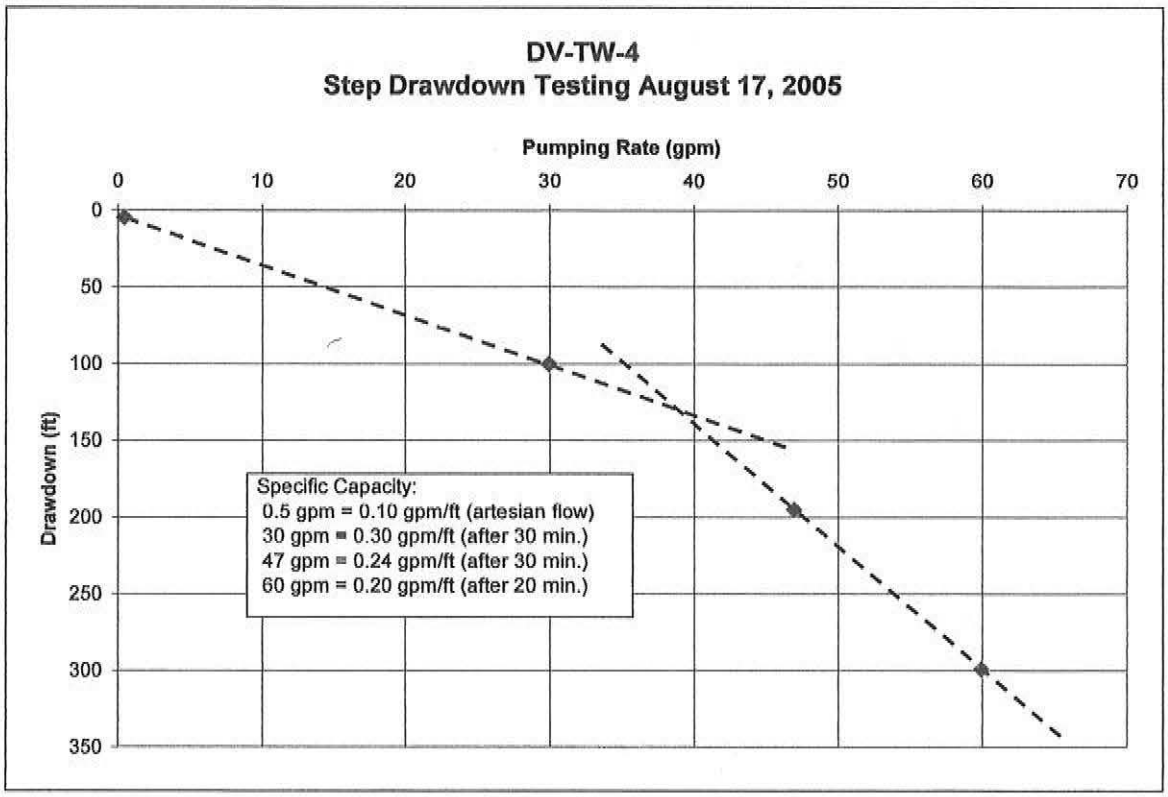

DV-TW-4
Sept. 26, 2006 Test at 49.2 gpm
Time (minutes)
0.10
1.00
10.00
100.00
1000.00
10000.00
100000.00
Drawdown (ft)
0
40
80
120
160
200
240
280
320
360
400
440
480
Cooper-Jacob Calculation:
Q = 49.2 gpm
delta s = 85 ft
T = 152.8 gpd/ft, or 20.4 ft²/day

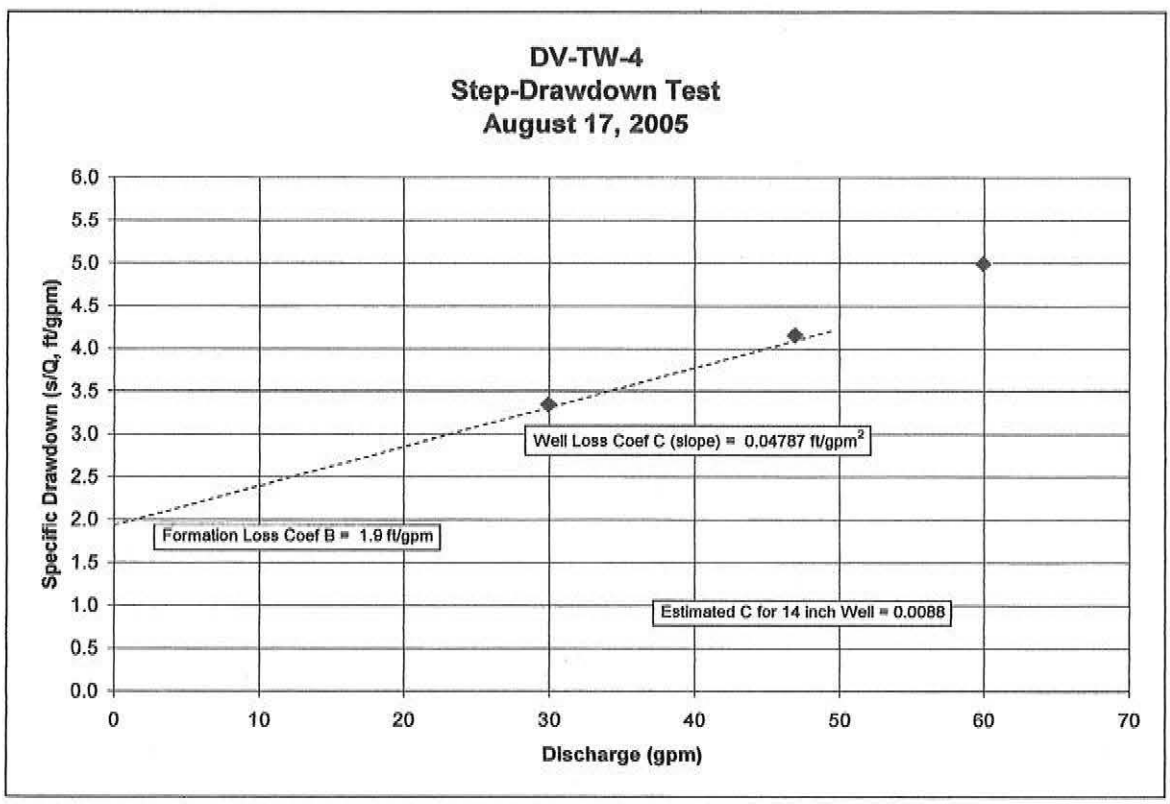

DV-TW-4 Sept. 26, 2006 Test at 49.2 gpm - Theis Solution
W(u)
1/u
LEGEND
Transmissivity 27.0207 sq ft/d
Data Used
Data Ignored


DV-TW-4 Sept. 26, 2006 Test - Theis Recovery
Residual Drawdown (ft)
436.0
348.8
261.6
174.4
87.2
0.0
Time, t/t'
LEGEND
Transmissivity 22.5719 sq ft/d
Data Used
Data Ignored


DV-TW-4
August 18, 2005 Test at 30 gpm
Time
8/18/2005 6:00
8/18/2005 12:00
8/18/2005 18:00
8/19/2005 0:00
8/19/2005 6:00
8/19/2005 12:00
Depth to Water (ft)
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
Temperature (oF)
84.0
82.0
80.0
78.0
76.0
74.0
72.0
70.0
Starting Water Level at 4 ft below top of casing (pumped the day previous - not full recovery to flow artesian conditions.
Recovery Monitoring
Shallow (cooler) aquifer dominates initial recovery (higher transmissivity)
Shallow (cooler) aquifer dominates recovery
Pumping Period
Deeper (warmer) aquifer dominants recovery
Water Level
Temperature


DV-TW-4
August 18, 2005 Test at 30 gpm
Time (minutes)
1
10
100
1000
Drawdown (ft)
50
55
60
65
70
75
80
85
90
95
100
105
110
115
120
Cooper-Jacob Calculations:
Q = 30 gpm
delta s = 4 ft
T = 1,980 gpd/ft, or 264.7 ft²/d


DV-TW-4
Step Drawdown Testing August 17, 2005
Pumping Rate (gpm)
0
10
20
30
40
50
60
70
Drawdown (ft)
0
50
100
150
200
250
300
350
Specific Capacity:
0.5 gpm = 0.10 gpm/ft (artesian flow)
30 gpm = 0.30 gpm/ft (after 30 min.)
47 gpm = 0.24 gpm/ft (after 30 min.)
60 gpm = 0.20 gpm/ft (after 20 min.)


DV-TW-4
Step-Drawdown Test
August 17, 2005
Specific Drawdown (s/Q, ft/gpm)
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
10
20
30
40
50
60
70
Discharge (gpm)
Well Loss Coef C (slope) = 0.04787 ft/gpm²
Formation Loss Coef B = 1.9 ft/gpm
Estimated C for 14 inch Well = 0.0088

Project Name: **Intermountain Water Supply, Ltd.**
Water Level Data Collected for: **DV Test Well #5 - Pumping Well**
Distance from pumped Well: 0 ft
Pumping Well: **DV Test Well #5**
Location: Dry Valley
Average Pumped Rate: 94.6 gpm
Total Depth: 1000 ft Perf Zone: 70-1000 ft
Diameter: 6"
Land Surface Elevation: 4,890 ft
Measuring Point (MP): Top of Casing
MP Above Land Surface: 1.40
Pump Depth below MP: 500
Data Collected By: DS/HS
Type of Aquifer Test: Constant Discharge and Recovery
Start Time: 11:42 Start Date: 10/10/2006
End Time: 12:12 End Date: 10/20/2006
Duration (Days): 10.0

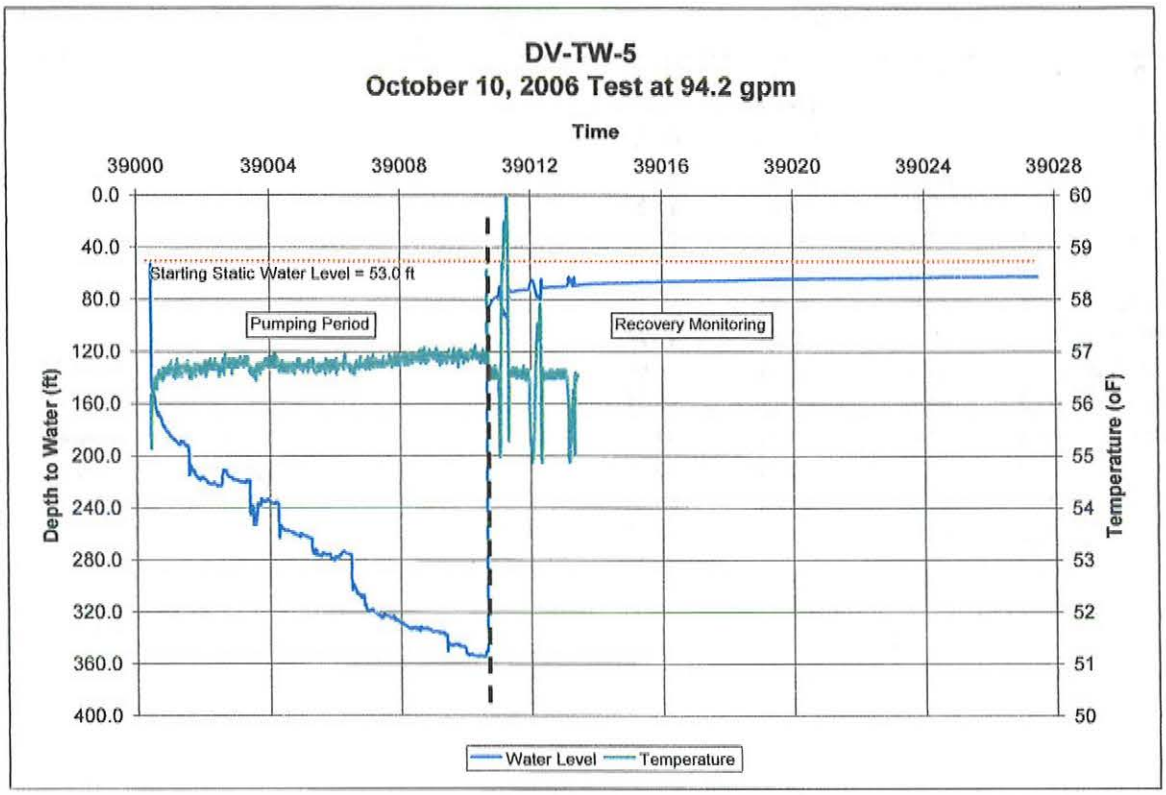
Pre-test Static Water Level (ft): 53.01
Transducer Depth Below WL (ft): 468.81
Measurement Method: Down-hole pressure transducer and water level meter

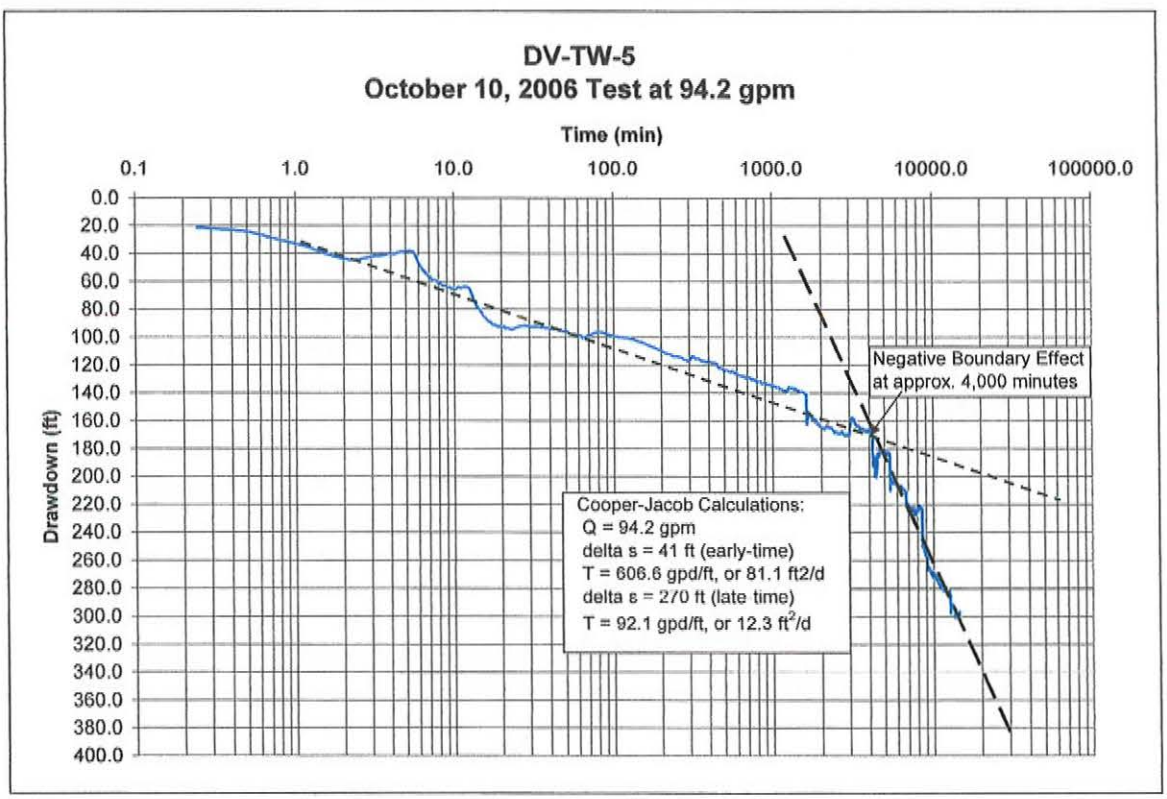
Manual Field Measurments

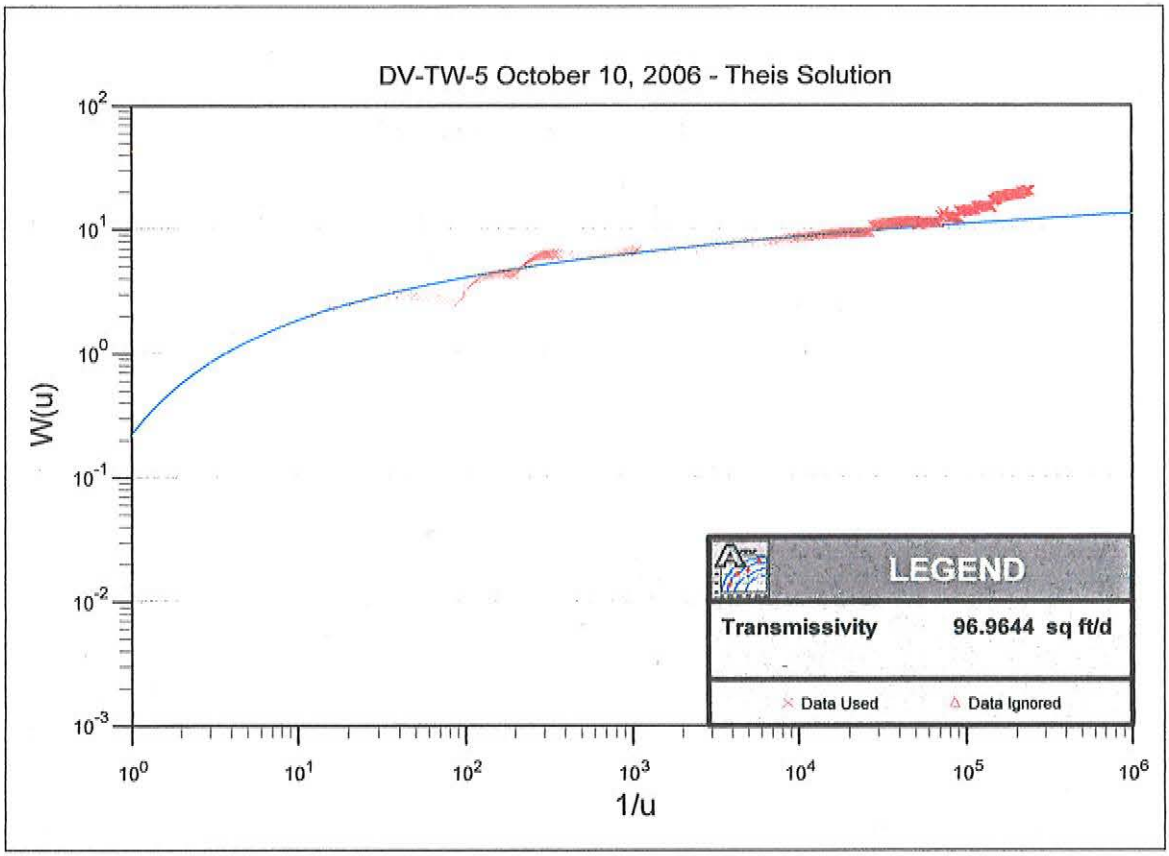
Date/Time	Elapsed Time (mins)	Depth to Water (ft)	Drawdown (ft)	Discharge Totalizer (gals)	Meter Reading (gpm)	Comments/Observations
10/10/2006 11:35		53.01	53.01	26,482,000		Probe= 468.91' Reset logger to 15 sec.
10/10/2006 11:42	0	98.24	98.24		105	Pump start
10/10/2006 11:45	3	94.18	94.18		80	
10/10/2006 11:47	5	110.91	110.91		105	
10/10/2006 11:51	9	121.21	121.21		100	
10/10/2006 11:53	11	120.19	120.19		97	
10/10/2006 11:55	13	133.59	133.59		105	
10/10/2006 11:57	15	143.63	143.63		110	
10/10/2006 11:59	17	148.21	148.21		110	
10/10/2006 12:01	19	148.71	148.71		105	Reset logger to 2 min. intervals
10/10/2006 12:03	21	150.54	150.54			
10/10/2006 12:08	26	148.70	148.70			
10/10/2006 12:13	31	149.13	149.13		100	
10/10/2006 12:18	36	149.72	149.72			
10/10/2006 12:28	46	152.35	152.35			
10/10/2006 12:38	56	155.18	155.18		100	
10/10/2006 12:45	63	--	--			Reset logger to 15 min. intervals
10/10/2006 12:48	66	155.98	155.98			
10/10/2006 12:50	68	--	--	26,488,900		
10/13/2006 22:33	4971	252.33	252.33	26,862,900	101	WL @ 249.7' above probe
10/16/2006 12:15	8673	302.51	302.51	27,282,800	105	WL @ 166.4' above probe
10/19/2006 10:30	12888	351.01	351.01	27,695,600	104	WL @ 117.9' above probe
10/20/2006 16:00	14658	--	--		97	WL @ 118.7' above probe
10/20/2006 16:10	14668	--	--	27,868,800		Start Recovery, Reset logger to 15 sec.
10/20/2006 16:12	14670	200.12	200.12			

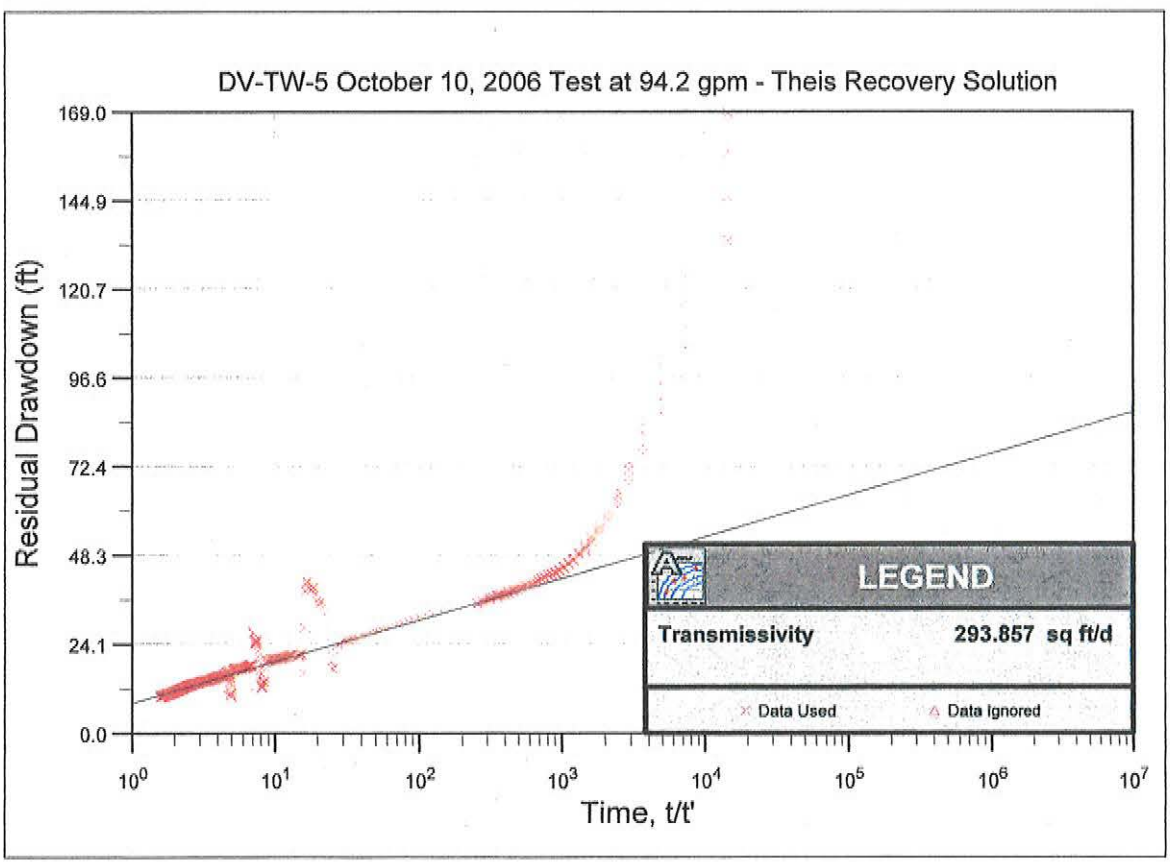
Manual Field Measurments

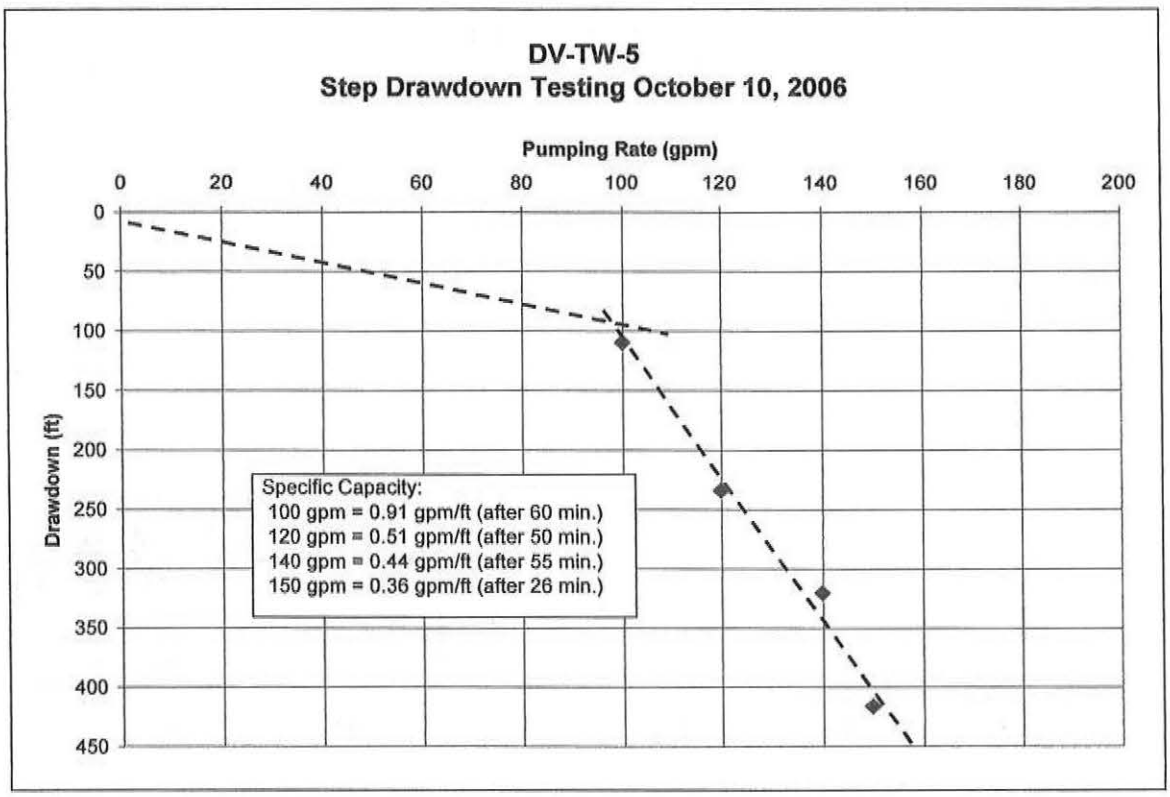
Date/Time	Elapsed Time (mins)	Depth to Water (ft)	Drawdown (ft)	Discharge Totalizer (gals)	Meter Reading (gpm)	Comments/Observations
10/20/2006 16:14	14672	133.63	133.63			
10/20/2006 16:16	14674	115.15	115.15			
10/20/2006 16:18	14676	108.24	108.24			
10/20/2006 16:20	14678	103.41	103.41			
10/20/2006 16:22	14680	99.91	99.91			
10/20/2006 16:24	14682	98.24	98.24			
10/20/2006 16:26	14684	97.21	97.21			
10/20/2006 16:28	14686	96.09	96.09			
10/20/2006 16:30	14688	95.24	95.24			
10/20/2006 16:35	14693	94.05	94.05			
10/20/2006 16:40	14698	93.11	93.11			
10/20/2006 16:50	14708	91.30	91.30			Set logger to 1 min. interval
10/20/2006 17:00	14718	90.00	90.00			Set logger to 15 min. interval
10/23/2006 10:55	18673	69.23	69.23			Switch Logger, Probe @ 11.3' below WL
10/26/2006 10:55	22993	66.81	66.81			

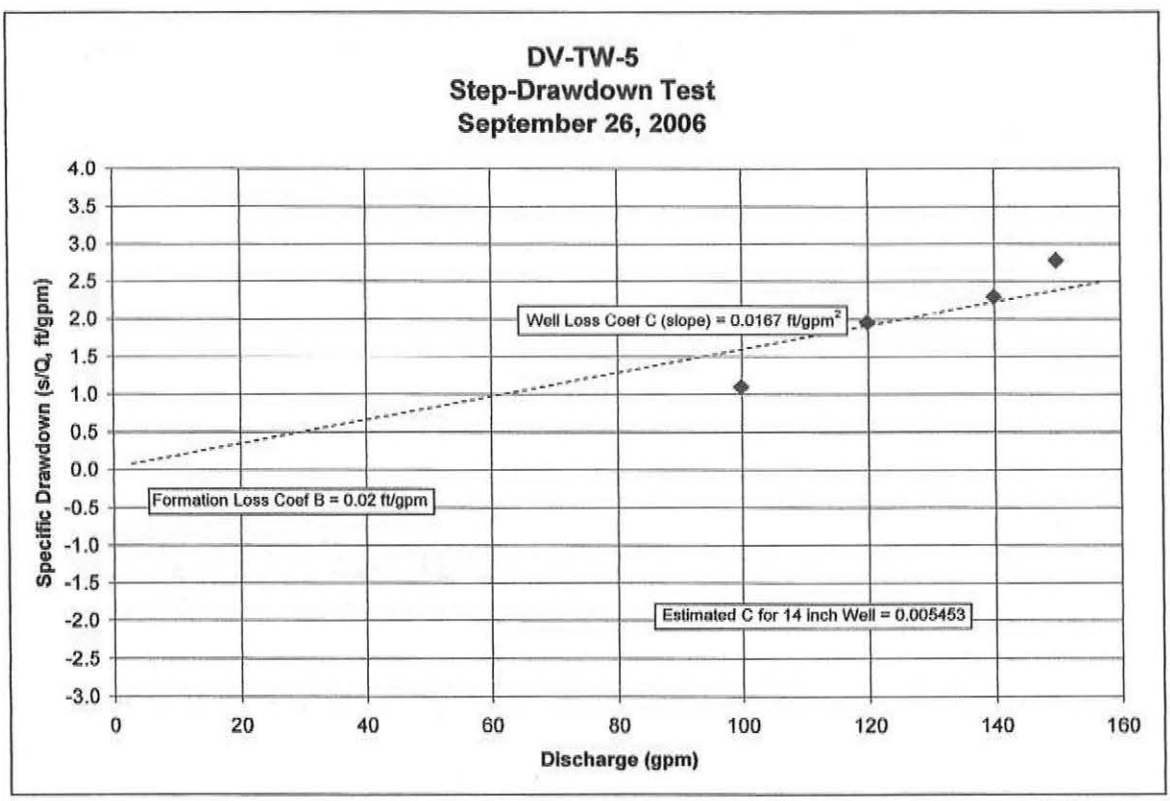

DV-TW-5
October 10, 2006 Test at 94.2 gpm
Time
39000
39004
39008
39012
39016
39020
39024
39028
0.0
40.0
80.0
120.0
160.0
200.0
240.0
280.0
320.0
360.0
400.0
Depth to Water (ft)
60
59
58
57
56
55
54
53
52
51
50
Temperature (oF)
Starting Static Water Level = 53.0 ft
Pumping Period
Recovery Monitoring
Water Level
Temperature


DV-TW-5
October 10, 2006 Test at 94.2 gpm
Time (min)
0.1
1.0
10.0
100.0
1000.0
10000.0
100000.0
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
160.0
180.0
200.0
220.0
240.0
260.0
280.0
300.0
320.0
340.0
360.0
380.0
400.0
Drawdown (ft)
Negative Boundary Effect
at approx. 4,000 minutes
Cooper-Jacob Calculations:
Q = 94.2 gpm
delta s = 41 ft (early-time)
T = 606.6 gpd/ft, or 81.1 ft2/d
delta s = 270 ft (late time)
T = 92.1 gpd/ft, or 12.3 ft²/d


DV-TW-5 October 10, 2006 - Theis Solution
W(u)
1/u
LEGEND
Transmissivity 96.9644 sq ft/d
Data Used
Data Ignored


DV-TW-5 October 10, 2006 Test at 94.2 gpm - Theis Recovery Solution
Residual Drawdown (ft)
Time, t/t'
LEGEND
Transmissivity 293.857 sq ft/d
Data Used
Data Ignored


DV-TW-5
Step Drawdown Testing October 10, 2006
Pumping Rate (gpm)
0
20
40
60
80
100
120
140
160
180
200
Drawdown (ft)
0
50
100
150
200
250
300
350
400
450
Specific Capacity:
100 gpm = 0.91 gpm/ft (after 60 min.)
120 gpm = 0.51 gpm/ft (after 50 min.)
140 gpm = 0.44 gpm/ft (after 55 min.)
150 gpm = 0.36 gpm/ft (after 26 min.)


DV-TW-5
Step-Drawdown Test
September 26, 2006
Specific Drawdown (s/Q, ft/gpm)
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
Well Loss Coef C (slope) = 0.0167 ft/gpm²
Formation Loss Coef B = 0.02 ft/gpm
Estimated C for 14 inch Well = 0.005453
0
20
40
60
80
100
120
140
160
Discharge (gpm)

Appendix C
Water Chemistry Reports

Appendix C
Water Chemistry Reports

Sierra Environmental Monitoring, Inc.

Laboratory Analysis Report
Report ID: 61646

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 7/9/2004
Client: ITF-112
Taken by: D. Smith
PO #:

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
200406-2069	Dry Valley Test Well #1	6/25/2004	12:15 PM	6/28/2004

Parameter	Method	Result	Units Of Measure	MCL	Analyst	Date Analyzed
Alkalinity, Total	SM 2320 B	133	mg/L CaCO3		Kobza	7/4/2004
Alkalinity/Bicarbonate	SM 2320 B	122	mg/L CaCO3		Kobza	7/4/2004
Alkalinity/Carbonate	SM 2320 B	11	mg/L CaCO3		Kobza	7/4/2004
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3		Kobza	7/4/2004
Arsenic - ICP-MS	EPA 200.8	0.005	mg/L	0.01 mg/L	Li	7/7/2004
Barium - ICP-MS	EPA 200.8	0.003	mg/L	2.0 mg/L	Li	7/7/2004
Calcium - ICP-OES	EPA 200.7	3.3	mg/L		Layman	7/6/2004
Chloride - Ion Chromatography	EPA 300.0	8.8	mg/L	250 mg/L	Keller	7/1/2004
Color Apparent	EPA 110.2	<5	Color Units	15	Nava	6/30/2004
Copper - ICP-MS	EPA 200.8	<0.001	mg/L	1.0 mg/L	Li	7/7/2004
Fluoride - Ion Chromatography	EPA 300.0	0.27	mg/L	2.0/4.0 mg/L	Keller	7/1/2004
Iron - ICP-OES	EPA 200.7	0.06	mg/L	0.3 mg/L	Layman	7/6/2004
Lead - ICP-MS	EPA 200.8	<0.001	mg/L	0.015 mg/L	Li	7/7/2004
Magnesium - ICP-OES	EPA 200.7	<0.5	mg/L	125 mg/L	Layman	7/6/2004
Manganese - ICP-MS	EPA 200.8	0.011	mg/L	0.05 mg/L	Li	7/7/2004
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.5 mg/L	Kobza	6/29/2004
Nitrate-N - Ion Chromatography	EPA 300.0	<0.05	mg/L N	10 mg/L as N	Keller	7/1/2004
pH	SM 4500 H+B	8.54	pH Units	6.5 to 8.5	Kobza	7/4/2004
pH - Temperature	SM 4500 H+B	18.6	°C		Kobza	7/4/2004
Potassium - ICP-OES	EPA 200.7	0.6	mg/L		Layman	7/6/2004
Sodium - ICP-OES	EPA 200.7	67	mg/L		Layman	7/6/2004
Sulfate - Ion Chromatography	EPA 300.0	20	mg/L	500 mg/L	Keller	7/1/2004
Total Dissolved Solids	SM 2540 C	210	mg/L	500/1000 mg/L	Osterreicher	6/29/2004
Turbidity	SM 2130 B	0.5	NTU		Nava	6/30/2004
Zinc - ICP-MS	EPA 200.8	<0.01	mg/L	5 mg/L	Li	7/7/2004

SAMPLE WATER AS TESTED X DID ____DID NOT MEET DRINKING WATER STANDARDS.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Sierra Environmental Monitoring, Inc.

Laboratory Analysis Report
Report ID: 61646

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 7/9/2004
Client: ITF-112
Taken by: D. Smith
PO #:

Approved By: _____ **Date:** 7/9/2004
Sierra Environmental Monitoring, Inc

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Sierra Environmental Monitoring, Inc.

Laboratory Analysis Report
Report ID: 61443

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 6/28/2004
Client: ITF-112
Taken by: D. Smith
PO #:

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
200406-1482	Dry Valley Test Well #1	6/17/2004	9:40 AM	6/17/2004

Parameter	Method	Result	Units Of Measure	MCL	Analyst	Date Analyzed
Alkalinity, Total	SM 2320 B	132	mg/L CaCO3		Kobza	6/24/2004
Alkalinity/Bicarbonate	SM 2320 B	124	mg/L CaCO3		Kobza	6/24/2004
Alkalinity/Carbonate	SM 2320 B	8	mg/L CaCO3		Kobza	6/24/2004
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3		Kobza	6/24/2004
Arsenic - ICP-MS	EPA 200.8	0.005	mg/L	0.01 mg/L	Li	6/18/2004
Barium - ICP-MS	EPA 200.8	0.004	mg/L	2.0 mg/L	Li	6/18/2004
Calcium - ICP-OES	EPA 200.7	3.4	mg/L		Li	6/22/2004
Chloride - Ion Chromatography	EPA 300.0	10	mg/L	250 mg/L	Henderson	6/17/2004
Color Apparent	EPA 110.2	<5	Color Units	15	Kobza	6/19/2004
Copper - ICP-MS	EPA 200.8	0.002	mg/L	1.0 mg/L	Li	6/18/2004
Fluoride - Ion Chromatography	EPA 300.0	0.21	mg/L	2.0/4.0 mg/L	Henderson	6/17/2004
Iron - ICP-OES	EPA 200.7	0.1	mg/L	0.3 mg/L	Li	6/22/2004
Lead - ICP-MS	EPA 200.8	<0.001	mg/L	0.015 mg/L	Li	6/18/2004
Magnesium - ICP-OES	EPA 200.7	<0.5	mg/L	125 mg/L	Li	6/22/2004
Manganese - ICP-MS	EPA 200.8	0.011	mg/L	0.05 mg/L	Li	6/18/2004
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.5 mg/L	Kobza	6/18/2004
Nitrate-N - Ion Chromatography	EPA 300.0	0.14	mg/L N	10 mg/L as N	Henderson	6/17/2004
pH	SM 4500 H+B	8.43	pH Units	6.5 to 8.5	Kobza	6/24/2004
pH - Temperature	SM 4500 H+B	20.8	°C		Kobza	6/24/2004
Potassium - ICP-OES	EPA 200.7	0.8	mg/L		Li	6/22/2004
Sodium - ICP-OES	EPA 200.7	67	mg/L		Li	6/22/2004
Sulfate - Ion Chromatography	EPA 300.0	20	mg/L	500 mg/L	Henderson	6/17/2004
Total Dissolved Solids	SM 2540 C	240	mg/L	500/1000 mg/L	Osterreicher	6/21/2004
Turbidity	SM 2130 B	1.1	NTU		Kobza	6/19/2004
Zinc - ICP-MS	EPA 200.8	0.01	mg/L	5 mg/L	Li	6/18/2004

SAMPLE WATER AS TESTED _4_ DID ____DID NOT MEET DRINKING WATER STANDARDS.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Sierra Environmental Monitoring, Inc.

Laboratory Analysis Report
Report ID: 61443

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 6/28/2004
Client: ITF-112
Taken by: D. Smith
PO #:

Approved By: _____
Sierra Environmental Monitoring, Inc

Date: 6/28/2004

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 77704

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	8/29/2006
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	H. Swartzentrube
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

Sierra Environmental Monitoring, Inc. 8/29/2006

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 77704

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 8/29/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200608-0553	DV-TW #1	8/9/2006	12:00 PM	8/9/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	135	mg/L CaCO3	2	Pacheco	8/11/2006	
Alkalinity/Bicarbonate	SM 2320 B	122	mg/L CaCO3	2	Pacheco	8/11/2006	
Alkalinity/Carbonate	SM 2320 B	13	mg/L CaCO3	2	Pacheco	8/11/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	8/11/2006	
Arsenic - ICP-MS	EPA 200.8	0.005	mg/L	0.002	Li	8/24/2006	
Barium - ICP-MS	EPA 200.8	0.006	mg/L	0.002	Li	8/24/2006	
Calcium - ICP-OES	EPA 200.7	2.9	mg/L	0.5	Keller	8/15/2006	
Chloride - Ion Chromatography	EPA 300.0	9.8	mg/L	0.5	Henderson	8/10/2006	
Color Apparent	EPA 110.2	<5	Color Units	5	Hellmann	8/9/2006	
Copper - ICP-MS	EPA 200.8	0.002	mg/L	0.002	Li	8/24/2006	
Fluoride - Ion Chromatography	EPA 300.0	0.4	mg/L	0.1	Henderson	8/10/2006	
Iron - ICP-OES	EPA 200.7	0.08	mg/L	0.05	Keller	8/15/2006	
Lead - ICP-MS	EPA 200.8	0.002	mg/L	0.002	Li	8/24/2006	
Magnesium - ICP-OES	EPA 200.7	<0.5	mg/L	0.5	Keller	8/15/2006	
Manganese - ICP-MS	EPA 200.8	0.014	mg/L	0.002	Li	8/24/2006	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Pacheco	8/11/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	<0.05	mg/L N	0.05	Henderson	8/10/2006	
pH	SM 4500 H+B	8.57	pH Units		Pacheco	8/11/2006	
pH - Temperature	SM 4500 H+B	18.2	°C		Pacheco	8/11/2006	
Potassium - ICP-OES	EPA 200.7	<0.5	mg/L	0.5	Keller	8/15/2006	
Sodium - ICP-OES	EPA 200.7	65	mg/L	0.5	Keller	8/15/2006	
Sulfate - Ion Chromatography	EPA 300.0	18	mg/L	0.2	Henderson	8/10/2006	
Total Dissolved Solids	SM 2540 C	220	mg/L	10	Pacheco	8/10/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	8/14/2006	
Turbidity	SM 2130 B	0.9	NTU	0.1	Hellmann	8/9/2006	
Zinc - ICP-MS	EPA 200.8	0.04	mg/L	0.03	Li	8/24/2006	B

Data Flag Legend:

B - Element or compound also found in associated Method Blank.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 77704

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 8/29/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	105.0			0.00		
Alkalinity/Bicarbonate				0.00		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	108.0	110.0	110.0	0.00	<0.002	mg/L
Barium - ICP-MS	109.0	108.0	108.0	0.00	<0.002	mg/L
Calcium - ICP-OES	99.0	97.0	94.0	3.14	<0.5	mg/L
Chloride - Ion Chromatography	101.0	83.0	87.0	4.71	<0.5	mg/L
Copper - ICP-MS	108.0	108.0	106.0	1.87	<0.002	mg/L
Fluoride - Ion Chromatography	101.0	96.0	100.0	4.18	<0.1	mg/L
Iron - ICP-OES	101.0	97.0	96.0	1.25	<0.05	mg/L
Lead - ICP-MS	108.0	108.0	108.0	0.00	<0.002	mg/L
Magnesium - ICP-OES	99.0	98.0	96.0	2.07	<0.5	mg/L
Manganese - ICP-MS	105.0	105.0	105.0	0.00	<0.002	mg/L
MBAS Surfactants	97.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	103.0	100.0	104.0	3.92	<0.05	mg/L
pH				71.95		
pH - Temperature				71.44		
Potassium - ICP-OES	97.0	90.0	88.0	1.12	<0.5	mg/L
Sodium - ICP-OES	97.0	91.0	90.0	1.65	<0.5	mg/L
Sulfate - Ion Chromatography	100.0	83.0	87.0	4.71	<0.2	mg/L
Total Dissolved Solids		99.0		0.96	<10	mg/L
Turbidity	94.0			2.47		
Zinc - ICP-MS	109.0	100.0	100.0	0.00	<0.03	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 77753

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	8/29/2006
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	H. Swartzentrube
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

Sierra Environmental Monitoring, Inc. 8/29/2006

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 77753

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 8/29/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200608-0670	DV-TW #1	8/10/2006	9:00 AM	8/10/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	135	mg/L CaCO3	2	Pacheco	8/11/2006	
Alkalinity/Bicarbonate	SM 2320 B	121	mg/L CaCO3	2	Pacheco	8/11/2006	
Alkalinity/Carbonate	SM 2320 B	14	mg/L CaCO3	2	Pacheco	8/11/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	8/11/2006	
Arsenic - ICP-MS	EPA 200.8	0.005	mg/L	0.002	Li	8/24/2006	
Barium - ICP-MS	EPA 200.8	<0.002	mg/L	0.002	Li	8/24/2006	
Calcium - ICP-OES	EPA 200.7	2.7	mg/L	0.5	Keller	8/15/2006	
Chloride - Ion Chromatography	EPA 300.0	9.6	mg/L	0.5	Henderson	8/11/2006	
Color Apparent	EPA 110.2	<5	Color Units	5	Hellmann	8/10/2006	
Copper - ICP-MS	EPA 200.8	0.004	mg/L	0.002	Li	8/24/2006	
Fluoride - Ion Chromatography	EPA 300.0	0.4	mg/L	0.1	Henderson	8/11/2006	
Iron - ICP-OES	EPA 200.7	0.07	mg/L	0.05	Keller	8/15/2006	
Lead - ICP-MS	EPA 200.8	<0.002	mg/L	0.002	Li	8/24/2006	
Magnesium - ICP-OES	EPA 200.7	<0.5	mg/L	0.5	Keller	8/15/2006	
Manganese - ICP-MS	EPA 200.8	0.012	mg/L	0.002	Li	8/24/2006	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Pacheco	8/11/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	<0.05	mg/L N	0.05	Henderson	8/11/2006	
pH	SM 4500 H+B	8.66	pH Units		Pacheco	8/11/2006	
pH - Temperature	SM 4500 H+B	19.7	°C		Pacheco	8/11/2006	
Potassium - ICP-OES	EPA 200.7	<0.5	mg/L	0.5	Keller	8/15/2006	
Sodium - ICP-OES	EPA 200.7	64	mg/L	0.5	Keller	8/15/2006	
Sulfate - Ion Chromatography	EPA 300.0	19	mg/L	0.2	Henderson	8/11/2006	
Total Dissolved Solids	SM 2540 C	210	mg/L	10	Pacheco	8/15/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	8/14/2006	
Turbidity	SM 2130 B	1.0	NTU	0.1	Hellmann	8/10/2006	
Zinc - ICP-MS	EPA 200.8	0.05	mg/L	0.03	Li	8/24/2006	B

Data Flag Legend:

B - Element or compound also found in associated Method Blank.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 77753

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 8/29/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	105.0			0.00		
Alkalinity/Bicarbonate				0.00		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	108.0	112.0	112.0	0.00	<0.002	mg/L
Barium - ICP-MS	109.0	112.0	111.0	0.90	<0.002	mg/L
Calcium - ICP-OES	99.0	100.0	100.0	0.00	<0.5	mg/L
Chloride - Ion Chromatography	97.0	96.0	97.0	1.04	<0.5	mg/L
Copper - ICP-MS	108.0	106.0	106.0	0.00	<0.002	mg/L
Fluoride - Ion Chromatography	98.0	98.0	97.0	0.51	<0.1	mg/L
Iron - ICP-OES	101.0	105.0	104.0	0.96	<0.05	mg/L
Lead - ICP-MS	108.0	109.0	109.0	0.00	<0.002	mg/L
Magnesium - ICP-OES	99.0	102.0	102.0	0.49	<0.5	mg/L
Manganese - ICP-MS	105.0	108.0	108.0	0.00	<0.002	mg/L
MBAS Surfactants	97.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	100.0	100.0	100.0	0.00	<0.05	mg/L
pH				71.95		
pH - Temperature				71.44		
Potassium - ICP-OES	97.0	96.0	94.0	2.11	<0.5	mg/L
Sodium - ICP-OES	97.0	97.0	95.0	2.08	<0.5	mg/L
Sulfate - Ion Chromatography	97.0	97.0	98.0	1.03	<0.2	mg/L
Total Dissolved Solids		103.0		0.25	<10	mg/L
Turbidity	96.0			7.23		
Zinc - ICP-MS	109.0	102.0	103.0	0.49	<0.03	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78026

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	9/8/2006
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	H. Swartzentrube
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

Sierra Environmental Monitoring, Inc. 9/8/2006

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78026

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 9/8/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200608-1475	DV-TW #1	8/23/2006	10:00 AM	8/24/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	137	mg/L CaCO3	2	Pacheco	8/25/2006	
Alkalinity/Bicarbonate	SM 2320 B	122	mg/L CaCO3	2	Pacheco	8/25/2006	
Alkalinity/Carbonate	SM 2320 B	15	mg/L CaCO3	2	Pacheco	8/25/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	8/25/2006	
Arsenic - ICP-MS	EPA 200.8	0.006	mg/L	0.002	Li	9/6/2006	
Barium - ICP-MS	EPA 200.8	0.002	mg/L	0.002	Li	9/6/2006	
Calcium - ICP-OES	EPA 200.7	2.9	mg/L	0.5	Keller	8/31/2006	
Chloride - Ion Chromatography	EPA 300.0	9.5	mg/L	0.5	Henderson	8/24/2006	
Color Apparent	EPA 110.2	10	Color Units	5	Kobza	8/24/2006	
Copper - ICP-MS	EPA 200.8	0.007	mg/L	0.002	Li	9/6/2006	
Fluoride - Ion Chromatography	EPA 300.0	0.5	mg/L	0.1	Henderson	8/24/2006	
Iron - ICP-OES	EPA 200.7	0.1	mg/L	0.05	Keller	8/31/2006	
Lead - ICP-MS	EPA 200.8	0.004	mg/L	0.002	Li	9/6/2006	
Magnesium - ICP-OES	EPA 200.7	<0.5	mg/L	0.5	Keller	8/31/2006	
Manganese - ICP-MS	EPA 200.8	0.015	mg/L	0.002	Li	9/6/2006	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Kobza	8/24/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	<0.05	mg/L N	0.05	Henderson	8/24/2006	
pH	SM 4500 H+B	8.62	pH Units		Pacheco	8/25/2006	
pH - Temperature	SM 4500 H+B	18.9	°C		Pacheco	8/25/2006	
Potassium - ICP-OES	EPA 200.7	<0.5	mg/L	0.5	Keller	8/31/2006	
Sodium - ICP-OES	EPA 200.7	70	mg/L	0.5	Keller	8/31/2006	
Sulfate - Ion Chromatography	EPA 300.0	19	mg/L	0.2	Henderson	8/24/2006	
Total Dissolved Solids	SM 2540 C	200	mg/L	10	Pacheco	8/25/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	8/29/2006	
Turbidity	SM 2130 B	1.0	NTU	0.1	Hellmann	8/24/2006	
Zinc - ICP-MS	EPA 200.8	0.04	mg/L	0.03	Li	9/6/2006	B

Data Flag Legend:

B - Element or compound also found in associated Method Blank.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78026

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 9/8/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	110.0			0.67		
Alkalinity/Bicarbonate				0.37		
Alkalinity/Carbonate				9.50		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	96.0	101.0	100.0	1.30	<0.002	mg/L
Barium - ICP-MS	99.0	102.0	102.0	0.00	<0.002	mg/L
Calcium - ICP-OES	99.0	103.0	118.0	13.57	<0.5	mg/L
Chloride - Ion Chromatography	97.0	106.0	103.0	2.87	<0.5	mg/L
Copper - ICP-MS	103.0	104.0	105.0	0.95	<0.002	mg/L
Fluoride - Ion Chromatography	97.0	107.0	103.0	3.82	<0.1	mg/L
Iron - ICP-OES	99.0	90.0	106.0	16.33	<0.05	mg/L
Lead - ICP-MS	98.0	104.0	105.0	0.96	<0.002	mg/L
Magnesium - ICP-OES	99.0	102.0	110.0	7.06	<0.5	mg/L
Manganese - ICP-MS	102.0	107.0	109.0	1.85	<0.002	mg/L
MBAS Surfactants	112.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	100.0	110.0	107.0	2.77	<0.05	mg/L
pH				0.00		
pH - Temperature				1.06		
Potassium - ICP-OES	98.0	99.0	106.0	7.30	<0.5	mg/L
Sodium - ICP-OES	99.0	98.0	108.0	9.71	<0.5	mg/L
Sulfate - Ion Chromatography	97.0	121.0	108.0	11.35	<0.2	mg/L
Total Dissolved Solids		100.0		2.56	<10	mg/L
Turbidity	102.0			9.52		
Zinc - ICP-MS	107.0	105.0	105.0	0.00	<0.03	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 69258

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	7/20/2005
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	D. Smith
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

Sierra Environmental Monitoring, Inc. 7/20/2005

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 69258

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 7/20/2005
Client: ITF-112
Taken by: D. Smith
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200507-0045	Dry Valley - Test Well #2	6/22/2005	10:30 AM	7/1/2005

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	140	mg/L CaCO3	2	Osterreicher	7/1/2005	
Alkalinity/Bicarbonate	SM 2320 B	140	mg/L CaCO3	2	Osterreicher	7/1/2005	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3	2	Osterreicher	7/1/2005	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Osterreicher	7/1/2005	
Arsenic - ICP-MS	EPA 200.8	0.015	mg/L	0.002	Li	7/18/2005	
Barium - ICP-MS	EPA 200.8	0.03	mg/L	0.004	Li	7/18/2005	B
Calcium - ICP-OES	EPA 200.7	10	mg/L	0.5	Henderson	7/8/2005	
Chloride - Ion Chromatography	EPA 300.0	21	mg/L	0.5	Keller	7/1/2005	
Color Apparent	EPA 110.2	<5	Color Units	5	Kobza	7/1/2005	
Copper - ICP-MS	EPA 200.8	0.006	mg/L	0.002	Li	7/18/2005	
Fluoride - Ion Chromatography	EPA 300.0	0.54	mg/L	0.1	Keller	7/1/2005	
Iron - ICP-OES	EPA 200.7	0.11	mg/L	0.05	Henderson	7/8/2005	
Lead - ICP-MS	EPA 200.8	<0.002	mg/L	0.002	Li	7/18/2005	
Magnesium - ICP-OES	EPA 200.7	4.7	mg/L	0.5	Henderson	7/8/2005	
Manganese - ICP-MS	EPA 200.8	0.026	mg/L	0.002	Li	7/18/2005	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Kobza	7/2/2005	
Nitrate-N - Ion Chromatography	EPA 300.0	1.2	mg/L N	0.05	Keller	7/1/2005	
pH	SM 4500 H+B	8.27	pH Units		Osterreicher	7/1/2005	
pH - Temperature	SM 4500 H+B	21.3	°C		Osterreicher	7/1/2005	
Potassium - ICP-OES	EPA 200.7	5.5	mg/L	0.5	Henderson	7/8/2005	
Sodium - ICP-OES	EPA 200.7	64	mg/L	0.5	Henderson	7/8/2005	
Sulfate - Ion Chromatography	EPA 300.0	23	mg/L	0.2	Keller	7/1/2005	
Total Dissolved Solids	SM 2540 C	280	mg/L	10	Osterreicher	7/5/2005	Hr
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	7/6/2005	
Turbidity	SM 2130 B	0.3	NTU	0.1	Kobza	7/1/2005	Hr
Zinc - ICP-MS	EPA 200.8	0.02	mg/L	0.01	Li	7/18/2005	

Data Flag Legend:

B - Element or compound also found in associated Method Blank.
Hr - Sample was received beyond holding time for this parameter and analyzed per client's request.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 69258

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 7/20/2005
Client: ITF-112
Taken by: D. Smith
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	104.0			20.26		
Alkalinity/Bicarbonate				20.26		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	102.0	110.0	111.0	1.81	<0.002	mg/L
Barium - ICP-MS	103.0	113.0	113.0	0.00	<0.004	mg/L
Calcium - ICP-OES	97.0	98.0	106.0	7.37	<0.5	mg/L
Chloride - Ion Chromatography	103.0	103.0	104.0	0.97	<0.5	mg/L
Copper - ICP-MS	102.0	111.0	112.0	0.89	<0.002	mg/L
Fluoride - Ion Chromatography	104.0	105.0	106.0	0.95	<0.1	mg/L
Iron - ICP-OES	101.0	102.0	107.0	4.97	<0.05	mg/L
Lead - ICP-MS	98.0	108.0	109.0	0.92	<0.002	mg/L
Magnesium - ICP-OES	98.0	100.0	104.0	3.90	<0.5	mg/L
Manganese - ICP-MS	99.0	110.0	110.0	0.00	<0.002	mg/L
MBAS Surfactants	107.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	102.0	103.0	104.0	0.96	<0.05	mg/L
pH				0.89		
pH - Temperature				1.92		
Potassium - ICP-OES	103.0	104.0	110.0	6.54	<0.5	mg/L
Sodium - ICP-OES	103.0	100.0	127.0	23.79	<0.5	mg/L
Sulfate - Ion Chromatography	103.0	103.0	104.0	0.97	<0.2	mg/L
Total Dissolved Solids		104.0		4.18	<10	mg/L
Turbidity	98.0			22.22		
Zinc - ICP-MS	102.0	108.0	108.0	0.00	<0.01	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78368

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.

P.O. Box 1482
Truckee, CA 96160

Date: 9/18/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Dear Interflow Hydrology, Inc.,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

Sierra Environmental Monitoring, Inc. — 9/18/2006

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78368

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.

P.O. Box 1482
Truckee, CA 96160

Date: 9/18/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200609-0479	DV - TW #2	9/7/2006	11:15 AM	9/8/2006

Parameter	Method	Result	Units	MCL	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	140	mg/L CaCO3		Pacheco	9/12/2006	
Alkalinity/Bicarbonate	SM 2320 B	140	mg/L CaCO3		Pacheco	9/12/2006	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3		Pacheco	9/12/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3		Pacheco	9/12/2006	
Arsenic - ICP-MS	EPA 200.8	0.018	mg/L	0.01 mg/L	Li	9/13/2006	
Barium - ICP-MS	EPA 200.8	0.040	mg/L	2.0 mg/L	Li	9/13/2006	
Calcium - ICP-OES	EPA 200.7	11	mg/L		Keller	9/11/2006	
Chloride - Ion Chromatography	EPA 300.0	25	mg/L	250/400 mg/L	Henderson	9/8/2006	
Color Apparent	EPA 110.2	<5	Color Units	15	Pacheco	9/8/2006	
Copper - ICP-MS	EPA 200.8	0.61	mg/L	1.0 mg/L	Li	9/13/2006	
Fluoride - Ion Chromatography	EPA 300.0	0.5	mg/L	2.0/4.0 mg/L	Henderson	9/8/2006	
Iron - ICP-OES	EPA 200.7	0.26	mg/L	0.3/0.6 mg/L	Keller	9/11/2006	
Lead - ICP-MS	EPA 200.8	0.053	mg/L	0.015 mg/L	Li	9/13/2006	
Magnesium - ICP-OES	EPA 200.7	4.4	mg/L	150 mg/L	Keller	9/11/2006	
Manganese - ICP-MS	EPA 200.8	0.029	mg/L	0.05/0.10 mg/L	Li	9/13/2006	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.5 mg/L	Hellmann	9/9/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	1.2	mg/L N	10 mg/L as N	Henderson	9/8/2006	
pH	SM 4500 H+B	8.04	pH Units	6.5 to 8.5	Pacheco	9/12/2006	
pH - Temperature	SM 4500 H+B	19.3	°C		Pacheco	9/12/2006	
Potassium - ICP-OES	EPA 200.7	5.4	mg/L		Keller	9/11/2006	
Sodium - ICP-OES	EPA 200.7	68	mg/L		Keller	9/11/2006	
Sulfate - Ion Chromatography	EPA 300.0	25	mg/L	250/500 mg/L	Henderson	9/8/2006	
Total Dissolved Solids	SM 2540 C	290	mg/L	500/1000 mg/L	Pacheco	9/12/2006	
Turbidity	SM 2130 B	0.7	NTU		Kobza	9/8/2006	
Zinc - ICP-MS	EPA 200.8	0.20	mg/L	5 mg/L	Li	9/13/2006	

SAMPLE WATER AS TESTED ____ DID _X_ DID NOT MEET DRINKING WATER STANDARDS. for Arsenic & Lead.

Data Flag Legend:

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78368

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.

P.O. Box 1482
Truckee, CA 96160

Date: 9/18/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	105.0			3.51		
Alkalinity/Bicarbonate				3.51		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	94.0	97.0	96.0	163.29	<0.001	mg/L
Barium - ICP-MS	98.0	96.0	94.0		<0.001	mg/L
Calcium - ICP-OES	100.0	100.0	100.0	0.50	<0.5	mg/L
Chloride - Ion Chromatography	98.0	90.0	86.0	4.55	<0.5	mg/L
Copper - ICP-MS	100.0	91.0	90.0		<0.001	mg/L
Fluoride - Ion Chromatography	98.0	101.0	97.0	4.02	<0.1	mg/L
Iron - ICP-OES	100.0	101.0	101.0	0.40	<0.05	mg/L
Lead - ICP-MS	100.0	99.0	100.0		<0.001	mg/L
Magnesium - ICP-OES	100.0	102.0	102.0	0.98	<0.5	mg/L
Manganese - ICP-MS	102.0	102.0	99.0	2.99	<0.001	mg/L
MBAS Surfactants	101.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	102.0	107.0	103.0	3.81	<0.05	mg/L
pH				0.37		
pH - Temperature				2.09		
Potassium - ICP-OES	100.0	102.0	102.0	0.00	<0.5	mg/L
Sodium - ICP-OES	100.0	75.0	80.0	6.45	<0.5	mg/L
Sulfate - Ion Chromatography	99.0	87.0	84.0	3.51	<0.2	mg/L
Total Dissolved Solids		97.0		2.09	<10	mg/L
Turbidity	97.0			2.82		
Zinc - ICP-MS	104.0	94.0	91.0		<0.005	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78369

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.	**Date:**	9/18/2006
	Client:	ITF-112
P.O. Box 1482	**Taken by:**	H. Swartzentrube
Truckee, CA 96160	**PO #:**	

Dear Interflow Hydrology, Inc.,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

Sierra Environmental Monitoring, Inc. 9/18/2006

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78369

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.

P.O. Box 1482
Truckee, CA 96160

Date: 9/18/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200609-0480	DV - TW #2	9/8/2006	9:30 AM	9/8/2006

Parameter	Method	Result	Units	MCL	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	140	mg/L CaCO3		Pacheco	9/12/2006	
Alkalinity/Bicarbonate	SM 2320 B	140	mg/L CaCO3		Pacheco	9/12/2006	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3		Pacheco	9/12/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3		Pacheco	9/12/2006	
Arsenic - ICP-MS	EPA 200.8	0.019	mg/L	0.01 mg/L	Li	9/13/2006	
Barium - ICP-MS	EPA 200.8	0.033	mg/L	2.0 mg/L	Li	9/13/2006	
Calcium - ICP-OES	EPA 200.7	11	mg/L		Keller	9/11/2006	
Chloride - Ion Chromatography	EPA 300.0	24	mg/L	250/400 mg/L	Henderson	9/8/2006	
Color Apparent	EPA 110.2	<5	Color Units	15	Pacheco	9/8/2006	
Copper - ICP-MS	EPA 200.8	0.079	mg/L	1.0 mg/L	Li	9/13/2006	
Fluoride - Ion Chromatography	EPA 300.0	0.5	mg/L	2.0/4.0 mg/L	Henderson	9/8/2006	
Iron - ICP-OES	EPA 200.7	<0.05	mg/L	0.3/0.6 mg/L	Keller	9/11/2006	
Lead - ICP-MS	EPA 200.8	0.008	mg/L	0.015 mg/L	Li	9/13/2006	
Magnesium - ICP-OES	EPA 200.7	4.5	mg/L	150 mg/L	Keller	9/11/2006	
Manganese - ICP-MS	EPA 200.8	0.022	mg/L	0.05/0.10 mg/L	Li	9/13/2006	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.5 mg/L	Hellmann	9/9/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	1.3	mg/L N	10 mg/L as N	Henderson	9/8/2006	
pH	SM 4500 H+B	8.09	pH Units	6.5 to 8.5	Pacheco	9/12/2006	
pH - Temperature	SM 4500 H+B	19.4	°C		Pacheco	9/12/2006	
Potassium - ICP-OES	EPA 200.7	5.5	mg/L		Keller	9/11/2006	
Sodium - ICP-OES	EPA 200.7	68	mg/L		Keller	9/11/2006	
Sulfate - Ion Chromatography	EPA 300.0	25	mg/L	250/500 mg/L	Henderson	9/8/2006	
Total Dissolved Solids	SM 2540 C	280	mg/L	500/1000 mg/L	Pacheco	9/12/2006	
Turbidity	SM 2130 B	0.5	NTU		Kobza	9/8/2006	
Zinc - ICP-MS	EPA 200.8	0.056	mg/L	5 mg/L	Li	9/13/2006	

SAMPLE WATER AS TESTED ____ DID __X__ DID NOT MEET DRINKING WATER STANDARDS. Par Arsenic

Data Flag Legend:

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78369

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.

P.O. Box 1482
Truckee, CA 96160

Date: 9/18/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	105.0			3.51		
Alkalinity/Bicarbonate				3.51		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	94.0	97.0	96.0	163.29	<0.001	mg/L
Barium - ICP-MS	98.0	96.0	94.0		<0.001	mg/L
Calcium - ICP-OES	100.0	100.0	100.0	0.50	<0.5	mg/L
Chloride - Ion Chromatography	98.0	90.0	86.0	4.55	<0.5	mg/L
Copper - ICP-MS	100.0	91.0	90.0		<0.001	mg/L
Fluoride - Ion Chromatography	98.0	101.0	97.0	4.02	<0.1	mg/L
Iron - ICP-OES	100.0	101.0	101.0	0.40	<0.05	mg/L
Lead - ICP-MS	100.0	99.0	100.0		<0.001	mg/L
Magnesium - ICP-OES	100.0	102.0	102.0	0.98	<0.5	mg/L
Manganese - ICP-MS	102.0	102.0	99.0	2.99	<0.001	mg/L
MBAS Surfactants	101.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	102.0	107.0	103.0	3.81	<0.05	mg/L
pH				0.37		
pH - Temperature				2.09		
Potassium - ICP-OES	100.0	102.0	102.0	0.00	<0.5	mg/L
Sodium - ICP-OES	100.0	75.0	80.0	6.45	<0.5	mg/L
Sulfate - Ion Chromatography	99.0	87.0	84.0	3.51	<0.2	mg/L
Total Dissolved Solids		97.0		2.09	<10	mg/L
Turbidity	97.0			2.82		
Zinc - ICP-MS	104.0	94.0	91.0		<0.005	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78648

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	10/5/2006
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	H. Swartzentrube
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

Sierra Environmental Monitoring, Inc. 10/5/2006

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78648

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 10/5/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200609-1374	DV-TW #2	9/19/2006	2:00 PM	9/21/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	120	mg/L CaCO3	2	Pacheco	9/22/2006	
Alkalinity/Bicarbonate	SM 2320 B	120	mg/L CaCO3	2	Pacheco	9/22/2006	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	9/22/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	9/22/2006	
Arsenic - ICP-MS	EPA 200.8	0.013	mg/L	0.002	Li	10/3/2006	
Barium - ICP-MS	EPA 200.8	0.032	mg/L	0.002	Li	10/3/2006	
Calcium - ICP-OES	EPA 200.7	12	mg/L	0.5	Keller	9/29/2006	
Chloride - Ion Chromatography	EPA 300.0	12	mg/L	0.5	Henderson	9/22/2006	
Color Apparent	EPA 110.2	<5	Color Units	5	Hellmann	9/21/2006	
Copper - ICP-MS	EPA 200.8	0.037	mg/L	0.004	Li	10/3/2006	B
Fluoride - Ion Chromatography	EPA 300.0	0.3	mg/L	0.1	Henderson	9/22/2006	
Iron - ICP-OES	EPA 200.7	0.22	mg/L	0.05	Keller	9/29/2006	
Lead - ICP-MS	EPA 200.8	0.003	mg/L	0.002	Li	10/3/2006	
Magnesium - ICP-OES	EPA 200.7	6.0	mg/L	0.5	Keller	9/29/2006	
Manganese - ICP-MS	EPA 200.8	0.011	mg/L	0.002	Li	10/3/2006	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Hellmann	9/20/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	1.7	mg/L N	0.05	Henderson	9/22/2006	
pH	SM 4500 H+B	8.16	pH Units		Pacheco	9/22/2006	
pH - Temperature	SM 4500 H+B	22.3	°C		Pacheco	9/22/2006	
Potassium - ICP-OES	EPA 200.7	4.9	mg/L	0.5	Keller	9/29/2006	
Sodium - ICP-OES	EPA 200.7	39	mg/L	0.5	Keller	9/29/2006	
Sulfate - Ion Chromatography	EPA 300.0	15	mg/L	0.2	Henderson	9/22/2006	
Total Dissolved Solids	SM 2540 C	230	mg/L	10	Pacheco	9/27/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	9/27/2006	
Turbidity	SM 2130 B	3.7	NTU	0.1	Hellmann	9/21/2006	
Zinc - ICP-MS	EPA 200.8	0.07	mg/L	0.02	Li	10/3/2006	B

Data Flag Legend:

B - Element or compound also found in associated Method Blank.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78648

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 10/5/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*
Alkalinity, Total	106.0			2.17	
Alkalinity/Bicarbonate				2.17	
Alkalinity/Carbonate				0.00	
Alkalinity/Hydroxide				0.00	
Arsenic - ICP-MS	99.0				<0.002 mg/L
Barium - ICP-MS	102.0				<0.002 mg/L
Calcium - ICP-OES	101.0	105.0	116.0	9.95	<0.5 mg/L
Chloride - Ion Chromatography	98.0	102.0	103.0	0.98	<0.5 mg/L
Copper - ICP-MS	102.0				<0.004 mg/L
Fluoride - Ion Chromatography	98.0	96.0	98.0	1.24	<0.1 mg/L
Iron - ICP-OES	101.0	103.0	107.0	4.38	<0.05 mg/L
Lead - ICP-MS	104.0				<0.002 mg/L
Magnesium - ICP-OES	101.0	104.0	109.0	5.63	<0.5 mg/L
Manganese - ICP-MS	103.0				<0.002 mg/L
MBAS Surfactants	101.0				<0.05 mg/L
Nitrate-N - Ion Chromatography	102.0	100.0	102.0	1.98	<0.05 mg/L
pH				0.13	
pH - Temperature				0.49	
Potassium - ICP-OES	101.0	104.0	113.0	8.29	<0.5 mg/L
Sodium - ICP-OES	100.0	85.0	130.0	41.86	<0.5 mg/L
Sulfate - Ion Chromatography	98.0	98.0	99.0	1.02	<0.2 mg/L
Total Dissolved Solids		104.0		1.92	<10 mg/L
Turbidity	95.0			123.08	
Zinc - ICP-MS	100.0				<0.02 mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78680

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	10/6/2006
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	H. Swartzentrube
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: _____ **Sierra Environmental Monitoring, Inc.**

Date: 10/6/2006

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78680

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 10/6/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200609-1481	DV-TW #2	9/22/2006	11:00 AM	9/22/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	130	mg/L CaCO3	2	Pacheco	9/25/2006	
Alkalinity/Bicarbonate	SM 2320 B	130	mg/L CaCO3	2	Pacheco	9/25/2006	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	9/25/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	9/25/2006	
Arsenic - ICP-MS	EPA 200.8	0.013	mg/L	0.002	Li	10/3/2006	
Barium - ICP-MS	EPA 200.8	0.032	mg/L	0.002	Li	10/3/2006	
Calcium - ICP-OES	EPA 200.7	12	mg/L	0.5	Keller	9/29/2006	
Chloride - Ion Chromatography	EPA 300.0	13	mg/L	0.5	Henderson	9/23/2006	
Color Apparent	EPA 110.2	<5	Color Units	5	Hellmann	9/23/2006	
Copper - ICP-MS	EPA 200.8	0.007	mg/L	0.004	Li	10/3/2006	B
Fluoride - Ion Chromatography	EPA 300.0	0.4	mg/L	0.1	Henderson	9/23/2006	
Iron - ICP-OES	EPA 200.7	<0.05	mg/L	0.05	Keller	9/29/2006	
Lead - ICP-MS	EPA 200.8	<0.002	mg/L	0.002	Li	10/3/2006	
Magnesium - ICP-OES	EPA 200.7	5.9	mg/L	0.5	Keller	9/29/2006	
Manganese - ICP-MS	EPA 200.8	0.01	mg/L	0.002	Li	10/3/2006	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Hellmann	9/23/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	1.6	mg/L N	0.05	Henderson	9/23/2006	
pH	SM 4500 H+B	8.33	pH Units		Pacheco	9/25/2006	
pH - Temperature	SM 4500 H+B	21.0	°C		Pacheco	9/25/2006	
Potassium - ICP-OES	EPA 200.7	4.9	mg/L	0.5	Keller	9/29/2006	
Sodium - ICP-OES	EPA 200.7	41	mg/L	0.5	Keller	9/29/2006	
Sulfate - Ion Chromatography	EPA 300.0	15	mg/L	0.2	Henderson	9/22/2006	
Total Dissolved Solids	SM 2540 C	220	mg/L	10	Pacheco	9/27/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	9/27/2006	
Turbidity	SM 2130 B	0.4	NTU	0.1	Hellmann	9/23/2006	
Zinc - ICP-MS	EPA 200.8	0.07	mg/L	0.02	Li	10/3/2006	B

Data Flag Legend:

B - Element or compound also found in associated Method Blank.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78680

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 10/6/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	109.0			2.02		
Alkalinity/Bicarbonate				2.02		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	99.0				<0.002	mg/L
Barium - ICP-MS	102.0				<0.002	mg/L
Calcium - ICP-OES	101.0	105.0	116.0	9.95	<0.5	mg/L
Chloride - Ion Chromatography	103.0	99.0	101.0	2.00	<0.5	mg/L
Copper - ICP-MS	102.0				<0.004	mg/L
Fluoride - Ion Chromatography	103.0	101.0	101.0	0.00	<0.1	mg/L
Iron - ICP-OES	101.0	103.0	107.0	4.38	<0.05	mg/L
Lead - ICP-MS	104.0				<0.002	mg/L
Magnesium - ICP-OES	101.0	104.0	109.0	5.63	<0.5	mg/L
Manganese - ICP-MS	103.0				<0.002	mg/L
MBAS Surfactants	101.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	106.0	103.0	104.0	0.96	<0.05	mg/L
pH				0.28		
pH - Temperature				0.00		
Potassium - ICP-OES	101.0	104.0	113.0	8.29	<0.5	mg/L
Sodium - ICP-OES	100.0	85.0	130.0	41.86	<0.5	mg/L
Sulfate - Ion Chromatography	102.0	99.0	101.0	2.00	<0.2	mg/L
Total Dissolved Solids		104.0		1.92	<10	mg/L
Turbidity	92.0			0.00		
Zinc - ICP-MS	100.0				<0.02	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78834

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	10/20/2006
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	H. Swartzentrube
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

Sierra Environmental Monitoring, Inc. 10/20/2006

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78834

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 10/20/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200609-1906	DV-TW #2	9/29/2006	10:45 AM	9/29/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	120	mg/L CaCO3	2	Pacheco	10/2/2006	
Alkalinity/Bicarbonate	SM 2320 B	120	mg/L CaCO3	2	Pacheco	10/2/2006	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	10/2/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	10/2/2006	
Arsenic - ICP-MS	EPA 200.8	0.014	mg/L	0.002	Li	10/18/2006	
Barium - ICP-MS	EPA 200.8	0.026	mg/L	0.002	Li	10/18/2006	
Calcium - ICP-OES	EPA 200.7	12	mg/L	0.5	Keller	10/10/2006	
Chloride - Ion Chromatography	EPA 300.0	14	mg/L	0.5	Henderson	10/2/2006	
Color Apparent	EPA 110.2	<5	Color Units	5	Hellmann	9/29/2006	
Copper - ICP-MS	EPA 200.8	0.004	mg/L	0.002	Li	10/18/2006	
Fluoride - Ion Chromatography	EPA 300.0	0.4	mg/L	0.1	Henderson	10/2/2006	
Iron - ICP-OES	EPA 200.7	<0.05	mg/L	0.05	Keller	10/10/2006	
Lead - ICP-MS	EPA 200.8	<0.002	mg/L	0.002	Li	10/18/2006	
Magnesium - ICP-OES	EPA 200.7	5.6	mg/L	0.5	Keller	10/10/2006	
Manganese - ICP-MS	EPA 200.8	0.009	mg/L	0.002	Li	10/18/2006	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Hellmann	9/29/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	1.6	mg/L N	0.05	Henderson	10/2/2006	Ha
pH	SM 4500 H+B	8.10	pH Units		Pacheco	10/2/2006	
pH - Temperature	SM 4500 H+B	20.1	°C		Pacheco	10/2/2006	
Potassium - ICP-OES	EPA 200.7	4.7	mg/L	0.5	Keller	10/10/2006	
Sodium - ICP-OES	EPA 200.7	44	mg/L	0.5	Keller	10/10/2006	
Sulfate - Ion Chromatography	EPA 300.0	17	mg/L	0.2	Henderson	10/2/2006	
Total Dissolved Solids	SM 2540 C	230	mg/L	10	Pacheco	10/3/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	10/5/2006	
Turbidity	SM 2130 B	0.3	NTU	0.1	Hellmann	9/29/2006	
Zinc - ICP-MS	EPA 200.8	0.07	mg/L	0.03	Li	10/18/2006	B

Data Flag Legend:

B - Element or compound also found in associated Method Blank.
Ha - Sample was analyzed beyond holding time for this parameter per client's request.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78834

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 10/20/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	108.0			1.29		
Alkalinity/Bicarbonate				1.29		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	100.0	105.0	105.0	0.00	<0.002	mg/L
Barium - ICP-MS	98.0	101.0	101.0	0.00	<0.002	mg/L
Calcium - ICP-OES	98.0	99.0	99.0	0.00	<0.5	mg/L
Chloride - Ion Chromatography	103.0	106.0	108.0	0.93	<0.5	mg/L
Copper - ICP-MS	99.0	103.0	102.0	0.98	<0.002	mg/L
Fluoride - Ion Chromatography	103.0	104.0	106.0	1.90	<0.1	mg/L
Iron - ICP-OES	100.0	102.0	101.0	0.99	<0.05	mg/L
Lead - ICP-MS	100.0	104.0	104.0	0.00	<0.002	mg/L
Magnesium - ICP-OES	99.0	101.0	100.0	0.50	<0.5	mg/L
Manganese - ICP-MS	101.0	104.0	104.0	0.00	<0.002	mg/L
MBAS Surfactants	91.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	106.0	109.0	110.0	0.91	<0.05	mg/L
pH				0.00		
pH - Temperature				6.03		
Potassium - ICP-OES	99.0	100.0	100.0	1.00	<0.5	mg/L
Sodium - ICP-OES	99.0	95.0	99.0	4.12	<0.5	mg/L
Sulfate - Ion Chromatography	102.0	103.0	105.0	1.92	<0.2	mg/L
Total Dissolved Solids		102.0		7.94	<10	mg/L
Turbidity	91.0			0.00		
Zinc - ICP-MS	101.0	100.0	100.0	1.00	<0.03	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 69868

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	8/8/2005
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	D. Smith
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- S200508-0002 - MBAS: Elevated detection limit due to matrix interference.

Approved By: _____ **Date:** 8/8/2005

Sierra Environmental Monitoring, Inc.

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 69868

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 8/8/2005
Client: ITF-112
Taken by: D. Smith
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200508-0002	Dry Valley Test Well #3	7/29/2005	10:00 AM	8/1/2005

Parameter	Method	Result	Units	MCL	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	130	mg/L CaCO3		Osterreicher	8/2/2005	
Alkalinity/Bicarbonate	SM 2320 B	130	mg/L CaCO3		Osterreicher	8/2/2005	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3		Osterreicher	8/2/2005	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3		Osterreicher	8/2/2005	
Arsenic - ICP-MS	EPA 200.8	0.009	mg/L	0.01 mg/L	Layman	8/4/2005	
Barium - ICP-MS	EPA 200.8	0.02	mg/L	2.0 mg/L	Layman	8/4/2005	
Calcium - ICP-OES	EPA 200.7	18	mg/L		Henderson	8/4/2005	
Chloride - Ion Chromatography	EPA 300.0	15	mg/L	250 mg/L	Keller	8/1/2005	
Color Apparent	EPA 110.2	10	Color Units	15	Osterreicher	8/2/2005	Hr
Copper - ICP-MS	EPA 200.8	0.004	mg/L	1.0 mg/L	Layman	8/4/2005	B
Fluoride - Ion Chromatography	EPA 300.0	0.43	mg/L	2.0/4.0 mg/L	Keller	8/1/2005	
Iron - ICP-OES	EPA 200.7	0.36	mg/L	0.3 mg/L	Henderson	8/4/2005	
Lead - ICP-MS	EPA 200.8	<0.001	mg/L	0.015 mg/L	Layman	8/4/2005	
Magnesium - ICP-OES	EPA 200.7	9.1	mg/L	125 mg/L	Henderson	8/4/2005	
Manganese - ICP-MS	EPA 200.8	0.018	mg/L	0.05 mg/L	Layman	8/4/2005	B
MBAS Surfactants	SM 5540 C	<0.2	mg/L	0.5 mg/L	Pacheco	8/1/2005	Hr
Nitrate-N - Ion Chromatography	EPA 300.0	3.4	mg/L N	10 mg/L as N	Keller	8/1/2005	
pH	SM 4500 H+B	8.3	pH Units	6.5 to 8.5	Osterreicher	8/2/2005	
pH - Temperature	SM 4500 H+B	22.6	°C		Osterreicher	8/2/2005	
Potassium - ICP-OES	EPA 200.7	5.1	mg/L		Henderson	8/4/2005	
Sodium - ICP-OES	EPA 200.7	42	mg/L		Henderson	8/4/2005	
Sulfate - Ion Chromatography	EPA 300.0	18	mg/L	500 mg/L	Keller	8/1/2005	
Total Dissolved Solids	SM 2540 C	250	mg/L	500/1000 mg/L	Kobza	8/1/2005	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	8/4/2005	
Turbidity	SM 2130 B	8.7	NTU		Pacheco	8/3/2005	Hr
Zinc - ICP-MS	EPA 200.8	0.018	mg/L	5 mg/L	Layman	8/4/2005	

SAMPLE WATER AS TESTED ____ DID _X_ DID NOT MEET DRINKING WATER STANDARDS for Iron.

Data Flag Legend:

B - Element or compound also found in associated Method Blank.
Hr - Sample was received beyond holding time for this parameter and analyzed per client's request.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 69868

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 8/8/2005
Client: ITF-112
Taken by: D. Smith
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	104.0			0.25		
Alkalinity/Bicarbonate				0.25		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	102.0	98.0	98.0	0.41	<0.001	mg/L
Barium - ICP-MS	101.0	100.0	98.0	2.02	<0.001	mg/L
Calcium - ICP-OES	103.0	109.0	109.0	0.46	<0.5	mg/L
Chloride - Ion Chromatography	97.0	96.0	99.0	2.56	<0.5	mg/L
Copper - ICP-MS	100.0	99.0	99.0	0.40	<0.002	mg/L
Fluoride - Ion Chromatography	95.0	98.0	96.0	2.06	<0.1	mg/L
Iron - ICP-OES	104.0	108.0	110.0	1.10	<0.05	mg/L
Lead - ICP-MS	101.0	98.0	97.0	1.03	<0.001	mg/L
Magnesium - ICP-OES	101.0	108.0	108.0	0.00	<0.5	mg/L
Manganese - ICP-MS	99.0	97.0	97.0	0.31	<0.003	mg/L
MBAS Surfactants	101.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	97.0	100.0	99.0	1.01	<0.05	mg/L
Nitrate-N - Ion Chromatography U						
pH				0.48		
pH - Temperature				0.88		
Potassium - ICP-OES	104.0	107.0	106.0	0.47	<0.5	mg/L
Sodium - ICP-OES	103.0	115.0	113.0	1.75	<0.5	mg/L
Sulfate - Ion Chromatography	98.0	89.0	99.0	10.64	<0.2	mg/L
Total Dissolved Solids		100.0		0.93	<10	mg/L
Turbidity	102.0			10.53		
Zinc - ICP-MS	101.0	95.0	94.0	1.06	<0.005	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 77331

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	8/1/2006
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	D. Smith
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

Sierra Environmental Monitoring, Inc. 8/1/2006

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 77331

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 8/1/2006
Client: ITF-112
Taken by: D. Smith
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200607-1188	DV-TW#3	7/19/2006	2:45 PM	7/21/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	130	mg/L CaCO3	2	Pacheco	7/21/2006	
Alkalinity/Bicarbonate	SM 2320 B	130	mg/L CaCO3	2	Pacheco	7/21/2006	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	7/21/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	7/21/2006	
Arsenic - ICP-MS	EPA 200.8	0.012	mg/L	0.002	Li	7/27/2006	
Barium - ICP-MS	EPA 200.8	0.009	mg/L	0.002	Li	7/27/2006	
Calcium - ICP-OES	EPA 200.7	18	mg/L	0.5	Keller	7/26/2006	
Chloride - Ion Chromatography	EPA 300.0	14	mg/L	0.5	Henderson	7/24/2006	
Color Apparent	EPA 110.2	<5	Color Units	5	Hellmann	7/21/2006	
Copper - ICP-MS	EPA 200.8	0.003	mg/L	0.002	Li	7/27/2006	
Fluoride - Ion Chromatography	EPA 300.0	0.2	mg/L	0.1	Henderson	7/24/2006	
Iron - ICP-OES	EPA 200.7	0.13	mg/L	0.05	Keller	7/26/2006	
Lead - ICP-MS	EPA 200.8	0.002	mg/L	0.002	Li	7/27/2006	
Magnesium - ICP-OES	EPA 200.7	9.4	mg/L	0.5	Keller	7/26/2006	
Manganese - ICP-MS	EPA 200.8	0.006	mg/L	0.004	Li	7/27/2006	B
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Pacheco	7/24/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	3.2	mg/L N	0.05	Henderson	7/24/2006	
pH	SM 4500 H+B	7.80	pH Units		Pacheco	7/21/2006	
pH - Temperature	SM 4500 H+B	18.8	°C		Pacheco	7/21/2006	
Potassium - ICP-OES	EPA 200.7	5.7	mg/L	1	Keller	7/26/2006	B
Sodium - ICP-OES	EPA 200.7	41	mg/L	0.5	Keller	7/26/2006	
Sulfate - Ion Chromatography	EPA 300.0	18	mg/L	0.2	Henderson	7/24/2006	
Total Dissolved Solids	SM 2540 C	270	mg/L	10	Pacheco	7/25/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	7/26/2006	
Turbidity	SM 2130 B	1.0	NTU	0.1	Hellmann	7/21/2006	
Zinc - ICP-MS	EPA 200.8	0.019	mg/L	0.01	Li	7/27/2006	

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 77331

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 8/1/2006
Client: ITF-112
Taken by: D. Smith
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200607-1189	DV-TW#3	7/21/2006	7:45 AM	7/21/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	130	mg/L CaCO3	2	Pacheco	7/21/2006	
Alkalinity/Bicarbonate	SM 2320 B	130	mg/L CaCO3	2	Pacheco	7/21/2006	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	7/21/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	7/21/2006	
Arsenic - ICP-MS	EPA 200.8	0.012	mg/L	0.002	Li	7/27/2006	
Barium - ICP-MS	EPA 200.8	0.008	mg/L	0.002	Li	7/27/2006	
Calcium - ICP-OES	EPA 200.7	17	mg/L	0.5	Keller	7/26/2006	
Chloride - Ion Chromatography	EPA 300.0	14	mg/L	0.5	Henderson	7/24/2006	
Color Apparent	EPA 110.2	<5	Color Units	5	Hellmann	7/21/2006	
Copper - ICP-MS	EPA 200.8	<0.002	mg/L	0.002	Li	7/27/2006	
Fluoride - Ion Chromatography	EPA 300.0	0.2	mg/L	0.1	Henderson	7/24/2006	
Iron - ICP-OES	EPA 200.7	0.05	mg/L	0.05	Keller	7/26/2006	
Lead - ICP-MS	EPA 200.8	<0.002	mg/L	0.002	Li	7/27/2006	
Magnesium - ICP-OES	EPA 200.7	9.2	mg/L	0.5	Keller	7/26/2006	
Manganese - ICP-MS	EPA 200.8	0.007	mg/L	0.004	Li	7/27/2006	B
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Pacheco	7/24/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	3.7	mg/L N	0.05	Henderson	7/24/2006	
pH	SM 4500 H+B	7.81	pH Units		Pacheco	7/21/2006	
pH - Temperature	SM 4500 H+B	19.2	°C		Pacheco	7/21/2006	
Potassium - ICP-OES	EPA 200.7	5.6	mg/L	1	Keller	7/26/2006	B
Sodium - ICP-OES	EPA 200.7	39	mg/L	0.5	Keller	7/26/2006	
Sulfate - Ion Chromatography	EPA 300.0	17	mg/L	0.2	Henderson	7/24/2006	
Total Dissolved Solids	SM 2540 C	250	mg/L	10	Pacheco	7/25/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	7/26/2006	
Turbidity	SM 2130 B	0.4	NTU	0.1	Hellmann	7/21/2006	
Zinc - ICP-MS	EPA 200.8	0.024	mg/L	0.01	Li	7/27/2006	

Data Flag Legend:

B - Element or compound also found in associated Method Blank.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 77331

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 8/1/2006
Client: ITF-112
Taken by: D. Smith
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	104.0			2.33		
Alkalinity/Bicarbonate				2.33		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	100.0				<0.002	mg/L
Barium - ICP-MS	103.0				<0.002	mg/L
Calcium - ICP-OES	99.0	106.0	104.0	1.90	<0.5	mg/L
Chloride - Ion Chromatography	105.0	98.0	101.0	3.02	<0.5	mg/L
Copper - ICP-MS	101.0				<0.002	mg/L
Fluoride - Ion Chromatography	103.0	99.0	102.0	3.00	<0.1	mg/L
Iron - ICP-OES	101.0	104.0	104.0	0.00	<0.05	mg/L
Lead - ICP-MS	104.0				<0.002	mg/L
Magnesium - ICP-OES	99.0	104.0	104.0	0.48	<0.5	mg/L
Manganese - ICP-MS	101.0				<0.004	mg/L
MBAS Surfactants	91.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	105.0	103.0	105.0	1.92	<0.05	mg/L
pH				0.00		
pH - Temperature				0.00		
Potassium - ICP-OES	98.0	104.0	105.0	1.44	<1	mg/L
Sodium - ICP-OES	97.0	95.0	98.0	3.11	<0.5	mg/L
Sulfate - Ion Chromatography	103.0	93.0	97.0	4.21	<0.2	mg/L
Total Dissolved Solids		98.0		33.22	<10	mg/L
Turbidity	105.0			6.59		
Zinc - ICP-MS	102.0				<0.01	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 77349

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	8/3/2006
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	D. Smith
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

8/3/2006

Sierra Environmental Monitoring, Inc.

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 77349

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 8/3/2006
Client: ITF-112
Taken by: D. Smith
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200607-1254	DV-TW #3	7/24/2006	11:15 AM	7/24/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	130	mg/L CaCO3	2	Pacheco	7/25/2006	
Alkalinity/Bicarbonate	SM 2320 B	130	mg/L CaCO3	2	Pacheco	7/25/2006	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	7/25/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	7/25/2006	
Arsenic - ICP-MS	EPA 200.8	0.012	mg/L	0.002	Li	7/27/2006	
Barium - ICP-MS	EPA 200.8	0.014	mg/L	0.002	Li	7/27/2006	
Calcium - ICP-OES	EPA 200.7	18	mg/L	0.5	Keller	7/26/2006	
Chloride - Ion Chromatography	EPA 300.0	14	mg/L	0.5	Henderson	7/24/2006	
Color Apparent	EPA 110.2	<5	Color Units	5	Hellmann	7/26/2006	
Copper - ICP-MS	EPA 200.8	0.004	mg/L	0.002	Li	7/27/2006	
Fluoride - Ion Chromatography	EPA 300.0	0.2	mg/L	0.1	Henderson	7/24/2006	
Iron - ICP-OES	EPA 200.7	0.08	mg/L	0.05	Keller	7/26/2006	
Lead - ICP-MS	EPA 200.8	0.002	mg/L	0.002	Li	7/27/2006	
Magnesium - ICP-OES	EPA 200.7	9.0	mg/L	0.5	Keller	7/26/2006	
Manganese - ICP-MS	EPA 200.8	0.006	mg/L	0.004	Li	7/27/2006	B
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Pacheco	7/26/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	3.4	mg/L N	0.05	Henderson	7/24/2006	
pH	SM 4500 H+B	7.71	pH Units		Pacheco	7/25/2006	
pH - Temperature	SM 4500 H+B	18.4	°C		Pacheco	7/25/2006	
Potassium - ICP-OES	EPA 200.7	7.4	mg/L	1	Keller	7/26/2006	B
Sodium - ICP-OES	EPA 200.7	56	mg/L	0.5	Keller	7/26/2006	
Sulfate - Ion Chromatography	EPA 300.0	18	mg/L	0.2	Henderson	7/24/2006	
Total Dissolved Solids	SM 2540 C	250	mg/L	10	Pacheco	7/27/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	7/26/2006	
Turbidity	SM 2130 B	1.0	NTU	0.1	Hellmann	7/26/2006	
Zinc - ICP-MS	EPA 200.8	0.027	mg/L	0.01	Li	7/27/2006	

Data Flag Legend:

B - Element or compound also found in associated Method Blank.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 77349

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 8/3/2006
Client: ITF-112
Taken by: D. Smith
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	105.0			1.62		
Alkalinity/Bicarbonate				1.62		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	100.0	90.0	50.0	57.14	<0.002	mg/L
Barium - ICP-MS	103.0	90.0	88.0	2.35	<0.002	mg/L
Calcium - ICP-OES	99.0	106.0	104.0	1.90	<0.5	mg/L
Chloride - Ion Chromatography	103.0	90.0	91.0	1.10	<0.5	mg/L
Copper - ICP-MS	101.0	111.0	111.0	0.00	<0.002	mg/L
Fluoride - Ion Chromatography	103.0	103.0	105.0	1.92	<0.1	mg/L
Iron - ICP-OES	101.0	104.0	104.0	0.00	<0.05	mg/L
Lead - ICP-MS	104.0	102.0	99.0	2.58	<0.002	mg/L
Magnesium - ICP-OES	99.0	104.0	104.0	0.48	<0.5	mg/L
Manganese - ICP-MS	101.0	108.0	104.0	3.77	<0.004	mg/L
MBAS Surfactants	89.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	105.0	102.0	103.0	0.98	<0.05	mg/L
pH				0.00		
pH - Temperature				0.00		
Potassium - ICP-OES	98.0	104.0	105.0	1.44	<1	mg/L
Sodium - ICP-OES	97.0	95.0	98.0	3.11	<0.5	mg/L
Sulfate - Ion Chromatography	102.0	81.0	82.0	1.23	<0.2	mg/L
Total Dissolved Solids		101.0		0.21	<10	mg/L
Turbidity	101.0			0.00		
Zinc - ICP-MS	102.0	101.0	97.0	4.55	<0.01	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 70313

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	8/31/2005
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	D. Smith
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- S200508-1201 - MBAS: Reporting Limit is elevated due to matrix interference.

Approved By: **Date:**

Sierra Environmental Monitoring, Inc. 8/31/2005

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 70313

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 8/31/2005
Client: ITF-112
Taken by: D. Smith
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200508-1201	DV-TW4	8/18/2005		8/19/2005

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	178	mg/L CaCO3	2	Osterreicher	8/22/2005	
Alkalinity/Bicarbonate	SM 2320 B	169	mg/L CaCO3	2	Osterreicher	8/22/2005	
Alkalinity/Carbonate	SM 2320 B	9	mg/L CaCO3	2	Osterreicher	8/22/2005	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Osterreicher	8/22/2005	
Arsenic - ICP-MS	EPA 200.8	0.016	mg/L	0.002	Layman	8/26/2005	
Barium - ICP-MS	EPA 200.8	0.026	mg/L	0.002	Layman	8/26/2005	Jl
Calcium - ICP-OES	EPA 200.7	4.6	mg/L	0.5	Keller	8/25/2005	
Chloride - Ion Chromatography	EPA 300.0	6.2	mg/L	0.5	Henderson	8/19/2005	
Color Apparent	EPA 110.2	20	Color Units	5	Pacheco	8/19/2005	
Copper - ICP-MS	EPA 200.8	<0.002	mg/L	0.002	Layman	8/26/2005	
Fluoride - Ion Chromatography	EPA 300.0	1.0	mg/L	0.1	Henderson	8/19/2005	
Iron - ICP-OES	EPA 200.7	0.98	mg/L	0.05	Keller	8/25/2005	
Lead - ICP-MS	EPA 200.8	<0.002	mg/L	0.002	Layman	8/26/2005	Jl
Magnesium - ICP-OES	EPA 200.7	1.6	mg/L	0.5	Keller	8/25/2005	
Manganese - ICP-MS	EPA 200.8	0.064	mg/L	0.006	Layman	8/26/2005	B
MBAS Surfactants	SM 5540 C	<0.1	mg/L	0.1	Osterreicher	8/19/2005	
Nitrate-N - Ion Chromatography	EPA 300.0	0.55	mg/L N	0.05	Henderson	8/19/2005	
pH	SM 4500 H+B	8.45	pH Units		Osterreicher	8/22/2005	
pH - Temperature	SM 4500 H+B	20.4	°C		Osterreicher	8/22/2005	
Potassium - ICP-OES	EPA 200.7	2.9	mg/L	0.5	Keller	8/25/2005	
Sodium - ICP-OES	EPA 200.7	73	mg/L	0.5	Keller	8/25/2005	
Sulfate - Ion Chromatography	EPA 300.0	9.2	mg/L	0.2	Henderson	8/19/2005	
Total Dissolved Solids	SM 2540 C	240	mg/L	10	Pacheco	8/23/2005	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	8/24/2005	
Turbidity	SM 2130 B	9.1	NTU	0.1	Pacheco	8/19/2005	
Zinc - ICP-MS	EPA 200.8	0.07	mg/L	0.06	Layman	8/26/2005	B

Data Flag Legend:

B - Element or compound also found in associated Method Blank.
Jl - The batch MS and/or MSD were outside acceptance limits. The batch LCS was acceptable.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 70313

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 8/31/2005
Client: ITF-112
Taken by: D. Smith
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	103.0			1.96		
Alkalinity/Bicarbonate				1.34		
Alkalinity/Carbonate				16.37		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	101.0	103.0	106.0	2.87	<0.001	mg/L
Barium - ICP-MS	101.0	34.0	34.0	2.05	<0.001	mg/L
Calcium - ICP-OES	99.0	102.0	106.0	3.85	<0.5	mg/L
Chloride - Ion Chromatography	98.0	98.0	98.0	0.00	<0.5	mg/L
Copper - ICP-MS	100.0	100.0	101.0	1.00	<0.001	mg/L
Fluoride - Ion Chromatography	98.0	101.0	102.0	0.99	<0.1	mg/L
Iron - ICP-OES	100.0	103.0	104.0	0.58	<0.05	mg/L
Lead - ICP-MS	97.0	64.0	64.0	0.16	<0.001	mg/L
Magnesium - ICP-OES	98.0	99.0	100.0	2.01	<0.5	mg/L
Manganese - ICP-MS	99.0	99.0	100.0	1.01	<0.003	mg/L
MBAS Surfactants	95.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	98.0	101.0	102.0	0.99	<0.05	mg/L
pH				0.59		
pH - Temperature				0.49		
Potassium - ICP-OES	99.0	119.0	120.0	1.25	<0.5	mg/L
Sodium - ICP-OES	98.0				<0.5	mg/L
Sulfate - Ion Chromatography	95.0	86.0	87.0	1.16	<0.2	mg/L
Total Dissolved Solids		103.0		10.98	<10	mg/L
Turbidity	104.0			0.55		
Zinc - ICP-MS	102.0	100.0	100.0	0.00	<0.03	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78839

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	10/20/2006
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	H. Swartzentrube
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

Sierra Environmental Monitoring, Inc. 10/20/2006

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78839

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 10/20/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200609-1905	DV-TW #4	9/28/2006	10:30 AM	9/29/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	184	mg/L CaCO3	2	Pacheco	10/2/2006	
Alkalinity/Bicarbonate	SM 2320 B	176	mg/L CaCO3	2	Pacheco	10/2/2006	
Alkalinity/Carbonate	SM 2320 B	8	mg/L CaCO3	2	Pacheco	10/2/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	10/2/2006	
Arsenic - ICP-MS	EPA 200.8	0.011	mg/L	0.002	Li	10/18/2006	
Barium - ICP-MS	EPA 200.8	0.012	mg/L	0.002	Li	10/18/2006	
Calcium - ICP-OES	EPA 200.7	2.8	mg/L	0.5	Keller	10/10/2006	
Chloride - Ion Chromatography	EPA 300.0	5.5	mg/L	0.5	Henderson	10/2/2006	
Color Apparent	EPA 110.2	30	Color Units	5	Hellmann	9/29/2006	
Copper - ICP-MS	EPA 200.8	0.008	mg/L	0.002	Li	10/18/2006	
Fluoride - Ion Chromatography	EPA 300.0	0.9	mg/L	0.1	Henderson	10/2/2006	
Iron - ICP-OES	EPA 200.7	0.24	mg/L	0.05	Keller	10/10/2006	
Lead - ICP-MS	EPA 200.8	0.003	mg/L	0.002	Li	10/18/2006	
Magnesium - ICP-OES	EPA 200.7	0.54	mg/L	0.5	Keller	10/10/2006	
Manganese - ICP-MS	EPA 200.8	0.043	mg/L	0.002	Li	10/18/2006	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Hellmann	9/29/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	0.06	mg/L N	0.05	Henderson	10/2/2006	Ha
pH	SM 4500 H+B	8.40	pH Units		Pacheco	10/2/2006	
pH - Temperature	SM 4500 H+B	20.2	°C		Pacheco	10/2/2006	
Potassium - ICP-OES	EPA 200.7	1.2	mg/L	0.5	Keller	10/10/2006	
Sodium - ICP-OES	EPA 200.7	77	mg/L	0.5	Keller	10/10/2006	
Sulfate - Ion Chromatography	EPA 300.0	0.9	mg/L	0.2	Henderson	10/2/2006	
Total Dissolved Solids	SM 2540 C	230	mg/L	10	Pacheco	10/3/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	10/5/2006	
Turbidity	SM 2130 B	1.2	NTU	0.1	Hellmann	9/29/2006	
Zinc - ICP-MS	EPA 200.8	0.06	mg/L	0.03	Li	10/18/2006	B

Data Flag Legend:

B - Element or compound also found in associated Method Blank.
Ha - Sample was analyzed beyond holding time for this parameter per client's request.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 78839

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 10/20/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	108.0			1.29		
Alkalinity/Bicarbonate				1.29		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	100.0	105.0	105.0	0.00	<0.002	mg/L
Barium - ICP-MS	98.0	101.0	101.0	0.00	<0.002	mg/L
Calcium - ICP-OES	98.0	99.0	99.0	0.00	<0.5	mg/L
Chloride - Ion Chromatography	103.0	106.0	108.0	0.93	<0.5	mg/L
Copper - ICP-MS	99.0	103.0	102.0	0.98	<0.002	mg/L
Fluoride - Ion Chromatography	103.0	104.0	106.0	1.90	<0.1	mg/L
Iron - ICP-OES	100.0	102.0	101.0	0.99	<0.05	mg/L
Lead - ICP-MS	100.0	104.0	104.0	0.00	<0.002	mg/L
Magnesium - ICP-OES	99.0	101.0	100.0	0.50	<0.5	mg/L
Manganese - ICP-MS	101.0	104.0	104.0	0.00	<0.002	mg/L
MBAS Surfactants	91.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	106.0	109.0	110.0	0.91	<0.05	mg/L
pH				0.00		
pH - Temperature				6.03		
Potassium - ICP-OES	99.0	100.0	100.0	1.00	<0.5	mg/L
Sodium - ICP-OES	99.0	95.0	99.0	4.12	<0.5	mg/L
Sulfate - Ion Chromatography	102.0	103.0	105.0	1.92	<0.2	mg/L
Total Dissolved Solids		102.0		7.94	<10	mg/L
Turbidity	91.0			0.00		
Zinc - ICP-MS	101.0	100.0	100.0	1.00	<0.03	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 79051

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	10/17/2006
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	H. Swartzentrube
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

10/17/2006

Sierra Environmental Monitoring, Inc.

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 79051

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 10/17/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200610-0519	DV-TW #4	10/6/2006	11:00 AM	10/9/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	170	mg/L CaCO3	2	Pacheco	10/10/2006	
Alkalinity/Bicarbonate	SM 2320 B	170	mg/L CaCO3	2	Pacheco	10/10/2006	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	10/10/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	10/10/2006	
Arsenic - ICP-MS	EPA 200.8	0.018	mg/L	0.002	Li	10/13/2006	
Barium - ICP-MS	EPA 200.8	0.017	mg/L	0.002	Li	10/13/2006	
Calcium - ICP-OES	EPA 200.7	2.8	mg/L	0.5	Keller	10/11/2006	
Chloride - Ion Chromatography	EPA 300.0	5.0	mg/L	0.5	Henderson	10/9/2006	
Color Apparent	EPA 110.2	25	Color Units	5	Hellmann	10/12/2006	
Copper - ICP-MS	EPA 200.8	0.007	mg/L	0.002	Li	10/13/2006	Jl
Fluoride - Ion Chromatography	EPA 300.0	0.61	mg/L	0.1	Henderson	10/9/2006	
Iron - ICP-OES	EPA 200.7	0.11	mg/L	0.05	Keller	10/11/2006	
Lead - ICP-MS	EPA 200.8	0.002	mg/L	0.002	Li	10/13/2006	
Magnesium - ICP-OES	EPA 200.7	0.55	mg/L	0.5	Keller	10/11/2006	
Manganese - ICP-MS	EPA 200.8	0.041	mg/L	0.002	Li	10/13/2006	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Pacheco	10/9/2006	Hr
Nitrate-N - Ion Chromatography	EPA 300.0	<0.05	mg/L N	0.05	Henderson	10/9/2006	
pH	SM 4500 H+B	8.29	pH Units		Pacheco	10/10/2006	
pH - Temperature	SM 4500 H+B	17.9	°C		Pacheco	10/10/2006	
Potassium - ICP-OES	EPA 200.7	1.4	mg/L	0.5	Keller	10/11/2006	
Sodium - ICP-OES	EPA 200.7	72	mg/L	0.5	Keller	10/11/2006	
Sulfate - Ion Chromatography	EPA 300.0	3.9	mg/L	0.2	Henderson	10/9/2006	
Total Dissolved Solids	SM 2540 C	250	mg/L	10	Pacheco	10/10/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	10/10/2006	
Turbidity	SM 2130 B	4.2	NTU	0.1	Kobza	10/11/2006	
Zinc - ICP-MS	EPA 200.8	0.03	mg/L	0.01	Li	10/13/2006	

Data Flag Legend:

Hr - Sample was received beyond holding time for this parameter and analyzed per client's request.
Jl - The batch MS and/or MSD were outside acceptance limits. The batch LCS was acceptable.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 79051

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 10/17/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	110.0			1.18		
Alkalinity/Bicarbonate				1.18		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	98.0	113.0	107.0	5.45	<0.002	mg/L
Barium - ICP-MS	100.0	130.0	125.0	3.93	<0.002	mg/L
Calcium - ICP-OES	99.0	109.0	109.0	0.00	<0.5	mg/L
Chloride - Ion Chromatography					<0.5	mg/L
Copper - ICP-MS	103.0	136.0	130.0	4.51	<0.002	mg/L
Fluoride - Ion Chromatography					<0.1	mg/L
Iron - ICP-OES	99.0	103.0	103.0	0.00	<0.05	mg/L
Lead - ICP-MS	101.0	121.0	115.0	5.08	<0.002	mg/L
Magnesium - ICP-OES	99.0	104.0	105.0	0.96	<0.5	mg/L
Manganese - ICP-MS	103.0	110.0	106.0	3.70	<0.002	mg/L
MBAS Surfactants	93.0				<0.05	mg/L
Nitrate-N - Ion Chromatography					<0.05	mg/L
pH				0.24		
pH - Temperature				0.56		
Potassium - ICP-OES	99.0	101.0	101.0	0.00	<0.5	mg/L
Sodium - ICP-OES	99.0	106.0	107.0	0.94	<0.5	mg/L
Sulfate - Ion Chromatography					<0.2	mg/L
Total Dissolved Solids		100.0		0.10	<10	mg/L
Turbidity	98.0			0.00		
Zinc - ICP-MS	99.0	104.0	100.0	3.42	<0.01	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 79156

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 10/20/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

Sierra Environmental Monitoring, Inc. 10/20/2006

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 79156

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 10/20/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200610-0855	DV-TW #5	10/10/2006	12:00 PM	10/11/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	130	mg/L CaCO3	2	Kobza	10/13/2006	
Alkalinity/Bicarbonate	SM 2320 B	130	mg/L CaCO3	2	Kobza	10/13/2006	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3	2	Kobza	10/13/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Kobza	10/13/2006	
Arsenic - ICP-MS	EPA 200.8	0.003	mg/L	0.002	Li	10/18/2006	
Barium - ICP-MS	EPA 200.8	0.071	mg/L	0.002	Li	10/18/2006	
Calcium - ICP-OES	EPA 200.7	34	mg/L	0.5	Keller	10/17/2006	
Chloride - Ion Chromatography	EPA 300.0	29	mg/L	0.5	Henderson	10/16/2006	
Color Apparent	EPA 110.2	>100	Color Units	5	Hellmann	10/12/2006	
Copper - ICP-MS	EPA 200.8	0.014	mg/L	0.002	Li	10/18/2006	
Fluoride - Ion Chromatography	EPA 300.0	0.2	mg/L	0.1	Henderson	10/16/2006	
Iron - ICP-OES	EPA 200.7	1.8	mg/L	0.05	Keller	10/17/2006	
Lead - ICP-MS	EPA 200.8	0.004	mg/L	0.002	Li	10/18/2006	
Magnesium - ICP-OES	EPA 200.7	4.4	mg/L	0.5	Keller	10/17/2006	
Manganese - ICP-MS	EPA 200.8	0.28	mg/L	0.002	Li	10/18/2006	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Hellmann	10/12/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	1.6	mg/L N	0.05	Henderson	10/16/2006	Ha
pH	SM 4500 H+B	7.73	pH Units		Kobza	10/13/2006	
pH - Temperature	SM 4500 H+B	21.7	°C		Kobza	10/13/2006	
Potassium - ICP-OES	EPA 200.7	3.1	mg/L	0.5	Keller	10/17/2006	
Sodium - ICP-OES	EPA 200.7	42	mg/L	0.5	Keller	10/17/2006	
Sulfate - Ion Chromatography	EPA 300.0	27	mg/L	0.2	Henderson	10/16/2006	
Total Dissolved Solids	SM 2540 C	300	mg/L	10	Pacheco	10/16/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	10/16/2006	
Turbidity	SM 2130 B	76	NTU	0.4	Kobza	10/11/2006	
Zinc - ICP-MS	EPA 200.8	0.10	mg/L	0.01	Li	10/18/2006	

Data Flag Legend:

Ha - Sample was analyzed beyond holding time for this parameter per client's request.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 79156

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 10/20/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	110.0			0.00		
Alkalinity/Bicarbonate				0.00		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	100.0	105.0	106.0	0.95	<0.002	mg/L
Barium - ICP-MS	98.0	101.0	104.0	2.93	<0.002	mg/L
Calcium - ICP-OES	98.0	100.0	99.0	0.50	<0.5	mg/L
Chloride - Ion Chromatography	102.0	102.0	105.0	2.90	<0.5	mg/L
Copper - ICP-MS	99.0	109.0	102.0	6.66	<0.002	mg/L
Fluoride - Ion Chromatography	102.0	105.0	104.0	0.96	<0.1	mg/L
Iron - ICP-OES	99.0	99.0	103.0	3.36	<0.05	mg/L
Lead - ICP-MS	100.0	102.0	104.0	1.95	<0.002	mg/L
Magnesium - ICP-OES						
Manganese - ICP-MS	101.0	106.0	106.0	0.00	<0.002	mg/L
MBAS Surfactants	104.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	105.0				<0.05	mg/L
pH				3.99		
pH - Temperature				4.72		
Potassium - ICP-OES	99.0	99.0	100.0	0.50	<0.5	mg/L
Sodium - ICP-OES	99.0	100.0	99.0	2.01	<0.5	mg/L
Sulfate - Ion Chromatography	101.0	97.0	99.0	2.04	<0.2	mg/L
Total Dissolved Solids		95.0		3.82	<10	mg/L
Turbidity	98.0			0.00		
Zinc - ICP-MS	101.0	102.0	100.0	1.98	<0.01	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 79287

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	11/2/2006
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	H. Swartzentrube
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

11/2/2006

Sierra Environmental Monitoring, Inc.

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 79287

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 11/2/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200610-1236	DV-TW #5	10/16/2006	12:15 PM	10/17/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	110	mg/L CaCO3	2	Pacheco	10/19/2006	
Alkalinity/Bicarbonate	SM 2320 B	110	mg/L CaCO3	2	Pacheco	10/19/2006	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	10/19/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	10/19/2006	
Arsenic - ICP-MS	EPA 200.8	0.004	mg/L	0.002	Li	10/31/2006	
Barium - ICP-MS	EPA 200.8	0.050	mg/L	0.002	Li	10/31/2006	
Calcium - ICP-OES	EPA 200.7	26	mg/L	0.5	Keller	10/26/2006	
Chloride - Ion Chromatography	EPA 300.0	18	mg/L	0.5	Henderson	10/19/2006	
Color Apparent	EPA 110.2	>100	Color Units	5	Hellmann	10/18/2006	
Copper - ICP-MS	EPA 200.8	0.013	mg/L	0.002	Li	10/31/2006	
Fluoride - Ion Chromatography	EPA 300.0	0.3	mg/L	0.1	Henderson	10/19/2006	
Iron - ICP-OES	EPA 200.7	1.2	mg/L	0.05	Keller	10/26/2006	
Lead - ICP-MS	EPA 200.8	0.002	mg/L	0.002	Li	10/31/2006	
Magnesium - ICP-OES	EPA 200.7	2.7	mg/L	0.5	Keller	10/26/2006	
Manganese - ICP-MS	EPA 200.8	0.068	mg/L	0.002	Li	10/31/2006	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Pacheco	10/18/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	2.4	mg/L N	0.05	Henderson	10/19/2006	
pH	SM 4500 H+B	7.80	pH Units		Pacheco	10/19/2006	
pH - Temperature	SM 4500 H+B	19.0	°C		Pacheco	10/19/2006	
Potassium - ICP-OES	EPA 200.7	2.8	mg/L	0.5	Keller	10/26/2006	
Sodium - ICP-OES	EPA 200.7	36	mg/L	0.5	Keller	10/26/2006	
Sulfate - Ion Chromatography	EPA 300.0	21	mg/L	0.2	Henderson	10/19/2006	
Total Dissolved Solids	SM 2540 C	240	mg/L	10	Pacheco	10/23/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	10/25/2006	
Turbidity	SM 2130 B	82	NTU	1.0	Hellmann	10/18/2006	
Zinc - ICP-MS	EPA 200.8	0.06	mg/L	0.01	Li	10/31/2006	

Data Flag Legend:

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 79287

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 11/2/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	107.0			0.00		
Alkalinity/Bicarbonate				0.00		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	106.0	108.0	106.0	1.88	<0.002	mg/L
Barium - ICP-MS	101.0	101.0	100.0	1.00	<0.002	mg/L
Calcium - ICP-OES	100.0	100.0	104.0	3.44	<0.5	mg/L
Chloride - Ion Chromatography	103.0	95.0	95.0	0.00	<0.5	mg/L
Copper - ICP-MS	102.0	102.0	101.0	0.99	<0.002	mg/L
Fluoride - Ion Chromatography	103.0	97.0	97.0	0.52	<0.1	mg/L
Iron - ICP-OES	101.0	102.0	105.0	2.32	<0.05	mg/L
Lead - ICP-MS	102.0	100.0	103.0	2.96	<0.002	mg/L
Magnesium - ICP-OES	101.0	100.0	101.0	1.50	<0.5	mg/L
Manganese - ICP-MS	102.0	102.0	103.0	0.97	<0.002	mg/L
MBAS Surfactants	104.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	106.0	101.0	101.0	0.00	<0.05	mg/L
pH				0.30		
pH - Temperature				3.03		
Potassium - ICP-OES	101.0	99.0	98.0	1.02	<0.5	mg/L
Sodium - ICP-OES	101.0	100.0	104.0	2.94	<0.5	mg/L
Sulfate - Ion Chromatography	103.0	85.0	88.0	3.47	<0.2	mg/L
Total Dissolved Solids		91.0		2.49	<10	mg/L
Turbidity	98.0			2.99		
Zinc - ICP-MS	104.0	98.0	99.0	1.02	<0.01	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 79417

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.		**Date:**	11/3/2006
Attn: Dwight Smith		**Client:**	ITF-112
P.O. Box 1482		**Taken by:**	H. Swartzentrube
Truckee, CA 96160		**PO #:**	

Dear Dwight Smith,

It is the policy of Sierra Environmental Monitoring, Inc to strictly adhere to a comprehensive Quality Assurance Plan that insures the data presented in this report are both accurate and precise. Sierra Environmental Monitoring, Inc. maintains accreditation in the State of Nevada (NV-15) and the State of California (ELAP 2526).

The data presented in this report were obtained from the analysis of samples received under a chain of custody. Unless otherwise noted below, samples were received in good condition, properly preserved and within the hold time for the requested analyses. Any anomalies associated with the analysis of the samples have been flagged with appropriate explanation in the Analysis Report section of this Laboratory Report.

General Comments:

- There are no general comments for this report.

Individual Sample Comments:

- There are no specific comments that are associated with these samples.

Approved By: **Date:**

Sierra Environmental Monitoring, Inc. 11/3/2006

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 79417

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 11/3/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Analysis Report

Sample ID:	Customer Sample ID	Date Sampled	Time Sampled	Date Received
S200610-1576	DV-TW #5	10/20/2006	4:00 PM	10/23/2006

Parameter	Method	Result	Units	Reporting Limit	Analyst	Date Analyzed	Data Flag
Alkalinity, Total	SM 2320 B	110	mg/L CaCO3	2	Pacheco	10/24/2006	
Alkalinity/Bicarbonate	SM 2320 B	110	mg/L CaCO3	2	Pacheco	10/24/2006	
Alkalinity/Carbonate	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	10/24/2006	
Alkalinity/Hydroxide	SM 2320 B	<2	mg/L CaCO3	2	Pacheco	10/24/2006	
Arsenic - ICP-MS	EPA 200.8	0.003	mg/L	0.002	Li	10/31/2006	
Barium - ICP-MS	EPA 200.8	0.038	mg/L	0.002	Li	10/31/2006	
Calcium - ICP-OES	EPA 200.7	27	mg/L	0.5	Keller	11/1/2006	
Chloride - Ion Chromatography	EPA 300.0	19	mg/L	0.5	Henderson	10/23/2006	
Color Apparent	EPA 110.2	<5	Color Units	5	Pacheco	10/23/2006	
Copper - ICP-MS	EPA 200.8	0.010	mg/L	0.002	Li	10/31/2006	
Fluoride - Ion Chromatography	EPA 300.0	0.3	mg/L	0.1	Henderson	10/23/2006	
Iron - ICP-OES	EPA 200.7	0.13	mg/L	0.05	Keller	11/1/2006	
Lead - ICP-MS	EPA 200.8	0.006	mg/L	0.002	Li	10/31/2006	
Magnesium - ICP-OES	EPA 200.7	2.7	mg/L	0.5	Keller	11/1/2006	
Manganese - ICP-MS	EPA 200.8	0.032	mg/L	0.002	Li	10/31/2006	
MBAS Surfactants	SM 5540 C	<0.05	mg/L	0.05	Pacheco	10/24/2006	
Nitrate-N - Ion Chromatography	EPA 300.0	2.3	mg/L N	0.05	Henderson	10/23/2006	
pH	SM 4500 H+B	7.40	pH Units		Pacheco	10/24/2006	
pH - Temperature	SM 4500 H+B	17.4	°C		Pacheco	10/24/2006	
Potassium - ICP-OES	EPA 200.7	0.91	mg/L	0.5	Keller	11/1/2006	
Sodium - ICP-OES	EPA 200.7	36	mg/L	0.5	Keller	11/1/2006	
Sulfate - Ion Chromatography	EPA 300.0	21	mg/L	0.2	Henderson	10/23/2006	
Total Dissolved Solids	SM 2540 C	250	mg/L	10	Hellmann	10/27/2006	
Total Recoverable Metals - Acid Dig	EPA 200.2	Completed			Kleinworth	10/30/2006	
Turbidity	SM 2130 B	3.2	NTU	0.1	Pacheco	10/23/2006	
Zinc - ICP-MS	EPA 200.8	0.06	mg/L	0.02	Li	10/31/2006	B

Data Flag Legend:

B - Element or compound also found in associated Method Blank.

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager

Laboratory Report
Report ID: 79417

Sierra Environmental Monitoring, Inc.

Interflow Hydrology, Inc.
Attn: Dwight Smith
P.O. Box 1482
Truckee, CA 96160

Date: 11/3/2006
Client: ITF-112
Taken by: H. Swartzentrube
PO #:

Quality Control Report

Parameter	*LCS, % Recovery*	*MS, % Recovery*	*MSD, % Recovery*	*RPD, %*	*Method Blank*	
Alkalinity, Total	108.0			1.30		
Alkalinity/Bicarbonate				1.30		
Alkalinity/Carbonate				0.00		
Alkalinity/Hydroxide				0.00		
Arsenic - ICP-MS	106.0	111.0	109.0	1.81	<0.002	mg/L
Barium - ICP-MS	101.0	104.0	104.0	0.00	<0.002	mg/L
Calcium - ICP-OES	98.0	104.0	102.0	1.94	<0.5	mg/L
Chloride - Ion Chromatography	101.0	100.0	96.0	4.08	<0.5	mg/L
Copper - ICP-MS	102.0	107.0	103.0	3.82	<0.002	mg/L
Fluoride - Ion Chromatography	102.0	106.0	102.0	3.86	<0.1	mg/L
Iron - ICP-OES	99.0	103.0	104.0	0.77	<0.05	mg/L
Lead - ICP-MS	102.0	107.0	105.0	1.89	<0.002	mg/L
Magnesium - ICP-OES	100.0	107.0	107.0	0.00	<0.5	mg/L
Manganese - ICP-MS	102.0	106.0	105.0	0.95	<0.002	mg/L
MBAS Surfactants	99.0				<0.05	mg/L
Nitrate-N - Ion Chromatography	100.0	104.0	101.0	2.93	<0.05	mg/L
pH				0.24		
pH - Temperature				0.61		
Potassium - ICP-OES	98.0	102.0	102.0	0.00	<0.5	mg/L
Sodium - ICP-OES	98.0	104.0	100.0	3.42	<0.5	mg/L
Sulfate - Ion Chromatography	100.0	30.0	28.0	6.90	<0.2	mg/L
Total Dissolved Solids				0.48	<10	mg/L
Turbidity	93.0			2.69		
Zinc - ICP-MS	104.0	103.0	100.0	2.94	<0.02	mg/L

Legend: ***LCS- Laboratory Control Standard*** ***MS- Matrix Spike*** ***MSD- Matrix Spike Duplicate***
RPD- Relative Percent Difference

John Kobza, Ph.D.
Laboratory Director

1135 Financial Blvd.
Reno, NV 89502-2348
Phone (775) 857-2400
FAX (775) 857-2404
sem@sem-analytical.com

John C. Seher
Special Consultant
Quality Assurance Manager