GOLDEN STATE ENVIRONMENTAL
Cultural, Environmental & Litigation Support Services
Certified SBA 8(a) / DVBE / WBE / SBE

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May 10, 2005

White Mountain Estates, LLC
332 West Howell Avenue
Ridgecrest, CA 93555

RE: Preliminary Hydrogeologic Investigation, White Mountain Estates – Phase 2, Chalfant Valley, Mono County, California

Attn: Robert (Bob) Stark

Dear Mr. Stark:

Golden State Environmental (GSE) is pleased to provide the following preliminary description of hydrogeologic conditions, a recharge estimate, and CEQA documentation specific to Section VIII - Hydrology and Water Quality for the area of the proposed White Mountain Estates (WME) Phase 2 located in Chalfant Valley, Mono County, California.

Background

The WME Phase 2 is located immediately to the east (uphill) from White Mountain Estates Phase 1, and is approximately 10 miles north of Bishop, California, in Chalfant Valley, along Highway 6[a] (Figure 1). WME Phase 2 is located at the base, and on the western slope, of the White Mountains (Figure 2). The landscape is composed of alluvial fan deposits that are derived from erosion of bedrock, the source of bedrock located to the immediate east of the development. The topography is representative of alluvial fan deposition, fault geomorphology, and surface weathering. Ground surface relief is approximately 4295 feet mean sea level (msl) in the southwest corner, to over 4600 feet msl along the eastern property line of the development. The lower portion has a relief of slightly over 100 feet, to an elevation of approximately 4420 feet msl.

A spring is located in the upper portion of the development at an elevation of approximately 4535 feet msl. This spring is hydraulically upgradient and east of the WME Phase 2 lower development. This, and other springs along a north-south trend, is the result of water surfacing at the intersection of groundwater, ground surface, and semi-permeable faulting[b]. In general, the springs are more than 100 feet higher than the eastern boundary of the Phase 2 lower development.

[a] The development is located in a portion of the south ½ of Section 22, Township 5 South, Range 33 East, Mono County, California.
[b] The presence and orientation of faulting within the WME Phase 2 area is presented under separate cover by Sierra Geotechnical, Inc., Plate 1 – Site Geologic Map and Plate 2 – Geologic Cross Sections A-A' and A'- A''

In addition to the above, it is our understanding that the WME Phase 2 development includes the following:

- Approximately 76.5 acres divided into lots, roads and common area;
- The ground surface is covered with sparse native vegetation;
- 23.25 acres located in the lower elevation (lower development) of Phase 2 will be divided into 38 lots;
- A retention basin of 0.63 acres is set aside as Lot A, and is located between Lot 1 and Lot 2 in the lower development;
- These 38 lots are less than one acre in size each, with a water source planned to be from a community well(s);
- Lot B, located in the upper development of Phase 2, immediately adjacent to and east of Lot 34 in the lower development, is currently set aside for the community well (completed in September 2004);
- A portion of the 30.68 acres located in the upper development of Phase 2 is in an Alquist-Priolo Special Studies Zone[c];
- The number of lots to be located in the upper development of Phase 2 is 8, and may be supplied water from individual site wells or from a community water system;
- The actual number of home sites may vary depending on refinements in the Phase 2 plan;
- At least three natural springs are present in the uppermost development of Phase 2;
- The majority of recommended habitable zones are all located to the west, downgradient, from the springs; and
- Peak capacity for the Phase 2 – lower development (38 lots) groundwater system is 114 gallons per minute (gpm) or 184 acre-feet per year, this derived from an average of 3.0[d] gpm per household.

Site Hydrogeologic Conditions

WME Phase 2 is located within the Tri-Valley area, within Chalfont Valley. Chalfont Valley is bounded on the east by the White Mountains and on the west by sloping lava and pyroclastic flows of the Bishop Tuff. The fault system that runs north-south through the WME Phase 2 upper development, generally defines the eastern margin of the alluvial valley groundwater system[e].

The geology in the vicinity of WME Phase 2 is characterized by alluvial fan deposits that are superposed over valley fill deposits[f], both of Quaternary age. The alluvial fan deposits consist of poorly-sorted, unconsolidated, gravel, sand, silt and clay. The valley fill deposits are composed of moderately to well-sorted, unconsolidated lenses and layers of sand, silty sand, and gravelly sand, and layers and lenses or beds of silty clay, originating mostly from detritus eroded from the bedrock mountains upslope to the east. Structurally, the WME Phase 2 property is situated within the Bishop Basin, one of two structural basins formed by

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[c] Sierra Geotechnical Services, Inc., , and as shown on State of California Special Studies Zones Map – Northeast ¼ Bishop Quadrangle, effective January 1, 1985.

[d] Personal Communication, February 17, 2005, Marvin Moskowitz, Mono County Health Department.

[e] CDMG, 1985 and 1992.

[f] Danskin, Wesley R., 1998. Evaluation of the Hydrogeologic System and Selected Water-Management Alternatives in the Owens Valley, California. U.S. Geological Survey Water-Supply Paper 2370, Pages 13-20.

a narrow, north-south trending steep-sided graben. The eastern side of the graben is delineated by the White Mountain Fault Zone.

WME Phase 2 is located at the very south-eastern end of the Tri-Valley Groundwater Management District[gh]. Groundwater is interpreted to move from areas of recharge to areas of discharge. At WME Phase 2, groundwater appears to originate from multiple sources. These sources include (1) as underflow through the Tri-Valley Basin (2) from infiltration of runoff into alluvium from the drainage overlying WME Phase 2 and the drainage to the immediate north of Coldwater Canyon (herein referred to as "North Coldwater Canyon" for reference purposes) and (3) from complex flow systems probably present within Piute Creek, North Coldwater Canyon and Coldwater Canyon.

Groundwater flow in the immediate vicinity of WME Phase 2 generally follows topography, flowing to the west-southwest within the alluvial fan deposits, cascading over semi-permeable faults that trend north-south along the mountain front, and from north to south in the valley alluvium. Depth to groundwater on Lot B is approximately 200 feet below ground surface (bgs). Wells located west of the WME Phase 2 upper development are considered to be completed within the alluvial fan and/or valley alluvium. Wells installed in the WME Phase 2 upper development will be within the north-south trending fault zone; these wells probably completed in fault-block zones consisting of fine sand to gravel recharged from the White Mountain valleys to the immediate east of the development.

A well was begun in July and completed in September 2004 on Lot B of WME Phase 2, upper development. A delay in well completion was caused by a breakdown of the drilling rig's mud circulation pump after the first 90 feet of borehole had been advanced. The well is constructed to a depth of 338 feet, having a screened interval from 238 to 338 feet, at an elevation of approximately 4405 feet msl. Initial depth to groundwater was measured at 203 feet below top of casing. The well log is provided in Attachment A. The soil cuttings indicated the well intersected alluvial gravels and sand to a depth of 79 feet bgs, and from 79 feet to a depth of 390 feet variable fine sand to sand with gravel zones to the total depth of the well pilot boring. A fine sand to silt zone was present from 205 to 215 feet representing the intersection of the well with the fault identified by Sierra Geotechnical Services, Inc. as Fault 1. This fault has an orientation of N18-22W/36-45SW. Fault gouge may be present; but, since the well borehole was drilled with mud rotary, finer material typical of fault gouge would have been difficult to observe in the borehole cuttings. However, in subsequent discussion with the driller, he noted that the drill string suddenly encountered easy drilling over a 10- to 15-foot zone before returning to harder drilling conditions. The well intersects gravel generally consisting of volcanic and metasedimentary lithic fragments with varying amounts of silt and fine to coarse grained sand. The sand ranges from fine to coarse grained, and contains quartz, some feldspar and other lithic fragments of volcanic and

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[g] Philip Williams & Associates, 1980. The Hydrology of the Benton, Hammil and Chalfont Valleys, Mono County, California. March. On page 23, the calculated outflow from the Chalfant Basin at 13,700 ac-ft/year. The WME Phase 2 water use would therefore be approximately 1% of the calculated underflow from Chalfant Valley to Owens Valley, California.

[h] Danskin, Wesley R., 1998. Evaluation of the Hydrogeologic System and Selected Water-Management Alternatives in the Owens Valley, California. U.S. Geological Survey Water-Supply Paper 2370, Table 11. This is less than 10% of the calculated underflow from Chalfant Valley to Owens Valley, California. As discussed by Danskin, this result is less than reported by others.

metasedimentary composition. Correlation of the geotechnical/fault zone study with the well construction indicates the well is screened to the east of the fault, with filter material extending through the fault zone to within 55 feet of ground surface.

Comparison of the well location with respect to the faulting and depth to water in the WME Phase I Well (50 feet; 4230 feet MSL) and the WME Phase 2 well (203 feet; 4202 feet MSL), suggests the WME Phase 2 well is screened in a fault-block aquifer. Projecting the water table from WME-1 well to WME Phase 2 well, the static water level in the WME Phase 2 well is approximately 58 feet lower than the Phase 1 Well, and indicates hydrogeologic separation from the two flow systems. The presence of the find sand to silt in conjunction with the groundwater surface present at a depth of 203 feet (within the fault gouge zone) will cause the aquifer to respond to pumping as would be anticipated for a semi-confined aquifer. The aquifer thickness is unknown; however, an aquifer thickness of greater than several hundred feet would be expected based on correlation of adjacent valley alluvium thickness.

A constant-discharge aquifer test was initiated at the WME Phase 2 well on September 10, 2004. The well was pumped for 24 hours at a rate of approximately 160 gpm. Analysis of the drawdown and recovery data indicated estimated aquifer parameters in the vicinity of the well are as follows:

- Transmissivity – 1.6 feet^2 per minute (approximately 16,835 gpd/ft) based on an aquifer thickness of 500 feet;
- Hydraulic conductivity of 0.0035 feet per minute (5 feet per day)[i]; and
- Storativity between 0.002 and 0.000001[j].

The aquifer test data and analysis results are presented in Attachment B.

Recharge in North Coldwater Canyon

The recharge estimate for North Coldwater Canyon was derived using the Maxey-Eakin Method which estimates groundwater recharge by using precipitation versus elevation relationships, assuming method-specific estimates of recharge as a percent of precipitation. The Maxey-Eakin Method is a widely used groundwater recharge estimation technique used in arid locations throughout the Basin and Range, and is the primary method of recharge estimation used by the Nevada Department of Conservation and Natural Resources in its reconnaissance studies of groundwater resources[k]. The Maxey-Eakin Method is a good predictor of recharge and, as an estimate, is likely environmentally conservative in that the

[i] This result matches the results of a specific capacity test survey from 46 wells. The summarized data provided by U.S. Filter (Task 1 Report – Preliminary Data Collection and Hydrologic Models for the U.S. Filter Tri-Valley Surplus Groundwater Program, Mono County, California, MHA Environmental Consulting, Inc., March 9, 2001) indicates that wells completed to depths less than 400 feet have a hydraulic conductivity of less than 15 feet per day.

[j] The storativity is dependant on the actual thickness of the aquifer, increasing with increasing aquifer thickness.

[k] Avon, L. and Durbin, T.J., 1994. Evaluation of the Maxey-Eakin Method for Calculating Recharge to Ground-Water Basins in Nevada. American Water Resources Association Water Resources Bulletin, Volume 30, No. 1, pp.99-111, February.

Maxey-Eakin method has been noted to underestimate groundwater recharge in areas of low surface runoff[l].

The North Coldwater Canyon area, directly east of the development, is located between elevations of 4400 feet msl to over 8700 feet msl. Precipitation data applied to this evaluation was collected from three locations within the basin as identified in Table 1. Topographic maps[m] were used to delineate recharge zones by area and elevation. Areas calculated for each elevation (recharge zone) is presented in Table 2. The estimated groundwater recharge from North Coldwater Canyon, having an area of approximately 1200 acres, is calculated to be 30 acre-feet per year.

Recharge in Adjacent Areas

Two adjacent areas, Piute Creek to the north and Coldwater Canyon to the south, likely contribute recharge to the groundwater associated with WME Phase 2 development areas. The drainage basins for both Piute Creek and Coldwater Canyon are significantly bigger than the drainage basin for North Coldwater Canyon; the Piute Creek basin is estimated to be three times greater and Coldwater Canyon at least five times greater. Based on a preliminary assessment, it is likely that each of these basins, assuming a conservative overall 35 percent contribution, could contribute at least an additional 135 acre-feet per year.

Potential Impacts to WME Phase I Well

The WME Phase 1 and WME Phase 2 wells are located in two different fault block aquifers, separated by a suspected semi-permeable fault. Therefore, impact from the Phase 2 well on the Phase 1 well should be negligible.

Potential Water Quantity and Quality Impacts to Springs

The location of the springs, being at elevations of more than 100 feet above the eastern boundary of WME Phase 2 lower development, in conjunction with the recharge to the springs originating from infiltration upgradient (from the east) in North Coldwater Canyon and adjacent canyons (Piute Creek and Coldwater Canyon), indicates pumping from the WME Phase 2 well will not affect flow in the springs.

Recharge in this area probably results from flow discharging from the adjacent canyons, including Piute Creek and Coldwater Canyon. The presence of the fault zone at the mouth of the canyons, probably results in spreading of groundwater to the north and south behind the faults, and subsequent release to the west through underflow and surface flow in the form of local springs. Measured flow from one of the springs located in the upper development of Phase 2 indicated an average surface flow of more than 13 gallons per minute (gpm). The flow measurement from the spring was accomplished using a "V-notched" weir placed in the stream approximately 100 feet below the spring outlet point. Water was collected over a unit of time and the volume measured. A total of 15 measurements were collected and the data

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[l] Davisson, M.L. and T.P. Rose, 2000. Maxey-Eakin Methods for Estimating Groundwater Recharge in the Fenner Watershed, Southeastern California. U.S. Department of Energy, Lawrence Livermore Laboratory, May 15, 13p.

[m] U.S. Geological Survey 7½ minute quadrangle topographic maps used included Laws, California (37118-D3-TF-024) 1994 and Chalfant Valley, California (37118-E3-TF-024), 1994.

statistically analyzed. By comparison, the actual measured flow is in close agreement with a hypothetical flow calculation based solely on weir design (Attachment C).

The presence of the springs along the mapped fault zones indicates a spreading of groundwater draining from the White Mountains; the faults acting as groundwater barriers controlling spring discharge in the area. A likely scenario is the faulting along the western edge of the White Mountains[n] acts as a dam to groundwater flow, with water spilling over low spots in the surface expression of the fault (dam). This damming would allow recharge from drainages to the north and south (Piute Creek and Coldwater Canyon, respectively), to contribute recharge (estimated at 135 acre-feet per year) to the groundwater system east of the fault, thereby contributing to surface flow in the springs. Consequently, recharge to the area is probably inclusive of all three drainages, and may be on the order of 165 acre-feet per year.

Groundwater quality samples were collected from both the Phase 2 well and the spring and analyzed for general minerals, metals (including arsenic) and radioactivity (gross α-particle). A comparison of selected parameters from the analytical results for the Phase 2 well and spring, and the Phase 1 Well samples is provided in the following table:

Comparison of Selected Water Quality Parameters

Parameter	Units	WME Phase 2 Well	Spring	WME Phase I Well
Conductivity	umhos/cm	370	415	420
pH	mg/L	7.9	7.28	7.8
TDS	mg/L	240	298	280
Aluminum	mg/L	ND <0.050	0.041	ND <0.050
Arsenic	mg/L	ND <0.002	ND <0.005	0.0027
Barium	mg/L	ND <0.100	0.017	ND <0.100
Calcium	mg/L	37	53.7	37
Iron	mg/L	ND <0.020	0.110	ND <0.100
Lead	mg/L	ND <0.005	0.011	ND <0.005
Magnesium	mg/L	6.2	10.8	5.4
Potassium	mg/L	4.4	4.87	3.3
Sodium	mg/L	29	19.3	35
Zinc	mg/L	0.093	0.036	ND <0.050
Total Hardness	mg/L	120	178	120
Nitrate (as N)	mg/L	0.23	0.10	2.0
Chloride	mg/L	3.3	2.0	5.2
Sulfate	mg/L	53	55	79
Nitrite (as N)	mg/L	ND <0.10	ND <0.1	ND <0.40
Alkalinity ($CaCO_3$)	mg/L	ND <3.0	160	110
Bicarbonate	mg/L	150	195	140
Total Cyanide	mg/L	ND <0.10	ND <0.01	ND <0.100

[n] In the WME Phase 2 area, it is identified as the series of faults aligned north-south through the upper development.

Fluoride	mg/L	0.4	0.19	0.5
MBAS	mg/L	ND <0.05	ND <0.04	ND <0.05
Mercury	mg/L	ND <0.001	ND <0.0004	ND <0.001
Radioactivity	pCi/L	2.38 (+/- 1.43)	2.0 (+/-2.3)	Not Analyzed
Anions	mEq/L	3.6	4.41	4.11
Cations	mEq/L	3.7	4.53	3.9

Based on the results of the laboratory analyses and comparison against current drinking water standards[o], the groundwater is suitable as a domestic drinking water source. In addition, the analytical data indicates no significant difference between water from the Phase I and Phase II wells. A copy of the laboratory reports and water quality regulations are included as Attachment D.

***CEQA* Documentation**

The required California Environmental Quality Act (CEQA) documentation for the proposed WME Phase 2 development includes a review and evaluation of the potential environmental impacts listed in pages 7 and 8 of Section VIII, Hydrology and Water Quality, in Appendix G, Environmental Checklist Form. Three areas of concern, related to the WME Phase 2 development, were identified in a review by AMEC Earth & Environment of the proposed preliminary hydrogeologic evaluation and include the following:

- Potential impacts to the potable water supply well located within the existing development immediately west of the subject site (WME Phase I);
- Potential water quantity and quality impacts to the local springs (inclusive of septic waste disposal and irrigation subsurface return flow); and
- Potential water quality and quantity impacts of the western portion of the site's community water system on the private water systems and visa versa.

Potential Impacts to WME Phase I Well Supply

The evaluation of the aquifer conditions based on the separation of the two wells by a suspected semi-permeable fault indicates that impact from the pumping of groundwater from the Phase 2 well on the Phase 1 well within the existing development immediately west of WME Phase 2 should be less than significant impact to no impact.

Potential Impacts to Local Springs

The analysis of potential water quantity and quality impacts to the local springs from the production of water from the WME Phase 2 (lower development) well is not expected to affect flow in the springs and should be of no impact. Presently, plans for the WME Phase 2 upper development area call for the division of the parcel into 8 lots (39-46) and three common areas (lots B, C and D). Lot B is the location of the WME Phase 2 well that was completed in September 2004. Of the eight lots planned for development, only two are currently proposed to have individual wells. The area encompassed by these lots (45 and 46) is large (5.7 acres and 19.5 acres, respectively), being traversed by a complex system of faults[p].

[o] Title 22, CCR, Division 4, Chapter 15, Domestic Water Quality and Monitoring; September 12, 2003.

[p] Based on mapping performed by Sierra Geotechnical Services, Inc., Plate 1 – Site Geologic Map and Plate 2 – Geologic Cross Sections A-A' and A'- A''

The measured average spring flow is 13.7 gpm with approximately 12 gpm (88%) being captured roughly 100 feet downstream for livestock watering purposes, leaving less than two gpm (1.7 gpm) for natural flow downstream. As a result, no significant riparian environment is supported by the spring. Each well, as required for development planning purposes, will produce 3.0 gpm for a total production of 6.0 gpm. Every effort will be made, within the constraints posed by site conditions, to locate the wells up-gradient or cross-gradient from the spring to avoid influence that may result from their pumping, particularly for Lot 46. Assuming a worse-case scenario of approximately 6.0 gpm loss of flow in the vicinity of the spring in Lot 46, the current un-captured outflow of less than 2 gpm would not be altered, the existing site conditions should not be affected, and significant impact to downstream spring flow is not expected. Moreover, additional flow could be made available by allowing all out-flow from the spring to drain naturally and not be captured below its source as is currently the case. If allowed, this would result in an increase in down stream flow of nearly 350 percent over current conditions, or could also serve as an additional buffer to water use above the spring. Due to the complexity of the hydrogeology in the WME Phase 2 upper development area, further analysis would be required to evaluate, if possible, a minimum distance of well placement relative to the spring to avoid direct impact. However, given that the expected well production of 6.0 gpm is not expected to alter existing site conditions below the spring, the need for such an analysis is considered unwarranted.

The septic tank and drainfield layouts for the lots must meet Mono County Health Department regulations. Typically, the drainfield should not be constructed closer than within 100 feet of a well. Given the size of the lots proposed, this should not pose a significant problem. In addition, the great distance between the constructed drainfields and the top of the water table (approximately 100 to 200 feet over the proposed development area) should allow for more than sufficient earth material to adequately filter effluent before reaching groundwater. The alluvial sands and gravels identified at the site, which are somewhat dry, permeable and contain plenty of air filled pore space, is well suited for this process. Therefore, no significant impact is expected.

Potential Impacts to Community Water System

Potential water quality and quantity impacts of the western portion of the site's community water system on the private water systems proposed and visa versa is expected to be less than significant to no impact. The production of water from the WME Phase 2 development (WME Phase 2 well) is considered to be hydrogeologically isolated from the WME Phase 1 well to the west due to the complex nature of the numerous faults that traverse the WME Phase 2 development area.

Closure

Groundwater flow in the vicinity of the WME Phase 2 development is complex and should be considered a combination of groundwater flow directly from the White Mountains and groundwater flow through the Chalfant Valley. The presence of multiple faults and recharge estimate provided indicate probable additional recharge through this complex hydrogeologic system. For this preliminary hydrogeologic evaluation, the data used in the interpretation and analysis provided above were derived from multiple sources and were assumed to be

valid as presented. A reasonable effort was incorporated into obtaining sources pertinent to this evaluation and does not preclude the availability of additional data.

The recently installed WME Phase II well (Lot B, upper development) has demonstrated via a 24-hour pump test that it can provide up to 120 gpm as calculated by assuming 75% of the test rate of 160 gpm. The estimated total water requirement for the proposed 38 lot development is 184 acre-feet per year. The estimated potential recharge is 165 acre-feet per year, leaving a possible deficit of 19-acre feet per year. Therefore as a contingency, a second well will be installed in the southwest corner of Lot 12, approximately 750 feet west (down slope) of the Phase II well (Lot B) and will be screened in the valley aquifer. The existing Phase I development is currently supplied from one well located in the northwest corner of the development. According to the White Mountain Mutual Water Company, this well produces at a rate of 250 gpm (probably capable of 350 gpm) with a drawdown of only 2.4 feet.[q] The proposed second well to support the Phase II development, which will be screened in the same aquifer, is expected to be able to produce a similar quantity of water and well efficiency. It is anticipated that at least 50% of the development's water requirements (or about 92 acre-feet per year) will be met with the second well, although it could provide water for the entire planned WME Phase II development as a backup, if necessary. The second well will be located approximately 1200 feet southeast from the existing Phase I well and produce groundwater at an anticipated rate of 60 gpm, or about 25% of the Phase I well production. As a result, drawdown is expected to be minimal. A reduction in groundwater production from the existing Phase II well (Lot B) from 120 gpm to 60 gpm, representing about 38% of the test pumping rate of 160 gpm, will transform a 19 acre-feet shortfall into a surplus of approximate 73 acre-feet. Therefore, it is unlikely that production from the proposed second Phase II well will pose significant impact to the Phase I well, nor pose a significant impact to the springs to the east.

Golden State Environmental appreciates this opportunity to perform this work for White Mountain Estates, and look forward to working with you in the future. Should you have any questions or comments, please call us.

Sincerely,
Golden State Environmental

REGISTERED GEOLOGIST
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REGISTERED GEOLOGIST
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Robert Traylor, R.G., C.Hg.
Principal Hydrogeologist

Tables
Figures
Attachments

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[q] Personal Communication, May 10, 2005, Marilyn Voorhis, President, White Mountain Mutual Water Company; citing data from a well test performed by Southern California Edison, in a report prepared by the Manager of Hydraulic Services, 2002.

Tables

Table 1. Precipitation Station Data

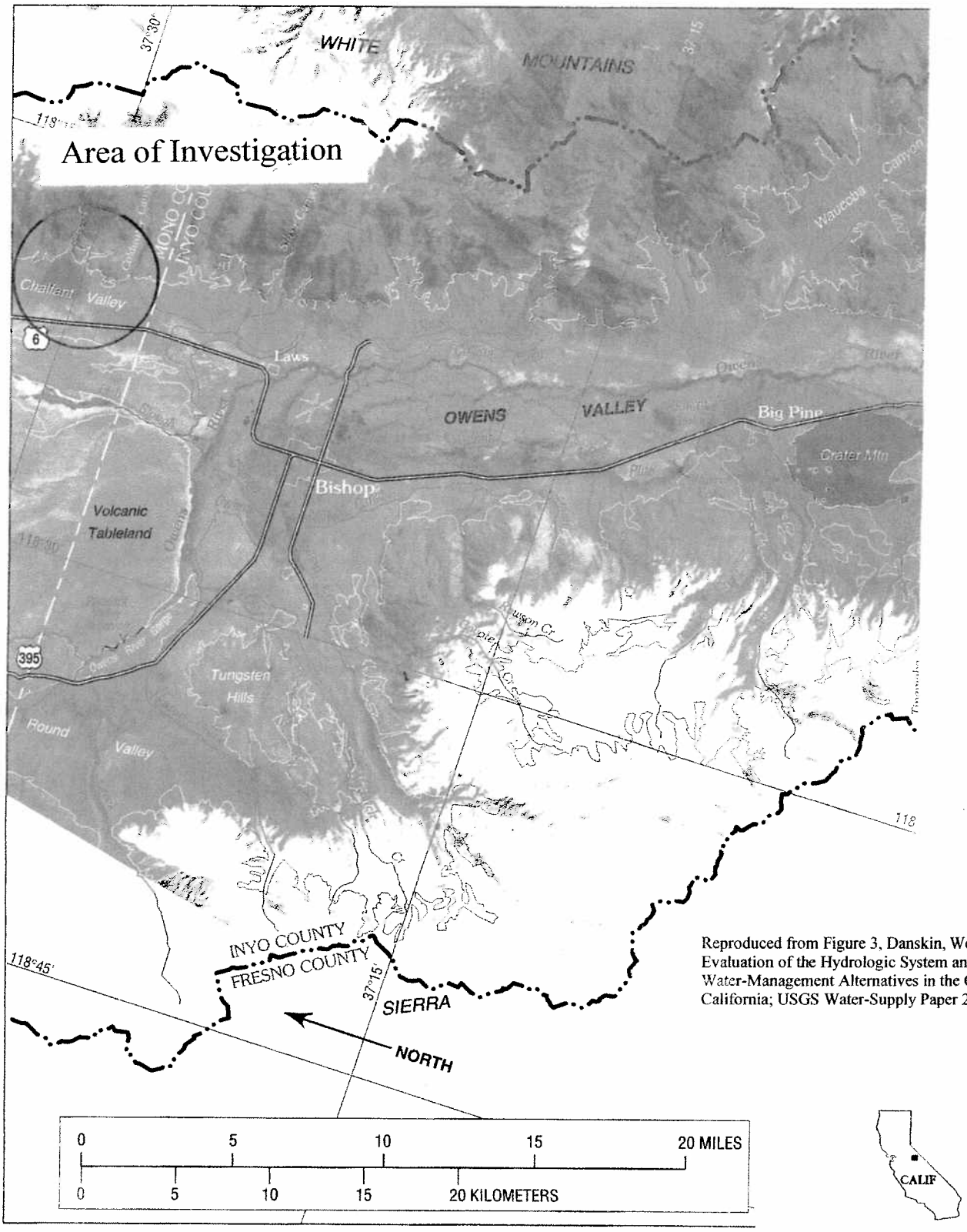
Station Name	Altitude (feet)	Mean Annual Ppt (in/yr)	Latitude (north)	Longitude (west)
White Mountain No. 1	10150	13.94	37 deg, 30 min	118 deg, 10 min
White Mountain No. 2	12070	19.73	37 deg, 35 min	118 deg, 14 min
Bishop Yard	4140	7.12	37 deg, 21 min	118 deg, 24 min

Source: Danskin, Wesley, R. 1998. Evaluation of the hydrogeologic System and Selected Water-Management Alternatives in the Owens Valley, California. Page 27.

Table 2. Recharge Summary - "North" Coldwater Canyon

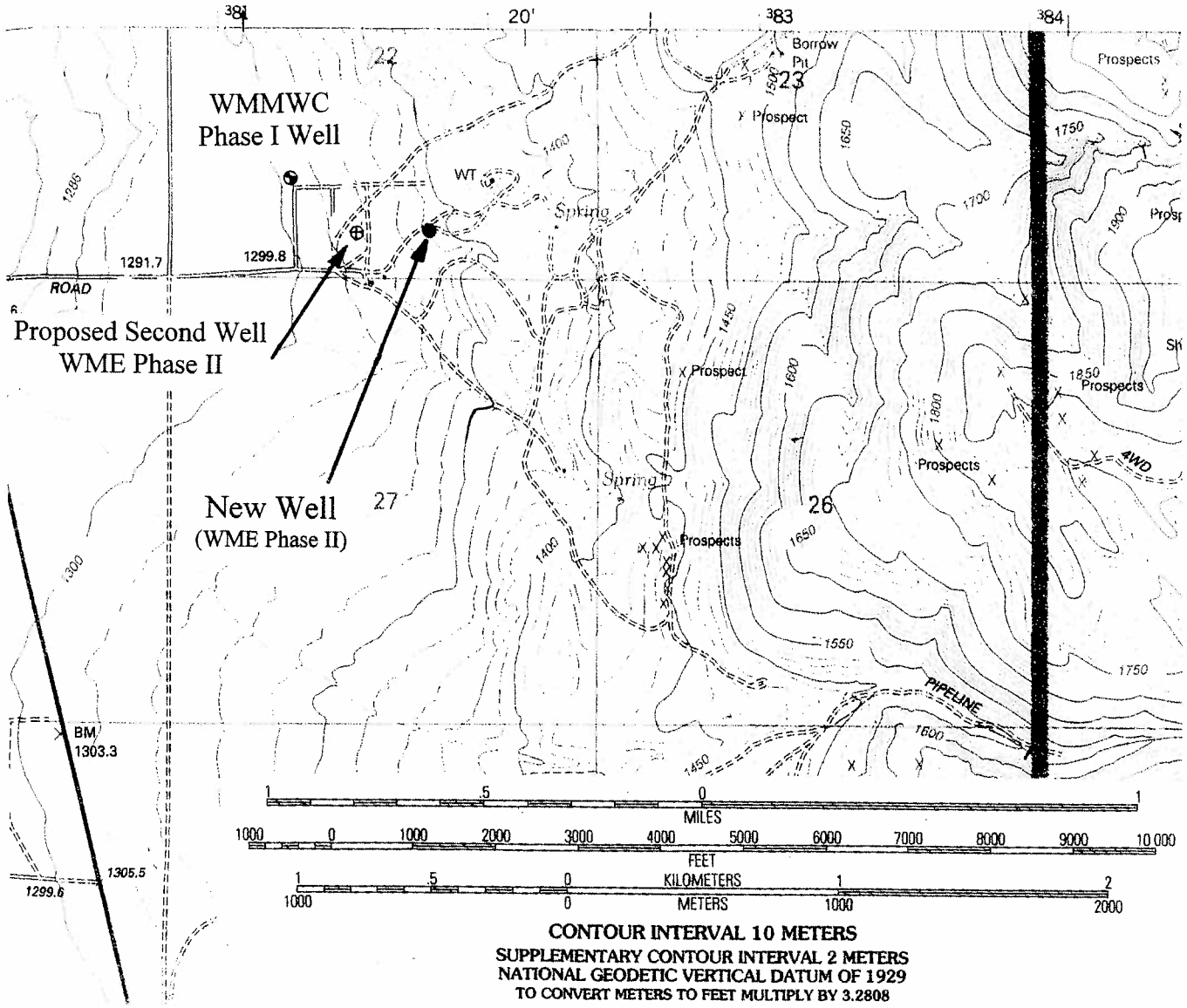
Precipitation Range (inches)	Elevation Range (ft msl)	Acres	Pct. Recharge	Estimated Recharge (acre-ft/yr)
less than 8	below 5000	163	0	
8 to 12	5000 to 7750	961	3	24.0
12 to 15	7750 to 9750	76	7	6.0
Total Recharge		1200		30.0

Figures



Reproduced from Figure 3, Danskin, Wesley R., 1998, Evaluation of the Hydrologic System and Selected Water-Management Alternatives in the Owens Valley, California; USGS Water-Supply Paper 2370.

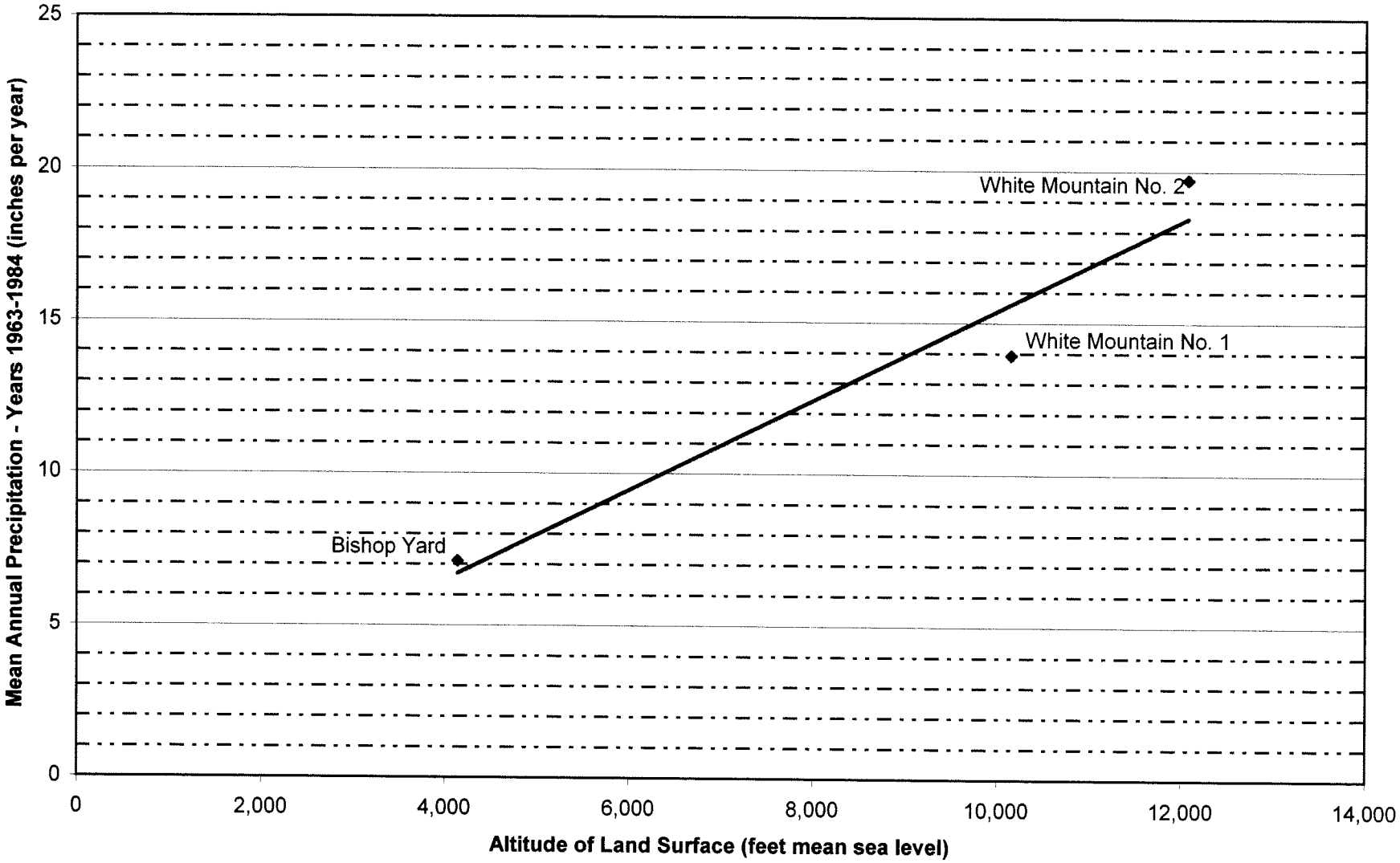
Golden State Environmental	SITE LOCATION MAP	FIGURE 1



Reproduced from Laws Quadrangle California, 7.5-Minute Series, USGS 1994, Scale 1:24,000. (Elevations given in meters above mean sea level)

Golden State Environmental	SITE DETAIL MAP	FIGURE 2

Figure 3 - Rainfall Regression Analysis - White Mountain Estates, LLC



Golden State Environmental
Figure 3 PptAltRegEq_Tables 1,2.xls

Attachments

Attachment A

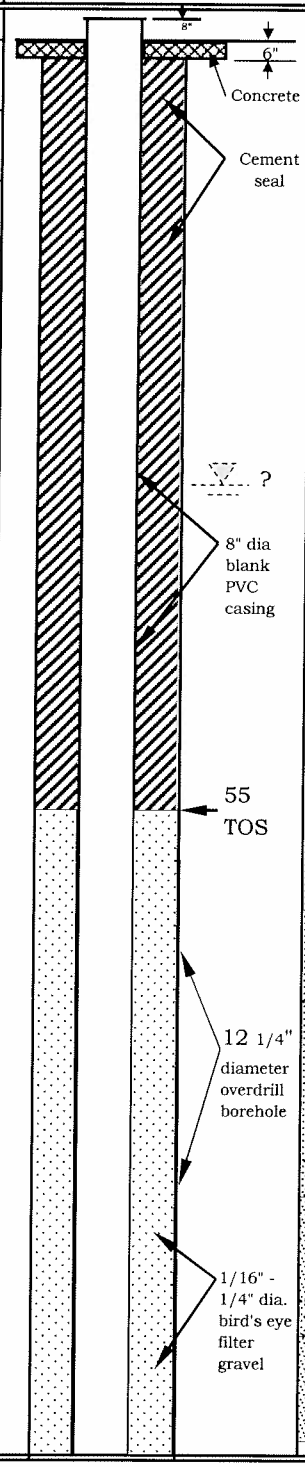
(Well Logs)

Project Name:	White Mountain Estates	Excavation Date: (startup)	14-Jul-04
Project Number:	2004-G017A	Excavation Method:	Mud Rotary
Client:	White Mountain Estates, LLC	Boring Diameter:	9 7/8" / 12 1/4"
Location:	Approximately 10 miles north of Bishop, California; approximately 1 mile east of intersection of Highway 6 and WME Road	Well Casing Diameter:	8" PVC
		Depth to Groundwater:	203.13 ft BTC
		Total Depth of Boring:	338 ft BTC
Elevation:	Approximately 4400 feet MSL	Screen Interval(s):	238-338 ft BTC

GS ENVIRONMENTAL

Surface Conditions: Alluvial fan deposits; silty (clayey) to sandy gravel

Sample NR	Sample R	Hammer Wt. (lbs.) Blows /foot (6"/12"/18")	Depth (feet)	Well Construction	Lithology	USCS	Description
			0			GM	Silty to fine sandy GRAVEL: lithic fragments of volcanic and metasedimentary rocks, and quartz; small pebbles are present and are subrounded to subangular
			5				
			10				•Gravel appears to coarsen, drill stem bouncing & chatter
			15				•Increase in sand, fine to coarse grained
			20				" "
			25				" "
			30				•Possible perched GW / highly suspect?
			35				•Gravel appears coarser, moderate drill stem bouncing & chatter
			40				" "
			45				" "
			50			GW/SW	Silty to fine sandy GRAVEL as above but with increase in fine to coarse grained sand; gravel less abundant
			55			GW	Fine to coarse sandy GRAVEL: lithic fragments appear to be mostly dark volcanic/metavolcanic(?) with some quartz; other metamorphic rock fragments present.
			60				•Increase in sand @ 60 feet
			65			GW/SW	Medium to coarse grained sandy GRAVEL: lithic fragments mostly dark volcanics with some small subrounded pebbles, some metamorphic fragments; hard drilling and drill stem chatter
			70			GP	
			75				•Less sand than above; dark lithic fragments & small subrounded pebbles @ 70 ft
			80			SW/GW	SAND with gravel: sand is mostly medium to coarse grained, subangular with trace subrounded, mostly quartz & volcanic & metamorphic lithics; gravel as above
			85			SW	Sand as @ 80 feet
			90			GW/SW	GRAVEL with sand: sand is fine to coarse grained, subanular; gravel similar to above
			95			SW	SAND with trace gravel: sand is fine to coarse grained, subangular to trace subrounded, mostly quartz, some lithics



Project Name:	White Mountain Estates	Excavation Date: (startup)	14-Jul-04
Project Number:	2004-G017A	Excavation Method:	Mud Rotary
Client:	White Mountain Estates, LLC	Boring Diameter:	9 7/8" / 12 1/4"
Location:	Approximately 10 miles north of Bishop, California; approximately 1 mile east of intersection of Highway 6 and WME Road	Well Casing Diameter:	8" PVC
		Depth to Groundwater:	203.13 ft BTC
		Total Depth of Boring:	338 ft BTC
Elevation:	Approximately 4400 feet MSL	Screen Interval(s):	238-338 ft BTC

GS ENVIRONMENTAL

Surface Conditions: Alluvial fan deposits; silty (clayey) to sandy gravel

Sample NR	Sample R	Hammer Wt. (lbs.) / Blows /foot (6"/12"/18")	Depth (feet)	I.D. / Well Construction	Lithology	USCS	Description
			100			SW	•SAND as @ 95 ft
			105			GW/SW	SAND with gravel: sand is fine to coarse grained, subangular; drill cuttings contain abundant lithic fragments similar to those @ 80 ft
			110			GW	GRAVEL: similar to 80 ft sample but less sand
			115			SW	Gravelly SAND: sand is fine to coarse grained, subangular to subrounded, mostly quartz but with feldspar and other lithic grains; gravel is generally pebble size, subangular to subrounded; both pebble gravel and lithic fragments composed of volcanics and other igneous and metamorphics
			120				
			125				•Gravel content greatly reduced @120 ft
			130	8" dia blank PVC casing			
			135				
			140			GW	Sandy fine GRAVEL: gravel mostly pebble size, subangular to angular fragments of dark volcanic/metavolcanics(?);
			145			SW	sand is medium to coarse grained, subangular, mostly quartz and other rock fragments
			150				SAND: medium to coarse grained, subangular, mostly quartz and other ingneous and metamorphics
			155				•Trace fine GRAVEL @ 150 ft
			160			GW	•Sandy GRAVEL similar to that @ 140 ft
			165	12 1/4" diameter overdrill borehole		SW	SAND: medium to coarse grained, subangular, mostly quartz and other ingneous and metamorphics
			170			GW	•Sandy GRAVEL similar to that @ 160 ft
			175			SW	Gravelly SAND: sand is medium to coarse grained, subangular, mostly quartz and lithics; gravel is fine
			180				•Grain size range fine to coarse sand, no gravel @180 ft
			185	1/16" - 1/4" dia. bird's eye filter gravel			•Trace gravel @ 185 ft to 195 ft
			190				
			195				

Project Name:	White Mountain Estates	Excavation Date: (startup)	14-Jul-04
Project Number:	2004-G017A	Excavation Method:	Mud Rotary
Client:	White Mountain Estates, LLC	Boring Diameter:	9 7/8" / 12 1/4"
Location:	Approximately 10 miles north of Bishop, California; approximately 1 mile east of intersection of Highway 6 and WME Road	Well Casing Diameter:	8" PVC
		Depth to Groundwater:	203.13 ft BTC
		Total Depth of Boring:	338 ft BTC
Elevation:	Approximately 4400 feet MSL	Screen Interval(s):	238-338 ft BTC

GS ENVIRONMENTAL

Surface Conditions: Alluvial fan deposits; silty (clayey) to sandy gravel

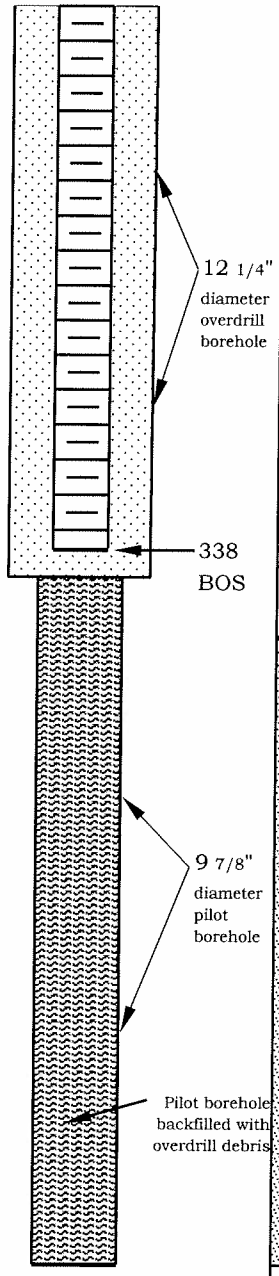
Sample NR	Sample R	Hammer Wt. (lbs.) / Blows /foot (6"/12"/18")	Depth (feet)	Well Construction	Lithology	USCS	Description
			200			SW	SAND: fine to coarse grained, subangular; with trace of fine gravel, subangular to angular fragments
			205	203 DTW		SM	Silty SAND: fine to medium grained, subangular, quartz and lithics of igneous(?) composition
			210	8" dia blank PVC casing			
			215			SW	SAND: fine to medium grained, subangular; with trace of fine gravel, subangular to angular fragments
			220				
			225			GW	Sandy fine GRAVEL: gravel mostly pebble size, subangular to angular fragments of dark volcanic/metavolcanics(?); sand is medium to coarse grained, subangular, mostly quartz and other rock fragments
			230			SW	•SAND similar to that @ 220 ft
			235			GW	Sandy GRAVEL: gravel mostly fine grained, subrounded to angular fragments of dark igneous composition; sand is fine to coarse grained, subangular, mostly quartz and other igneous(?) rock fragments
			240	238 TOS			
			245				
			250	12 1/4" diameter overdrill borehole			
			255				
			260				
			265				
			270	0.032" slotted PVC 8" casing			
			275				
			280				
			285	1/16" - 1/4" dia. bird's eye filter gravel			
			290				
			295				

Project Name:	White Mountain Estates	Excavation Date: (startup)	14-Jul-04
Project Number:	2004-G017A	Excavation Method:	Mud Rotary
Client:	White Mountain Estates, LLC	Boring Diameter:	9 7/8" / 12 1/4"
Location:	Approximately 10 miles north of Bishop, California; approximately 1 mile east of intersection of Highway 6 and WME Road	Well Casing Diameter:	8" PVC
		Depth to Groundwater:	203.13 ft BTC
		Total Depth of Boring:	338 ft BTC
Elevation:	Approximately 4400 feet MSL	Screen Interval(s):	238-338 ft BTC

GS ENVIRONMENTAL

Surface Conditions: Alluvial fan deposits; silty (clayey) to sandy gravel

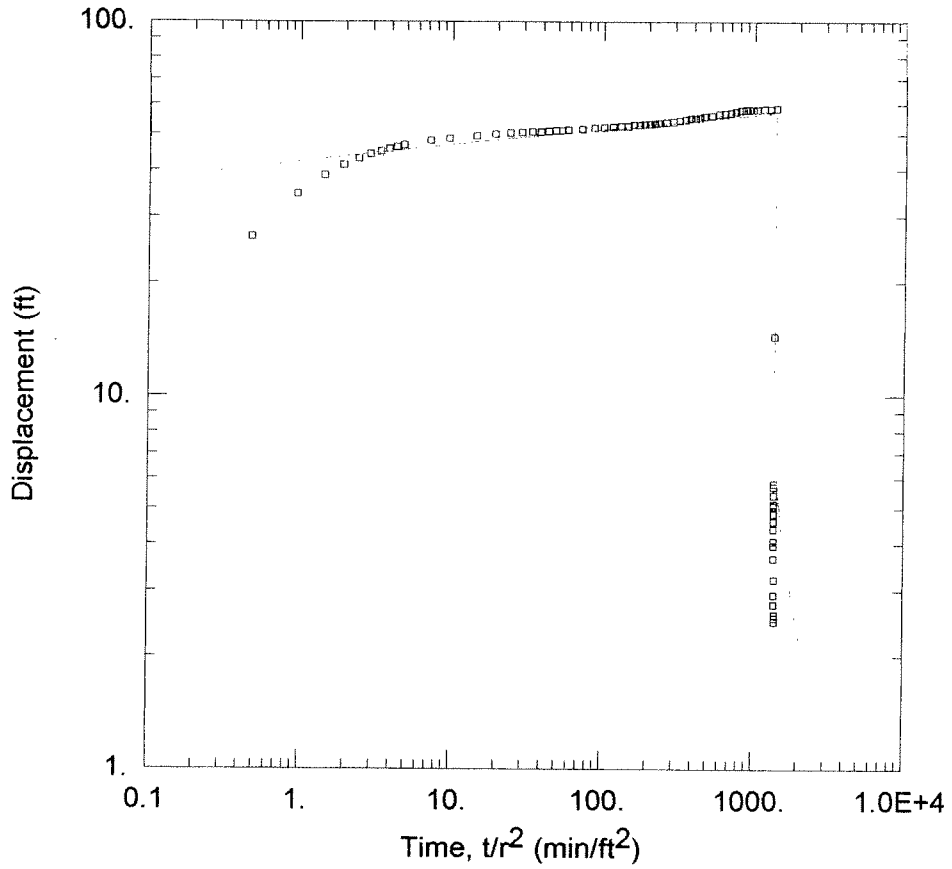
Sample NR	Sample R	Hammer Wt. (lbs.) Blows /foot (6"/12"/18")	Depth (feet)	Well Construction	Lithology	USCS	Description
			300			GW	Sandy GRAVEL as @ 295 ft
			305			SW/GW	SAND with gravel: sand is mostly fine to medium grained, subangular, with mostly quartz & volcanics; some lithic fragments; gravel as above
			310			SW	SAND: fine to coarse grained, subangular, with lithic fragments
			315			GW	Sandy GRAVEL: gravel mostly fine grained, subrounded to angular fragments of dark igneous composition; sand is fine to coarse grained, subangular, mostly quartz and other igneous(?) rock fragments
			320				
			325				
			330			SW	SAND: fine to coarse grained, subangular, with lithic fragments similar to that @ 310 ft
			335				
			340			GW	Sandy GRAVEL as @ 315 ft to 330 ft
			345			SW	SAND: fine to coarse grained, subangular, with lithic fragments similar to that @ 330 ft to 340 ft
			350				
			355				
			360				
			365				
			370				
			375				
			380				
			385				
			390				Total depth of pilot boring 390 feet below surface grade
			395				



Attachment B

(Aquifer Data)

Summary of Aquifer Test Parameters from 24-Hour Constant Discharge Test													
Aquifer Solution	Confined or unconfined analysis	Early/late data	Aquifer thickness	Anisotropy Ratio	T (ft2/min)	T (gpd/ft)	S	Sy	b	B	k (ft/min)	k (ft/day)	k (gpd/ft2)
Neuman	unconfined	early	186	0.33	0.589	6344	3.10E-07	0.001	--	1.6E-05	0.00317	4.6	34
Neuman	unconfined	late	186	0.33	0.541	5827	8.61E-04	0.5	--	1.0E-05	0.00291	4.2	31
Theis	confined	--	186	0.50	0.8461	9114	7.00E-07	--	186	--	0.00455	6.6	49
Theis	confined	--	250	0.50	1.029	11084	7.00E-07	--	250	--	0.00396	5.7	43
Theis	confined	--	500	0.50	1.563	16835	6.15E-04	--	500	--	0.00340	4.9	37
Theis	confined	--	1000	0.50	3.065	33014	1.79E-03	--	1000	--	0.00307	4.4	33
									mean of green		0.00351	5.05	38



CONSTANT DISCHARGE TEST

Data Set: F:\...\WME_Drawdown 24h AqTest TheisConfined 186.aqt
Date: 03/25/05 Time: 10:24:05

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates, LLC
Project: 2004-G017A-001
Location: Chalfont, California
Test Well: Test Well #1
Test Date: September 10, 2004

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
PW 1	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
PW 1	0	0

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

T = 0.8461 ft^2/min
S = 6.998E-7
Kz/Kr = 0.5
b = 186. ft

Data Set: F:\GSE\Projects\White Mountain Estates\WME_Drawdown 24h AqTest TheisConfined 186.aqt
Title: Constant Discharge Test
Date: 03/25/05
Time: 10:24:18

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates, LLC
Project: 2004-G017A-001
Location: Chalfont, California
Test Date: September 10, 2004
Test Well: Test Well #1

AQUIFER DATA

Saturated Thickness: 186. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: PW 1

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.6667 ft
Wellbore Radius: 1.02 ft

Partially Penetrating Well
Depth to Top of Screen: 34. ft
Depth to Bottom of Screen: 134. ft

No. of pumping periods: 2

Pumping Period Data

Time (min)	Rate (cu. ft/min)	Time (min)	Rate (cu. ft/min)
0.	21.4	1440.	0.

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: PW 1

X Location: 0. ft

Y Location: 0. ft

Radial distance from PW 1: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 34. ft
Depth to Bottom of Screen: 134. ft

No. of Observations: 73

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	26.64	360.	54.59
1.	34.59	390.	55.01
1.5	38.81	420.	55.17
2.	41.26	450.	55.35
2.5	42.91	480.	55.65
3.	44.16	540.	56.01
3.5	44.97	600.	56.54
4.	45.63	660.	56.89
4.5	46.22	720.	57.09
5.	46.62	780.	57.54
7.5	47.93	840.	57.99
10.	48.54	900.	58.15
15.	49.37	960.	58.25
20.	49.86	1020.	58.28
25.	50.22	1080.	58.26
30.	50.42	1200.	58.35
35.	50.64	1320.	58.47
40.	50.77	1440.	58.68
45.	50.91	1440.5	14.41
50.	51.06	1441.	4.08
55.	51.17	1441.5	5.14
60.	51.28	1442.	5.82
75.	51.61	1442.5	5.71
90.	51.85	1443.	5.43
105.	52.04	1443.5	5.08
120.	52.3	1444.	4.84
135.	52.48	1444.5	4.61
150.	52.63	1445.	4.41
165.	52.86	1447.5	3.97
180.	52.96	1450.	3.67
195.	53.13	1455.	3.22
210.	53.24	1460.	2.93
225.	53.38	1465.	2.77
240.	53.51	1470.	2.6
270.	53.77	1475.	2.55
300.	54.04	1480.	2.49

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
330.	54.38		

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	2.13	ft^2/min
S	7.089E-5	
Kz/Kr	0.01	
b	186.	ft

K = T/b = 0.01145 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	0.8461	0.06016	ft^2/min
S	6.998E-7	1.216E-6	
Kz/Kr	0.5	not estimated	
b	186.	not estimated	ft

K = T/b = 0.004549 ft/min

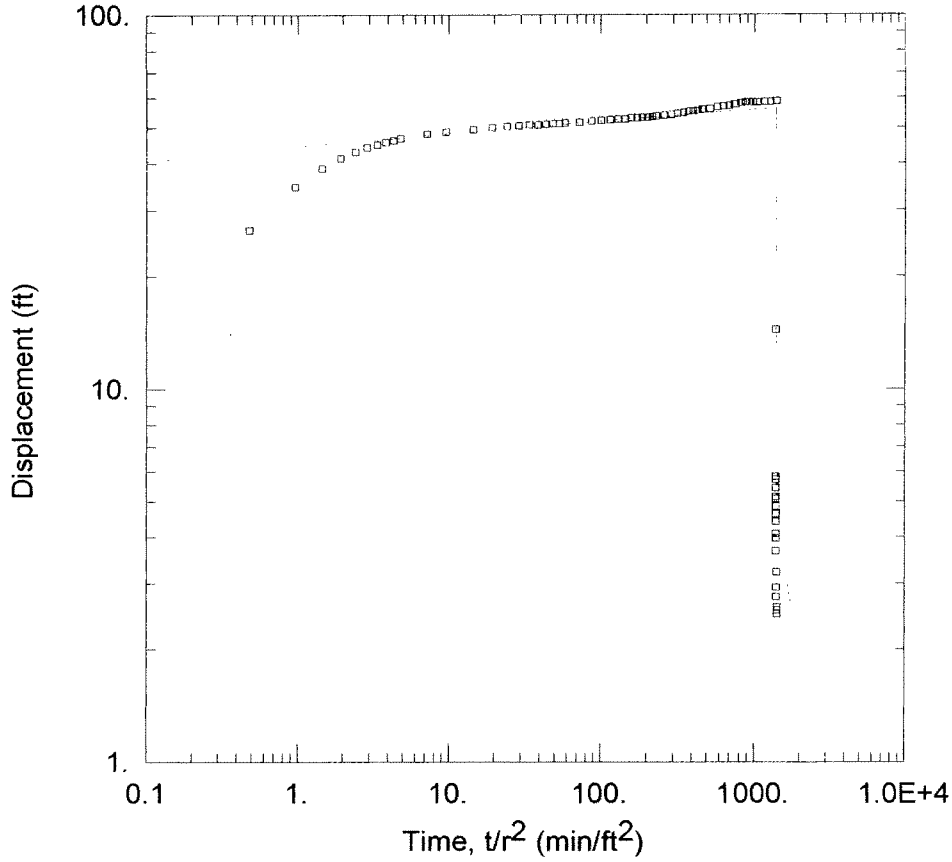
Parameter Correlations

	T	S
T	1.00	-0.99
S	-0.99	1.00

Residual Statistics

for weighted residuals

Sum of Squares... 1175.5 ft^2
Variance ..... 16.56 ft^2
Std. Deviation..... 4.069 ft
Mean..... -1.05 ft
No. of Residuals .. 73
No. of Estimates .. 2



CONSTANT DISCHARGE TEST

Data Set: F:\...\WME_Drawdown 24h AqTest TheisConfined 250.aqt
Date: 03/25/05 Time: 10:32:46

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates, LLC
Project: 2004-G017A-001
Location: Chalfont, California
Test Well: Test Well #1
Test Date: September 10, 2004

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
PW 1	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
PW 1	0	0

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

T = 1.029 ft^2/min
S = 6.998E-7
Kz/Kr = 0.5
b = 250. ft

Data Set: F:\GSE\Projects\White Mountain Estates\WME_Drawdown 24h AqTest TheisConfined 250.aqt
Title: Constant Discharge Test
Date: 03/25/05
Time: 10:32:53

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates, LLC
Project: 2004-G017A-001
Location: Chalfont, California
Test Date: September 10, 2004
Test Well: Test Well #1

AQUIFER DATA

Saturated Thickness: 250. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: PW 1

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.6667 ft
Wellbore Radius: 1.02 ft

Partially Penetrating Well
Depth to Top of Screen: 34. ft
Depth to Bottom of Screen: 134. ft

No. of pumping periods: 2

Pumping Period Data

Time (min)	Rate (cu. ft/min)	Time (min)	Rate (cu. ft/min)
0.	21.4	1440.	0.

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: PW 1

X Location: 0. ft

Y Location: 0. ft

Radial distance from PW 1: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 34. ft
Depth to Bottom of Screen: 134. ft

No. of Observations: 73

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	26.64	360.	54.59
1.	34.59	390.	55.01
1.5	38.81	420.	55.17
2.	41.26	450.	55.35
2.5	42.91	480.	55.65
3.	44.16	540.	56.01
3.5	44.97	600.	56.54
4.	45.63	660.	56.89
4.5	46.22	720.	57.09
5.	46.62	780.	57.54
7.5	47.93	840.	57.99
10.	48.54	900.	58.15
15.	49.37	960.	58.25
20.	49.86	1020.	58.28
25.	50.22	1080.	58.26
30.	50.42	1200.	58.35
35.	50.64	1320.	58.47
40.	50.77	1440.	58.68
45.	50.91	1440.5	14.41
50.	51.06	1441.	4.08
55.	51.17	1441.5	5.14
60.	51.28	1442.	5.82
75.	51.61	1442.5	5.71
90.	51.85	1443.	5.43
105.	52.04	1443.5	5.08
120.	52.3	1444.	4.84
135.	52.48	1444.5	4.61
150.	52.63	1445.	4.41
165.	52.86	1447.5	3.97
180.	52.96	1450.	3.67
195.	53.13	1455.	3.22
210.	53.24	1460.	2.93
225.	53.38	1465.	2.77
240.	53.51	1470.	2.6
270.	53.77	1475.	2.55
300.	54.04	1480.	2.49

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
330.	54.38		

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.991	ft^2/min
S	6.69E-7	
Kz/Kr	0.5	
b	250.	ft

K = T/b = 0.003964 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	1.029	0.07867	ft^2/min
S	6.998E-7	1.611E-6	
Kz/Kr	0.5	not estimated	
b	250.	not estimated	ft

K = T/b = 0.004116 ft/min

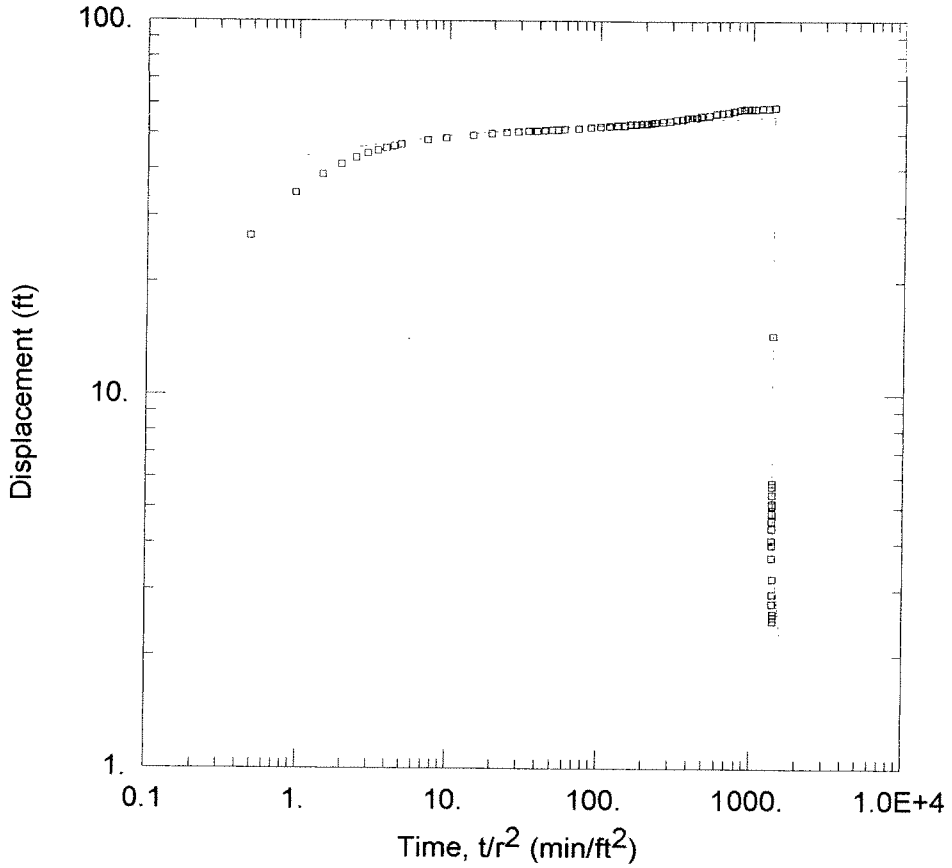
Parameter Correlations

	T	S
T	1.00	-0.99
S	-0.99	1.00

Residual Statistics

for weighted residuals

Sum of Squares... 919.2 ft^2
Variance ..... 12.95 ft^2
Std. Deviation..... 3.598 ft
Mean..... -0.9366 ft
No. of Residuals .. 73
No. of Estimates .. 2



CONSTANT DISCHARGE TEST

Data Set: F:\...\WME_Drawdown 24h AqTest TheisConfined 500.aqt
Date: 03/25/05 Time: 10:37:59

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates, LLC
Project: 2004-G017A-001
Location: Chalfont, California
Test Well: Test Well #1
Test Date: September 10, 2004

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
PW 1	0	0

Observation Wells

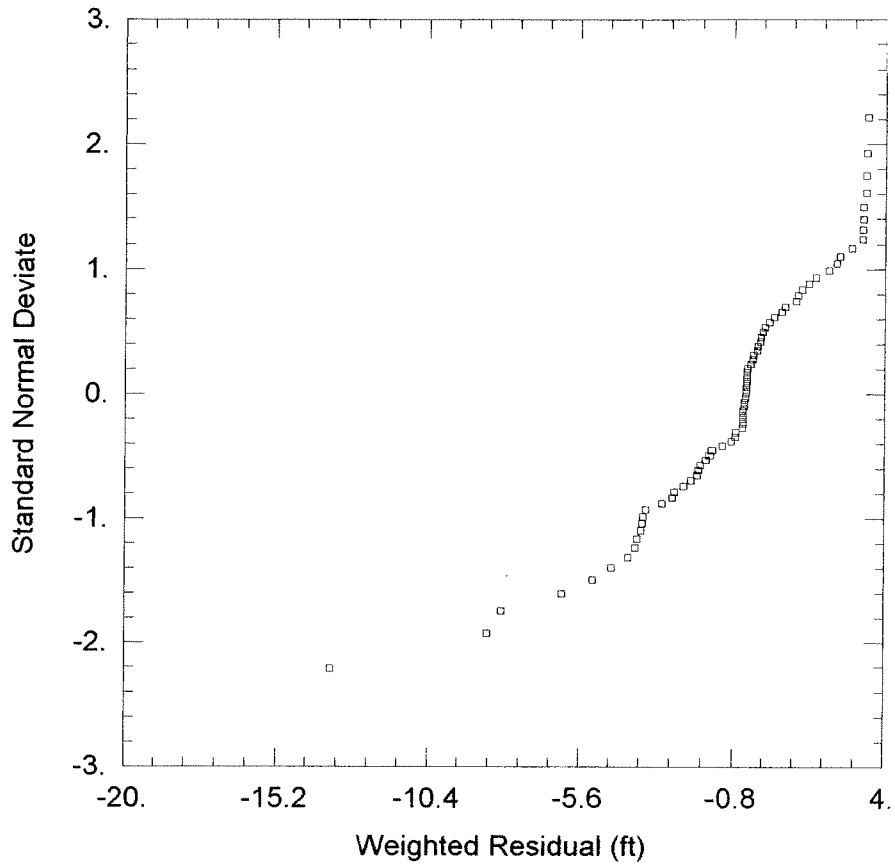
Well Name	X (ft)	Y (ft)
PW 1	0	0

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

T = 1.563 ft^2/min
Kz/Kr = 0.5

S = 0.000615
b = 500. ft



CONSTANT DISCHARGE TEST

Data Set: F:\...\WME_Drawdown 24h AqTest TheisConfined 500.aqt
Date: 03/25/05 Time: 10:41:19

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates, LLC
Project: 2004-G017A-001
Location: Chalfont, California
Test Well: Test Well #1
Test Date: September 10, 2004

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
PW 1	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
PW 1	0	0

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

T = 1.563 ft^2/min
S = 0.000615
Kz/Kr = 0.5
b = 500. ft

Data Set: F:\GSE\Projects\White Mountain Estates\WME_Drawdown 24h AqTest TheisConfined 500.aqt
Title: Constant Discharge Test
Date: 03/25/05
Time: 10:38:10

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates, LLC
Project: 2004-G017A-001
Location: Chalfont, California
Test Date: September 10, 2004
Test Well: Test Well #1

AQUIFER DATA

Saturated Thickness: 500. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: PW 1

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.6667 ft
Wellbore Radius: 1.02 ft

Partially Penetrating Well
Depth to Top of Screen: 34. ft
Depth to Bottom of Screen: 134. ft

No. of pumping periods: 2

Pumping Period Data

Time (min)	Rate (cu. ft/min)	Time (min)	Rate (cu. ft/min)
0.	21.4	1440.	0.

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: PW 1

X Location: 0. ft

Y Location: 0. ft

Radial distance from PW 1: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 34. ft
Depth to Bottom of Screen: 134. ft

No. of Observations: 73

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	26.64	360.	54.59
1.	34.59	390.	55.01
1.5	38.81	420.	55.17
2.	41.26	450.	55.35
2.5	42.91	480.	55.65
3.	44.16	540.	56.01
3.5	44.97	600.	56.54
4.	45.63	660.	56.89
4.5	46.22	720.	57.09
5.	46.62	780.	57.54
7.5	47.93	840.	57.99
10.	48.54	900.	58.15
15.	49.37	960.	58.25
20.	49.86	1020.	58.28
25.	50.22	1080.	58.26
30.	50.42	1200.	58.35
35.	50.64	1320.	58.47
40.	50.77	1440.	58.68
45.	50.91	1440.5	14.41
50.	51.06	1441.	4.08
55.	51.17	1441.5	5.14
60.	51.28	1442.	5.82
75.	51.61	1442.5	5.71
90.	51.85	1443.	5.43
105.	52.04	1443.5	5.08
120.	52.3	1444.	4.84
135.	52.48	1444.5	4.61
150.	52.63	1445.	4.41
165.	52.86	1447.5	3.97
180.	52.96	1450.	3.67
195.	53.13	1455.	3.22
210.	53.24	1460.	2.93
225.	53.38	1465.	2.77
240.	53.51	1470.	2.6
270.	53.77	1475.	2.55
300.	54.04	1480.	2.49

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
330.	54.38		

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	1.701	ft^2/min
S	5.661E-5	
Kz/Kr	0.5	
b	500.	ft

K = T/b = 0.003402 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	1.563	0.01874	ft^2/min
S	0.000615	0.0001959	
Kz/Kr	0.5	not estimated	
b	500.	not estimated	ft

K = T/b = 0.003126 ft/min

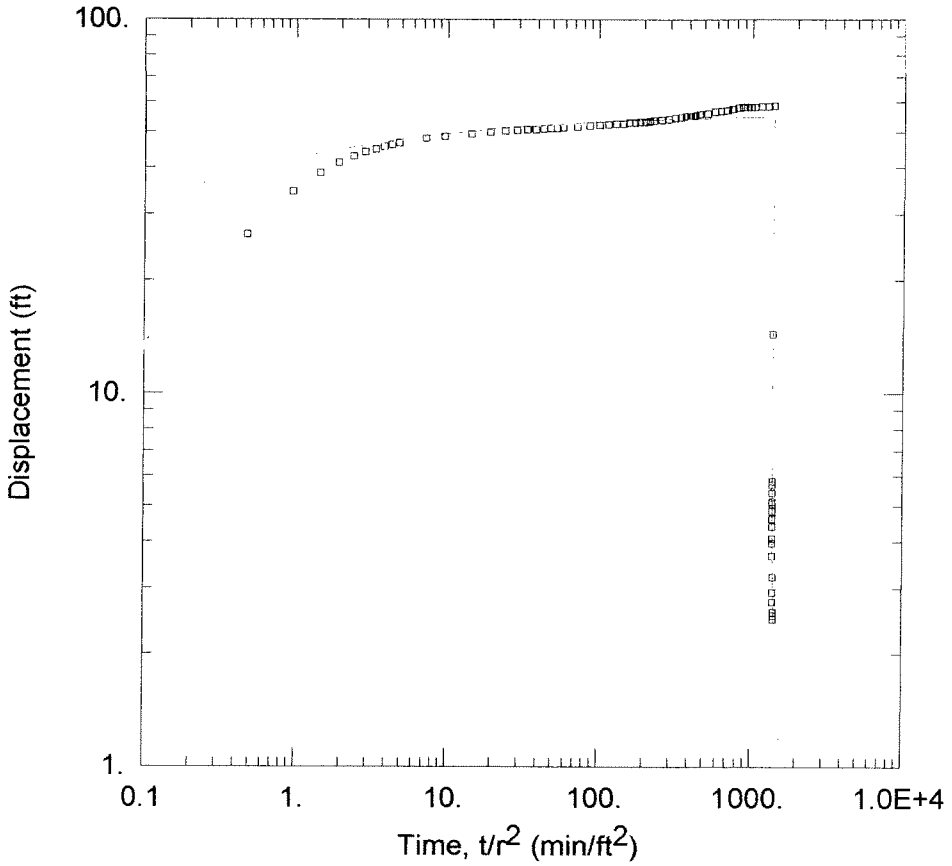
Parameter Correlations

	T	S
T	1.00	-0.72
S	-0.72	1.00

Residual Statistics

for weighted residuals

Sum of Squares... 685.9 ft^2
Variance ..... 9.66 ft^2
Std. Deviation..... 3.108 ft
Mean..... -0.8007 ft
No. of Residuals .. 73
No. of Estimates .. 2



CONSTANT DISCHARGE TEST

Data Set: F:\...\WME_Drawdown 24h AqTest TheisConfined 1000.aqt
Date: 03/25/05 Time: 10:44:45

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates, LLC
Project: 2004-G017A-001
Location: Chalfont, California
Test Well: Test Well #1
Test Date: September 10, 2004

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
PW 1	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
PW 1	0	0

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

T = 3.065 ft^2/min
S = 0.001788
Kz/Kr = 0.5
b = 1000. ft

Data Set: F:\GSE\Projects\White Mountain Estates\WME_Drawdown 24h AqTest TheisConfined 1000.aqt
Title: Constant Discharge Test
Date: 03/25/05
Time: 10:44:52

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates, LLC
Project: 2004-G017A-001
Location: Chalfont, California
Test Date: September 10, 2004
Test Well: Test Well #1

AQUIFER DATA

Saturated Thickness: 1000. ft
Anisotropy Ratio (Kz/Kr): 0.5

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: PW 1

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.6667 ft
Wellbore Radius: 1.02 ft

Partially Penetrating Well
Depth to Top of Screen: 34. ft
Depth to Bottom of Screen: 134. ft

No. of pumping periods: 2

Pumping Period Data

Time (min)	Rate (cu. ft/min)	Time (min)	Rate (cu. ft/min)
0.	21.4	1440.	0.

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: PW 1

X Location: 0. ft

Y Location: 0. ft

Radial distance from PW 1: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 34. ft
Depth to Bottom of Screen: 134. ft

No. of Observations: 73

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	26.64	360.	54.59
1.	34.59	390.	55.01
1.5	38.81	420.	55.17
2.	41.26	450.	55.35
2.5	42.91	480.	55.65
3.	44.16	540.	56.01
3.5	44.97	600.	56.54
4.	45.63	660.	56.89
4.5	46.22	720.	57.09
5.	46.62	780.	57.54
7.5	47.93	840.	57.99
10.	48.54	900.	58.15
15.	49.37	960.	58.25
20.	49.86	1020.	58.28
25.	50.22	1080.	58.26
30.	50.42	1200.	58.35
35.	50.64	1320.	58.47
40.	50.77	1440.	58.68
45.	50.91	1440.5	14.41
50.	51.06	1441.	4.08
55.	51.17	1441.5	5.14
60.	51.28	1442.	5.82
75.	51.61	1442.5	5.71
90.	51.85	1443.	5.43
105.	52.04	1443.5	5.08
120.	52.3	1444.	4.84
135.	52.48	1444.5	4.61
150.	52.63	1445.	4.41
165.	52.86	1447.5	3.97
180.	52.96	1450.	3.67
195.	53.13	1455.	3.22
210.	53.24	1460.	2.93
225.	53.38	1465.	2.77
240.	53.51	1470.	2.6
270.	53.77	1475.	2.55
300.	54.04	1480.	2.49

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
330.	54.38		

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	3.28	ft^2/min
S	0.0001212	
Kz/Kr	0.5	
b	1000.	ft

K = T/b = 0.00328 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	3.065	0.02903	ft^2/min
S	0.001788	0.0003993	
Kz/Kr	0.5	not estimated	
b	1000.	not estimated	ft

K = T/b = 0.003065 ft/min

Parameter Correlations

	T	S
T	1.00	-0.52
S	-0.52	1.00

Residual Statistics

for weighted residuals

Sum of Squares... 640.4 ft^2
Variance ..... 9.02 ft^2
Std. Deviation..... 3.003 ft
Mean..... -0.6845 ft
No. of Residuals .. 73
No. of Estimates .. 2

Data Set: F:\GSE\Projects\White Mountain Estates\WME_Drawdown 24h AqTest Neuman 186A.aqt
Title: Constant Discharge Test
Date: 03/23/05
Time: 17:22:41

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates, LLC
Project: 2004-G017A-001
Location: Chalfont, California
Test Date: September 10, 2004
Test Well: Test Well #1

AQUIFER DATA

Saturated Thickness: 186. ft
Anisotropy Ratio (Kz/Kr): 0.3325

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: PW 1

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.6667 ft
Wellbore Radius: 1.02 ft

Partially Penetrating Well
Depth to Top of Screen: 34. ft
Depth to Bottom of Screen: 134. ft

No. of pumping periods: 2

Pumping Period Data

Time (min)	Rate (cu. ft/min)	Time (min)	Rate (cu. ft/min)
0.	21.4	1440.	0.

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: PW 1

X Location: 0. ft

Y Location: 0. ft

Radial distance from PW 1: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 34. ft
Depth to Bottom of Screen: 134. ft

No. of Observations: 73

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	26.64	360.	54.59
1.	34.59	390.	55.01
1.5	38.81	420.	55.17
2.	41.26	450.	55.35
2.5	42.91	480.	55.65
3.	44.16	540.	56.01
3.5	44.97	600.	56.54
4.	45.63	660.	56.89
4.5	46.22	720.	57.09
5.	46.62	780.	57.54
7.5	47.93	840.	57.99
10.	48.54	900.	58.15
15.	49.37	960.	58.25
20.	49.86	1020.	58.28
25.	50.22	1080.	58.26
30.	50.42	1200.	58.35
35.	50.64	1320.	58.47
40.	50.77	1440.	58.68
45.	50.91	1440.5	14.41
50.	51.06	1441.	4.08
55.	51.17	1441.5	5.14
60.	51.28	1442.	5.82
75.	51.61	1442.5	5.71
90.	51.85	1443.	5.43
105.	52.04	1443.5	5.08
120.	52.3	1444.	4.84
135.	52.48	1444.5	4.61
150.	52.63	1445.	4.41
165.	52.86	1447.5	3.97
180.	52.96	1450.	3.67
195.	53.13	1455.	3.22
210.	53.24	1460.	2.93
225.	53.38	1465.	2.77
240.	53.51	1470.	2.6
270.	53.77	1475.	2.55
300.	54.04	1480.	2.49

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
330.	54.38		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.589	ft^2/min
S	3.101E-7	
Sy	0.001	
ß	1.566E-5	

K = T/b = 0.003167 ft/min

Data Set: F:\GSE\Projects\White Mountain Estates\WME_Drawdown 24h AqTest Neuman 186B.aqt
Title: Constant Discharge Test
Date: 03/23/05
Time: 17:34:17

PROJECT INFORMATION

Company: Golden State Environmental
Client: White Mountain Estates, LLC
Project: 2004-G017A-001
Location: Chalfont, California
Test Date: September 10, 2004
Test Well: Test Well #1

AQUIFER DATA

Saturated Thickness: 186. ft
Anisotropy Ratio (Kz/Kr): 0.3325

PUMPING WELL DATA

No. of pumping wells: 1

Pumping Well No. 1: PW 1

X Location: 0. ft
Y Location: 0. ft

Casing Radius: 0.6667 ft
Wellbore Radius: 1.02 ft

Partially Penetrating Well
Depth to Top of Screen: 34. ft
Depth to Bottom of Screen: 134. ft

No. of pumping periods: 2

Pumping Period Data

Time (min)	Rate (cu. ft/min)	Time (min)	Rate (cu. ft/min)
0.	21.4	1440.	0.

OBSERVATION WELL DATA

No. of observation wells: 1

Observation Well No. 1: PW 1

X Location: 0. ft

Y Location: 0. ft

Radial distance from PW 1: 0. ft

Partially Penetrating Well
Depth to Top of Screen: 34. ft
Depth to Bottom of Screen: 134. ft

No. of Observations: 73

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.5	26.64	360.	54.59
1.	34.59	390.	55.01
1.5	38.81	420.	55.17
2.	41.26	450.	55.35
2.5	42.91	480.	55.65
3.	44.16	540.	56.01
3.5	44.97	600.	56.54
4.	45.63	660.	56.89
4.5	46.22	720.	57.09
5.	46.62	780.	57.54
7.5	47.93	840.	57.99
10.	48.54	900.	58.15
15.	49.37	960.	58.25
20.	49.86	1020.	58.28
25.	50.22	1080.	58.26
30.	50.42	1200.	58.35
35.	50.64	1320.	58.47
40.	50.77	1440.	58.68
45.	50.91	1440.5	14.41
50.	51.06	1441.	4.08
55.	51.17	1441.5	5.14
60.	51.28	1442.	5.82
75.	51.61	1442.5	5.71
90.	51.85	1443.	5.43
105.	52.04	1443.5	5.08
120.	52.3	1444.	4.84
135.	52.48	1444.5	4.61
150.	52.63	1445.	4.41
165.	52.86	1447.5	3.97
180.	52.96	1450.	3.67
195.	53.13	1455.	3.22
210.	53.24	1460.	2.93
225.	53.38	1465.	2.77
240.	53.51	1470.	2.6
270.	53.77	1475.	2.55
300.	54.04	1480.	2.49

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
330.	54.38		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
T	0.541	ft^2/min
S	0.0008615	
Sy	0.5	
ß	1.0E-5	

K = T/b = 0.002909 ft/min

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
T	0.541	0.1503	ft^2/min
S	0.0008614	0.001405	
Sy	0.5	3.58	
ß	1.0E-5	2.627E-5	

K = T/b = 0.002909 ft/min

Parameter Correlations

	T	S	Sy	ß
T	1.00	-0.99	0.21	-1.00
S	-0.99	1.00	-0.13	0.99
Sy	0.21	-0.13	1.00	-0.24
ß	-1.00	0.99	-0.24	1.00

Residual Statistics

for weighted residuals

Sum of Squares... 631.6 ft^2
Variance ..... 9.153 ft^2
Std. Deviation..... 3.025 ft
Mean..... -0.4934 ft

No. of Residuals . . 73
No. of Estimates . . 4

Theis (1935) Solution

The Theis (1935) solution (see Theis (1935) Solution) is applicable to unconfined aquifers through the correction of drawdown data as follows:

$$s' = s - (s^2 / 2b)$$

where s' is corrected displacement, s is observed displacement and b is saturated thickness of the aquifer. This correction only applies to pumping tests in which water is withdrawn from an unconfined aquifer; it is not appropriate for injection tests.

The corrected displacement (s') predicted by this equation reaches a maximum of one-half the aquifer saturated thickness (0.5b) when the observed displacement is equal to the aquifer saturated thickness (s = b). Of course, complete dewatering of the aquifer (s = b) is not a realistic condition; however, in some cases, the displacement predicted with this correction equation along a type curve may exceed the saturated thickness of the aquifer.

More:
Assumptions
Data Requirements
Solution Options
Visual Curve Matching Tips
References
Tutorial

Cooper-Jacob (1946) Solution

The Cooper-Jacob (1946) solution (see Cooper-Jacob (1946) Solution) is applicable to unconfined aquifers through the correction of drawdown data as follows:

$$s' = s - (s^2 / 2b)$$

where s' is corrected displacement, s is observed displacement and b is saturated thickness of the aquifer. This correction only applies to pumping tests in which water is withdrawn from an unconfined aquifer; it is not appropriate for injection tests.

The corrected displacement (s') predicted by this equation reaches a maximum of one-half the aquifer saturated thickness (0.5b) when the observed displacement is equal to the aquifer saturated thickness (s = b). Of course, complete dewatering of the aquifer (s = b) is not a realistic condition; however, in some cases, the displacement predicted with this correction equation along a type curve may exceed the saturated thickness of the aquifer.

More:

Assumptions
Data Requirements
Solution Options
Visual Curve Matching Tips
References
Tutorial

Attachment C

(Spring Flow Measurements and Calculations)

Statistical Analysis of Spring Flow Measurements - White Mountain Estates

Statistics

X-Value Observation	Y-Value gpm
1	18.0
2	13.3
3	11.4
4	13.1
5	14.1
6	12.9
7	14.6
8	13.7
9	13.7
10	12.9
11	12.8
12	13.3
13	13.3
14	14.6
15	13.3

	13.7	Mean
	13.3	Median
	1.43	Std Dev
(1)	0.7	Confidence Interval
	0.89	Average of the absolute deviations from the mean
	28.63	Sum of the squares
(2)	13.11	Forcast future value of spring flow (linear regression)
(3)	6.27	Kurtosis
(4)	13.3	Mode
(5)	1.96	Skewness
(6)	-0.26	Standardize
(7)	1.45	Standard Error
(8)	2.05	Variance

Notes:

(1) Thus, the flow from the spring is 13.7 pgm + or - 0.7 gpm, or
12.9 to 14.4 gpm at 95 percent confindence

(2) Predicted value of spring flow based on previous data.

(3) Positive value indicates relatively peaked distribution; negative is flat.

(4) Most frequently occurring number.

(5) The degree of asymetry of a distribution around its mean. Positive skewness indicates a distribution with an asymetric tail extending toward positive values; negative indicates toward more negative values.

(6) Normalized value from a distrubution characterized by a mean and standard deviation.

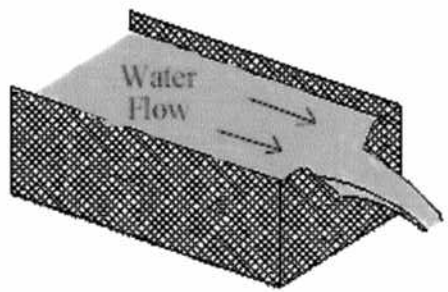
(7) Standard error is a measure of the amount of error in the prediction of y (discharge, gpm) for an idividual x (observation).

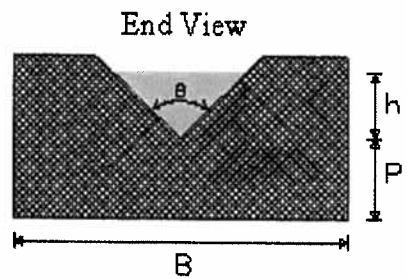
(8) Estimates variance for the flow rate measurements from the spring.

V-Notch (Triangular) Weir Calculator

Discharge and Head Calculations, Equations, and Guidelines for water flow measurement in streams and channels

To: LMNO Engineering home page (more calculations) Unit Conversions Trouble printing?
Weirs: Rectangular Cipoletti Weir **End Depth:** Circular Rectangular Triangular
Flumes: Parshall, Trapezoidal, Rectangular, and U shape Parshall (submerged)





Solve for:
Discharge

Select Units:
Discharge in gal/min or gpm (U.
Head in feet
Notch Angle in Degrees

http://www.LMNOeng.com

Discharge, Q (gpm):	13.209387307194374
Head, h (ft):	.167
Notch Angle, theta (degrees):	90
Discharge Coefficient, C:	0.577904885384
Head Correction Factor, k (ft):	0.0029025168212000003

Click to Calculate

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Topics: Introduction Equations Installation Guidelines and Equation Applicability Error Messages References

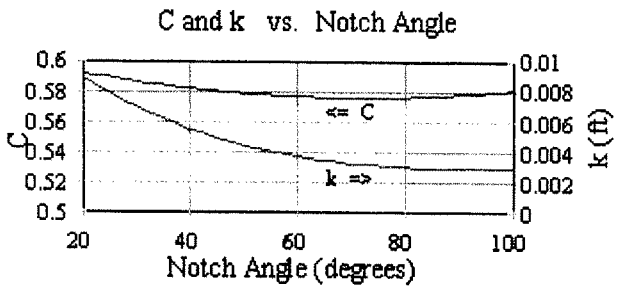
Introduction
Weirs are typically installed in open channels such as streams to determine discharge (flowrate). The basic principle is that discharge is directly related to the water depth above the crotch (bottom) of the V; this distance is called head (h). The V-notch design causes small changes in discharge to have a large change in depth allowing more accurate head measurement than with a rectangular weir.

Equations
V-notch weir equations have become somewhat standardized. ISO (1980), ASTM (1993), and USBR (1997) all suggest using the

Kindsvater-Shen equation, which is presented below from USBR (1997) for Q in cfs and heights in ft units. All of the references show similar curves for C and k vs. angle, but none of them provide equations for the curves. To produce automated calculations, LMNO Engineering used a curve fitting program to obtain the equations which best fit the C and k curves. Our equations are shown below. The graph shown is from our fits. If you compare it to the graphs shown in the references, it looks nearly identical which implies that our fits are very good.

$$Q = 4.28\, C \tan\left(\frac{\theta}{2}\right) (h+k)^{5/2}$$

where Q = Discharge (cfs)
C = Discharge Coefficient
θ = Notch Angle
h = Head (ft)
k=Head Correction Factor (ft)



$C = 0.607165052 - 0.000874466963\,Ø + 6.10393334\times10^{-6}\,Ø^2$

$k\ (ft.) = 0.0144902648 - 0.00033955535\,Ø + 3.29819003\times10^{-6}\,Ø^2 - 1.06215442\times10^{-8}\,Ø^3$

where Ø is the notch angle in degrees

Installation Guidelines and Equation Applicability Top of Page

USBR (1997) suggests using the V-notch weir equations for the following conditions:

Head (h) should be measured at a distance of at least 4h upstream of the weir.

It doesn't matter how thick the weir is except where water flows over the weir through the "V." The weir should be between 0.03 and 0.08 inches (0.8 to 2 mm) thick in the V. If the bulk of the weir is thicker than 0.08 inch, the downstream edge of the V can be chamfered at an angle greater than 45° (60° is recommended) to achieve the desired thickness of the edges. You want to avoid having water cling to the downstream face of the weir.

Water surface downstream of the weir should be at least 0.2 ft. (6 cm) below the bottom of the V to allow a free flowing waterfall.

Measured head (h) should be greater than 0.2 ft. (6 cm) due to potential measurement error at such small heads and the fact that the nappe (waterfall) may cling to the weir.

The equations have been developed for h<1.25 ft. (38 cm) and h/P<2.4..

The equations have been developed for fully contracted V-notch weirs which means h/B should be <= 0.2.

The average width of the approach channel (B) should be > 3 ft. (91 cm).

The bottom of the "V" should be at least 1.5 ft. (45 cm) above the bottom of the upstream channel.

If your weir does not achieve some of the above criteria, you may have a "partially contracted V-notch weir" where h/B needs only to be <= 0.4, the bottom of the "V" only needs to be 4 inch (10 cm) above the bottom of the upstream channel, the approach channel only needs to be 2 ft. (61 cm) wide, and h can be up to 2 ft. (61 cm) instead of 1.25 ft. (38 cm). Partially contracted weirs use a different graph for C which is a function of h/P and P/B and is only valid for a notch angle of 90°. In the graph (not shown - see USBR, 1997), C varies from 0.576 to 0.6; whereas, for a fully contracted 90° notch, C is 0.578 from our graph shown above. Our calculation does not account for partially contracted weirs, but for most practical purposes the difference in C is inconsequential.

Error Messages given by calculation Top of Page

"All inputs must be positive". This is an initial check of user input.

"Angle out of range". The notch angle must be between 20° and 100° (0.35 and 1.75 radians) for the equations to be valid.

"Infeasible input". Input results in a negative head due to the compiler's machine precision. Occurs if head is being computed and a very low Q is entered (e.g. 1.0e-20).

References

ASTM (1993). American Society for Testing and Materials. ASTM D5242. Standard method for open-channel flow measurement of water with thin-plate weirs. 1993. Available from Global Engineering Documents at http://global.ihs.com

ISO (1980). International Organization of Standards. ISO 1438/1-1980(E). Water flow measurement in open channels using weirs and venturi flumes - Part 1: Thin plate weirs. 1980. Available from Global Engineering Documents at http://global.ihs.com

USBR (1997). U.S. Department of the Interior, Bureau of Reclamation. Water Measurement Manual. 1997. 3ed. Available from http://www.ntis.gov

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Attachment D

(Laboratory Reports & Water Quality Regulations)

E.S. BABCOCK & SONS, INC.
Established 1908

NELAP #02101CA ELAP#1156
6100 Quail Valley Court Riverside, CA 92507-0704
P.O. Box 432 Riverside, CA 92502-0432
PH (951) 653-3351 FAX (951) 653-1662
www.babocklabs.com

Client Name: Reeve Pump & Well
Contact: Jennifer Baird
Address: P. O. Box 1624
Bishop, CA 93515

Report Date: 04-Nov-2004

Analytical Report: Page 2 of 4
Project Name: No Project
Project Number: No Project
Work Order Number: A4J2015

Received on Ice (Y/N): Yes Temp: 15 °C

Laboratory Reference Number
A4J2015-01

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
White Mtn. #0002	Water	10/20/04 14:30	10/21/04 9:30

Analyte(s)	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
Cations							
Total Hardness	120	3.0	mg/L	SM 3120B	11/01/04 13:30	lmt	
Calcium	37	1.0	mg/L	EPA 200.7	11/01/04 13:30	lmt	
Magnesium	6.2	1.0	mg/L	EPA 200.7	11/01/04 13:30	lmt	
Sodium	29	1.0	mg/L	EPA 200.7	11/01/04 13:30	lmt	
Potassium	4.4	1.0	mg/L	EPA 200.7	11/01/04 13:30	lmt	
Total Cations	3.7	0.05	me/L	Calculation			
Anions							
Total Alkalinity	120	3.0	mg/L	SM 2320B	10/28/04 15:20	era	
Hydroxide	ND	3.0	mg/L	SM 2320B	10/28/04 15:20	era	
Carbonate	ND	3.0	mg/L	SM 2320B	10/28/04 15:20	era	
Bicarbonate	150	3.0	mg/L	SM 2320B	10/28/04 15:20	era	
Sulfate	53	0.50	mg/L	EPA 300.0	10/22/04 23:14	cth	
Chloride	3.3	1.0	mg/L	EPA 300.0	10/22/04 23:14	cth	
Nitrate as N	0.23	0.20	mg/L	EPA 300.0	10/22/04 23:14	cth	N_HTa
Fluoride	0.4	0.1	mg/L	SM 4500F C	10/25/04 16:58	era	
Total Anions	3.6	0.05	me/L	Calculation			
			me/L				
Aggregate Properties							
pH	7.9	1.0	pH Units	SM 4500H+ B	10/21/04 21:20	jng	
Specific Conductance	370	1.0	umhos/cm	SM 2510 B	10/21/04 21:20	jng	
Solids							
Total Dissolved Solids	240	20	mg/L	SM 2540C	10/24/04 16:57	jng	

ACCREDITED IN ACCORDANCE WITH nelac

E.S. BABCOCK & SONS, INC.
Established 1906

NELAP #02101CA ELAP#1156
6100 Quail Valley Court Riverside, CA 92507-0704
P.O. Box 432 Riverside, CA 92502-0432
PH (951) 653-3351 FAX (951) 653-1662
www.babcocklabs.com

Client Name: Reeve Pump & Well
Contact: Jennifer Baird
Address: P. O. Box 1624
Bishop, CA 93515

Report Date: 04-Nov-2004

Analytical Report: Page 3 of 4
Project Name: No Project
Project Number: No Project
Work Order Number: A4J2015

Received on Ice (Y/N): Yes Temp: 15 °C

Laboratory Reference Number
A4J2015-01

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
White Mtn. #0002	Water	10/20/04 14:30	10/21/04 9:30

Analyte(s)	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
Surfactants							
MBAS	ND	0.05	mg/L	SM 5540C	10/22/04 20:28	tsp	N_HTa
General Inorganics							
Cyanide	ND	0.10	mg/L	SM 4500CN F	10/25/04 14:51	mml	
Nutrients							
Nitrite as N	ND	0.10	mg/L	SM 4500NO2 B	10/22/04 14:28	lmm	
Metals and Metalloids							
Aluminum	ND	50	ug/L	EPA 200.7	11/01/04 13:30	lmt	
Antimony	ND	6.0	ug/L	EPA 200.8	10/30/04 13:37	leo	
Arsenic	ND	2.0	ug/L	EPA 200.8	10/30/04 13:37	leo	
Barium	ND	100	ug/L	EPA 200.8	10/30/04 13:37	leo	
Beryllium	ND	1.0	ug/L	EPA 200.8	10/30/04 13:37	leo	
Cadmium	ND	1.0	ug/L	EPA 200.8	10/30/04 13:37	leo	
Total Chromium	ND	1.0	ug/L	EPA 200.8	11/03/04 15:50	ja	
Copper	ND	10	ug/L	EPA 200.8	10/30/04 13:37	leo	
Iron	ND	20	ug/L	EPA 200.7	11/01/04 13:30	lmt	
Lead	ND	5.0	ug/L	EPA 200.8	10/30/04 13:37	leo	
Manganese	ND	10	ug/L	EPA 200.8	10/30/04 13:37	leo	
Mercury	ND	1.0	ug/L	EPA 200.8	10/30/04 13:37	leo	
Nickel	ND	10	ug/L	EPA 200.8	10/30/04 13:37	leo	
Selenium	ND	5.0	ug/L	EPA 200.8	10/30/04 13:37	leo	
Silver	ND	10	ug/L	EPA 200.8	10/30/04 13:37	leo	
Thallium	ND	1.0	ug/L	EPA 200.8	10/30/04 13:37	leo	
Zinc	93	10	ug/L	EPA 200.8	10/30/04 13:37	leo	

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E.S. BABCOCK & SONS, INC.
Established 1906

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6100 Quail Valley Court Riverside, CA 92507-0704
P.O. Box 432 Riverside, CA 92502-0432
PH (951) 653-3351 FAX (951) 653-1662
www.babcocklabs.com

Client Name: Reeve Pump & Well
Contact: Jennifer Baird
Address: P. O. Box 1624
Bishop, CA 93515

Report Date: 04-Nov-2004

Analytical Report: Page 4 of 4
Project Name: No Project
Project Number: No Project
Work Order Number: A4J2015

Received on Ice (Y/N): Yes Temp: 15 °C

Notes and Definitions

N_HTa Sample analyzed outside of the EPA recommended holding time.
ND Analyte NOT DETECTED at or above the reporting limit (RDL)
NR Not Reported

RDL = Reportable Detection Limit MDL = Method Detection Limit

Approval

Enclosed are the analytical results for the submitted sample(s). Babcock Laboratories certify the data presented as part of this report meet the minimum quality standards in the referenced analytical methods. Any exceptions have been noted. Babcock Laboratories and its officers and employees assume no responsibility and make no warranty, express or implied, for uses or interpretations made by any recipients, intended or unintended, of this report.

☒ James K. Babcock, President
☐ Allison Mackenzie, General Manager
☐ Lawrence J. Chrystal, Laboratory Director

cc:

Short ESB Report

ACCREDITED IN ACCORDANCE WITH nelac

E.S. BABCOCK & SONS, INC.
Established 1906

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6100 Quail Valley Court Riverside, CA 92507-0704
P.O. Box 432 Riverside, CA 92502-0432
PH (951) 653-3351 FAX (951) 653-1662
www.babcocklabs.com

Client Name: Reeve Pump & Well
Contact: Jennifer Baird
Address: P. O. Box 1624
Bishop, CA 93515

Report Date: 04-Nov-2004

Analytical Report: Page 1 of 4
Project Name: No Project
Project Number: No Project
Work Order Number: A4J2015

Received on Ice (Y/N): Yes Temp: 15 °C

Sample Identification

Lab Sample #	Client Sample ID	Matrix	Date Sampled	By	Date Submitted	By
A4J2015-01	White Mtn. #0002	Water	10/20/04 14:30		10/21/04 09:30	UPS

ACCREDITED IN ACCORDANCE WITH nelac

ENVIRONMENTAL

ANALYTICAL CHEMISTS

November 5, 2004

Babcock & Sons, Inc.
P.O. Box 432
Riverside, CA 92502

Lab ID : SP 411182-01
Customer ID: 2-14

Sampled On : October 20, 2004-14:30
Sampled By : Client
Received On: October 27, 2004-10:00
Matrix : Drinking Water

Description : White Mtn. #0002
Project : Reeve Pump & Well (A4J2016-01)

Sample Results - Radio

Constituents	Result ± Error	Units	MCL	Preparation Method	Preparation Date/ID	Analysis Method	Analysis Date/ID
Radio Chemistry P:1 Gross Alpha	2.38 ± 1.43	pCi/L	15*	900.0	10/29/04:A207	900.0	11/02/2004:A01

MCL = Maximium Contaminat Level. Containers: (P) Plastic Preservatives: (1) Cool 4°C
* Including Radium but excluding Uranium. (Ref. Title 22 sec. 64441.)

Corporate Offices & Laboratory
P.O. Box 272 / 853 Corporation Street
Santa Paula, CA 93061-0272
TEL: (805) 392-2000

Office & Laboratory
2500 Stagecoach Road
Stockton, CA 95215
TEL: (209) 942-0161
FAX: (209) 942-0423

Field Office
Visalia, California
TEL: (559) 734-9473
FAX: (559) 734-8435
Mobile: (559) 737-2399

ENVIRONMENTAL

ANALYTICAL CHEMISTS

November 05, 2004
Babcock & Sons, Inc.

Lab ID : SP 411182
Customer : 2-14

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Gross Alpha	900.0	10/29/2004:A207	Blank	pCi/L		ND	<1	
			LCS	pCi/L	42.33	106%	75-125	
			MS	pCi/L	42.33	78.3%	60-140	
		(SP 411064-01)	MSD	pCi/L	42.33	85.7%	60-140	
			MSRPD	pCi/L		8.9%	≤30	
Alpha-α	900.0	11/02/2004:A	00-CCB	cpm		0.060	.0555±.055	
			00-CCV	cpm	24390	50.0%	49.9±.85	

Definitions

Blank : Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS/MSD : Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
CCB : Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV : Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
ND : Non-detect - Result was below the DQO listed for the analyte.
DQO : Data Quality Objective - This is the criteria against which the quality control data is compared.

Corporate Offices & Laboratory
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TEL: (805) 392-2000
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Stockton, CA 95215
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TEL: (559) 734-8473
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Mobile: (559) 737-2399

ENVIRONMENTAL

ANALYTICAL CHEMISTS

November 5, 2004

Lab ID : SP 411182
Customer : 2000014

Babcock & Sons, Inc.
P.O. Box 432
Riverside, CA 92502

Laboratory Report

Introduction: This report package contains total of 3 pages divided into three sections:

Case Narrative (1 Page): An overview of the work performed at FGL.
Chemical Results (1 Page): Results for each sample submitted.
Quality Control (1 Page): Supporting Quality Control (QC) results.

This report package pertains to the following sample:

Sample Description	Date Sampled	Date Received	FGL Lab Sample ID #	Matrix
White Mtn. #0002	10/20/2004	10/27/2004	SP 411182-01	DW

Sampling and Receipt Information: The sample was received, prepared and analyzed within the method specified holding times. All samples arrived at 6 °C. All samples were checked for pH if acid or base preservation required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Forms.

Quality Control: All samples were prepared and analyzed according to the following tables:

Radio Chemistry QC

900.0	10/29/2004:A207 All preparation quality controls are within established criteria.
	11/02/2004:A - GP215 All analysis quality controls are within established criteria.

Certification: I certify that this data package is in compliance with NELAC Standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following signature.

FGL ENVIRONMENTAL

Kelly A. Dunnahoo, B.S.
Laboratory Director

KAD:cea

Corporate Offices & Laboratory
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Mobile: (559) 737-2399

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900 **FAX 714/538-1209**

CLIENT Golden State Enviromental (10957)
ATTN: Dale Schneeberger
15051 Leffingwell Rd.
Suite #102
Whittier, CA 90604

LAB REQUEST 145686
REPORTED 03/08/2005
RECEIVED 02/18/2005

SUBMITTER Client

COMMENTS Added Gross Alpha on 3-15-05.

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
598102	WMESP-1
598103	Laboratory Method Blank

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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TESTING & CONSULTING
Chemical
Microbiological
Environmental

rder #: 598102
Client: Golden State Enviromental
matrix: WATER
Client Sample ID: WMESP-1
Date Sampled: 02/16/2005
me Sampled: 16:30
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
120.1 Conductivity						
Conductivity	415	1	1.0	umhos/cm	02/23/05	MS
0.1 pH						
pH	7.28	1		NA	02/19/05	BGS
160.1 Filterable Residue (TDS)						
Filterable Residue (TDS)	298	1	6.0	mg/L	02/23/05	MS
0.7 ICP Total Metals - Water Only						
Aluminum	0.041	1	0.03	mg/L	02/24/05	KN
Antimony	ND	1	0.006	mg/L	02/24/05	KN
Arsenic	ND	1	0.005	mg/L	02/24/05	KN
Barium	0.017	1	0.01	mg/L	02/24/05	KN
Beryllium	ND	1	0.005	mg/L	02/24/05	KN
Cadmium	ND	1	0.005	mg/L	02/24/05	KN
Calcium	53.7	1	0.1	mg/L	02/24/05	KN
Chromium	ND	1	0.01	mg/L	02/24/05	KN
Copper	ND	1	0.01	mg/L	02/24/05	KN
Iron	0.110	1	0.02	mg/L	02/24/05	KN
Lead	0.011	1	0.005	mg/L	02/24/05	KN
Magnesium	10.8	1	0.1	mg/L	02/24/05	KN
Manganese	ND	1	0.01	mg/L	02/24/05	KN
Nickel	ND	1	0.015	mg/L	02/24/05	KN
Potassium	4.87	1	0.5	mg/L	02/24/05	KN
Selenium	ND	1	0.006	mg/L	02/24/05	KN
Silver	ND	1	0.005	mg/L	02/24/05	KN
Sodium	19.3	1	0.1	mg/L	02/24/05	KN
Thallium	ND	1	0.005	mg/L	02/24/05	KN
Zinc	0.036	1	0.01	mg/L	02/24/05	KN

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

rder #: 598102
Client: Golden State Enviromental
Matrix: WATER
Client Sample ID: WMESP-1
Date Sampled: 02/16/2005
me Sampled: 16:30
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
200.7 Total Hardness (as CaCO3)						
Total Hardness (as CaCO3)	178	1	5.0	mg/L	03/04/05	HK
300.0 Nitrate as N by Ion Chromatography						
Nitrate (as N)	0.10	1	0.1	mg/L	02/19/05	BGS
Chloride	2.0	1	1.0	mg/L	02/19/05	BGS
Sulfate	55	1	1.0	mg/L	02/19/05	BGS
Nitrite (as N)	ND	1	0.1	mg/L	02/19/05	BGS
310.1 Alkalinity						
Alkalinity as Calcium Carbonate	160	1	5.0	mg/L	02/23/05	DK
Bicarbonate	195	1	5.0	mg/L	02/23/05	DK
Carbonate	ND	1	5.0	mg/L	02/23/05	DK
Hydroxide	ND	1	5.0	mg/L	02/23/05	DK
5.2 Total Cyanide						
Cyanide	ND	1	0.01	mg/L	02/24/05	MS
340.2 Fluoride by ISE						
Fluoride	0.19	1	0.05	mg/L	02/23/05	NA
5.1 MBAS (Methylene Blue Active Substances)						
MBAS	ND	1	0.04	mg/L	02/18/05	HK
7470A Mercury in Water						
Mercury	ND	1	0.0004	mg/L	02/24/05	MDJ
0.0 Radioactivity - Gross Alpha and Beta						

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

rder #: 598102
Client: Golden State Enviromental
Matrix: WATER
Client Sample ID: WMESP-1
Date Sampled: 02/16/2005
me Sampled: 16:30
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
900.0 Radioactivity - Gross Alpha and Beta						
Radioactivity - Gross Alpha	2.0+/-2.3	1	1.0	pCi/L	03/17/05	QP
Ion Balance						
Anions	4.41	1		mEq/L	03/04/05	HK
Cations	4.53	1		mEq/L	03/04/05	HK

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

rder #: 598103
Client: Golden State Enviromental
Matrix: WATER
Client Sample ID: Laboratory Method Blank
Date Sampled:
me Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
120.1 Conductivity						
Conductivity	0.97	1	1.0	umhos/cm	02/23/05	MS
0.1 pH						
pH	5.85	1		NA	02/19/05	MS
160.1 Filterable Residue (TDS)						
Filterable Residue (TDS)	ND	1	6.0	mg/L	02/23/05	MS
0.7 ICP Total Metals - Water Only						
Aluminum	ND	1	0.030	mg/L	02/24/05	KN
Antimony	ND	1	0.006	mg/L	02/24/05	KN
Arsenic	ND	1	0.005	mg/L	02/24/05	KN
Barium	ND	1	0.010	mg/L	02/24/05	KN
Beryllium	ND	1	0.005	mg/L	02/24/05	KN
Cadmium	ND	1	0.005	mg/L	02/24/05	KN
Calcium	ND	1	0.10	mg/L	02/24/05	KN
Chromium	ND	1	0.010	mg/L	02/24/05	KN
Copper	ND	1	0.010	mg/L	02/24/05	KN
Iron	ND	1	0.02	mg/L	02/24/05	KN
Lead	ND	1	0.005	mg/L	02/24/05	KN
Magnesium	ND	1	0.10	mg/L	02/24/05	KN
Manganese	ND	1	0.010	mg/L	02/24/05	KN
Nickel	ND	1	0.015	mg/L	02/24/05	KN
Potassium	ND	1	0.50	mg/L	02/24/05	KN
Selenium	ND	1	0.006	mg/L	02/24/05	KN
Silver	ND	1	0.005	mg/L	02/24/05	KN
Sodium	ND	1	0.10	mg/L	02/24/05	KN
Thallium	ND	1	0.005	mg/L	02/24/05	KN
Zinc	ND	1	0.010	mg/L	02/24/05	KN

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

rder #: 598103
Client: Golden State Enviromental
Matrix: WATER
Client Sample ID: Laboratory Method Blank
Date Sampled:
me Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
200.7 Total Hardness (as CaCO3)						
Total Hardness (as CaCO3)	ND	1	5.0	mg/L	02/24/05	KN
300.0 Nitrate as N by Ion Chromatography						
Nitrate (as N)	ND	1	0.1	mg/L	02/19/05	BGS
Chloride	ND	1	1.0	mg/L	02/19/05	BGS
Sulfate	ND	1	1.0	mg/L	02/19/05	BGS
Nitrite (as N)	ND	1	0.1	mg/L	02/19/05	BGS
310.1 Alkalinity						
Alkalinity as Calcium Carbonate	ND	1	5.0	mg/L	02/23/05	DK
Bicarbonate	ND	1	5.0	mg/L	02/23/05	DK
Carbonate	ND	1	5.0	mg/L	02/23/05	DK
Hydroxide	ND	1	5.0	mg/L	02/23/05	DK
35.2 Total Cyanide						
Cyanide	ND	1	0.01	mg/L	02/24/05	MS
340.2 Fluoride by ISE						
Fluoride	ND	1	0.05	mg/L	02/23/05	NA
25.1 MBAS (Methylene Blue Active Substances)						
MBAS	ND	1	0.04	mg/L	02/18/05	HK
7470A Mercury in Water						
Mercury	ND	1	0.0004	mg/L	02/24/05	MDJ
00.0 Radioactivity - Gross Alpha and Beta						

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

rder #: 598103
Client: Golden State Enviromental
Matrix: WATER
Client Sample ID: Laboratory Method Blank
Date Sampled:
me Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
900.0 Radioactivity - Gross Alpha and Beta						
Radioactivity - Gross Alpha	ND	1	1.0	pCi/L	03/17/05	QP
Ion Balance						
Anions	ND	1		mEq/L	03/04/05	HK
Cations	ND	1		mEq/L	03/04/05	HK

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

ASSOCIATED LABORATORIES
QA REPORT FORM

QC Sample: 145686

Matrix: LIQUID

Prep. Date: March 15, 2005

Analysis Date: March 17, 2005

LR#'s in Batch: LR 145686

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

Reporting Units = pCi/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
Gross Alpha	900.0	ND	5.7	5.2	5.7	91	100	9

ND = "U" - Not Detected
RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate
%REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%REC LIMITS = 80-120
RPD LIMITS = 20

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

Test	Method	PREP BLK Value	LCS Result	True	%Rec	L.Limit	H.Limit
Gross Alpha	900.0	ND	5.6	5.7	98	80%	120%

Value = Preparation Blank Value; ND = "U" for Not-Detected
LCS Result = Lab Control Sample Result
True = True Value of LCS
Limit / H.Limit = LCS Control Limits

ASSOCIATED LABORATORIES
806 N. Batavia • Orange, CA 92868
(714) 771-6900 • Fax: (714) 538-1209

145686

CHAIN OF CUSTODY RECORD

Date 2/16/05 Page 1 of 1

CLIENT Golden State Environmental
ADDRESS 15051 Leffingwell Rd #102
Whittier, CA 90604

PROJECT NAME

PROJECT MANAGER Dale Schneeberger
PHONE NUMBER 562 941-3448
SAMPLERS: (Signature) [signature]

Lab Use Only:
Samples Intact Yes X No ___
County Seals Intact Yes ___ No X
Sample Ambient ___ Cooled X Frozen ___
Same Day ___ 24 Hr. ___
Regular X 48 Hr. ___

SAMPLE NUMBER	LOCATION DESCRIPTION	DATE	TIME	SAMPLE TYPE WATER	AIR	SOLID	NO OF CNTNRS	SUSP. CONTAM.	TESTS REQUIRED
WMESP-1	WME / Bishop, CA	2/16/05	1630	X			6	N	Cations, Anions,
									pH, Cond, TDS,
									MBAS, Cyanide,
									Nitrite, Metals &
									Metalloids
									Radiochemistry (Gross Alpha)
									(See attached)

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[signature]	[signature]	2/18/05
Relinquished by: (Signature) [signature] 1540 2/18/05	Received by Laboratory for analysis: (Signature) [signature]	Date/Time 2/18/05 15:45

Special Instructions:

I hereby authorize the performance of the above indicated work.

DISTRIBUTION: White with report. Yellow to AL, Pink to Courier

2-220.- 8:30

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900 **FAX 714/538-1209**

CLIENT Golden State Enviromental (10957)
ATTN: Dale Schneeberger
15051 Leffingwell Rd.
Suite #102
Whittier, CA 90604

LAB REQUEST 145686
REPORTED 03/08/2005
RECEIVED 02/18/2005

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
598102	WMESP-1
598103	Laboratory Method Blank

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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TESTING & CONSULTING
Chemical
Microbiological
Environmental

rder #: 598102
Matrix: WATER
Date Sampled: 02/16/2005
me Sampled: 16:30
Sampled By:

Client: Golden State Enviromental
Client Sample ID: WMESP-1

Analyte	Result	DF	DLR	Units	Date/Analyst	
120.1 Conductivity						
Conductivity	415	1	1.0	umhos/cm	02/23/05	MS
0.1 pH						
pH	7.28	1		NA	02/19/05	BGS
160.1 Filterable Residue (TDS)						
Filterable Residue (TDS)	298	1	6.0	mg/L	02/23/05	MS
0.7 ICP Total Metals - Water Only						
Aluminum	0.041	1	0.03	mg/L	02/24/05	KN
Antimony	ND	1	0.006	mg/L	02/24/05	KN
Arsenic	ND	1	0.005	mg/L	02/24/05	KN
Barium	0.017	1	0.01	mg/L	02/24/05	KN
Beryllium	ND	1	0.005	mg/L	02/24/05	KN
Cadmium	ND	1	0.005	mg/L	02/24/05	KN
Calcium	53.7	1	0.1	mg/L	02/24/05	KN
Chromium	ND	1	0.01	mg/L	02/24/05	KN
Copper	ND	1	0.01	mg/L	02/24/05	KN
Iron	0.110	1	0.02	mg/L	02/24/05	KN
Lead	0.011	1	0.005	mg/L	02/24/05	KN
Magnesium	10.8	1	0.1	mg/L	02/24/05	KN
Manganese	ND	1	0.01	mg/L	02/24/05	KN
Nickel	ND	1	0.015	mg/L	02/24/05	KN
Potassium	4.87	1	0.5	mg/L	02/24/05	KN
Selenium	ND	1	0.006	mg/L	02/24/05	KN
Silver	ND	1	0.005	mg/L	02/24/05	KN
Sodium	19.3	1	0.1	mg/L	02/24/05	KN
Thallium	ND	1	0.005	mg/L	02/24/05	KN
Zinc	0.036	1	0.01	mg/L	02/24/05	KN

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

rder #: 598102
Client: Golden State Enviromental
matrix: WATER
Client Sample ID: WMESP-1
Date Sampled: 02/16/2005
me Sampled: 16:30
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
200.7 Total Hardness (as CaCO3)						
Total Hardness (as CaCO3)	178	1	5.0	mg/L	03/04/05	HK
300.0 Nitrate as N by Ion Chromatography						
Nitrate (as N)	0.10	1	0.1	mg/L	02/19/05	BGS
Chloride	2.0	1	1.0	mg/L	02/19/05	BGS
Sulfate	55	1	1.0	mg/L	02/19/05	BGS
Nitrite (as N)	ND	1	0.1	mg/L	02/19/05	BGS
310.1 Alkalinity						
Alkalinity as Calcium Carbonate	160	1	5.0	mg/L	02/23/05	DK
Bicarbonate	195	1	5.0	mg/L	02/23/05	DK
Carbonate	ND	1	5.0	mg/L	02/23/05	DK
Hydroxide	ND	1	5.0	mg/L	02/23/05	DK
5.2 Total Cyanide						
Cyanide	ND	1	0.01	mg/L	02/24/05	MS
340.2 Fluoride by ISE						
Fluoride	0.19	1	0.05	mg/L	02/23/05	NA
5.1 MBAS (Methylene Blue Active Substances)						
MBAS	ND	1	0.04	mg/L	02/18/05	HK
7470A Mercury in Water						
Mercury	ND	1	0.0004	mg/L	02/24/05	MDJ
n Balance						

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 598102
Matrix: WATER
Date Sampled: 02/16/2005
Time Sampled: 16:30
Sampled By:

Client: Golden State Enviromental
Client Sample ID: WMESP-1

Analyte	Result	DF	DLR	Units	Date/Analyst	
Ion Balance						
Anions	4.41	1		mEq/L	03/04/05	HK
Cations	4.53	1		mEq/L	03/04/05	HK

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

rder #: 598103
Matrix: WATER
Date Sampled:
ne Sampled:
Sampled By:

Client: Golden State Enviromental
Client Sample ID: Laboratory Method Blank

Analyte	Result	DF	DLR	Units	Date/Analyst	
120.1 Conductivity						
Conductivity	0.97	1	1.0	umhos/cm	02/23/05	MS
0.1 pH						
pH	5.85	1		NA	02/19/05	MS
160.1 Filterable Residue (TDS)						
Filterable Residue (TDS)	ND	1	6.0	mg/L	02/23/05	MS
0.7 ICP Total Metals - Water Only						
Aluminum	ND	1	0.030	mg/L	02/24/05	KN
Antimony	ND	1	0.006	mg/L	02/24/05	KN
Arsenic	ND	1	0.005	mg/L	02/24/05	KN
Barium	ND	1	0.010	mg/L	02/24/05	KN
Beryllium	ND	1	0.005	mg/L	02/24/05	KN
Cadmium	ND	1	0.005	mg/L	02/24/05	KN
Calcium	ND	1	0.10	mg/L	02/24/05	KN
Chromium	ND	1	0.010	mg/L	02/24/05	KN
Copper	ND	1	0.010	mg/L	02/24/05	KN
Iron	ND	1	0.02	mg/L	02/24/05	KN
Lead	ND	1	0.005	mg/L	02/24/05	KN
Magnesium	ND	1	0.10	mg/L	02/24/05	KN
Manganese	ND	1	0.010	mg/L	02/24/05	KN
Nickel	ND	1	0.015	mg/L	02/24/05	KN
Potassium	ND	1	0.50	mg/L	02/24/05	KN
Selenium	ND	1	0.006	mg/L	02/24/05	KN
Silver	ND	1	0.005	mg/L	02/24/05	KN
Sodium	ND	1	0.10	mg/L	02/24/05	KN
Thallium	ND	1	0.005	mg/L	02/24/05	KN
Zinc	ND	1	0.010	mg/L	02/24/05	KN

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

rder #: 598103
Client: Golden State Enviromental
matrix: WATER
Client Sample ID: Laboratory Method Blank
Date Sampled:
ne Sampled:
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
200.7 Total Hardness (as CaCO3)						
Total Hardness (as CaCO3)	ND	1	5.0	mg/L	02/24/05	KN
300.0 Nitrate as N by Ion Chromatography						
Nitrate (as N)	ND	1	0.1	mg/L	02/19/05	BGS
Chloride	ND	1	1.0	mg/L	02/19/05	BGS
Sulfate	ND	1	1.0	mg/L	02/19/05	BGS
Nitrite (as N)	ND	1	0.1	mg/L	02/19/05	BGS
310.1 Alkalinity						
Alkalinity as Calcium Carbonate	ND	1	5.0	mg/L	02/23/05	DK
Bicarbonate	ND	1	5.0	mg/L	02/23/05	DK
Carbonate	ND	1	5.0	mg/L	02/23/05	DK
Hydroxide	ND	1	5.0	mg/L	02/23/05	DK
5.2 Total Cyanide						
Cyanide	ND	1	0.01	mg/L	02/24/05	MS
340.2 Fluoride by ISE						
Fluoride	ND	1	0.05	mg/L	02/23/05	NA
5.1 MBAS (Methylene Blue Active Substances)						
MBAS	ND	1	0.04	mg/L	02/18/05	HK
7470A Mercury in Water						
Mercury	ND	1	0.0004	mg/L	02/24/05	MDJ
on Balance						

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

rder #: 598103

Client: Golden State Enviromental

Matrix: WATER

Client Sample ID: Laboratory Method Blank

Date Sampled:

ne Sampled:

Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
Ion Balance						
Anions	ND	1		mEq/L	03/04/05	HK
Cations	ND	1		mEq/L	03/04/05	HK

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

ASSOCIATED LABORATORIES
QA REPORT FORM

QC Sample: LR 145700

Matrix: WATER

Prep. Date: Feb 23-05

Analysis Date: Feb 23-05

ID#'s in Batch: LR 145700, 145661, 145662, 145791, 145790, 145686

SAMPLE RESULT / SAMPLE DUPLICATE

Reporting Units = mg/L

Test	Method	Sample Result	Sample Duplicate	RPD
TDS	160-1 / 2540C	488	492	0.8

RPD = Relative Percent Difference of Sample Result and Sample Duplicate

RPD LIMITS = 5 %

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

PREP BLANK	LCS				
Value	Result	TRUE	% Rec	L. Limit	H. Limit
ND	296	293	101	90%	110%

Value = Preparation Blank Value; ND = Not-Detected
LCS Result = Lab Control Sample Result
True = True Value of LCS
L.Limit / H.Limit = LCS Control Limits

ASSOCIATED LABORATORIES
QA REPORT FORM (MS/MSD)

QC Sample: 145686-598102 QC# 022305 W5

Matrix: WATER

Prep. Date: February 23, 2005

Analysis Date: February 24, 2005

ID#'s in Batch: LR 145686, 145591, 145674, 145664, 145714, 145691, 145689, 145694, 145700, 145673, 145650, 145837

Reporting Units = mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

TEST	Method	Sample Result	ND	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
As	200.7 / 6010	0.005	U	1	0.91	0.89	91	89	2
Se	200.7 / 6010	0.006	U	1	0.89	0.85	89	85	5
Tl	200.7 / 6010	0.005	U	1	0.90	0.87	90	87	3
Pb	200.7 / 6010	0.011		1	0.84	0.83	83	82	1
Sb	200.7 / 6010	0.006	U	1	0.86	0.84	86	84	2
Ba	200.7 / 6010	0.017		1	0.95	0.92	93	90	3
Be	200.7 / 6010	0.005	U	1	0.96	0.93	96	93	3
Cd	200.7 / 6010	0.005	U	1	0.87	0.84	87	84	4
Cr	200.7 / 6010	0.010	U	1	0.93	0.89	93	89	4
Co	200.7 / 6010	0.005	U	1	0.86	0.83	86	83	4
Cu	200.7 / 6010	0.010	U	1	0.90	0.88	90	88	2
Mo	200.7 / 6010	0.017		1	0.92	0.92	90	90	0
Ni	200.7 / 6010	0.015	U	1	0.87	0.82	87	82	6
Ag	200.7 / 6010	0.005	U	1	0.40	0.39	80	78	3
V	200.7 / 6010	0.005	U	1	0.96	0.93	96	93	3
Zn	* 200.7 / 6010	0.036		1	0.83	0.78	79	74	6
Al	200.7 / 6010	0.041		1	0.90	0.87	86	83	3
Fe	200.7 / 6010	0.110		1	1.03	0.96	92	85	7
Mn	200.7 / 6010	0.010	U	1	0.90	0.87	90	87	3
B	200.7 / 6010	0.050		1	0.94	0.90	89	85	4
Ca	200.7 / 6010	53.700		10	62.10	58.20	NC	NC	6
Mg	200.7 / 6010	10.800		10	20.80	19.60	100	88	6
K	200.7 / 6010	4.870		10	14.80	12.80	99	79	14
Na	200.7 / 6010	19.300		10	30.00	28.30	107	90	6

*** = Outside QC limits, due to matrix Interference**

If Sample Result > 4 times Spike Added, then "NC"

% REC LIMITS = 75 -125
RPD LIMITS = 20

ASSOCIATED LABORATORIES

LCS/MB REPORT FORM

LCS Source(s) : QC21-LOT#QC2/91/1;QC7-LOT7A92/1

Element	Method	Result	TRUE	%Rec	L.Limit	H.Limit	Method Blank MB	Method Blank ND
Ag	200.7 / 6010	0.87	1	87	80%	120%	0.005	U
Al	200.7 / 6010	1.92	2	96	80%	120%	0.030	U
As	200.7 / 6010	1.84	2	92	80%	120%	0.005	U
B	200.7 / 6010	1.87	2	94	80%	120%	0.050	U
Ba	200.7 / 6010	1.87	2	94	80%	120%	0.010	U
Be	200.7 / 6010	2.04	2	102	80%	120%	0.005	U
Cd	200.7 / 6010	1.86	2	93	80%	120%	0.005	U
Co	200.7 / 6010	1.95	2	98	80%	120%	0.005	U
Cr	200.7 / 6010	1.89	2	95	80%	120%	0.010	U
Cu	200.7 / 6010	1.95	2	98	80%	120%	0.010	U
Fe	200.7 / 6010	1.91	2	96	80%	120%	0.020	U
Mn	200.7 / 6010	1.92	2	96	80%	120%	0.010	U
Mo	200.7 / 6010	1.87	2	94	80%	120%	0.010	U
Ni	200.7 / 6010	1.90	2	95	80%	120%	0.015	U
Pb	200.7 / 6010	1.85	2	93	80%	120%	0.005	U
Sb	200.7 / 6010	1.91	2	96	80%	120%	0.006	U
Se	200.7 / 6010	1.97	2	99	80%	120%	0.006	U
Tl	200.7 / 6010	1.95	2	98	80%	120%	0.005	U
V	200.7 / 6010	1.96	2	98	80%	120%	0.005	U
Zn	200.7 / 6010	1.86	2	93	80%	120%	0.010	U
Ca	200.7 / 6010	5.45	5	109	80%	120%	0.100	U
Mg	200.7 / 6010	5.55	5	111	80%	120%	0.100	U
K	200.7 / 6010	4.04	5	81	80%	120%	0.500	U
Na	200.7 / 6010	4.66	5	93	80%	120%	0.100	U

*Notes : RESULT = Sample Result; TRUE = True Value; %Rec = 100*Result/True*

L.LIMIT / H.LIMIT = Low / High Control Limits

MB = Method Blank; ND = " U " for Non- Detected

ASSOCIATED LABORATORIES
QA REPORT FORM

QC Sample : LR 145647-597932

Matrix: WATER

Prep. Date: 02/18/05

Analysis Date: 02/19/05

Lab ID#'s in Batch: LR 145647, 145671, 145665, 145686, 145694, 145702, 145689

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

REPORTING UNITS = mg/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
CL	300.0	775	200	997	999	111	112	0
SO4	300.0	400	200	631	632	116	116	0
NO3	300.0	ND	100	107.0	107	107	107	0
NO2	300.0	ND	100	100	101	100	101	1

RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Dup
%REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%Rec Limits = 80 - 120
RPD Limits = 20

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

Test	Method	PREP BLK Value	LCS Result	True	%Rec	L.Limit	H.Limit
CL	300.0	ND	40.2	40	101	90%	110%
SO4	300.0	ND	39.9	40	100	90%	110%
NO3	300.0	ND	19.8	20	99	90%	110%
NO2	300.0	ND	4.95	5	99	90%	110%

VALUE = Preparation Blank Value; ND = Not-Detected
LCS = Lab Control Sample Result
TRUE = True Value of LCS
L.LIMIT / H.LIMIT = LCS Control Limits

ASSOCIATED LABORATORIES
QA REPORT FORM

QC Sample: LR 145686-598102

Matrix: WATER

Prep. Date: 02/23/05

Analysis Date: 02/23/05

ID#'s in Batch: LR 145643, 145641, 145665, 145686, 145832, 144887

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

Reporting Units = mg/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
FLUORIDE	340.2 / 4500-F	0.19	0.25	0.47	0.46	112	108	2

ND = Not Detected
RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate
%REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%REC LIMITS = 75 - 125
RPD LIMITS = 20

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

PREP BLK	LCS				
Value	Result	True	%Rec	L.Limit	H.Limit
ND	1.02	1.00	102	80%	120%

Value = Preparation Blank Value
LCS Result = Lab Control Sample Result
True = True Value of LCS
L.Limit / H.Limit = LCS Control Limits

ASSOCIATED LABORATORIES
QA REPORT FORM

QC Sample: LR 145686-598102

Matrix: WATER

Prep. Date: Feb 24-05

Analysis Date: Feb 24-05

ID#'s in Batch: LR 145686, 145467, 145735, 145818, 145842, 145925

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

Reporting Units = mg/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
MERCURY	245.1 / 7470A	ND	0.004	0.0036	0.0031	90	78	15

RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate
%REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%REC LIMITS = 75 - 125
RPD LIMITS = 20

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

PREP BLK	LCS				
Value	Result	True	%Rec	L.Limit	H.Limit
ND	0.0054	0.005	108	80%	120%

Value = Preparation Blank Value; ND = Not-Detected
LCS Result = Lab Control Sample Result
True = True Value of LCS
L.Limit / H.Limit = LCS Control Limits

ASSOCIATED LABORATORIES
806 N. Batavia • Orange, CA 92868
(714) 771-6900 • Fax: (714) 538-1209

145686

CHAIN OF CUSTODY RECORD

Date 2/16/05 Page 1 of 1

CLIENT Golden State Environmental
ADDRESS 15051 Leffingwell Rd #102
Whittier, CA 90604

PROJECT NAME

PROJECT MANAGER Dale Schnaeberger
PHONE NUMBER 562 941-3448
SAMPLERS (Signature) Dale Schn

Lab Use Only:
Samples Intact Yes X No ___
County Seals Intact Yes ___ No X
Sample Ambient ___ Cooled X Frozen ___
Same Day ___ 24 Hr. ___
Regular X 48 Hr. ___

SAMPLE NUMBER	LOCATION DESCRIPTION	DATE	TIME	SAMPLE TYPE WATER	AIR	SOLID	NO OF CNTNRS	SUSP. CONTAM.	TESTS REQUIRED
WMESP-1	WME / Bishop, CA	2/16/05	1630	X			6	N	Cations, Anions, pH, Cond, TDS, MBAS, Cyanide, Nitrite, Metals & Metalloids Radiochemistry (Gross Alpha) (See attached)

Relinquished by: (Signature) Dale Schn
Received by: (Signature) M Montie
Date/Time 2/18/05

Relinquished by: (Signature) M Montie 2/18/05 1540
Received by Laboratory for analysis: (Signature) [illegible]
Date/Time 2/18/05 1545

Special Instructions:

I hereby authorize the performance of the above indicated work.

DISTRIBUTION: White with report. Yellow to AL, Pink to Courier

2-220.— 8.20

September 12, 2003

NOTE: This extract from Title 22 of the California Code of Regulations is prepared as an aid to staff of the DHS Drinking Water Program and cannot be relied upon by the regulated community as the State of California's representation of the law. The published codes are the only official representation of the law.

TITLE 22, CALIFORNIA CODE OF REGULATIONS

DIVISION 4. ENVIRONMENTAL HEALTH

CHAPTER 15. DOMESTIC WATER QUALITY AND MONITORING

ARTICLE 4. PRIMARY STANDARDS—INORGANIC CHEMICALS

Section 64431. Maximum contaminant levels - inorganic chemicals

Table 64431-A

Maximum Contaminant Levels
Inorganic Chemicals

Chemical	*Maximum Contaminant Level, mg/L*
Aluminum	1.
Antimony	0.006
Arsenic	0.05
Asbestos	7 MFL*
Barium	1.
Beryllium	0.004
Cadmium	0.005
Chromium	0.05
Cyanide	0.15
Fluoride	2.
Mercury	0.002
Nickel	0.1
Nitrate (as NO3)	45.
Nitrate + Nitrite (sum as nitrogen)	10.
Nitrite (as nitrogen)	1.
Selenium	0.05
Thallium	0.002

*MFL = million fibers per liter; MCL for fibers exceeding 10 um in length.

Article 4.1. FLUORIDATION

Section 64433.2. Optimal fluoride levels

Table 64433.2-A
Optimal Fluoride Levels

Annual average of maximum daily air temperatures, degrees		*Optimal fluoride level, mg/L*	*Control Range, mg/L*	
Fahrenheit	Celsius		Low	High
50.0 to 53.7	10.0 to 12.0	1.2	1.1	1.7
53.8 to 58.3	12.1 to 14.6	1.1	1.0	1.6
58.4 to 63.8	14.7 to 17.7	1.0	0.9	1.5
63.9 to 70.6	17.8 to 21.4	0.9	0.8	1.4
70.7 to 79.2	21.5 to 26.2	0.8	0.7	1.3
79.3 to 90.5	26.3 to 32.5	0.7	0.6	1.2

ARTICLE 5. RADIOACTIVITY

Section 64441. Natural radioactivity

Section 64443. Man-made radioactivity

Table 4
MCL Radioactivity

Constituent	*Maximum Contaminant Level, pCi/l*
Combined Radium-226 and Radium-228	5
Gross Alpha particle activity (including Radium-226 but excluding Radon and Uranium)	15
Tritium	20,000
Strontium-90	8
Gross Beta particle activity	50
Uranium	20

ARTICLE 5.5. PRIMARY STANDARDS—ORGANIC CHEMICALS

Section 64444. General requirements

Table 64444-A
Maximum Contaminant Levels
Organic Chemicals

Chemical	*Maximum Contaminant Level, mg/L*
(a) Volatile Organic Chemicals (VOCs)	
Benzene	0.001
Carbon Tetrachloride	0.0005
1,2-Dichlorobenzene	0.6
1,4-Dichlorobenzene	0.005
1,1-Dichloroethane	0.005
1,2-Dichloroethane	0.0005
1,1-Dichloroethylene	0.006
cis-1,2-Dichloroethylene	0.006
trans-1,2-Dichloroethylene	0.01
Dichloromethane	0.005
1,2-Dichloropropane	0.005
1,3-Dichloropropene	0.0005
Ethylbenzene	0.3
Methyl-*tert*-butyl ether	0.013
Monochlorobenzene	0.07
Styrene	0.1
1,1,2,2-Tetrachloroethane	0.001
Tetrachloroethylene	0.005
Toluene	0.15
1,2,4-Trichlorobenzene	0.005
1,1,1-Trichloroethane	0.200
1,1,2-Trichloroethane	0.005
Trichloroethylene	0.005
Trichlorofluoromethane	0.15
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.2
Vinyl Chloride	0.0005
Xylenes	1.750*

Table 64444-A (continued)
Maximum Contaminant Levels
Organic Chemicals

Chemical	*Maximum Contaminant Level, mg/L*
(b) Non-Volatile Synthetic Organic Chemicals (SOCs)	
Alachlor	0.002
Atrazine	0.001
Bentazon	0.018
Benzo(a)pyrene	0.0002
Carbofuran	0.018
Chlordane	0.0001
2,4-D	0.07
Dalapon	0.2
Dibromochloropropane (DBCP)	0.0002
Di(2-ethylhexyl)adipate	0.4
Di(2-ethylhexyl)phthalate	0.004
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Endrin	0.002
Ethylene Dibromide (EDB)	0.00005
Glyphosate	0.7
Heptachlor	0.00001
Heptachlor Epoxide	0.00001
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Lindane	0.0002
Methoxychlor	0.03
Molinate	0.02
Oxamyl	0.05
Pentachlorophenol	0.001
Picloram	0.5
Polychlorinated Biphenyls	0.0005
Simazine	0.004
Thiobencarb	0.07
Toxaphene	0.003
2,3,7,8-TCDD (Dioxin)	3×10^{-8}
2,4,5-TP (Silvex)	0.05

*MCL is for either a single isomer or the sum of the isomers.

ARTICLE 16. SECONDARY DRINKING WATER STANDARDS

Section 64449. Secondary maximum contaminant levels and compliance

Table 64449-A
Secondary Maximum Contaminant Levels
Consumer Acceptance Limits

Constituents	*Maximum Contaminant Levels/Units*
Aluminum	0.2 mg/L
Color	15 Units
Copper	1.0 mg/L
Corrosivity	Non-corrosive
Foaming Agents (MBAS)	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Methyl-*tert*-butyl ether (MTBE)	0.005 mg/L
Odor—Threshold	3 Units
Silver	0.1 mg/L
Thiobencarb	0.001 mg/L
Turbidity	5 Units
Zinc	5.0 mg/L

Table 64449-B
Secondary Maximum Contaminant Levels - Ranges

	Maximum Contaminant Level Ranges		
Constituent, Units	*Recommended*	*Upper*	*Short Term*
Total Dissolved Solids, mg/L	500	1,000	1,500
or			
Specific Conductance, micromhos	900	1,600	2,200
Chloride, mg/L	250	500	600
Sulfate, mg/L	250	500	600

CHAPTER 17.5. LEAD AND COPPER

ARTICLE 1. GENERAL REQUIREMENTS AND DEFINITIONS

Section 64672.3. Determination of compliance with lead and copper action levels

(a) The lead action level is exceeded if the concentration of lead in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with Article 6 is greater than 0.015 mg/L (i.e., if the "90th percentile" lead level is greater than 0.015 mg/L).

(b) The copper action level is exceeded if the concentration of copper in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with Article 6 is greater than 1.3 mg/L (i.e., if the "90th percentile" copper level is greater than 1.3 mg/L).

EDT

E.S BABCOCK & SONS, INC.
Established 1906
NELAP #02101CA ELAP#1156
6100 Quail Valley Court Riverside, CA 92507-0704
P.O. Box 432 Riverside, CA 92502-0432
PH (909) 653-3351 FAX (909) 653-1662
e-mail: esbsales@aol.com
www.babcocklabs.com

GENERAL MINERAL & PHYSICAL & INORGANIC ANALYSIS (9/99)

Date of Report: 03/06/19
Sample ID No.A3F0231-01
Laboratory Name: E.S. BABCOCK & SONS
Signature Lab Director:
Name of Sampler:Marilyn Voorhis
Employed By: White Mountain MW Co.
Date/Time Sample Collected:03/06/03/1000
Date/Time Sample Received @ Lab:03/06/05/0940
Date Analyses Completed:03/06/17

System Name:WHITE MOUNTAIN ESTATES
System Number: 2600621
Name or Number of Sample Source:WELL 01

User ID: 26C
Station Number: 2600621-001
Date/Time of Sample: |03|06|03|1000|
YY MM DD TTTT
Laboratory Code: 4790
YY MM DD
Date Analysis completed: |03|06|17|
Submitted by:
Phone #:

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3) (mg/L)	00900	120	
	mg/L	Calcium (Ca) (mg/L)	00916	37	
	mg/L	Magnesium (Mg) (mg/L)	00927	5.4	
	mg/L	Sodium (NA) (mg/L)	00929	35	
	mg/L	Potassium (K) (mg/L)	00937	3.3	
Total Cations		Meq/L Value: 3.90			
	mg/L	Total Alkalinity (AS CaCO3) (mg/L)	00410	110	
	mg/L	Hydroxide (OH) (mg/L)	71830	< 3	
	mg/L	Carbonate (CO3) (mg/L)	00445	< 3	
	mg/L	Bicarbonate (HCO3) (mg/L)	00440	140	
*	mg/L+	Sulfate (SO4) (mg/L)	00945	79	.5
*	mg/L+	Chloride (Cl) (mg/L)	00940	5.2	
45	mg/L	Nitrate (as NO3) (mg/L)	71850	< 2	2.0
2 .	mg/L	Fluoride (F) (Natural-Source)	00951	0.5	.1
Total Anions		Meq/L Value: 4.11			
	Std.Units+	PH (Laboratory) (Std.Units)	00403	7.8	
***	umho/cm+	Specific Conductance (E.C.) (umhos/cm)	00095	420	
****	mg/L+	Total Filterable Residue@180C(TDS)(mg/L)	70300	280	
15	Units	Apparent Color (Unfiltered) (Units)	00081		
3	TON	Odor Threshold at 60 C (TON)	00086		1.
5	NTU	Lab Turbidity (NTU)	82079		
0.5	mg/L+	MBAS (mg/L)	38260	< 0.05	

* 250-500-600 ** 0.6-1.7 *** 1000-1600-2200 **** 500-1000-1500

ACCREDITED nelac

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INORGANIC CHEMICALS A3F0231-01

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
1000	ug/L	Aluminum (Al) (ug/L)	01105	ND	50.0
6	ug/L	Antimony (ug/L)	01097	ND	6.0
50	ug/L	Arsenic (As) (ug/L)	01002	2.7	2.0
1000	ug/L	Barium (Ba) (ug/L)	01007	ND	100.0
4	ug/L	Beryllium (ug/L)	01012	ND	1.0
5	ug/L	Cadmium (Cd) (ug/L)	01027	ND	1.0
50	ug/L	Chromium (Total Cr) (ug/L)	01034	3.7	10.0
	ug/L	Chromium (Total Cr-CrVI screen) (ug/L)	A-044	3.7	1.0
1000	ug/L+	Copper (Cu) (ug/L)	01042	ND	50.0
300	ug/L+	Iron (Fe) (ug/L)	01045	ND	100.0
	ug/L	Lead (Pb) (ug/L)	01051	ND	5.0
50	ug/L+	Manganese (Mn) (ug/L)	01055	ND	20.0
2	ug/L	Mercury (Hg) (ug/L)	71900	ND	1.0
100	ug/L	Nickel (ug/L)	01067	ND	10.0
50	ug/L	Selenium (Se) (ug/L)	01147	ND	5.0
100	ug/L+	Silver (Ag) (ug/L)	01077	ND	10.0
2	ug/L	Thallium (ug/L)	01059	ND	1.0
5000	ug/L	Zinc (Zn) (ug/L)	01092	ND	50.0
		ADDITIONAL ANALYSES			
1000	ug/L	Nitrite as Nitrogen(N) (ug/L)	00620	ND	400
200	ug/L	Cyanide (ug/L)	01291	ND	100.0

+ Indicates Secondary Drinking Water Standards

Laboratory comments and description of any additional components found:

Sample Description: 197 Sequoia St Bishop

Mono CHD/White Mountain Est.

ACCREDITED IN ACCORDANCE WITH nelac

Attachment E

(Comments to Letter Dated February 4, 2005)

amec

February 4, 2005
Project No. 4417000641

County of Mono
Minaret Mall, Suite P
P.O. Box 347
Mammoth Lakes, CALIFORNIA 93546

Attention: Mr. Gerry Le Francois, Planner

RE: Review Of " Preliminary Hydrogeologic Investigation White Mountain Estates-Phase 2, Chalfant Valley, Mono County Prepared By Golden State Environmental For White Mountain Estates LLC Dated November 30, 2004

AMEC Earth & Environmental, Inc. (AMEC) has reviewed the above referenced document on behalf of Mono County. AMEC's review assessed the results of the investigation as presented in the referenced report relative to the Mono County requirements listed as items VIII b & f of Appendix G, Environmental Checklist Form. In reviewing and commenting on the referenced document AMEC also considered the observations made during the site visit conducted by this firm on June 3, 2004, conversations with representatives from Golden States Environmental and White Mountain Estates LLC and AMEC's previous review letter (dated June 2004) regarding the proposed scope of work for hydrogeologic assessment of the site, AMEC's review is focused on the original AMEC comments regarding the scope of work for the water resource assessment for the site. Specifically these comments include the following:

1. Potential impacts to the potable water supply well located within the development immediately west of the subject site,

2. Potential water quantity and quality impacts to the local springs (inclusive of septic waste disposal and irrigation subsurface return flow),

3. Potential water quality and quantity impacts of the western portion of the sites community water system on the private water systems and vise versa.

The purpose of AMEC's review is to provide the County of Mono with technical expertise regarding potential geologic hazards and water resource issues associated with the proposed development based on documents provided by the County.

On behalf of Mono County, AMEC's comments to the above referenced report are as follows:

1. It is apparent from the report that drawdown experienced during the aquifer test performed at the site was only recorded in the pumping well located on proposed lot 40. Typically, pumping wells experience excessive drawdown due to inefficiencies in construction and drawdown data is often "corrected". Please provide a description of the correction factor used or explain why a correction factor was not employed. Additionally,

recovery data are typically used to aid in validating the drawdown data and analysis as well as assessing drawdown correction factors. If available, please provide recovery data and analysis.

2. Drawdown data indicate that the depth to water at the end of the pumping test was 24 feet below the top of well perforations. This condition typically leads to cascading water and air entrainment in the water column. Air entrainment can cause cavitation of the pump and overestimation of pumping rates. Given the possibility of this condition please supply information to support the contention that the well can supply the reported 160 gallons per minute and that the rate of pumping during the test was held constant.

3. On page 4 under heading "Potential Water Quantity and Quality Impacts to "Springs" the following statement is made: For lots located at elevations above the springs, impact to the spring system would be less than 2.3 gpm per lot. The report also states that the number of lots above the springs is undefined and development may not proceed in the area. Based on these comments it is AMEC's opinion that if further development in the area east of the springs is planned a much more detailed evaluation of the potential impacts should be addressed.

4. A map or diagram showing the proposed lots, location of neighboring developments, wells; fault zones and other geologic conditions would aid in review of the document and allow for it to read as a standalone piece.

5. Given the proximity of the White Mountain escarpment, associated fault zones and potential for significant discharge or recharge boundaries, please provide a rational for conducting the aquifer -pumping test for 24 hours.

6. Please provide additional information as to the method used to derive the distance drawdown plot. Also provide additional information regarding this evaluation to include distances to potential sensitive hydrologic features such as neighboring wells, proposed septic leach fields and springs.

7. Given the reported depth to first groundwater (as noted on the well log) of 30', please provide additional information regarding potential recharge of the aquifer and impacts to water quality due to irrigation and septic disposal.

8. Relating to the comment above, the well log shows possible perched groundwater at 30'. Please provide additional information regarding this groundwater to include: how detected when using mud rotary drilling, potential thickness and location of lower confining unit, potential connection to local springs and water source for WME Phase 1.

9. The aquifer test solution used (Nueman Method) is typically employed for aquifers that are considered unconfined. The text of the report includes a storativity value of 0.007. Storativity values in the range of 10^{-3} are typically associated with semi-confined/leaky aquifers. Please discuss the test data and analysis further and provide rationale for utilizing the Nueman solution.

amec

10. The California Department of Health Services requires that a permitted public water source be sustainable for a minimum of ten years. Please provide specific discussion relating to the resource, this requirement and the potential impacts of discharging 145 acre-feet per year from the site for ten years.

11. Please provide references to support conclusions relating to aquifer gradients.

12. Information in the report indicates that the pumping test was performed on September 10, 2004 and the well was sampled on October 20, 2004. Please provide additional information relative to the sampling event so that the County may conclude that the analytical data provided is representative to the well and aquifer during anticipated operational conditions. Please indicate if the sample was raw or field filtered. If available, include sample collection data sheets and chain of custody documents.

13. The report states that the proposed demand is 145 acre-feet per year. Footnotes c & d allude to this amount of water being significantly less than the flow through Chalfant Valley. The recharge assessment presented in the report for the drainages in the White Mountains above the project site indicate that there is only 30 acre feet available. However, there was speculation that this amount may be less than anticipated due to geologic factors. The well for the project was installed in alluvial fan deposits at the base of White Mountains. Information in the form of geochemical data and/or physical data and analysis would aid in the assessment of the source of recharge and its potential for the site.

As your adjunct staff we look forward to reviewing the final work product to be prepared by White Mountain Estates LLC and providing input relative to your approval of the project. Should you have any questions regarding this letter please contact Brett Whitford at 775-331-2375.

Sincerely;

Brett Whitford
Environmental Services Manager
BW/MWM/dc

Mark W. McLarty CEG 1107
Senior Project Manager

Encl.: None

c: Mr. Gerry LeFrancois, Addressee (1)

Attachment E

Response to review of Preliminary Hydrogeologic Investigation, White Mountain Estates – Phase 2, Chalfant Valley, Mono County by AMEC Earth & Environmental, Inc. (AMEC).

Comment 1 – It is apparent from the report that drawdown experienced during the aquifer test performed at the site was only recorded in the pumping well located on the proposed lot 40. Typically, pumping wells experience excessive drawdown due to inefficiencies in construction and drawdown data is often "corrected." Please provide a description of the correction factor used or explain why a correction factor was not employed. Additionally, recovery data are typically used to aid in validating the drawdown data and analysis as well as assessing drawdown correction factors. If available, please provide recovery data and analysis.

Response – During groundwater pumping, drawdown was recorded in the pumping well and after pumping, recovery was recorded. Both drawdown and recovery data are provided in Attachment B. Several methods are readily available for analyzing aquifer test – drawdown and recovery data. The program used for analysis of the WME data was Aqtesolve for Windows. Input of drawdown and recovery observation data includes time and displacement (time from beginning of test and depth to water from static water level). For analyses requiring a correction factor, such as the Cooper-Jacob and Theis solutions, the displacement is corrected within the program; therefore, data were not corrected prior to data input. Both drawdown and recovery data and analysis are included in Attachment B. The Theis and Neuman solutions were used for derivation of aquifer parameters.

Comment 2 – Drawdown data indicate that the depth to water at the end of the pumping test was 24 feet below the top of well perforations. This condition typically leads to cascading water and air entrainment in the water column. Air entrainment can cause cavitation of the pump and overestimation of pumping rates. Given the possibility of this condition please supply information to support the contention that the well can supply reported 160 gallon per minute and that the rate of pumping during the test was held constant.

Response – The 24-hour pumping test was designed as a constant discharge rate test. The discharge rate was held at 160 gallons per minute throughout the test period by making minor adjustments to a valve placed in the discharge line down stream of a flow meter. Discharge readings (flow measurements) were confirmed by independently measuring flow using a stopwatch and 55-gallon bucket. Results of the flow rate confirmation indicated that measurement of the flow rate using the in-line flow meter was estimated at plus or minus 5 gallons per minute, or about 3% of the total pumping rate. Minor adjustments were made but not recorded during the test period because they were within the tolerance of measurement.

Comment 3 – On page 4 under heading "Potential Water Quantity and Quality Impacts to Springs" the following statement is made: For lots located at elevations above the springs, impact to the spring system would be less than 2.3 gpm per lot. The report also states that the number of lots above the springs is undefined and development may not proceed in the area. Based on these comments it is AMEC's opinion that if further development in the area east of the springs is planned a much more detailed evaluation of the potential impacts should be addressed.

Response – Presently, plans for the WME Phase 2 upper development area call for the division of the parcel into 8 lots (39-46) and three common areas (lots B, C and D). Lot B is the location of the WME Phase 2 well that was completed in September 2004. As noted previously, this well is located below (west) of the springs and is separated by a complex system of faults[r]. Of the eight lots planned for development, only two are currently proposed to have individual wells. The area encompassed by these lots (45 and 46) is large (5.7 acres and 19.5 acres, respectively) and is traversed by the numerous faults. The measured average spring flow is 13.7 gpm with approximately 12 gpm (88%) being captured roughly 100 feet downstream for livestock watering purposes, leaving less than two gpm (1.7 gpm) for natural flow downstream. As a result, no significant riparian environment is supported by the spring. Each well, as required for development planning purposes, will produce 3.0 gpm for a total production of 6.0 gpm. Every effort will be made, within the constraints posed by site conditions, to locate the wells up-gradient or cross-gradient from the spring to avoid influence that may result from their pumping, particularly for Lot 46. Assuming a worse-case scenario of approximately 6.0 gpm loss of flow in the vicinity of the spring in Lot 46, the current un-captured outflow of less than 2 gpm would not be altered, the existing site conditions should not be affected, and significant impact to downstream spring flow is not expected. Moreover, additional flow could be made available by allowing all out-flow from the spring to drain naturally and not be captured below its source as is currently the case. If allowed, this would result in an increase in down stream flow of nearly 350 percent over current conditions, or could also serve as an additional buffer to water use above the spring. Due to the complexity of the hydrogeology in the WME Phase 2 upper development area, further analysis would be required to evaluate, if possible, a minimum distance of well placement relative to the spring to avoid direct impact. However, given that the expected well production of 6.0 gpm is not expected to alter existing site conditions below the spring, the need for such an analysis is considered unwarranted.

Comment 4 – A map or diagram showing the proposed lots, location of neighboring developments, wells; fault zones and other geologic conditions would aid in review of the document and allow for it to read as a standalone piece.

---

[r] Based on mapping performed by Sierra Geotechnical Services, Inc., Plate 1 – Site Geologic Map and Plate 2 – Geologic Cross Sections A-A' and A'- A''

Response – Compilation and reporting of this information is being provided under separate cover by Sierra Geotechnical Services, Inc. This information is therefore being submitted under separate cover, and can be found on Plates 1 and 2 of the report.

Comment 5 – Given the proximity of the White Mountain escarpment, associated fault zones and potential for significant discharge or recharge boundaries, please provide a rationale for conducting the aquifer-pumping test for 24-hours.

Response – In discussions with Mr. Marvin Moskowitz, Mono County Health Department, Mr. Moskowitz stated that a 24-hr test was adequate to demonstrate production for development purposes, using 75% of the tests discharge value. In this case, 75% of the test's 160 gallons per minute discharge yields at value of 120 gallons per minute.

Comment 6 – Please provide additional information as to the method used to derive the distance drawdown plot. Also provide additional information regarding this evaluation to include distances to potential sensitive hydrologic features such as neighboring wells, proposed septic leach fields and springs.

Response – The WME Phase 2 well is located in a complicated hydrogeologic regime, including completion in a fault block aquifer that is separated from the WME Phase I well by a semi-permeable fault or faults. Pumping of the Phase 2 well will not impact the springs since the springs are upgradient of the well and several "fault block aquifers" to the east and will probably not affect neighboring wells (Phase I well) since that well is separated by a semi-permeable fault(s). The presence of septic drainfield(s) associated with three (41, 42 and 43) of the 8 proposed lots in the upper Phase 2 development is not expected to pose an impact to groundwater due to the approximate 200 feet of vertical separation in conjunction with the complex system of faults cross-cutting the area.

Comment 7 – Given the reported depth to first groundwater (as noted on the well log) of 30', please provide additional information regarding potential recharge of the aquifer and impacts to water quality due to irrigation and septic disposal.

Response – The reported shallow groundwater at 30 feet below ground surface in the log is questionable and was verbally communicated by the driller during advancement of the borehole. No water flow data or mud production data confirmed the presence of a water producing zone. The presence of stratified soils, as would be anticipated in alluvial fan deposition, might result in retardation of vertical groundwater migration. The measured depth to groundwater in the WME Phase 2 well at the time of the pump test was 203 feet below ground surface. This approximate 200 feet of vertical separation between the drainfields (ranging from approximately 100 to 200 feet vertical separation over the proposed development area), in conjunction with variable coarseness of soils will aid in protection of the groundwater quality. Furthermore, the placement of drainfields associated with the Phase 2 lower development will all be downgradient of the WME Phase 2 well and west of

the fault zone that separates this fault-bounded aquifer from the other aquifers to the west.

Comment 8 – Relating to the comment above, the well log shows possible perched groundwater at 30'. Please provide additional information regarding this groundwater to include: how detected when using mud rotary drilling, potential thickness and location of lower confining unit, potential connection to local springs and water source for WME Phase I.

Response – See response to Comment 7.

Comment 9 – The aquifer test solution used (Nueman Method) is typically employed for aquifers that are considered unconfined. The text of the report includes a storativity value of 0.007. Storativity values in the range of 10^{-3} are typically associated with semi-confined / leaky aquifers. Please discuss the test data and analysis further and provide rationale for utilizing the Nueman solution.

Response – As discussed in the report, additional geologic data indicate that well is completed in a fault block aquifer, with a fine sand/silt fault zone and adjacent fault causing the well to respond as a confined aquifer in the initial period of pumping, converting to a water table aquifer after a short period of pumping. Therefore, the test data were re-evaluated using the Theis and Neuman solutions. Test data and analyses are presented in Attachment B.

Comment 10 – The California Department of Health Services requires that a permitted public water source be sustainable for a minimum of ten years. Please provide a specific discussion relating to the resource, this requirement and the potential impacts of discharging 145 acre-feet per year from the site for ten years.

Response – As indicated throughout the report, the Phase 2 well is located in a fault block aquifer, in a complex hydrogeologic regime, separated from the valley alluvium by a semi-permeable fault. The revised estimated total water requirement (assuming 3 gpm per lot) for the proposed 38 lot development is 184 acre-feet per year. The estimated potential recharge is 165 acre-feet per year, leaving a possible deficit of 19 acre-feet per year. Therefore as a contingency, a second well will be installed in the southwest corner of Lot 12, approximately 750 feet west (down slope) of the Phase II well (Lot B) and will be screened in the valley aquifer. The existing Phase I development is currently supplied from one well located in the northwest corner of the development. According to the White Mountain Mutual Water Company, this well produces at a rate of 250 gpm (probably capable of 350 gpm) with a drawdown of only 2.4 feet.[s] The proposed second well to support the Phase II development, which will be completed in the same aquifer, is expected to be able to produce a similar quantity of water and well efficiency. It is anticipated that at least 50% of the development's water requirements (or about 92 acre-feet per year) will be met with the second well, although it

[s] Personal Communication, May 10, 2005, Marilyn Voorhis, President, White Mountain Mutual Water Company; citing data from a well test performed by Southern California Edison, in a report prepared by the Manager of Hydraulic Services, 2002.

could provide water for the entire planned WME Phase II development as a backup, if necessary. The second well will be located approximately 1200 feet southeast from the existing Phase I well and produce groundwater at an anticipated rate of 60 gpm, or only about 25% of the Phase I well production. As a result, drawdown is expected to be minimal. A reduction in groundwater production from the existing Phase II well (Lot B) from 120 gpm to 60 gpm, representing only about 38% of the test pumping rate of 160 gpm, will transform a 19 acre-feet shortfall into a surplus of approximate 73 acre-feet. Therefore, it is very unlikely that production from the proposed second Phase II well will pose significant impact to the Phase I well, nor pose a significant impact to the springs to the east.

Comment 11 – Please provide references to support conclusions relating to aquifer gradients.

Response – Groundwater gradients in the vicinity of WME were estimated using depth to water in the WME Phase I well, WME Phase 2 well and elevation of springs located in the eastern portion of the WME Phase 2 area. Gradient within the alluvial valley were obtained from Danskin (1998) and Phillip Williams & Associates (1980).

Comment 12 – Information in the report indicates that the pumping test was performed on September 10, 2004 and the well was sampled on October 20, 2004. Please provide additional information relative to the sampling event so that the County may conclude that the analytical data provided is representative to the well and aquifer during anticipated operational conditions. Please indicate if the sample was raw or filtered. If available, include sample collection data sheets and chain-of-custody documents.

Response – The well was sampled by the driller, Ralph Reeves. It is our understanding that the 20 October sample was obtained from a submersible pump discharge and submitted to the laboratory, unfiltered.

Comment 13 – The report states that the proposed demand is 145-acre feet per year. Footnotes c & d allude to this amount of water being significantly less than the flow through Chalfant Valley. The recharge assessment presented in the report for the drainages in the White Mountains above the project site indicate that there is only 30 acre feet available. However, there was speculation that this amount may be less than anticipated due to geologic factors. The well for the project was installed in alluvial fan deposits at the base of the White Mountains. Information in the form of geochemical data and/or physical data and analysis would aid in the assessment of the source of recharge and its potential for the site.

Response – Additional physical data has been collected by Sierra Geotechnical Services, Inc. This dataset was used to enhance the understanding of the hydrogeologic regime and flow system in, and adjacent to, WME. As indicated above, the source of water to the WME Phase 2 well is from upgradient, to the east, of the well and is separated from the valley alluvium by a semi-permeable fault. Water flow to the existing Phase 2 well is anticipated to be greater than 30

acre-feet per year, with the potential of up to 165 acre-feet per year. An additional well will be required to provide the required sustainable water source. This additional well will be located to intercept groundwater within the main valley alluvium as described in Comment 10 response above.

ASSOCIATED LABORATORIES
QA REPORT FORM

'C Sample: LR 145368-30

Matrix: WATER

Method : 310.1

rep. Date: 02/23/05

Analysis Date: 02/23/05

ID#'s in Batch: LR 145428, 145489, 145647, 145686, 145368, 145740

SAMPLE RESULT / SAMPLE DUPLICATE

Reporting Units = mg/L

Test	Sample Result	Sample Duplicate	RPD
Bicarbonate	125	125	0.0
Carbonate	ND	ND	0.0
Hydroxide	ND	ND	0.0
Total Alkalinity as CaCO3	103	103	0.0

RPD = Relative Percent Difference of Sample Result and Sample Duplicate
ND = "U" - Not Detected

RPD LIMITS = 20

ASSOCIATED LABORATORIES
QA REPORT FORM

QC Sample: LR 145686

Matrix: WATER

Prep. Date: 02/22/05, 02/24/05

Analysis Date: February 24, 2005

ID#'s in Batch: LR 145464, 145465, 145510, 145512, 145463, 145686, 145534, 145513, 145470, 145680, LR 145735, 145679

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULT

Reporting Units = mg/L

Test	Method	Sample Result	Spike Added	Matrix Spike	Matrix Spike Dup	%Rec MS	%Rec MSD	RPD
CN	335.2 / 4500-CN	ND	0.456	0.455	0.440	100	96	3

ND = Not Detected
RPD = Relative Percent Difference of Matrix Spike and Matrix Spike Duplicate
%REC-MS & MSD = Percent Recovery of Matrix Spike & Matrix Spike Duplicate

%REC LIMITS = 80-120
RPD LIMITS = 20

PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS

PREP BLK	LCS				
Value	Result	True	%Rec	L.Limit	H.Limit
ND	0.098	0.100	98	85%	115%

Value = Preparation Blank Value
LCS Result = Lab Control Sample Result
True = True Value of LCS
L.Limit / H.Limit = LCS Control Limits