Well Testing Report
Prepared for the County of San Diego
Renteria TPM 21107

By John Peterson
California Registered Geologist #3713
Certified Hydrogeologist #90

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For Alfonso Renteria
559 Merlot Place
Chula Vista Ca. 91913

John Peterson

Peterson Environmental Services
5580 La Jolla Blvd. #398
La Jolla Ca. 92037
858-454-9984
Cell 858-220-0877
Fax 858-551-7549

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List of Terms, Acronyms and Abbreviations

Ac-ft	acre-feet (325,900 gallons)
ac-ft/yr/du	acre-feet per year per dwelling unit
CEQA	California Environmental Quality Act
DPLU	Department of Planning and Land Use, County of San Diego
Ft	feet
GIS	Geographic Information System
gpm	gallons per minute
Guidelines	County of San Diego, Guidelines for Determining Significance and Report Format and Content Requirements Groundwater
id	internal diameter
hp	horsepower
MCL	Maximum contaminant level
mg/l	milligrams per liter
NEPA	National Environmental Policy Act
pCi/L	pico curies per liter
TDS	Total dissolved solids (mg/l)

Executive Summary

This investigation has been completed to provide the Department of Planning and Land Use, County of San Diego information regarding available groundwater resources for the proposed Renteria Tentative Parcel Map TPM 21107. Both groundwater quantity and groundwater quality has been investigated to determine if any potential impacts to the groundwater system would result from the proposed project. The project is located east of Jamul California (Figure 1 and 2) and includes a planned residential subdivision of 4 single family lots (with one remainder parcel) on 58.07 gross acres. This results in an average overall density of 1 dwelling unit per 11.6 acres. The project will be using groundwater since no imported water is available in this area of the County.

To accomplish this objective a 24-hour constant rate discharge test was completed on one well and water samples were collected for nitrate, TDS, coliform bacteria, and uranium and gross alpha.

Chapter 1

1.0 Introduction

1.1 Purpose of the Report

The purpose of this report is to: 1) document groundwater resource yield potential on the project site to determine if these resources are capable of meeting the projected water demand of the project, 2) identify any adverse potential groundwater resource impacts resulting from the proposed project, 3) evaluate groundwater quality to ensure that the groundwater resources meets all health standards, and/or mitigate significant impacts consistent with federal, state and local rules and regulations including the California Environmental Quality Act (CEQA) and the San Diego County Groundwater Ordinance #9826.

1.2 Project Location and Description

Project Location

The project is located in the unincorporated community of Jamul California in the south central portion of San Diego County (Figures 1 and 2). The project is located just east of community of Jamul, and is about 4.5 mile east along Skyline Truck Trail.

Project Description

The project is a proposed residential subdivision of 4 single family lots (with a remainder parcel) on 58.07 acres (Attachment A in Pump Test Plan). This results in an average overall density of 1 dwelling unit per 11.6 acres. The project will be using groundwater since no imported water is available in this area of the County and as a result the project falls under the requirements of the San Diego County Groundwater Ordinance. The project is estimated to use 2.5 ac-ft per year based on the usage of .5 ac-ft per year per residential unit as defined within the County Groundwater Ordinance #9826.

Well sampling and a constant rate discharge test were completed in compliance with the approved *Pump Test Plan, Renteria TPM 21107, December 5, 2008* (Appendix A). The pump test plan was reviewed and approved by Mr. Jim Bennett, County Groundwater Geologist prior to initiation of the work.

1.3 Applicable Groundwater Regulations

Federal Regulations and Standards

The proposed action does not include lands under Federal jurisdiction and as such the regulations contained within the NEPA do not apply.

State Regulations and Standards

Since the proposed action includes a discretionary permit application the project falls under the requirements of the California Environmental Quality Act (CEQA). Specifically Appendix G, Title 14, Chapter 3, §15000-15387 gives two questions: 1) will the project "***violate any water quality standards or waste discharge requirements***?" and 2) will the project "***substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or***

a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)".

Specific direction has been provided by the County of San Diego within the Guidelines to address these issues from the CEQA Guidelines. This report has been completed following those directions.

County Regulations and Standards

County Groundwater Ordinance: The project is subject to the San Diego County Groundwater Ordinance #9826. The Ordinance identifies specific minimum parcel sizes for residential density (Section 67.722 A). These density requirements as identified within the County Groundwater Limitations Map list the project as having between 15 and 18 inches of average annual rainfall. This rainfall value results in a minimum parcel size of 8 acres (County Groundwater Ordinance Section 67.722 A 1). The proposed project has an average parcel size of 1 dwelling unit per 11.6 acres with a minimum parcel size of 10 acres. Thus, the proposed parcel sizes meet the minimum parcel size criterion.

The Ordinance also identifies specific requirements (Section 67.722 C and 67.703 Residential Well Test) for residential well tests. As required by the Ordinance for projects with 1 to 10 proposed lots, at least one well test is required. One well was pump tested for well yield parameters. The selection of Well #4 for this yield test was approved by Mr. Jim Bennett, San Diego County Groundwater Geologist prior to testing.

County Guidelines for Determining Significance – Groundwater Resources (County Guidelines): Due to the project's proposed use of groundwater, the project is subject to the County Guidelines. The County Guidelines are based on the State CEQA Guidelines, and address groundwater quantity and groundwater quality. The primary goal of these guidelines is to establish measurable standards for determining when an impact will be considered significant pursuant to CEQA. For each potential impact to groundwater, levels of significance are defined. The "low well yield" and "poor water quality" thresholds were applied to this project.

Chapter 2

2.1 Well Testing

2.1.1 Guidelines for the Determination of Significance

The project is proposing individual residential wells. As a result according to the Guidelines (page 18) the following thresholds apply:

1. ***Proposed projects requiring groundwater resources for uses associated with single-family residences require well production during the well test to be no less than 3 gpm for each well tested. Proposed projects that cannot meet this requirement will be considered to have a significant impact.***
2. ***Where analysis of a residential well test indicates that greater than 0.5 feet of residual drawdown is projected, the project will be considered to have a significant impact.***
3. ***The analysis of the residential well test must indicate that the amount of drawdown predicted to occur in the well after five years of continual pumping at the rate of projected water demand (a) will not interfere with the continued production of sufficient water to meet the needs of the anticipated residential use(s) and (b) must be less than the saturated depth of water above the pump intake or 100 feet, whichever is less. (The pump intake is assumed to be 50-feet above the bottom of the well). Proposed projects that cannot meet this guideline will be considered to have a significant impact.***

2.2.2 Methodology

As identified by the Mr. Jim Bennett one well, located on Lot #4, was selected to be tested for groundwater yield. The well was tested according to the directions provided within the Guidelines.

2.2.2.1 Well Test Description

The well was pump tested for 24 hour period. Recovery was monitored 7,152 minutes or for almost 5 days due to the slow response of the recovery water levels. The test and result are summarized below.

2.2.2.2 Testing Summary

Well #4: This well was constructed in the western portion of the proposed tentative parcel map on Lot #4 (see Figure 2) at an elevation of approximately 2,565 feet. The well was completed by Butler Drilling which is located in Alpine California in August 2008 (see California Well Log within the pump test plan, Appendix A). The well was drilled to 825 feet with a 24 foot annular seal and is open hole below that. The well log reports soil and DG to 15 with fractured granitic rock to total depth. The drillers log reports a static water level of 185 feet and an estimated well yield of 3.5 to 4 gpm.

The well was set up on Friday December 12, 2008 using the existing submersible pump (with foot valve to prevent backflow) installed to an approximate depth of 600 feet. A 1 inch PVC sounding tube (set to 580 feet) was placed in the well to allow for the installation of a Global Water Data Logger to collect water level measurements during

the test. A ¾ inch water flow meter was calibrated to ensure accurate water production data and a gate value was installed to regulate flow rate during the test. At the time of installation the meter had a total cumulative flow value of 1,038 cubic feet. Prior to any production, groundwater depth, as measured from the top of the PVC sounding tube, was 73.0 feet (measured by electrical water level indicator). The sounding tube was set 2.0 feet above ground surface, and all measured water levels during the test were measured from the top of the sounding tube. Following installation of the equipment the well was turned on to check the installation and to calibrate the flow rate to 3.2 gpm. Also chlorine was added to the well at this time to disinfect the well prior to the test. A total of 234 gallons of water was produced to complete this task (a portion of which was recirculated back down the well to allow for full disinfection of the well). This resulting meter reading at the beginning of the constant discharge test was 1069.3 cubic feet.

The constant rate discharge test began at 9:15 am on Sunday December 14, 2008. Prior to initiation of the test static water level was monitored with the same equipment and was recorded at 73.0 feet below top of sounding tube. As a result the well was determined to have fully recovered from the calibration testing which was completed two days earlier. The test began at a yield of approximately 3.2 gpm. Water production was also checked periodically using a stop watch and calibrated 5 gallon bucket. The water was directed through garden hoses to the west (down gradient) from the site. Approximately 250 feet of hose was used and the discharge water was directed onto a hard granitic outcrop flowing away (northwest) from the well.

Production rate held very steady over the course of the test and was not adjusted during the 24-hour production period. During the pumping interval maximum production was approximately 3.2 gpm and averaged about 3.1 gpm. The pumping phase of the test was completed at 9:15 am on Monday December 15, 2008 for a pumping period of 1440 minutes. At the end of the test a total of 4,490 gallons of water (final meter reading of 1669.6 cubic feet) had been produced for an average discharge rate of 3.12 gpm over the length of the test. This quantity of water equals 2.3 borehole volumes of water (please note that for this calculation borehole diameter was estimated at 8 inches since this value is not report on the drillers log). For the length of the test the well had a maximum drawdown of 67.3 feet (Figure 3 and Table 4). Thus the specific capacity of the well (gpm/ft of drawdown) was .046 gpm/ft. Recovery was monitored for 5 days to 8:40 am on Saturday December 20, 2008. Recovery measurements were extended to 5 days due to the slow recovery seen in the well. Initially the data logger was removed during the morning of Tuesday December 16, 2008, however once the data had been plotted on the recovery curve the data logger was reinstalled in the well at 16:40 the same day to continue the collection of recovery water levels. This is seen as the data gap on Figure 4 at the t/t' time of 2.0.

No monitoring well was available for the test. The closest off-site well is about 1,000 feet away from the test well.

2.2.2.3 Well Test Analysis

Well #4:
Total drawdown during the test was **67.3 feet.**
Specific Capacity (given as gpm/foot of drawdown) was **.046** (3.11 gpm/5.5 ft of drawdown).
Residual drawdown as projected on the t/t' curve was **+2.5 feet.**
Transmissivity is calculated using the Cooper-Jacobs approximation to the Theis equation which states:

$$T = \frac{2.3 \times Q}{4 \times \Pi \times \Delta s}$$

Where
T = Transmissivity (feet^2/day)
Q = average pumping rate in feet^3/day
Π = 3.14
Δs = the change is drawdown over 1 log cycle of time (or recovery as shown on the t/t' plot

Using this equation the value for Transmissivity becomes (**pumping**):

$$T = \frac{2.3 \times 599}{4 \times 3.14 \times 40.5}$$

T = **2.7 ft^2/day pumping phase**

Using this equation the value for Transmissivity becomes (**recovery**):

$$T = \frac{2.3 \times 599}{4 \times 3.14 \times 65}$$

T = **1.69 ft^2/day recovery phase**

No estimates of storativity can be given since a monitoring well was not available for the test.

Calculated predicted drawdown after 5 years of production can be estimated by projecting drawdown out to 5 years or 2,600,000 minutes. As shown on Figure 5 the projected drawdown, at a continuous yield of 3.11 gpm would be 205 feet. However this value must be corrected to reflect the continuous yield of 3.11 gpm from the completed pump test. (.31 gpm equals the annual demand of .5 ac-ft/yr which is used within these calculations.) This correction is given by:

$$\frac{3.11 \text{ gpm}}{205 \text{ feet}} = \frac{0.31 \text{ gpm}}{x \text{ (predicted drawdown at 5 years)}}$$

Thus predicted drawdown at 5 years equals **20.4 feet**. This value is less than the threshold as identified in the County Guidelines of 100 feet or less for projected drawdown following 5 years of production.

No offsite or onsite well interference problems are anticipated due to the following factors:

1) Predicted drawdown following 5-years of continuous production is estimated at 20.4 feet within the pumping well. This also assumes no groundwater recharge over the 5-yr period.
2) Also groundwater drawdown focuses around a production well and lessen away from the pumping well. No wells are anticipated to be constructed nearby (from the project due to the size of the proposed lots), or are currently located within 400 feet of the well. No offsite wells are located within 1,000 feet from the test well.

Due to these factors no adverse onsite or offsite impacts to other wells are anticipated.

2.2.3 Significance of Impacts Prior to Mitigation

Low Well Yield: The tested well met all thresholds of significance. The well was pumped for a 24-hour period at a yield of greater than 3 gpm. The well recovered so that projected residual drawdown was less than .5 feet. Also projected drawdown following 5 years of continuous projection at .31 gpm met identified thresholds of significance. As such the data support the conclusion for the finding of "***less than significant***" for low well yield.

2.2.4 Mitigation Measures and Design Considerations

Since the well testing showed that low well yield is "***less than significant***" no mitigation measures or design considerations are proposed or required.

2.2.5 Conclusions

The well tested met all threshold criteria. The testing showed that the significance level was "***less than significant***" and no mitigation measures or design considerations are proposed.

Chapter 3

3.0 Water Quality Analysis

3.1 Guidelines for Determination of Significance

According to the Guidelines the following threshold of significance must be met for water quality:

> ***Groundwater resources for proposed projects requiring a potable water source must not exceed the Primary State of Federal Maximum Contaminant Levels (MCLs) for applicable contaminants. Proposed projects that cannot demonstrate compliance with applicable MCLs will be considered to have a significant impact. In general, projects will be required to sample water supply wells for nitrate, bacteria (fecal and total coliform) and radionuclide activity.***

3.2 Methodology

At the end of the projection test (completed on Well #4 December 15, 2008) samples were collected for: nitrate, total dissolved solids (TDS) and total and fecal coliform and gross alpha and uranium. These results are given in Appendix B. Also it is noted that preliminary water samples were collected by the project owner prior to the testing cycle. These samples were collected on October 6, 2008 (Appendix B) and were ran for gross alpha, radium 226 and 228. These samples were completed at my direction to rule out any potential problems with radionuclides prior to the collection of the formal production testing. A discussion on these results is given below in Section 3.2.2.

3.2.1 Sampling Procedures

Sample Handling and Transportation: All sample containers used for the samples were provided from the Environmatrix Analytical Lab. This lab is a certified by the California Department of Health Services. Sample containers for gross alpha, uranium, nitrate, and TDS were clean and unpreserved plastic bottles. Sample containers for total and fecal coliform were collected in preserved bottles as provided by the Lab. All samples were collected by me, placed immediately in an ice cooler at 4^0C and transported directly to the lab within the time limits established. Please note that gross alpha and uranium testing was performed at BSK Analytical Laboratories located in Fresno California, as a subcontractor to EnvironMatrix Analytical Labs. Chain of custody was directly from me to the lab personnel for all samples.

Analytical Methods: Analytical processes employed for the testing are given in Table 1:

Table 1: Analytical Methods

Analyte	Method	MCL
Nitrate (reported as N)	SM 4500 NO3 E	10 mg/l
Total Dissolved Solids	SM 2540 C	500 mg/l recommended
Gross Alpha	EPA 00-02	15 pCi/L
Uranium	EPA 200.8	20 pCi/l
Total and E Coli	SM 9223	absent

3.2.2 Groundwater Sampling Analysis:

Water samples were collected from Well #4 on the project site on December 15, 2008 (Figure 2) following the 24 hour production test. During the test a total of 2.4 well bore volumes of water were produced (4,490 gallons). Please note that the value of well bore storage is estimated using a well diameter of 8 inches. This is estimated since the value is not reported on the Drillers log.

Also as given above samples for radionuclides were collected on October 6, 2008 by the project owner. Results of this testing is offered in Table 2 with lab results documented in Appendix B.

The results for radionuclides are given in Table 2.

Table 2: Radionuclides

Well #	Gross Alpha[1]	Uranium[2]		
4		14 +/- 0.64	1.6 (no sigma reported)	
			Radium 226[4]	Radium 228[4]
4[3]		15.7+/- 2.06	3.39 +/-0.481	0.000 +/- 0.956

[1] Given in piCi/L and a MCL of 15
[2] Given in piCi/L and a MCL of 20
[3] Collected by the Owner on October 6, 2008
[4] Given in piCi/L and a MCL of 5 for the combination of Radium 226 and 228.

As pointed out by Mr. Jim Bennett the County Groundwater Geologist (memo dated March 30, 2009) the radionuclides test results from the pump test also requires the determination of the level of radium. This is because after subtracting out the level of uranium from the concentration of gross alpha (14 – 1.6 = 12.4 piCi/L) the radionuclide level is above the MCL for radium, thus the level of radium 226 and 228 must also be considered. These two radionuclides have a MCL of 5 piCi/L for the combination of both elements. The water samples collected by the owner had a combined radium level for 226 and 228 of 3.39 piCi/L and is within the MCL as established for the elements.

However it is pointed out that normally all water samples must be collected by a registered professional to ensure accuracy of the sampling. In the review of the test results and specifically comparing the test results for gross alpha (14 piCi/L for the sample collected by me on December 15, 2008 and 15.7 piCi/L for the sample collected by the owner on October 6, 2008) the water samples compare very well. In fact the sample collected by me had a lower concentration of gross alpha than the sample collected by the owner. As a result I as a Certified California Hydrogeologist am prepared to substantiate that the sample collected by the owner accurately reflects the concentration of radium within the test well.

Table 3: Water Quality Results

Element	Result
Nitrate[1]	non detected
TDS[2]	251
Total Coliform[3]	Present
E. Coli[3]	Absent

[1] Given in mg/l and a MCL of 10
[2] Given in mg/l and a recommended MCL of < 500
[3] Must be absent

All samples were analyzed within laboratory holding time for each constituent.

Due to the positive result for total coliform bacteria the well was chlorinated a second time and rested for several days. A second sample was then collected for coliform bacteria on January 5, 2009. This sample tested negative (absent) for both total and E coli bacteria.

3.3 Significance of Impacts Prior to Mitigation

Samples collected for gross alpha and uranium are within MCL. Samples collected for nitrate and TDS were well less than MCL and the sample for coliform was recorded as "absent" for both fecal and total coliform bacteria (within the second round of testing). In summary all water quality samples met identified thresholds.

3.4 Mitigation Measures and Design Considerations

Since all water quality samples were within thresholds no mitigation measures or design considerations are proposed.

3.5 Conclusions

All water quality thresholds have been met and no mitigation measures or design considerations are required. The data supports the finding that impacts to groundwater quality are "***less than significant***".

Chapter 4: Conclusions

Summary of Project Impacts and Mitigation
No significant environmental impacts to groundwater resources were identified within this investigation. Specific results include:

Low Well Yield:
One well was pump tested for a 24 hour interval at a yield of greater than 3 gpm. As required recovery for the well indicated full recovery as projected on the t/t' plot. (Figure 4). Also the projected drawdown following 5 years of production, estimated at 20.4 feet is less than the identified threshold. Thus the well met all thresholds identified by the Guidelines. As such it has been found that the project as proposed met the thresholds set for low well yield and the finding of "***less than significant***" can be support.

Groundwater Quality:
Water quality samples were collected on December 15, 2008 following the 24 hour production test. In all cases the measured levels met the MCL for the respective elements. However a second sample was collected for total coliform since the first sample was positive for total coliform.

As a result the well met all MCL levels for the identified elements. Due to this the finding "***less than significant***" can be made for the project in relationship to potable water quality.

Within this review no threshold was determined to be above any identified threshold and as a result no mitigation or design considerations are proposed. The project as proposed meets all thresholds as identified with the County Guidelines.

Respectfully Submitted

John Peterson, PG #3713, CHG #90
Peterson Environmental Services
5580 La Jolla Blvd. #398
La Jolla Ca. 92037

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Table 4: Raw Water Level Data "Production" From Global Water 500 ft Data Logger

Date	Time	Feet	Volts	Date	Time	Feet	Volts
12/13/2008	14:16:22	0.3	17.52	12/14/2008	09:31:27	382.6	18.59
12/13/2008	14:16:36	0.3	19.06	12/14/2008	09:32:27	381.9	18.59
12/14/2008	09:08:17	393	18.67	12/14/2008	09:33:27	382.1	18.58
12/14/2008	09:08:53	393.2	18.67	12/14/2008	09:34:27	382.1	18.58
12/14/2008	09:09:23	392.9	18.67	12/14/2008	09:35:27	381.2	18.58
12/14/2008	09:09:53	392.9	18.66	12/14/2008	09:36:27	381.1	18.57
12/14/2008	09:10:23	393.2	18.66	12/14/2008	09:37:27	381.1	18.57
12/14/2008	09:10:53	393.4	18.66	12/14/2008	09:38:27	380.4	18.56
12/14/2008	09:11:23	393.4	18.66	12/14/2008	09:39:27	380.4	18.56
12/14/2008	09:11:53	392.5	18.66	12/14/2008	09:40:27	379.9	18.56
12/14/2008	09:12:23	392.2	18.66	12/14/2008	09:41:27	379.7	18.55
12/14/2008	09:12:53	392	18.66	12/14/2008	09:42:27	380.1	18.55
12/14/2008	09:13:23	390.4	18.66	12/14/2008	09:43:27	379.2	18.55
12/14/2008	09:13:53	390.5	18.66	12/14/2008	09:44:27	379.1	18.55
12/14/2008	09:14:23	390.4	18.65	12/14/2008	09:45:27	379.4	18.54
12/14/2008	09:14:53	389.5	18.66	12/14/2008	09:46:27	379.2	18.54
12/14/2008	09:15:23	388.7	18.65	12/14/2008	09:47:27	378.4	18.53
12/14/2008	09:15:53	388.9	18.65	12/14/2008	09:48:27	378.7	18.53
12/14/2008	09:16:23	387.9	18.64	12/14/2008	09:49:27	378.1	18.53
12/14/2008	09:16:53	388.2	18.64	12/14/2008	09:50:27	377.7	18.53
12/14/2008	09:17:23	388	18.64	12/14/2008	09:51:27	377.6	18.52
12/14/2008	09:17:53	387.7	18.64	12/14/2008	09:52:27	378.1	18.52
12/14/2008	09:18:23	387	18.64	12/14/2008	09:53:27	377.6	18.51
12/14/2008	09:18:53	386.9	18.63	12/14/2008	09:54:27	376.9	18.51
12/14/2008	09:19:23	386.7	18.64	12/14/2008	09:55:27	376.7	18.51
12/14/2008	09:19:53	386.4	18.64	12/14/2008	09:56:27	377.4	18.5
12/14/2008	09:20:23	386	18.63	12/14/2008	09:57:27	376.4	18.5
12/14/2008	09:20:53	385.9	18.63	12/14/2008	09:58:27	375.9	18.5
12/14/2008	09:21:23	385.7	18.63	12/14/2008	09:59:27	376.2	18.49
12/14/2008	09:21:53	385.4	18.63	12/14/2008	10:00:27	376.1	18.48
12/14/2008	09:22:23	385.4	18.62	12/14/2008	10:01:27	375.7	18.48
12/14/2008	09:22:53	385.2	18.63	12/14/2008	10:02:04	375.9	18.48
12/14/2008	09:23:23	384.7	18.62	12/14/2008	10:07:04	375.4	18.47
12/14/2008	09:23:53	384.7	18.61	12/14/2008	10:12:04	373.9	18.46
12/14/2008	09:24:23	384.5	18.61	12/14/2008	10:17:04	373.9	18.44
12/14/2008	09:24:53	384.9	18.61	12/14/2008	10:22:04	372.1	18.42
12/14/2008	09:25:23	384.2	18.61	12/14/2008	10:27:04	371.7	18.41
12/14/2008	09:25:53	384	18.61	12/14/2008	10:32:04	371.6	18.4
12/14/2008	09:26:23	383.9	18.61	12/14/2008	10:37:04	370.4	18.39
12/14/2008	09:26:53	384.2	18.61	12/14/2008	10:42:04	370.1	18.36
12/14/2008	09:27:23	383.7	18.61	12/14/2008	10:47:04	369.7	18.36
12/14/2008	09:27:53	383.9	18.6	12/14/2008	10:47:46	369.6	18.36
12/14/2008	09:28:23	383.2	18.6	12/14/2008	10:57:46	368.1	18.32
12/14/2008	09:28:53	383.1	18.6	12/14/2008	11:07:46	367.3	18.3
12/14/2008	09:29:23	382.7	18.6	12/14/2008	11:17:46	365.9	18.27
12/14/2008	09:29:27	382.9	18.6	12/14/2008	11:27:46	365.1	18.24

Table 4: Raw Water Level Data "Production"
Page 2

Date	Time	Feet	Volts
12/14/2008	11:47:46	362.8	18.21
12/14/2008	11:57:46	362.1	18.18
12/14/2008	12:07:46	361.1	18.16
12/14/2008	12:17:46	360.6	18.14
12/14/2008	12:27:46	359.8	18.12
12/14/2008	12:37:46	359.9	18.09
12/14/2008	12:47:46	358.9	18.08
12/14/2008	12:57:46	357.9	18.05
12/14/2008	13:07:46	357.1	18.04
12/14/2008	13:17:46	356.6	18.02
12/14/2008	13:27:46	355.9	18
12/14/2008	13:37:46	355.6	17.98
12/14/2008	13:47:46	355.1	17.97
12/14/2008	13:57:46	355.1	17.95
12/14/2008	14:07:46	355.3	17.93
12/14/2008	14:17:46	353.8	17.91
12/14/2008	14:27:46	353.8	17.9
12/14/2008	14:37:46	352.9	17.89
12/14/2008	14:47:46	352.4	17.88
12/14/2008	14:57:46	352.1	17.89
12/14/2008	15:07:46	351.9	17.88
12/14/2008	15:17:46	351.3	17.86
12/14/2008	15:27:46	350.6	17.87
12/14/2008	15:37:46	350.6	17.88
12/14/2008	15:47:46	351.3	17.89
12/14/2008	15:57:46	350	17.9
12/14/2008	16:07:46	350.5	17.91
12/14/2008	16:17:46	350.3	17.91
12/14/2008	16:27:46	348.5	17.91
12/14/2008	16:37:46	349.3	17.91
12/14/2008	16:47:46	348.6	17.91
12/14/2008	16:57:46	349	17.91
12/14/2008	17:07:46	348.3	17.92
12/14/2008	17:17:46	346.8	17.89
12/14/2008	17:27:46	347	17.91
12/14/2008	17:37:46	346.3	17.91
12/14/2008	17:47:46	346.1	17.91
12/14/2008	17:57:46	346.6	17.91
12/14/2008	18:07:46	345.6	17.92
12/14/2008	18:17:46	345.1	17.92
12/14/2008	18:27:46	344.6	17.92
12/14/2008	18:37:46	345.3	17.93
12/14/2008	18:47:46	344.1	17.93
12/14/2008	18:57:46	343.6	17.93
12/14/2008	19:07:46	343.8	17.93
12/14/2008	19:17:46	342.6	17.94
12/14/2008	19:37:46	343.3	17.94
12/14/2008	19:47:46	342.8	17.94
12/14/2008	19:57:46	341.6	17.94
12/14/2008	20:07:46	341.8	17.94
12/14/2008	20:17:46	342	17.94
12/14/2008	20:27:46	342	17.94
12/14/2008	20:37:46	341	17.95
12/14/2008	20:47:46	340.1	17.95
12/14/2008	20:57:46	341.1	17.95
12/14/2008	21:07:46	339.5	17.96
12/14/2008	21:17:46	339.3	17.95
12/14/2008	21:27:46	339.1	17.95
12/14/2008	21:37:46	339.8	17.95
12/14/2008	21:47:46	339.6	17.95
12/14/2008	21:57:46	339.1	17.96
12/14/2008	22:07:46	338.1	17.96
12/14/2008	22:17:46	338.8	17.96
12/14/2008	22:27:46	338.5	17.96
12/14/2008	22:37:46	337.8	17.96
12/14/2008	22:47:46	337.8	17.96
12/14/2008	22:57:46	337.3	17.96
12/14/2008	23:07:46	337.6	17.96
12/14/2008	23:17:46	336.6	17.96
12/14/2008	23:27:46	337.3	17.96
12/14/2008	23:37:46	336.6	17.96
12/14/2008	23:47:46	337.1	17.96
12/14/2008	23:57:46	335.3	17.96
12/15/2008	00:07:46	336.5	17.96
12/15/2008	00:17:46	335.6	17.96
12/15/2008	00:27:46	335	17.96
12/15/2008	00:37:46	335.8	17.96
12/15/2008	00:47:46	335.5	17.96
12/15/2008	00:57:46	335.3	17.96
12/15/2008	01:07:46	334	17.96
12/15/2008	01:17:46	334.8	17.96
12/15/2008	01:27:46	334	17.96
12/15/2008	01:37:46	333.3	17.96
12/15/2008	01:47:46	333.5	17.96
12/15/2008	01:57:46	333	17.96
12/15/2008	02:07:46	333.3	17.96
12/15/2008	02:17:46	332.8	17.96
12/15/2008	02:27:46	333.8	17.96
12/15/2008	02:37:46	332.3	17.96
12/15/2008	02:47:46	333.3	17.96
12/15/2008	02:57:46	333.2	17.97
12/15/2008	03:07:46	331.8	17.96

Table 4: Raw Water Level Data "Production"
Page 3

Date	Time	Feet	Volts
12/15/2008	03:07:46	331.8	17.96
12/15/2008	03:17:46	332.7	17.96
12/15/2008	03:27:46	332.5	17.96
12/15/2008	03:37:46	332.3	17.96
12/15/2008	03:47:46	331.5	17.96
12/15/2008	03:57:46	331	17.96
12/15/2008	04:07:46	331.2	17.96
12/15/2008	04:17:46	330.7	17.96
12/15/2008	04:27:46	331.2	17.96
12/15/2008	04:37:46	331	17.96
12/15/2008	04:47:46	330.7	17.96
12/15/2008	04:57:46	330.7	17.96
12/15/2008	05:07:46	330.8	17.96
12/15/2008	05:17:46	330.5	17.97
12/15/2008	05:27:46	330	17.96
12/15/2008	05:37:46	329.7	17.96
12/15/2008	05:47:46	330	17.92
12/15/2008	05:57:46	329.7	17.89
12/15/2008	06:07:46	329.8	17.86
12/15/2008	06:17:46	328.7	17.84
12/15/2008	06:27:46	328.7	17.82
12/15/2008	06:37:46	328.2	17.8
12/15/2008	06:47:46	328	17.78
12/15/2008	06:57:46	328.2	17.76
12/15/2008	07:07:46	328.5	17.74
12/15/2008	07:17:46	328.3	17.72
12/15/2008	07:27:46	327.8	17.71
12/15/2008	07:37:46	327.5	17.7
12/15/2008	07:47:46	327.8	17.68
12/15/2008	07:57:46	327.2	17.67
12/15/2008	08:07:46	327.5	17.65
12/15/2008	08:17:46	327.2	17.64
12/15/2008	08:27:46	326.5	17.62
12/15/2008	08:37:46	326.5	17.6
12/15/2008	08:47:46	326.7	17.6
12/15/2008	08:57:46	326	17.58
12/15/2008	09:07:46	326	17.57
12/15/2008	09:17:46	325.7	17.56
12/15/2008	09:18:19	326.5	17.56
12/15/2008	09:18:49	326.2	17.56

Table 5: Raw Water Level Data "Recovery"

Time Recovery Minutes	Total Time Minutes	T/T'	Residual DD Feet	Time Recovery Minutes	Total Time Minutes	T/T'	Residual DD Feet
0.0	**1440.0**		66.9	19.5	**1459.5**	74.8	56.3
0.5	**1440.5**	2881.0	67.2	20.5	**1460.5**	71.2	56.1
1.0	**1441.0**	1441.0	66.7	21.5	**1461.5**	68.0	55.6
1.5	**1441.5**	961.0	64.9	22.5	**1462.5**	65.0	55.4
2.0	**1442.0**	721.0	65.4	23.5	**1463.5**	62.3	54.9
2.5	**1442.5**	577.0	64.9	24.5	**1464.5**	59.8	53.8
3.0	**1443.0**	481.0	64.7	25.5	**1465.5**	57.5	53.9
3.5	**1443.5**	412.4	63.2	26.5	**1466.5**	55.3	53.1
4.0	**1444.0**	361.0	63.2	27.5	**1467.5**	53.4	53.8
4.5	**1444.5**	321.0	63.6	28.5	**1468.5**	51.5	53.8
5.0	**1445.0**	289.0	62.7	29.5	**1469.5**	49.8	53.6
5.5	**1445.5**	262.8	62.1	30.5	**1470.5**	48.2	52.4
6.0	**1446.0**	241.0	62.4	31.5	**1471.5**	46.7	52.9
6.5	**1446.5**	222.5	62.1	32.5	**1472.5**	45.3	51.9
7.0	**1447.0**	206.7	61.7	33.5	**1473.5**	44.0	52.6
7.5	**1447.5**	193.0	60.4	33.5	**1473.5**	44.0	51.3
8.0	**1448.0**	181.0	61.1	38.5	**1478.5**	38.4	50.9
8.5	**1448.5**	170.4	59.6	43.5	**1483.5**	34.1	49.6
9.0	**1449.0**	161.0	60.2	48.5	**1488.5**	30.7	49.3
9.5	**1449.5**	152.6	60.2	58.5	**1498.5**	25.6	47.3
10.0	**1450.0**	145.0	60.1	68.5	**1508.5**	22.0	45.6
10.5	**1450.5**	138.1	59.6	78.5	**1518.5**	19.3	44.1
11.0	**1451.0**	131.9	59.2	88.5	**1528.5**	17.3	42.8
11.5	**1451.5**	126.2	59.4	98.5	**1538.5**	15.6	41.5
12.0	**1452.0**	121.0	58.3	108.5	**1548.5**	14.3	40.3
12.5	**1452.5**	116.2	58.6	118.5	**1558.5**	13.2	39.3
13.0	**1453.0**	111.8	57.6	128.5	**1568.5**	12.2	38.5
13.5	**1453.5**	107.7	58.6	138.5	**1578.5**	11.4	37.6
14.0	**1454.0**	103.9	58.4	148.5	**1588.5**	10.7	36.8
14.5	**1454.5**	100.3	58.3	158.5	**1598.5**	10.1	36.1
15.0	**1455.0**	97.0	58.1	168.5	**1608.5**	9.5	35.5
15.5	**1455.5**	93.9	57.4	178.5	**1618.5**	9.1	34.8
16.0	**1456.0**	91.0	56.9	188.5	**1628.5**	8.6	34.3
16.5	**1456.5**	88.3	57.4	198.5	**1638.5**	8.3	33.6
17.5	**1457.5**	83.3	56.9	208.5	**1648.5**	7.9	33.1
18.5	**1458.5**	78.8	55.4	218.5	**1658.5**	7.6	32.6

Table 5: Raw Water Level Data "Recovery"
Page 2

Time Recovery Minutes	Total Time Minutes	T/T'	Residual DD Feet	Time Recovery Minutes	Total Time Minutes	T/T'	Residual DD Feet
228.5	**1668.5**	7.3	32.1	588.5	**2028.5**	3.4	23.2
238.5	**1678.5**	7.0	31.6	598.5	**2038.5**	3.4	23
248.5	**1688.5**	6.8	31.3	608.5	**2048.5**	3.4	22.8
258.5	**1698.5**	6.6	31	618.5	**2058.5**	3.3	22.7
268.5	**1708.5**	6.4	30.6	628.5	**2068.5**	3.3	22.5
278.5	**1718.5**	6.2	30.1	638.5	**2078.5**	3.3	22.3
288.5	**1728.5**	6.0	29.8	648.5	**2088.5**	3.2	22.5
298.5	**1738.5**	5.8	29.5	658.5	**2098.5**	3.2	22.2
308.5	**1748.5**	5.7	29.1	668.5	**2108.5**	3.2	21.8
318.5	**1758.5**	5.5	28.8	678.5	**2118.5**	3.1	21.8
328.5	**1768.5**	5.4	28.6	688.5	**2128.5**	3.1	21.7
338.5	**1778.5**	5.3	28.1	698.5	**2138.5**	3.1	21.7
348.5	**1788.5**	5.1	28	708.5	**2148.5**	3.0	21.5
358.5	**1798.5**	5.0	27.8	718.5	**2158.5**	3.0	21.3
368.5	**1808.5**	4.9	27.5	728.5	**2168.5**	3.0	21.3
378.5	**1818.5**	4.8	27.3	738.5	**2178.5**	2.9	21.2
388.5	**1828.5**	4.7	27	748.5	**2188.5**	2.9	21
398.5	**1838.5**	4.6	26.6	758.5	**2198.5**	2.9	20.8
408.5	**1848.5**	4.5	26.5	768.5	**2208.5**	2.9	20.8
418.5	**1858.5**	4.4	26.3	778.5	**2218.5**	2.8	20.7
428.5	**1868.5**	4.4	26	788.5	**2228.5**	2.8	20.5
438.5	**1878.5**	4.3	25.8	798.5	**2238.5**	2.8	20.5
448.5	**1888.5**	4.2	25.7	808.5	**2248.5**	2.8	20.3
458.5	**1898.5**	4.1	25.5	818.5	**2258.5**	2.8	20.2
468.5	**1908.5**	4.1	25.2	828.5	**2268.5**	2.7	20.2
478.5	**1918.5**	4.0	25	838.5	**2278.5**	2.7	20.2
488.5	**1928.5**	3.9	24.8	848.5	**2288.5**	2.7	20
498.5	**1938.5**	3.9	24.7	858.5	**2298.5**	2.7	20
508.5	**1948.5**	3.8	24.3	868.5	**2308.5**	2.7	19.7
518.5	**1958.5**	3.8	24.2	878.5	**2318.5**	2.6	19.7
528.5	**1968.5**	3.7	24	888.5	**2328.5**	2.6	19.7
538.5	**1978.5**	3.7	23.8	898.5	**2338.5**	2.6	19.3
548.5	**1988.5**	3.6	23.7	908.5	**2348.5**	2.6	19.5
558.5	**1998.5**	3.6	23.5	918.5	**2358.5**	2.6	19.3
568.5	**2008.5**	3.5	23.5	928.5	**2368.5**	2.6	19.2
578.5	**2018.5**	3.5	23.3	938.5	**2378.5**	2.5	19.2

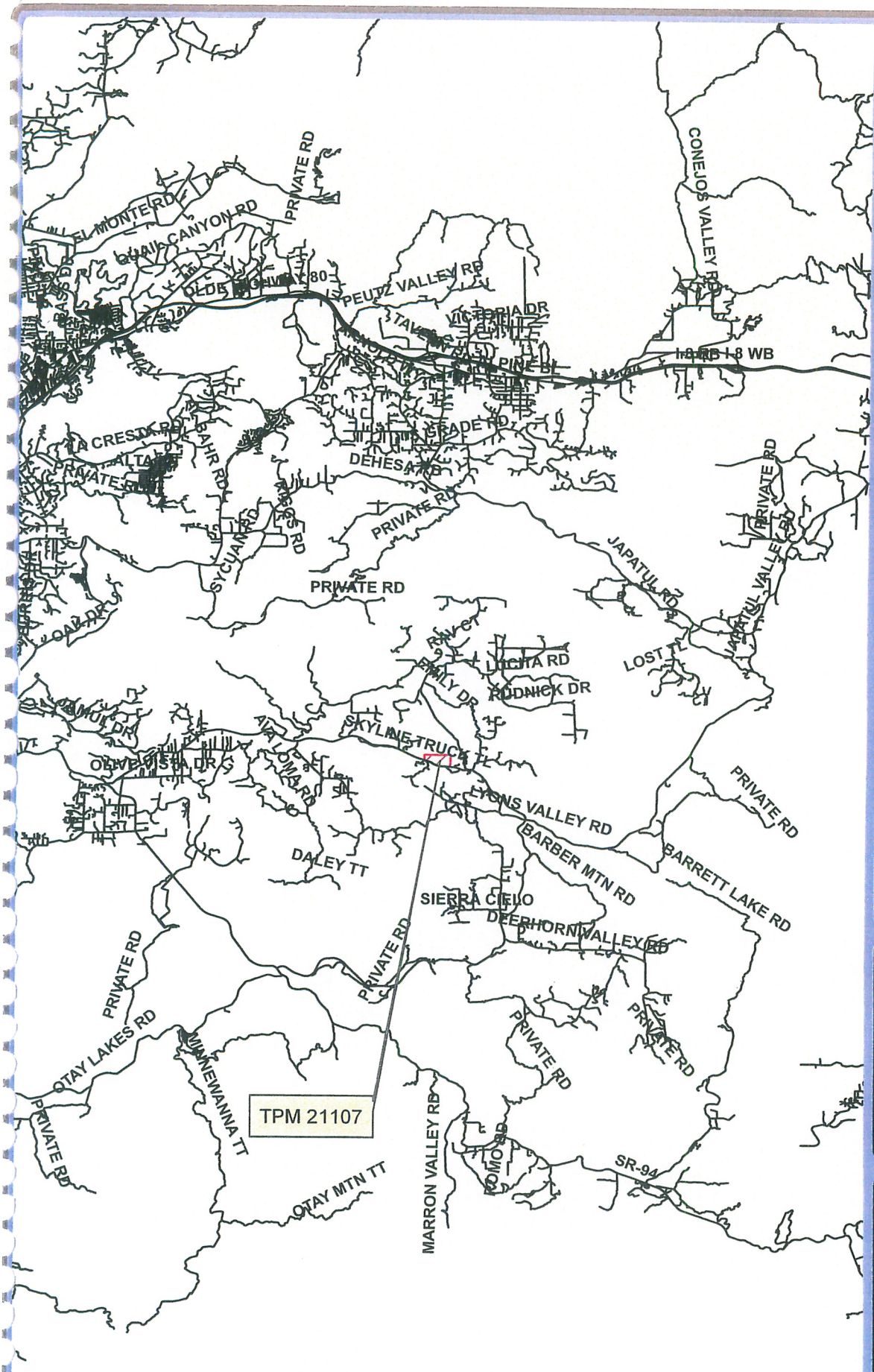
Table 5: Raw Water Level Data "Recovery"
Page 3

Time Recovery Minutes	Total Time Minutes	T/T'	Residual DD Feet	Time Recovery Minutes	Total Time Minutes	T/T'	Residual DD Feet
948.5	**2388.5**	2.5	19	1298.5	**2738.5**	2.1	16
958.5	**2398.5**	2.5	18.8	1308.5	**2748.5**	2.1	16
968.5	**2408.5**	2.5	18.8	1318.5	**2758.5**	2.1	15.8
978.5	**2418.5**	2.5	18.7	1328.5	**2768.5**	2.1	15.8
988.5	**2428.5**	2.5	18.7	1338.5	**2778.5**	2.1	15.7
998.5	**2438.5**	2.4	18.7	1348.5	**2788.5**	2.1	15.5
1008.5	**2448.5**	2.4	18.5	1358.5	**2798.5**	2.1	15.5
1018.5	**2458.5**	2.4	18.5	1368.5	**2808.5**	2.1	15.5
1028.5	**2468.5**	2.4	18.2	1378.5	**2818.5**	2.0	15.5
1038.5	**2478.5**	2.4	18.3	1388.5	**2828.5**	2.0	15.3
1048.5	**2488.5**	2.4	18.2	1398.5	**2838.5**	2.0	15.5
1058.5	**2498.5**	2.4	18	1408.5	**2848.5**	2.0	15.2
1068.5	**2508.5**	2.3	18	1418.5	**2858.5**	2.0	15.3
1078.5	**2518.5**	2.3	18	1428.5	**2868.5**	2.0	15.2
1088.5	**2528.5**	2.3	17.8	1438.5	**2878.5**	2.0	15.2
1098.5	**2538.5**	2.3	17.7	1448.5	**2888.5**	2.0	15
1108.5	**2548.5**	2.3	17.7	1458.5	**2898.5**	2.0	15
1118.5	**2558.5**	2.3	17.5	1872.0	**3312.0**	1.8	13.4
1128.5	**2568.5**	2.3	17.5	1992.0	**3432.0**	1.7	13.4
1138.5	**2578.5**	2.3	17.3	2112.0	**3552.0**	1.7	12.4
1148.5	**2588.5**	2.3	17.2	2232.0	**3672.0**	1.6	11.9
1158.5	**2598.5**	2.2	17.2	2352.0	**3792.0**	1.6	11.5
1168.5	**2608.5**	2.2	17.2	2472.0	**3912.0**	1.6	11
1178.5	**2618.5**	2.2	17	2592.0	**4032.0**	1.6	10.5
1188.5	**2628.5**	2.2	16.8	2712.0	**4152.0**	1.5	10.2
1198.5	**2638.5**	2.2	16.8	2832.0	**4272.0**	1.5	9.7
1208.5	**2648.5**	2.2	16.8	2952.0	**4392.0**	1.5	9.2
1218.5	**2658.5**	2.2	16.8	3072.0	**4512.0**	1.5	8.9
1228.5	**2668.5**	2.2	16.5	3192.0	**4632.0**	1.5	8.4
1238.5	**2678.5**	2.2	16.7	3312.0	**4752.0**	1.4	8.2
1248.5	**2688.5**	2.2	16.5	3432.0	**4872.0**	1.4	7.9
1258.5	**2698.5**	2.1	16.3	3552.0	**4992.0**	1.4	7.5
1268.5	**2708.5**	2.1	16.3	3672.0	**5112.0**	1.4	7.2
1278.5	**2718.5**	2.1	16.2	3792.0	**5232.0**	1.4	7
1288.5	**2728.5**	2.1	16	3912.0	**5352.0**	1.4	6.7
				4032.0	**5472.0**	1.4	6.5

Table 5: Raw Water Level Data "Recovery"
Page 4

Time Recovery Minutes	Total Time Minutes	T/T'	Residual DD Feet
4152.0	**5592.0**	1.3	6.4
4272.0	**5712.0**	1.3	6.2
4392.0	**5832.0**	1.3	5.9
4512.0	**5952.0**	1.3	5.9
4632.0	**6072.0**	1.3	5.7
4752.0	**6192.0**	1.3	5.7
4872.0	**6312.0**	1.3	5.4
4992.0	**6432.0**	1.3	5.2
5112.0	**6552.0**	1.3	5
5232.0	**6672.0**	1.3	4.7
5352.0	**6792.0**	1.3	4.5
5472.0	**6912.0**	1.3	4.4
5592.0	**7032.0**	1.3	4.2
5712.0	**7152.0**	1.3	4
5832.0	**7272.0**	1.2	4
5952.0	**7392.0**	1.2	4.4
6072.0	**7512.0**	1.2	4.2
6192.0	**7632.0**	1.2	4
6312.0	**7752.0**	1.2	3.9
6432.0	**7872.0**	1.2	3.7
6552.0	**7992.0**	1.2	3.6
6672.0	**8112.0**	1.2	3.4
6792.0	**8232.0**	1.2	3.2
6912.0	**8352.0**	1.2	3.2
7032.0	**8472.0**	1.2	3.1
7152.0	**8592.0**	1.2	2.9

Figure 1
Location Map
TPM 21107



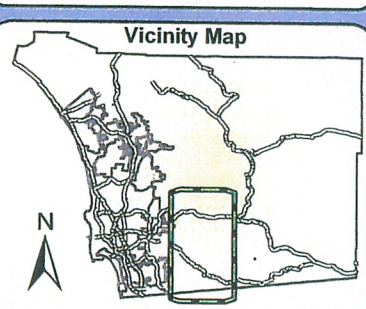
Roads

Subject Parcel

0 6,000 12,000 24,000 Feet

1 inch equals 14,151 feet

Vicinity Map



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Plot Date: 04/04/07

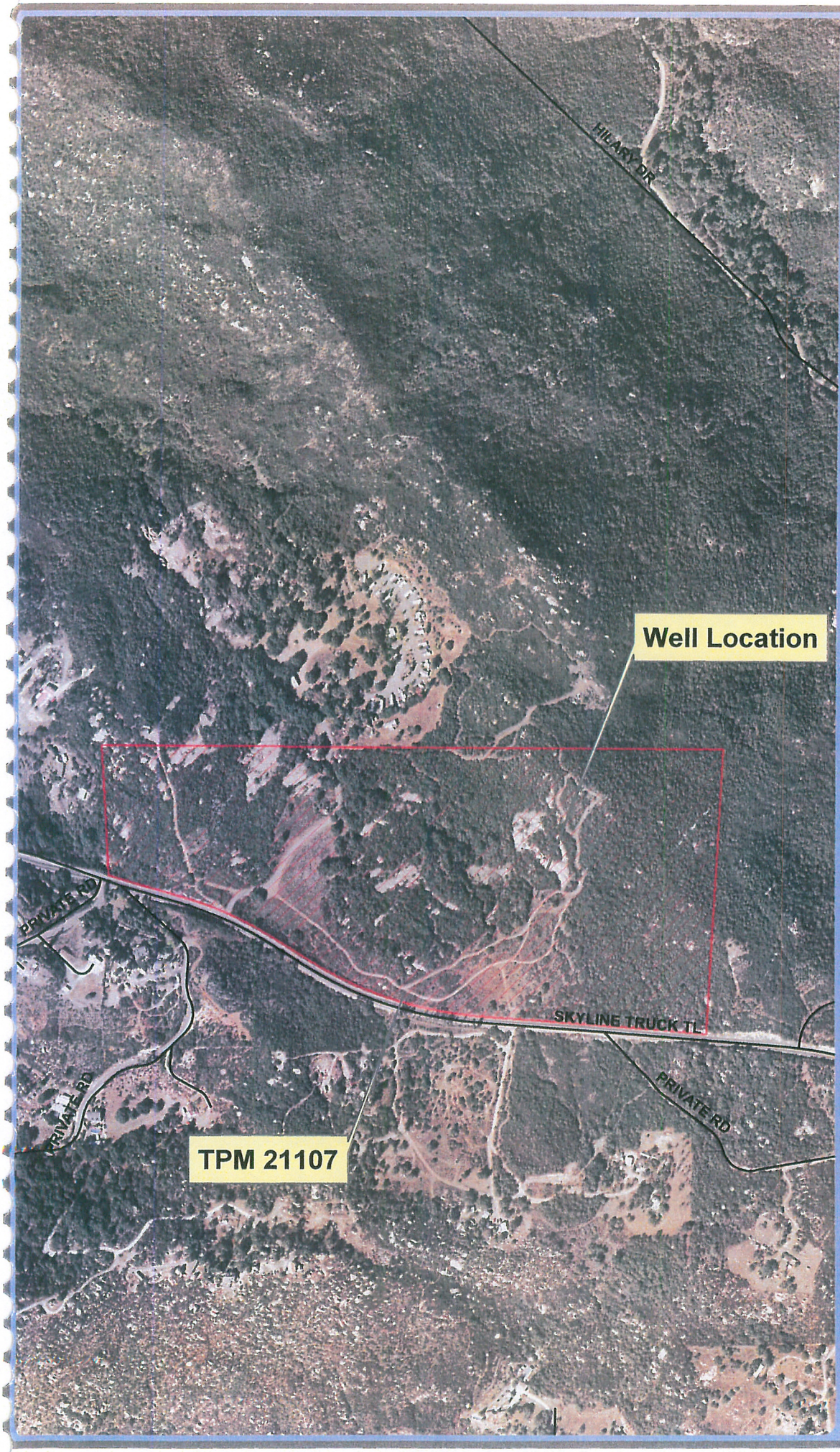


Figure 2
Well Location
TPM 21107

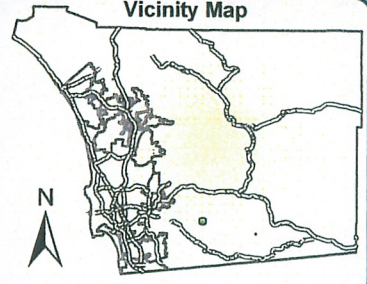
Roads

Subject Parcel

0 245 490 980 Feet

1 inch equals 583 feet

Vicinity Map



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Plot Date: 04/04/07

Figure 3
Renteria TPM 21107
Drawdown Graph

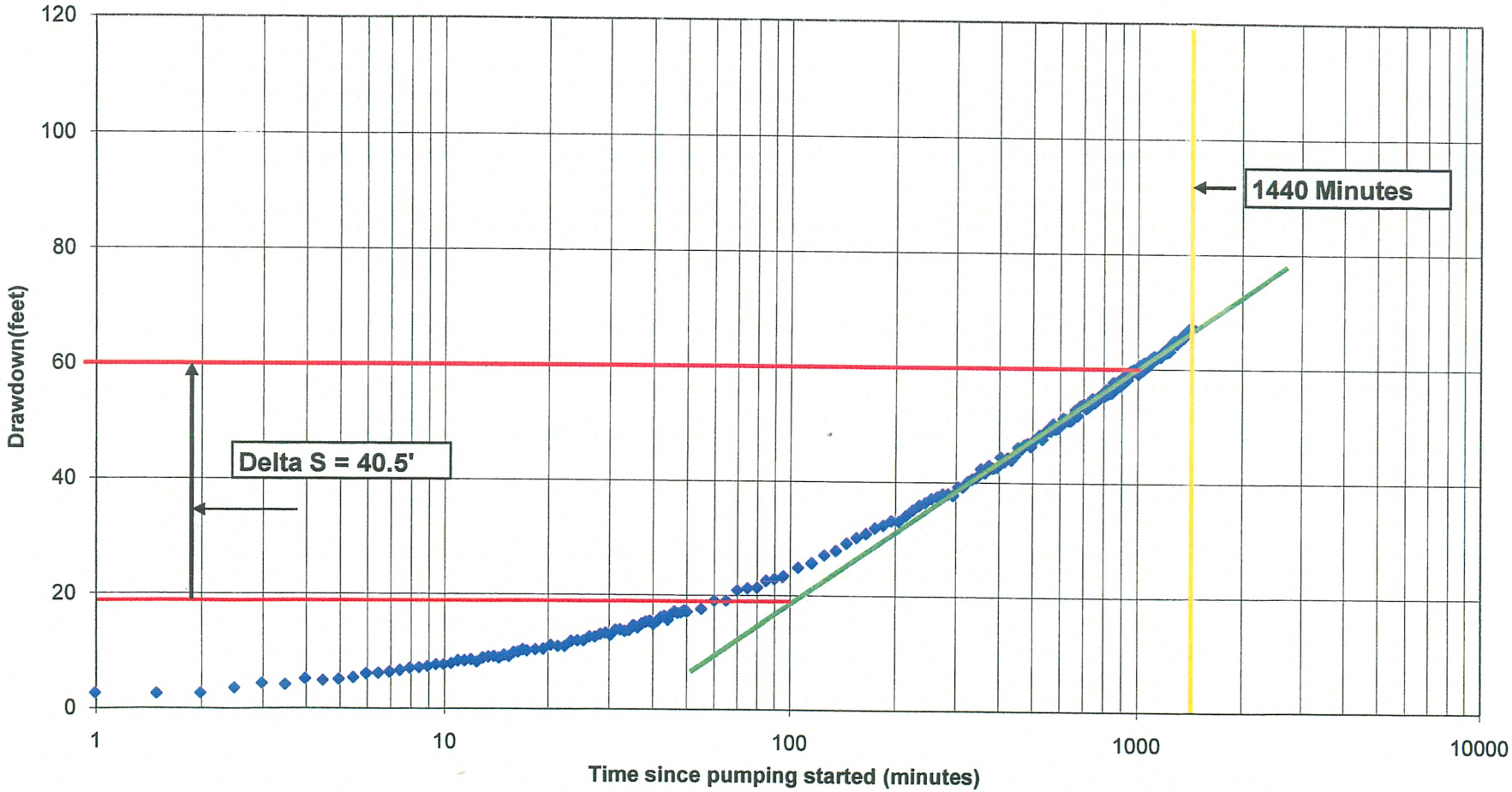


Figure 4
Renteria TPM 21107
Recovery Graph

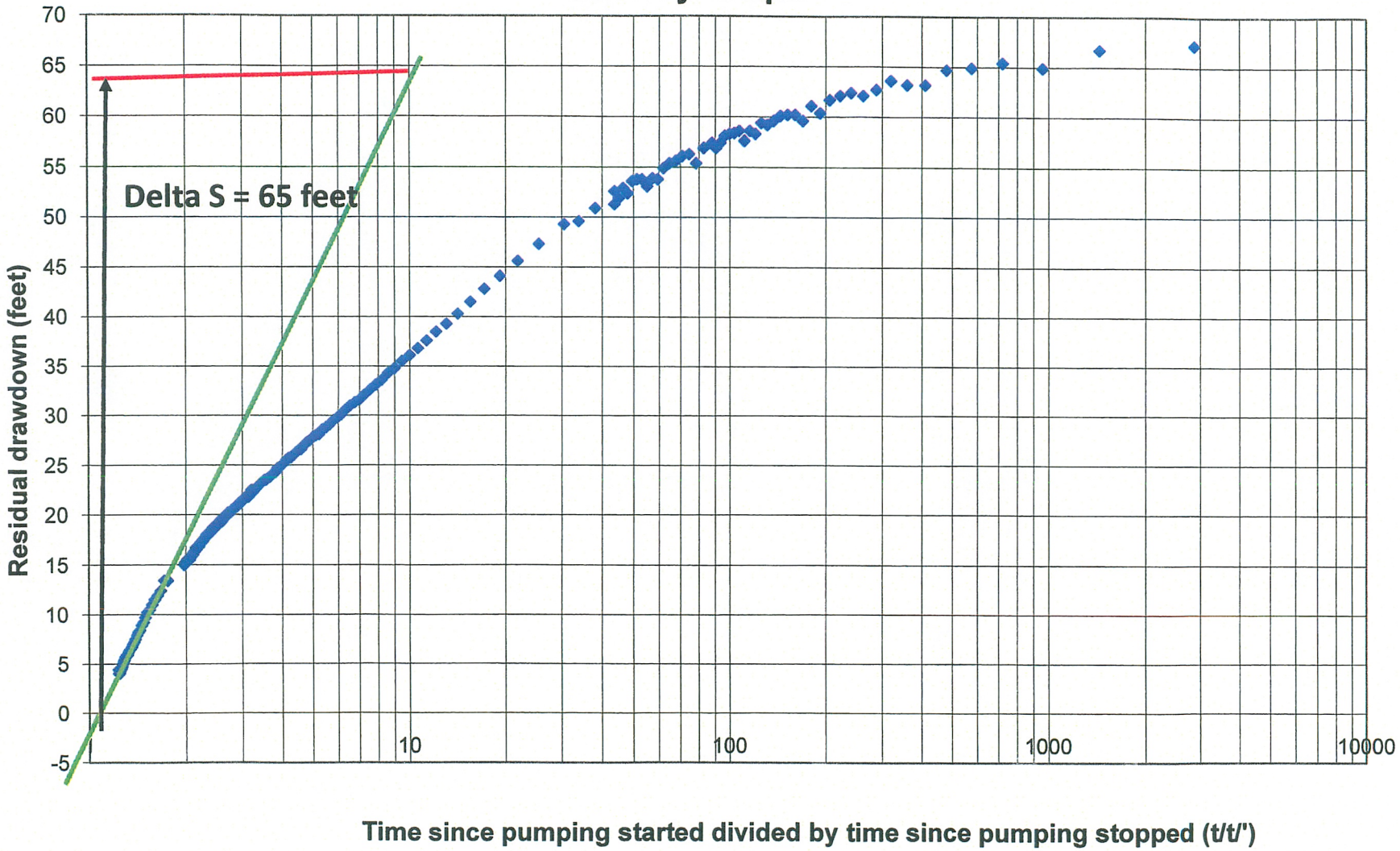
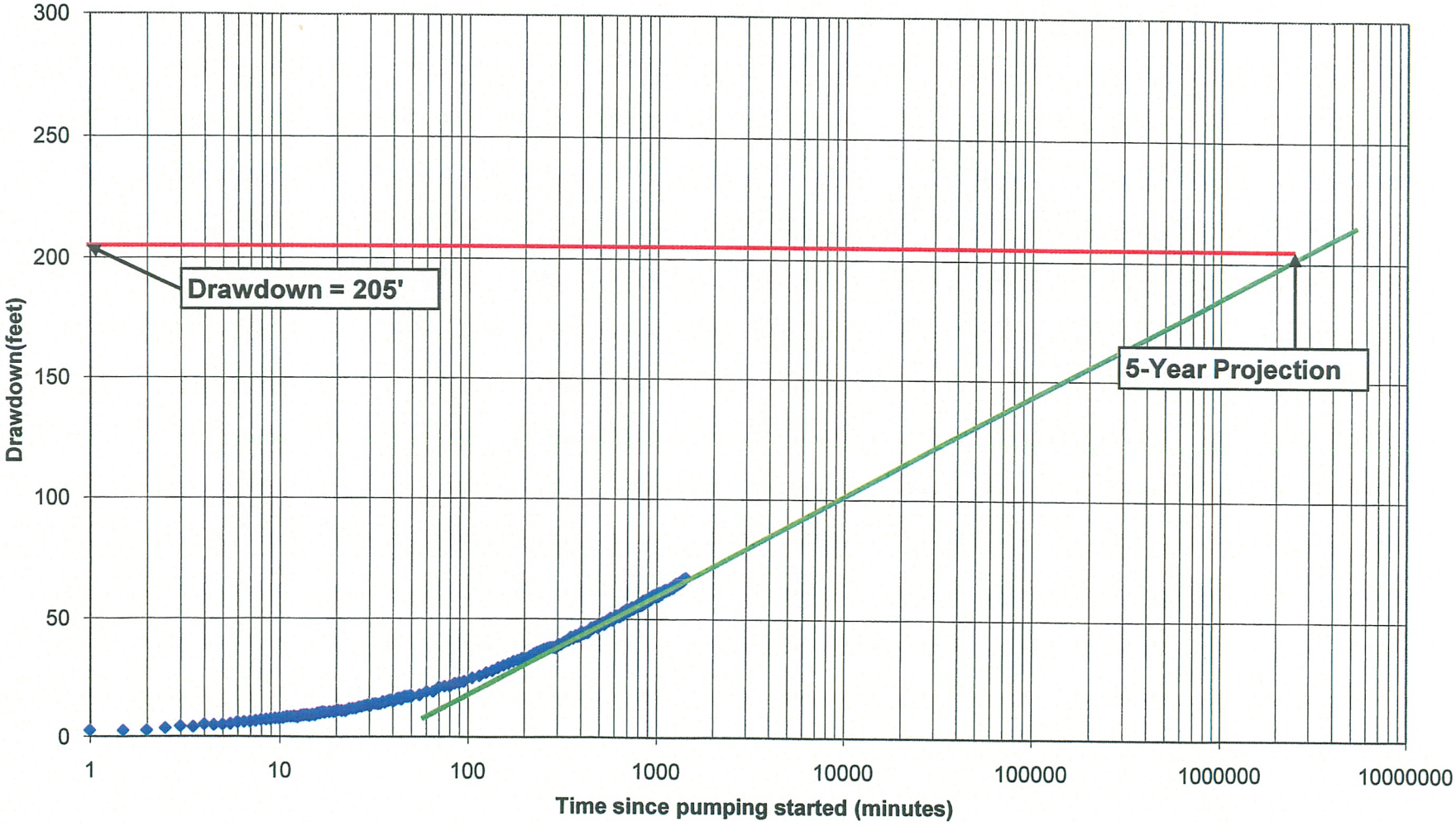


Figure 5
Renteria TPM 21107
5-Year Projection



Appendix A:

Pump Test Plan

Pump Test Plan
Renteria TPM 21107
December 5, 2008

John Peterson

Professional Geologist #3713
Certified Hydrogeologist #90
Peterson Environmental Services
5580 La Jolla Blvd. #398
La Jolla Ca. 92037
858-454-9984
Cell 858-220-0877
Fax 858-551-7549

Project Description and Location

The Renteria TPM is located in Jamul California (Figures 1 and 2). The project is composed of 58.07 gross acres and is proposing a total of 4 single family residential lots (with a remainder parcel for a total of 5 lots) with a minimum parcel size of 10.0 gross acres. This results in an average density of 1 dwelling unit per 11.6 acres for the project. As identified by the County Groundwater Ordinance (Section 67.703.1) one well is required to be constructed and tested to prove adequate well yield on the project.

Well Description:

As identified by Jim Bennett, County Groundwater Geologist one lot was selected to be tested for aquifer yield pumping tests. This lot is #4 which is located in the eastern section of the project (Attachment A Tentative Parcel Map, located in pocket at the end of this report). This well is new and has not been used prior to the proposed testing.

The well was drilled by Butler Drilling Company located in Alpine California. The well was completed in August 2008 and is located at GPS location of N 32 43 40.22, W 116 46 24.51 elevation 2,567 feet. The well was drilled to 825 feet (see Appendix A for Well Completion Log). The Well Completion Log reports an anticipated well yield of 3.5 to 4 gpm (gallons per minute). The borehole was installed with a steel casing (blank and screen) to the total depth of 24 feet and a concrete seal. The remaining hole appears to be uncased and an open borehole (no additional information is provided on the well log).

Proposed Production Rate

The well will be pumped at 3 gallons per minute (gpm) for a 24 hour period of production and will be monitored for a similar 24-hour period of recovery. The well is currently not in use.

Pump Test Plan:

The pump test will be run according to the following conditions.

1) Static groundwater level will be recorded prior to production testing. The well will be set up for the test the day prior to the production test and a water level will be taken at that time. Note

that static water level was monitored on December 4 during the initial site review. Static water level was monitored at 72.9 feet below top of the 1 inch sounding tube which is located at 2.0 feet above ground surface. Thus static water level is approximately 70.9 feet below ground surface.

2) The well currently has an installed submersible pump and motor (see photos of the well Appendix B). The existing facility will be used for the test with the installed 1 inch sounding tube to allow access for the data logger. The pump has a check value installed to prevent siphoning of water when the pump is shut down. A gate value and cumulative and instantaneous flow meter will also be installed. During the test flow will also be monitored periodically by timing the filling of a container of a known volume to confirm production rate.
3) Following configuration of the well with pump and motor the well will be allowed to be rested for at least a 24 hour period or which time full recovery has been documented. At that time groundwater levels will also be compared to previously collected levels to ensure that true static groundwater levels have been reached prior to beginning the pumping test.
4) No other wells are known to existing within 1,000 feet of the test well. No offsite wells are in the area of the project (see Figure 2). The closest neighboring wells are likely for the existing RV Park that is located about 1,000 feet to the northwest of the well. The park is it an elevation of about 2,472 or about 100 feet below the test well. With a static water level of 70.9 feet below ground surface in the test well the elevation of the groundwater is above the ground level in the park. Due to the distance between the test well and the various elevations it is unlikely that any direct hydrological connection exists between the test well and the park. As a result it is proposed that no off site wells will be monitored during the test.
5) The discharge will be directed through garden hoses that will extend about 250 feet to the northwest of the test well. The water will be discharged onto an existing expanse of hard granitic rock that slopes directly away from the project site. This can be seen on Figure 2 to the northwest of the test well.
6) During the test groundwater levels will be collected via a Global Water data logger installed in the pumping well. The data logger

will be set to record water levels on a logarithmic basis (following direction contained within Section 3.1 of the *Guidelines for Performing Residential Well Tests*). Also periodic water levels will also be collected via electric line to confirm the data.

7) The length of the test could be extended if straight line conditions have not been encountered within the production well following consultation with the County Groundwater Geologist.
8) At the end of the test water samples will be collected for nitrate, TDS coliform (fecal and total) bacteria, uranium and gross alpha. The samples will be collected within lab supplied containers, and taken to the lab within allocated time according to standard procedures.
9) Recovery will run for at least 24-hours following production with the use of the data logger. Following recovery the well will be returned to original condition and all equipment removed from the field.

Conclusion

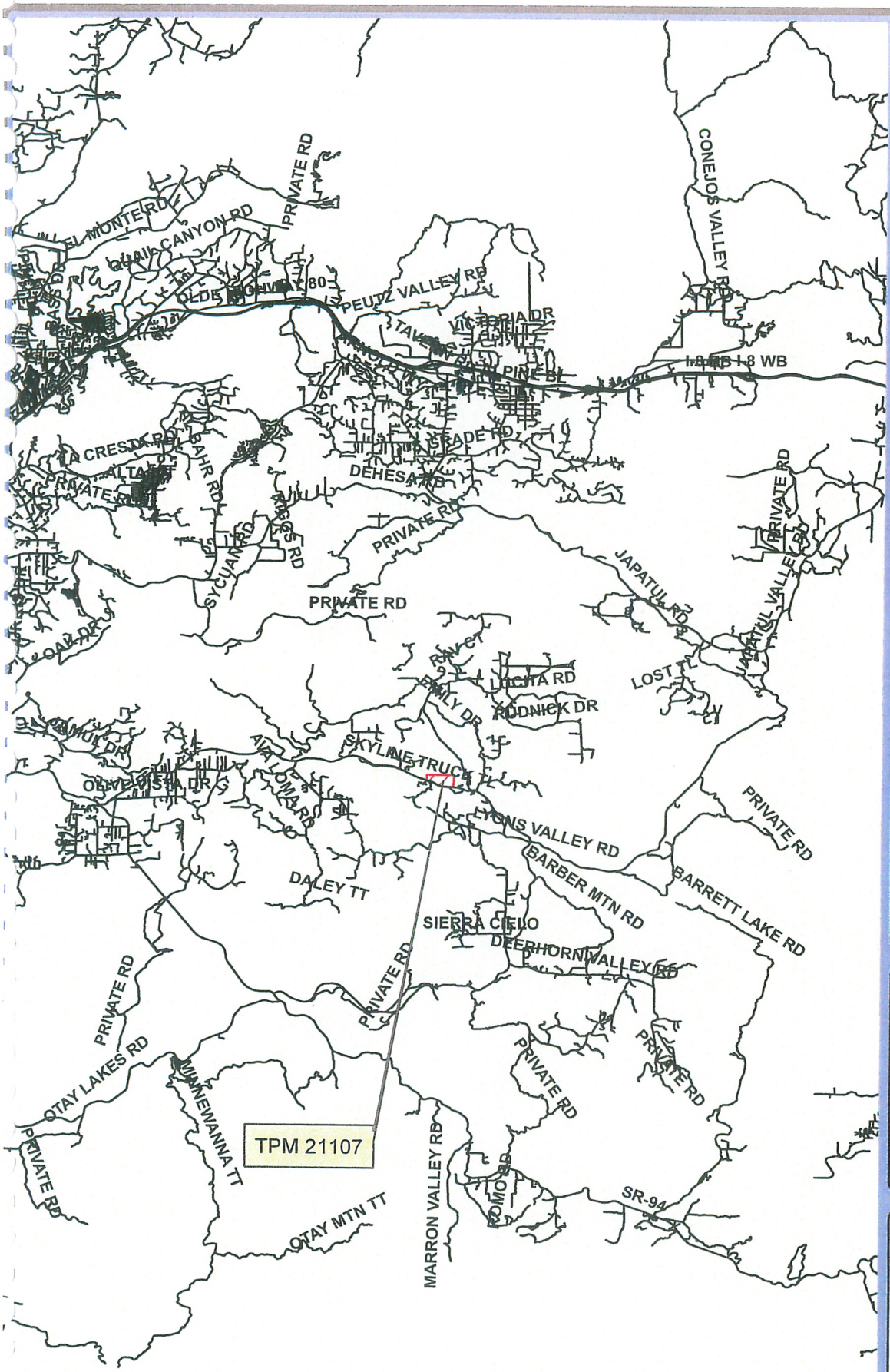
As directed by Jim Bennett, County Groundwater Geologist, a well will be tested on TPM 21107 located in Jamul California. This well will be pump tested as required by the County Groundwater Ordinance to investigate groundwater yield potential of the aquifer. It is anticipated that the well will be pumped at 3 gpm for 24 hours with at least a 24 hour recovery interval. Water samples will be collected at the end of the test for nitrate, TDS, coliform bacteria, gross alpha and uranium. It is anticipated that this test will be completed during mid portion of December 2008.

Please let me know if you need any additional information regarding these tests.

Respectively Submitted,

John Peterson
PG #3713, CHG #90
Peterson Environmental Services

Figure 1
Location Map
TPM 21107



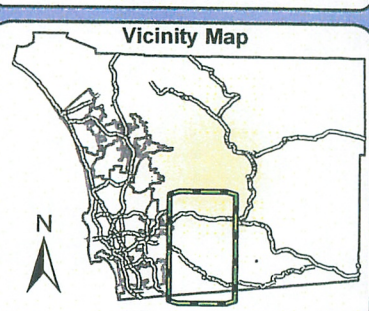
Roads

Subject Parcel

0 6,000 12,000 24,000 Feet

1 inch equals 14,151 feet

Vicinity Map



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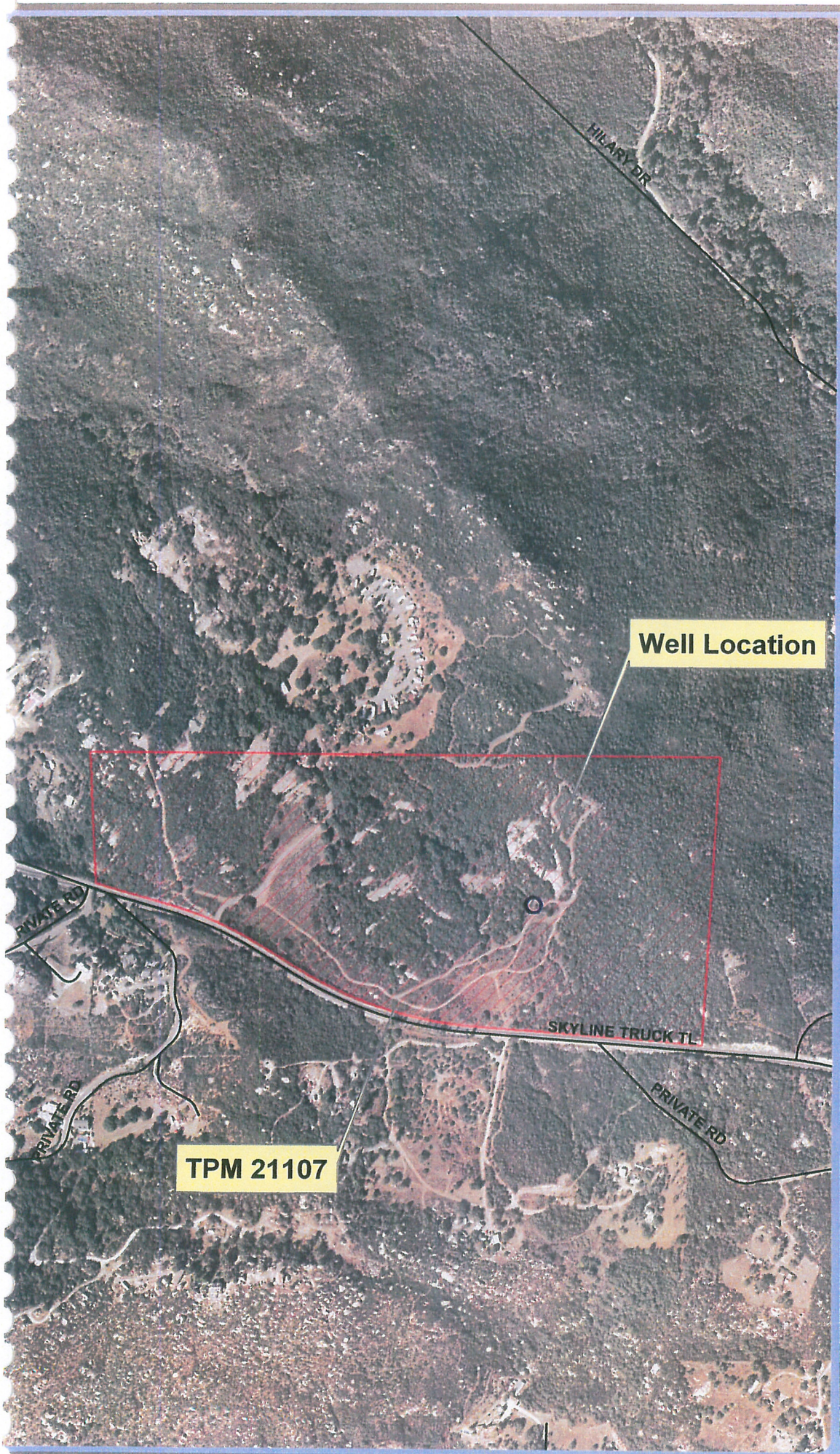
Plot Date: 04/04/07

Figure 2
Well Location
TPM 21107



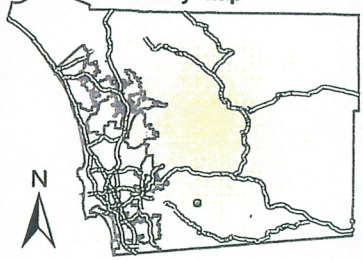
Roads

Subject Parcel

0 245 490 980 Feet

1 inch equals 583 feet

Vicinity Map



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Plot Date: 04/04/07

Appendix A
Well Completion Log

TRIPLICATE
Owner's Copy

Page 1 of 2

Owner's Well No. LWEL#19789

Date Work Began 8/20/08, Ended 8/22/08

Local Permit Agency SAN DIEGO COUNTY HEALTH DEPT.

Permit No. Ø Permit Date 7/25/2008

STATE OF CALIFORNIA

WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. 1086387

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD ROTARY AIR FLUID

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	1	TOP SOIL
1	15	D.G.
15		ROCK BED (GRAY)
15	79	SOLID GRANITE
79	88	ALTERED GRANITE (GRAY & BR.)
88	114	SOLID GRANITE
114	121	FRACTURED GRANITE
121	181	SOLID GRANITE
181		SEAM (SMALL)
181	306	SOLID GRANITE
306	307	FRACTURED GRANITE
307	440	SOLID GRANITE
440	442	FRACTURED GRANITE
442	473	SOLID GRANITE
473	476	FRACTURED GRANITE
476	484	SOLID GRANITE
484	504	ALTERED GRANITE (W/ORANGE)
504	576	SOLID GRANITE
576	577	FRACTURED GRANITE
577	611	SOLID GRANITE
611	628	FRACTURED GRANITE
628	665	SOLID GRANITE
665	667	FRACTURED -BROKEN GRANITE
667	758	SOLID GRANITE
758	801	ALTERED W/SOME SM.FRACTURES
801	825	SOLID GRANITE

TOTAL DEPTH OF BORING 24 (Feet)

TOTAL DEPTH OF COMPLETED WELL 825 (Feet)

WELL OWNER

Name ALFONSO RENTERIA

Mailing Address 559 MERLOT PL.

CITY CHULA VISTA STATE CA ZIP 91913

WELL LOCATION

Address SKYLINE TRUCK TRAIL

City JAMUL STATE CA ZIP 91935

County SAN DIEGO

APN Book 599 Page 052 Parcel 01

Township 17S Range 2E Section 4

Lat ___ N DEG. MIN. SEC. Long ___ W DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR

___ Deepen

___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY

X Domestic ___ Public

___ Irrigation ___ Industrial

MONITORING ___

TEST WELL ___

CATHODIC PROTECTION ___

HEAT EXCHANGE ___

DIRECT PUSH ___

INJECTION ___

VAPOR EXTRACTION ___

SPARGING ___

REMEDIATION ___

OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 185 (Ft.) & DATE MEASURED 8/26/08

ESTIMATED YIELD * 3½-4 (GPM) & TEST TYPE ATR

TEST LENGTH 1 (Hrs.) TOTAL DRAWDOWN 825 (Ft.)

** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
+1	24	12 3/4	X				STEEL	8	.250	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	24	X	X		

ATTACHMENTS (✓)

___ Geologic Log

___ Well Construction Diagram

___ Geophysical Log(s)

___ Soil/Water Chemical Analyses

___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME BUTLER DRILLING COMPANY
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS P.O. BOX 935 CITY ALPINE STATE CA ZIP 91903

Signed [signature] C-57 LICENSED WATER WELL CONTRACTOR

DATE SIGNED 9/19/08 C-57 LICENSE NUMBER 652207

DWR 188 REV. 05-03

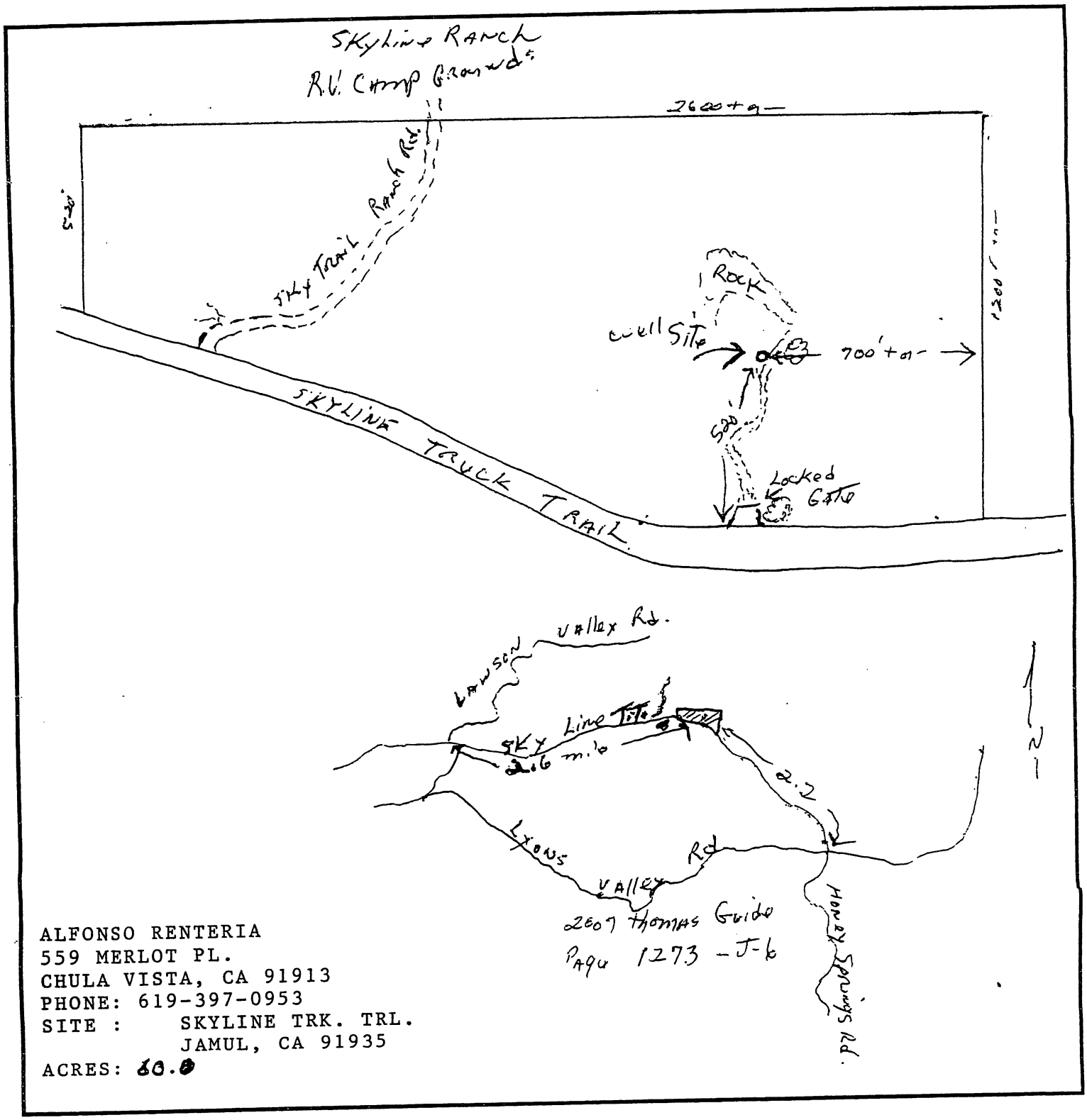
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

JUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH

Control #: _____
Assessor's Parcel Number: 599-052-01

LOCATION

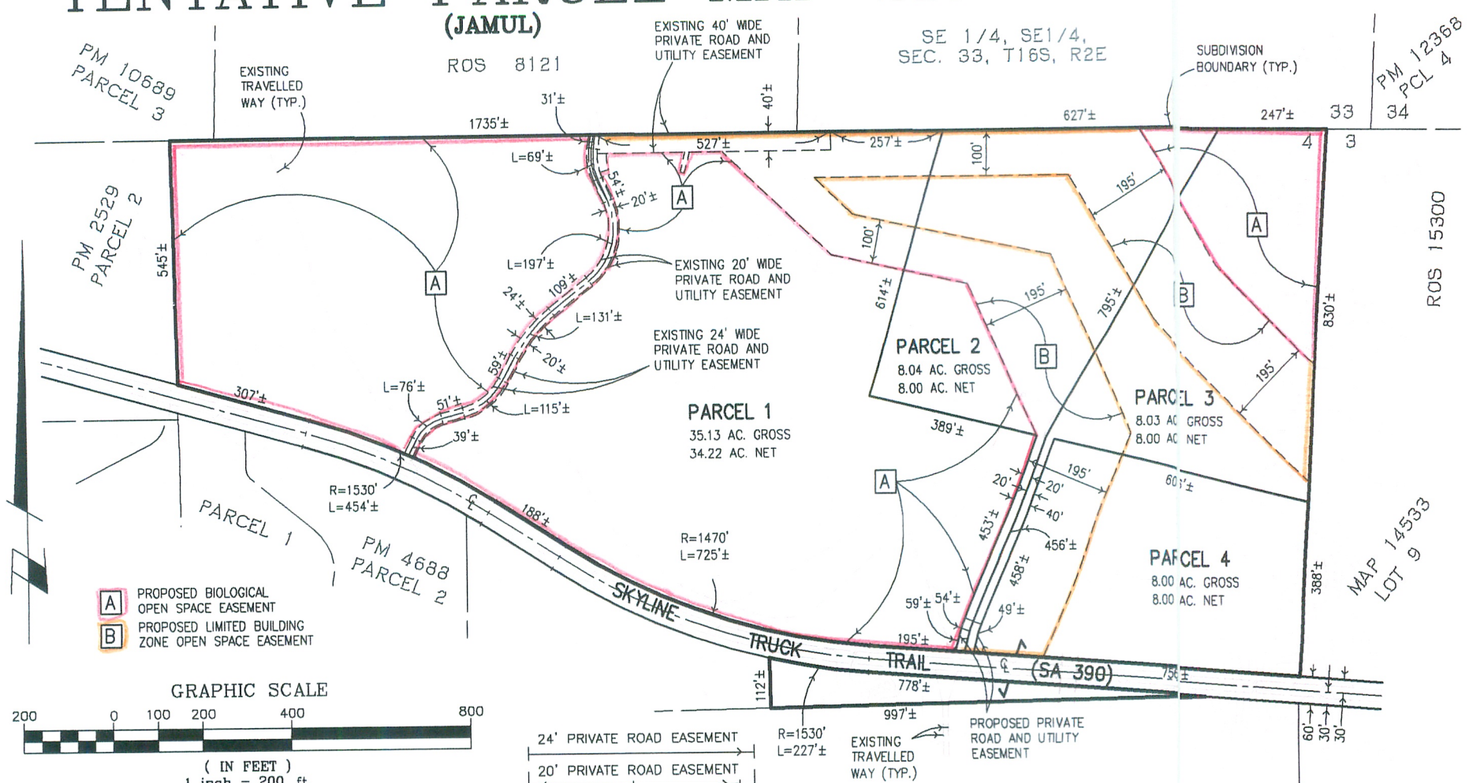
Indicate below the vicinity and exact location of well with respect to the following items: Property lines, water bodies or water courses, drainage pattern, easements, roads, existing wells, sewers and private sewage disposal systems and other potential contamination sources, including dimensions.



ALFONSO RENTERIA
559 MERLOT PL.
CHULA VISTA, CA 91913
PHONE: 619-397-0953
SITE : SKYLINE TRK. TRL.
JAMUL, CA 91935
ACRES: 80.0

Appendix B
Site Photos

TENTATIVE PARCEL MAP 21107 RPL3



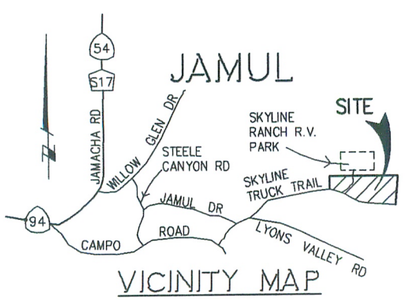
GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

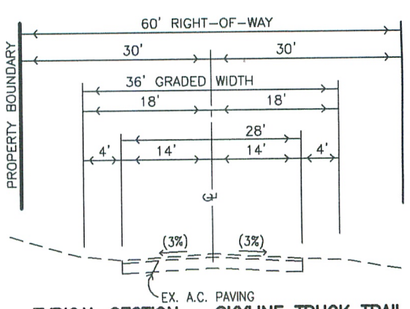
AVERAGE SLOPE= $\frac{L \times 100\%}{A \times 43{,}560}$

PCL. NO.	L (FT.)	I (FT.)	A (AC.)	AVERAGE SLOPE(%)
1	9440	25	35.13	15.42
2	3090	25	8.04	22.06
3	2978	25	8.03	21.28
4	2251	25	8.00	16.15



VICINITY MAP

T.B. REF: PAGE 1274, B7
NOT TO SCALE



TYPICAL SECTION – ONSITE PRIVATE ROAD

NOT TO SCALE

TYPICAL SECTION – SKYLINE TRUCK TRAIL

NOT TO SCALE

DEH NO. VPM 338

ALL PARCELS SHALL HAVE A LAYOUT OF THE SEWAGE DISPOSAL SYSTEM APPROVED BY THE SAN DIEGO DEPARTMENT OF PUBLIC HEALTH PRIOR TO APPROVAL OF A BUILDING PERMIT AND/OR ISSUANCE OF A SEPTIC TANK PERMIT. CUTS AND FILLS FOR DRIVEWAYS AND BUILDING SITES SHALL BE MADE PRIOR TO APPROVAL OF THE LAYOUTS, AN ADDITIONAL EXPANSION AREA OF 100% OF THE INITIAL TILE AREA SHALL BE PROVIDED FOR POTENTIAL EXPANSION IN THE EVENT OF FAILURE OF GRAVITY FLOW. EACH PARCEL IS APPROVED FOR A STANDARD SEPTIC 1500 GALLON TANK CONNECTED TO * OF TILE DRAIN FIELD TO SERVE A 5 BEDROOM DWELLING, PROVIDED THE ORIGINAL SOIL IS NOT DISTURBED IN ANY WAY SUCH AS CUTTING, FILLING OR RIPPING. THIS DOES NOT CONSTITUTE APPROVAL FOR COMMERCIAL ESTABLISHMENTS.

*SEE DATA AND RECOMMENDATIONS IN THE NAME OF AL RENTERIA, BY RONALD C. ASHMAN RCE 34300, DATED 1-14-2011.

SCOTT ROSECRANS JULY 26, 2011

GARY ERBECK – DEPUTY DIRECTOR
ENVIRONMENTAL HEALTH SERVICES

THIS CERTIFICATE DOES NOT IMPLY ALL CONDITIONS PURSUANT TO THE R.P.O. ORDINANCE HAVE BEEN MET, THE DEPARTMENT OF PLANNING AND LAND USE SHOULD BE CONSULTED REGARDING THE RESULTANT CHANGES. THE SEPTIC SYSTEM DESIGN MUST BE RE-EVALUATED BY THE DEPARTMENT OF HEALTH SERVICES.

PARCEL	* = LEACH LINE FOOTAGE	TRENCH DEPTH FOOTAGE	ROCK UNDER PIPE FOOTAGE	REMARKS
1	450'	3'	1'	100% RESERVE
2	440'	3'	1'	100% RESERVE
3	430'	3'	1'	100% RESERVE
4	430'	3'	1'	100% RESERVE

LAND DIVISION STATEMENT
OWNER'S CERTIFICATE

WE HEREBY CERTIFY THAT WE ARE THE RECORD OWNERS, AS SHOWN ON THE LATEST EQUALIZED COUNTY ASSESSMENT, OF THE PROPERTY SHOWN ON THE TENTATIVE PARCEL MAP. ALL OF OUR CONTIGUOUS OWNERSHIP WITHIN AND BEYOND THE BOUNDARIES OF THE TENTATIVE PARCEL MAP IS SHOWN. THE BASIS OF CREATION OF THE LOTS IN OUR OWNERSHIP IS INDICATED ON THE TENTATIVE PARCEL MAP. WE UNDERSTAND THAT PROPERTY IS CONSIDERED AS CONTIGUOUS EVEN IF IT IS SEPARATED BY ROADS, STREETS, UTILITY EASEMENTS OR RAILROAD RIGHTS-OF-WAY. "FREEWAY" AS DEFINED IN SECTION 23.5 OF THE STREETS AND HIGHWAYS CODE, SHALL NOT BE CONSIDERED AS ROADS OR STREETS.

WE FURTHER CERTIFY THAT WE WILL NOT, BY THIS APPLICATION, CREATE OR CAUSE TO BE CREATED, OR WILL NOT HAVE PARTICIPATED IN THE CREATION OF MORE THAN FOUR PARCELS ON CONTIGUOUS PROPERTY UNLESS SUCH CONTIGUOUS PARCELS WERE CREATED BY MAJOR SUBDIVISION. FOR PURPOSES OF THIS CERTIFICATION, THE TERM "PARTICIPATED" MEANS HAVING COOPERATED WITH OR ACTED IN A PLANNING, COORDINATING, OR DECISION-MAKING CAPACITY IN ANY FORMAL OR INFORMAL ASSOCIATION OR PARTNERSHIP FOR THE PURPOSE OF DIVIDING REAL PROPERTY.

WE CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT

EXECUTED THIS _____ DAY OF _____, 2011
AT SAN DIEGO, CALIFORNIA

SIGNATURE:

ALFONSO RENTERIA, TRUSTEE — ELENA M. RENTERIA, TRUSTEE

JULIO A. RENTERIA, JOINT TENANT — ROSA LAURA RENTERIA CARDENAS, JOINT TENANT

C/O RENTERIA FAMILY TRUST
559 MERLOT PLACE
CHULA VISTA, CA 91913
(619) 397-0953

1. COMPLETE TAX ASSESSOR'S NUMBERS ARE: 599-052-01
2. STATUS OF EXISTING LEGAL ACCESS TO SUBJECT PROPERTY FROM A PUBLICLY MAINTAINED ROAD. SKYLINE TRUCK TRAIL 60' PUBLICLY MAINTAINED ROAD
3. EXISTING ZONING OF EACH LOT IS: A-72
4. GENERAL OR COMMUNITY PLAN DESIGNATION IS: SR 10
5. PROPOSED USE OF EACH LOT IS: SINGLE FAMILY RESIDENCE
6. SOURCE OF DOMESTIC POTABLE WATER SUPPLY FOR EACH LOT IS: PRIVATE WELLS
7. DISTRICT OR AGENCY PROVIDING FIRE PROTECTION TO SUBJECT PROPERTY IS: RURAL FIRE PROTECTION DISTRICT
8. SOURCE OF EXISTING TOPO: COUNTY 200 SCALE TOPOGRAPHIC SURVEY SHEETS: 202-1833, 202-1839, 206-1833, 206-1839 PHOTOGRAPHY DATED: AUGUST 1964
9. NO GRADING IS ANTICIPATED AT THIS TIME.
10. SEWER DISTRICT: PRIVATE SEPTIC SYSTEMS
11. SCHOOL DISTRICTS: JAMUL-DULZURA UNION ELEMENTARY SCHOOL DISTRICT GROSSMONT UNION HIGH SCHOOL DISTRICT
12. SOLAR STATEMENT: ALL LOTS WITHIN THIS SUBDIVISION HAVE A MINIMUM OF 100 SQUARE FEET OF SOLAR ACCESS FOR EACH FUTURE DWELLING/COMMERCIAL/ INDUSTRIAL UNIT ALLOWED BY THIS SUBDIVISION.
13. SITE ADDRESS: SKYLINE TRUCK TRAIL JAMUL CA
14. LEGAL DESCRIPTION: PORTION OF LOTS 1 AND 2 OF SECTION 4, T17S, R2E, SBM
15. REGIONAL PLAN CATEGORY: SEMI RURAL 10
16. SUBREGIONAL/COMMUNITY PLAN: JAMUL
17. TAX RATE AREA: 79002

TENTATIVE PARCEL MAP PREPARED BY:

CREW ENGINEERING AND SURVEYING
5725 KEARNY VILLA ROAD, STE. "D"
SAN DIEGO, CA. 92123
(858) 571-0555

BY: _____
RONALD C. ASHMAN R.C.E. 34300
(EXP. 9-30-11)

ZONE		
USE REGULATIONS		A-72
ANIMAL REGULATIONS		O
DEVELOPMENT REGULATIONS	Density	---
	Lot Size	8AC
	Building Type	C
	Maximum Floor Area	---
	Floor Area Ratio	---
	Height	G
	Lot Coverage	---
	Setback	C
	Open Space	---
SPECIAL AREA REGULATIONS		---

BY:_____ DATE:_____

JN 1304

Appendix B:

Water Quality Results

EnviroMatrix Analytical, Inc.

31 December 2008

Peterson Environmental Services
Attn: John Peterson
5580 La Jolla Blvd, Suite 398
La Jolla, CA 92037

EMA Log #: 0812449

Project Name: Renteria 12-15-08

Enclosed are the results of analyses for samples received by the laboratory on 12/15/08 11:00. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that this data is in compliance both technically and for completeness.

Dan Verdon
Laboratory Director

CA ELAP Certification #: 2564

4340 Viewridge Avenue, Suite A • San Diego, California 92123 • (858) 560-7717 • Fax (858) 560-7763
Analytical Chemistry Laboratory

Client Name: Peterson Environmental Services
Project Name: Renteria 12-15-08

EMA Log #: 0812449

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Renteria 12-15-08	0812449-01	Drinking Water	12/15/08 09:00	12/15/08 11:00

NOTE: The Uranium and Gross Alpha analyses were performed by a sub-contract laboratory, results to follow in a separate report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Peterson Environmental Services
Project Name: Renteria 12-15-08

EMA Log #: 0812449

Conventional Chemistry Parameters by Standard/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Renteria 12-15-08 (0812449-01) Drinking Water Sampled: 12/15/08 09:00 Received: 12/15/08 11:00									
Nitrate as N	ND	0.05	mg/l	1	8121602	12/16/08	12/16/08	SM4500 NO3 E	
Total Dissolved Solids	**251**	20	"	"	8121618	12/16/08	12/17/08	SM2540 C	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Peterson Environmental Services
Project Name: Renteria 12-15-08

EMA Log #: 0812449

Microbiological Parameters by Standard Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Renteria 12-15-08 (0812449-01) Drinking Water Sampled: 12/15/08 09:00 Received: 12/15/08 11:00									
Total Coliforms	**Present**		None	1	8122009	12/15/08	12/16/08	SM9223	
E. Coli	Absent		"	"	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Peterson Environmental Services
Project Name: Renteria 12-15-08

EMA Log #: 0812449

Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8121602										
Blank (8121602-BLK1)				Prepared & Analyzed: 12/16/08						
Nitrate as N	ND	0.05	mg/l							
LCS (8121602-BS1)				Prepared & Analyzed: 12/16/08						
Nitrate as N	0.50	0.05	mg/l	0.500		99	80-120			
LCS Dup (8121602-BSD1)				Prepared & Analyzed: 12/16/08						
Nitrate as N	0.51	0.05	mg/l	0.500		101	80-120	2	20	
Duplicate (8121602-DUP1)		**Source: 0812449-01**		Prepared & Analyzed: 12/16/08						
Nitrate as N	0.01	0.05	mg/l		ND				20	
Matrix Spike (8121602-MS1)		**Source: 0812449-01**		Prepared & Analyzed: 12/16/08						
Nitrate as N	0.47	0.05	mg/l	0.500	ND	93	80-120			
Matrix Spike Dup (8121602-MSD1)		**Source: 0812449-01**		Prepared & Analyzed: 12/16/08						
Nitrate as N	0.49	0.05	mg/l	0.500	ND	99	80-120	6	20	
Reference (8121602-SRM1)				Prepared & Analyzed: 12/16/08						
Nitrate as N	0.67	0.05	mg/l	0.688		98	90.12-107.7			
Batch 8121618										
Blank (8121618-BLK1)				Prepared: 12/16/08 Analyzed: 12/17/08						
Total Dissolved Solids	ND	20	mg/l							
Duplicate (8121618-DUP1)		**Source: 0812449-01**		Prepared: 12/16/08 Analyzed: 12/17/08						
Total Dissolved Solids	278	20	mg/l		251			10	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Peterson Environmental Services
Project Name: Renteria 12-15-08

EMA Log #: 0812449

Conventional Chemistry Parameters by Standard/EPA Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8121618										
Reference (8121618-SRM1)				Prepared: 12/16/08 Analyzed: 12/17/08						
Total Dissolved Solids	354	20	mg/l	329		107	6.93-113.0			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

CHAIN-OF-CUSTODY FORM

EnviroMatrix Analytical, Inc.

page____of____

4340 Viewridge Ave., Ste. A · San Diego, CA 92123 · Phone (858) 560-7717 · Fax (858) 560-7763

EMA LOG #: 0812449

Client: Renteria
Attn: John Peterson
Sampler(s): John Peterson
Address: 5580 La Jolla Blvd #398
La Jolla Ca.
Phone: 858-220-0877 Fax: 858-551-7549
Email: Petersonenv@hotmail.com
Billing Address: Same as above

Project ID: Renteria 12-15-08
Project #: Same PO#:

SAMPLE DETAILS

#	Client Sample ID	Sample Date/Time		Sample Matrix	Container(s) # of / Type
01	Renteria 12-15-08	12-15	0900	DW	Lab
02				GW	
03					
04					
05					
06					
07					
08					
09					
10					

REQUESTED ANALYSIS

#	Oil & Grease ☐413.1 ☐413.2 ☐1664	418.1 (Total Recoverable Petroleum Hydrocarbons)	8015B (TPH) ☐Gas ☐Diesel ☐Ext ☐ASTM D2887	624 / 8260 (VOC) ☐Full ☐BTXE ☐MTBE ☐Oxy ☐Nap	625 / 8270 (Semi Volatile Organics) ☐ PAH only	608 / 8081 (Organochlorine Pesticides)	608 / 8082 (Polychlorinated Biphenyls)	8141 (Organophosphorus Pesticides)	TBT (Organotin Compounds)	☐pH ☐Conductivity (EC) ☐TSS (TDS)	☐Nitrate ☐Nitrite ☐TKN ☐NH3	TTLC Metals (CAC Title 22) / (CAM 17)	STLC Metals (CAC Title 22) / (CAM 17)	TCLP (RCRA) ☐Metals ☐Organics	Cd, Pb, Ag, Zn, Desorbed	☐Coliform, ☐Total (MTF) ☐Fecal (MTF) ☐Coliform, ☐Fecal Coli	Enterococcus, ☐MTF ☐Idexx	Heterotrophic Plate Count (HPC)	Uranium	Gross Alpha					Microbiology Notes:
01										X	X				X			X	X					Sample Comments:
02																								
03																								
04																								
05																								
06																								
07																								
08																								
09																								
10																								

Sample Matrix Codes: GW=ground water WW=waste water DW=drinking water SW=storm water
A=air SED=sediment O=oil T=tissue S=solid other (specify) L=liquid other (specify)

Shipped By: ☐Courier ☐UPS ☐FedEx ☐USPS ☐Client drop off ☐Other_____
[1]Turnaround Time: ☐Same day ☐24 hr ☐48 hr ☐3 day ☐4 day ☐5 day ☐STD (5 day)
[1]Reporting Requirements: ☐Fax ☐PDF ☐Excel ☐Geotracker EDF ☐Other mail
[1]Sample Disposal: ☐By Laboratory ☐[2]Return to client: P/U or Delivery ☐Archive until ____/____/____

SAMPLE INTEGRITY

Correct Containers: Yes No N/A
Containers Properly Preserved: Yes No N/A
Custody Seals Intact: Yes No N/A
Temperature @ Receipt: _____
COC/Labels Agree: Yes No N/A
Sampled By: ☐Client ☐EMA ☐Autosampler

Project Comments:

CHAIN-OF-CUSTODY RECORD

RELINQUISHED BY	RECEIVED BY	DATE/TIME STAMP
Signature: John Pet	Signature: [illegible]	12/15/08
Print: John Peterson	Print: Sem Flory	11:00
Company: Peterson Env Services	Company: EMA In	
Signature	Signature	
Print	Print	
Company	Company	
Signature	Signature	
Print	Print	
Company	Company	

[1]Additional costs may apply, consult a project manager for details.
[2]EMA reserves the right to return any samples that do not match our waste profile.
Note: By relinquishing samples to EnviroMatrix Analytical, Inc., client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of the invoice. Sample(s) will be disposed of after 30 days unless otherwise noted. All work is subject to EMA's terms and conditions.

White - EMA Canary - Accounting Pink - Client (w/Report) Goldenrod - Client (Relinquish Samples)

EnviroMatrix Analytical, Inc.

16 January 2009

Peterson Environmental Services
Attn: John Peterson
5580 La Jolla Blvd, Suite 398
La Jolla, CA 92037

EMA Log #: 0812449

Project Name: Renterria 12-15-08

Enclosed with this letter are the test results performed by subcontract laboratory for the following analyses:

- Uranium
- Gross Alpha

The samples were received by EnviroMatrix Analytical, Inc. intact and with chain-of-custody documentation. The test results and pertinent quality assurance/quality control data are listed on the attached tables.

I certify that this data report is in compliance both technically and for completeness. Release of the data contained in this hard copy data report has been authorized by the following signature.

Dan Verdon
Laboratory Director

4340 Viewridge Avenue, Suite A • San Diego, California 92123 • (858) 560-7717 • Fax (858) 560-7763
Analytical Chemistry Laboratory

BSK Analytical Laboratories
Engineers & Laboratories

1414 Stanislaus Street
Fresno, California 93706
(559) 497-2888
Fax (559) 485-6935

BSK Submission Number: 2009010133

Jamey Cote
Enviromatrix Analytical Inc.
4340 Viewridge Avenue Suite A
San Diego, CA 92123

01/15/2009

Dear Jamey Cote,

Thank you for selecting BSK Analytical Laboratories for your analytical testing needs. We have prepared this report in response to your request for analytical services. Please find enclosed the following sections for your complete laboratory report, each uniquely paginated:

CASE NARRATIVE: An overview of the work performed.
CERTIFICATE OF ANALYSIS: Analytical results.
QUALITY CONTROL (QC) SUMMARY: QC supporting the results presented herein.
REPORT OF SAMPLE INTEGRITY
CHAIN OF CUSTODY FORM

Certification: BSK Analytical Laboratories certifies that the test results contained in this report meet all requirements of the NELAC Standards for applicable certified drinking water chemistry analyses under CA NELAP Certificate #04227CA, CA-ELAP Certificate #1180, and Nevada Certificate #CA79. For all other matrices and bacteriological analyses, this data package is in compliance with ELAP Standards for applicable certified analyses under CA-ELAP Certificate #1180. Any exceptions to applicable standards have been noted in the case narrative. Please note that certifications are applicable only to tests and/or analytes specified on each. Certification information may be obtained by contacting the laboratory or visiting our website at www.bsklabs.com. The results in this report pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from BSK Analytical Laboratories.

If additional clarification of any information is required, please contact your Client Services Representative, Mimi Do, at (800) 877-8310 or (559) 497-2888.

BSK ANALYTICAL LABORATORIES

Mimi Do
Client Services Representative

Quality Control Reviewer

Case Narrative

BSK Submission Number: 2009010133

SAMPLE AND RECEIPT INFORMATION

The sample(s) was received, prepared, and analyzed within the method specified holding times unless otherwise noted on the Certificate of Analysis. Samples, when shipped, arrived within acceptable temperature requirements of 0° to 6° Celsius unless otherwise noted on the Report of Sample Integrity. Samples collected by BSK Analytical Laboratories were collected in accordance with the BSK Sampling and Collection Standard Operating Procedures.

QUALITY CONTROL

All analytical quality controls are within established method criteria except when noted in the Quality Control section or on the Certificate of Analysis. All positive results for EPA Methods 504.1, 502.2, and 524.2 require the analysis of a Field Reagent Blank (FRB) to confirm that the results are not a contamination error from field sampling steps. If Field Reagent Blanks were not submitted with the samples, this method requirement has not been performed. QC samples may include analytes not requested in this submission.

RUN	ORDER	TEST	ANALYTE	COMMENT
165871	1075031	EPA 00-02	Gross Alpha	MS and MSD recoveries were affected by the matrix.

SAMPLE RESULT INFORMATION

Samples are analyzed as received (wet weight basis) unless noted here. The results relate only to the items tested. Any exceptions to be considered when evaluating these results are also listed here, if applicable. Results contained in this package shall not be reproduced, except in full, without written approval of BSK Analytical Laboratories.

ORDER	TEST	ANALYTE	COMMENT

BSK Analytical Laboratories
Engineers & Laboratories

1414 Stanislaus Street
Fresno, California 93706
(559) 497-2888
Fax (559) 485-6935

Certificate of Analysis

NELAP Certificate #04227CA
ELAP Certificate #1180

Jamey Cote
Enviromatrix Analytical Inc.
4340 Viewridge Avenue Suite A
San Diego, CA 92123

BSK Submission #: 2009010133
BSK Sample ID #: 1072879

Report Issue Date: 01/15/2009

Project ID: 0812449
Project Desc:
Submission Comments:
Sample Type: Liquid
Sample Description: 0812449-01
Sample Comments:

Date Sampled: 12/15/2008
Time Sampled: 0900
Date Received: 01/06/2009

Inorganics

Analyte	Method	Result	Units	PQL	Dilution	DLR	Prep Date/Time	Analysis Date/Time
Uranium (U)	EPA 200.8	**1.6**	pCi/L	0.67	1	0.67	01/15/09	01/15/09

Radiological

Analyte	Method	Result	Units	MDC	Prep Date/Time	Analysis Date/Time
Gross Alpha	EPA 00-02	**14**	pCi/L	1.30	01/12/09	01/14/09
Gross Alpha 2 Sigma Uncertainty	EPA 00-02	**0.64**	+/-			

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec: Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
DLR: Detection Limit for Reporting : PQL x Dilution
ND: None Detected at DLR
pCi/L: Picocurie per Liter

H: Analyzed outside of hold time
P: Preliminary result
S: Suspect result. See Case Narrative for comments.
E: Analysis performed by External laboratory. See External Laboratory Report attachments.
MDC: Min Detectable Concentration

Report Authentication Code:

BSK Analytical Laboratories
Engineers & Laboratories

1414 Stanislaus Street
Fresno, California 93706
(559) 497-2888
Fax (559) 485-6935

QC Summary Report

01/15/2009

BSK Submission : **2009010133**
Client : **Enviromatrix Analytical Inc.**
Date Submitted : **01/06/2009**
Project ID : **0812449**

Project Desc :

NELAP Certificate #04227CA
ELAP Certificate #1180

BSK StarLims Run #: 165871

Analyst Initials: **RHIANNONJ** Method Number: **ALPHA_00-02**

Analyte Results

Analyte	QC Type	Matrix Spike ID	Result	Units	% Rec or RPD	Spike RPD	Spk Conc	Matrix Conc	UCL	LCL	Date	
Gross Alpha	LCS	N/A	30	pCi/L	99		30	ND	120	80	01/14/09	*Acceptable*
Gross Alpha	LCSD	N/A	31	pCi/L	104	5	30	ND	120	80	01/14/09	*Acceptable*
Gross Alpha	MS	1072837	130	pCi/L	108		120	ND	130	70	01/14/09	*Acceptable*
	MS	1073439	84	pCi/L	55		120	18	130	70	01/14/09	*OOS-Low*
Gross Alpha	MSD	1072837	110	pCi/L	93	14	120	ND	130	70	01/14/09	*Acceptable*
	MSD	1073439	86	pCi/L	56	1.4	120	18	130	70	01/14/09	*OOS-Low*
Gross Alpha	RBLK	N/A	ND	pCi/L	< 3.0				3.0	N/A	01/14/09	*Acceptable*

Run	Test	Analyte	Comment
165871	ALPHA_00-02	GrossAlpha	MS and MSD recoveries were affected by the matrix.

StarLims Run 165871 includes the following BSK Sample ID# :

1072837 1072872 1072873 1072874 1072875 1072876 1072878 1072879 1073191 1073438 1073439 1074312 1074377 1074403 1074535 1075026 1075027 1075028 1075029 1075030 1075031 1075032

BSK StarLims Run #: 166078

Analyst Initials: **MARGARETS** Method Number: **AS_MS_TS**

Analyte Results

Analyte	QC Type	Matrix Spike ID	Result	Units	% Rec or RPD	Spike RPD	Spk Conc	Matrix Conc	UCL	LCL	Date	
Arsenic (As)	LCS	N/A	100	µg/L	101		100	ND	115	85	01/14/09	*Acceptable*
Cadmium (Cd)	LCS	N/A	100	µg/L	100		100	ND	115	85	01/14/09	*Acceptable*
Chromium - Total (Cr)	LCS	N/A	99	µg/L	98		100	ND	115	85	01/14/09	*Acceptable*
Copper (Cu)	LCS	N/A	100	µg/L	101		100	ND	115	85	01/14/09	*Acceptable*
Lead (Pb)	LCS	N/A	96	µg/L	96		100	ND	115	85	01/14/09	*Acceptable*
Mercury (Hg)	LCS	N/A	1.9	µg/L	93		2	ND	115	85	01/14/09	*Acceptable*
Nickel (Ni)	LCS	N/A	100	µg/L	103		100	ND	115	85	01/14/09	*Acceptable*
Selenium (Se) - Total	LCS	N/A	100	µg/L	104		100	ND	115	85	01/14/09	*Acceptable*
Silver (Ag)	LCS	N/A	98	µg/L	98		100	ND	125	75	01/14/09	*Acceptable*
Thallium (Tl)	LCS	N/A	96	µg/L	96		100	ND	115	85	01/14/09	*Acceptable*
Uranium (U)	LCS	N/A	100	µg/L	100		100	ND	115	85	01/14/09	*Acceptable*
Zinc (Zn)	LCS	N/A	100	µg/L	105		100	ND	115	85	01/14/09	*Acceptable*
Arsenic (As)	LCSD	N/A	100	µg/L	102	1.6	100	ND	115	85	01/14/09	*Acceptable*
Cadmium (Cd)	LCSD	N/A	100	µg/L	101	1.7	100	ND	115	85	01/14/09	*Acceptable*
Chromium - Total (Cr)	LCSD	N/A	100	µg/L	101	2.3	100	ND	115	85	01/14/09	*Acceptable*
Copper (Cu)	LCSD	N/A	100	µg/L	103	1.4	100	ND	115	85	01/14/09	*Acceptable*
Lead (Pb)	LCSD	N/A	99	µg/L	98	2.2	100	ND	115	85	01/14/09	*Acceptable*

%Rec: Percent Recovered
RPD: Relative Percent Difference
UCL: Upper Control Limit
LCL: Lower Control Limit
LCS: Laboratory Control Sample
LCSD: Laboratory Control Sample Duplicate
LDUP: Laboratory Sample Duplicate

Parent Sample: Sample used as background matrix for MS/MSD
OOS-High: QC Result Above UCL
OOS-Low: QC Result Below LCL
MS: Matrix Spike
MSD: Matrix Spike Duplicate
RBLK: Reagent (Method) Blank
Surrogate results for QC standards are not evaluated for acceptability (due to definition of a surrogate standard)

BSK Analytical Laboratories
Engineers & Laboratories

1414 Stanislaus Street
Fresno, California 93706
(559) 497-2888
Fax (559) 485-6935

QC Summary Report

01/15/2009

NELAP Certificate #04227CA
ELAP Certificate #1180

BSK Submission : **2009010133**
Client : **Enviromatrix Analytical Inc.**
Date Submitted : **01/06/2009**
Project ID : **0812449**

Project Desc :

BSK StarLims Run #: 166078

Analyst Initials: **MARGARETS** Method Number: **HG_MS_TS**

Analyte Results

Analyte	QC Type	Matrix Spike ID	Result	Units	% Rec or RPD	Spike RPD	Spk Conc	Matrix Conc	UCL	LCL	Date	
Mercury (Hg)	LCSD	N/A	2.0	µg/L	100	7.8	2	ND	115	85	01/14/09	*Acceptable*
Nickel (Ni)	LCSD	N/A	100	µg/L	103	0.34	100	ND	115	85	01/14/09	*Acceptable*
Selenium (Se) - Total	LCSD	N/A	100	µg/L	104	0.39	100	ND	115	85	01/14/09	*Acceptable*
Silver (Ag)	LCSD	N/A	100	µg/L	99	1.3	100	ND	125	75	01/14/09	*Acceptable*
Thallium (Tl)	LCSD	N/A	98	µg/L	97	1.4	100	ND	115	85	01/14/09	*Acceptable*
Uranium (U)	LCSD	N/A	100	µg/L	102	2.4	100	ND	115	85	01/14/09	*Acceptable*
Zinc (Zn)	LCSD	N/A	110	µg/L	106	1.6	100	ND	115	85	01/14/09	*Acceptable*
Arsenic (As)	RBLK	N/A	ND	µg/L	< 2.0				2.0	N/A	01/14/09	*Acceptable*
Cadmium (Cd)	RBLK	N/A	ND	µg/L	< 1.0				1.0	N/A	01/14/09	*Acceptable*
Chromium - Total (Cr)	RBLK	N/A	ND	µg/L	< 10				10	N/A	01/14/09	*Acceptable*
Copper (Cu)	RBLK	N/A	ND	µg/L	< 5.0				5.0	N/A	01/14/09	*Acceptable*
Lead (Pb)	RBLK	N/A	ND	µg/L	< 5.0				5.0	N/A	01/14/09	*Acceptable*
Mercury (Hg)	RBLK	N/A	ND	µg/L	< 0.40				0.40	N/A	01/14/09	*Acceptable*
Nickel (Ni)	RBLK	N/A	ND	µg/L	< 10				10	N/A	01/14/09	*Acceptable*
Selenium (Se) - Total	RBLK	N/A	ND	µg/L	< 2.0				2.0	N/A	01/14/09	*Acceptable*
Silver (Ag)	RBLK	N/A	ND	µg/L	< 10				10	N/A	01/14/09	*Acceptable*
Thallium (Tl)	RBLK	N/A	ND	µg/L	< 1.0				1.0	N/A	01/14/09	*Acceptable*
Uranium (U)	RBLK	N/A	ND	µg/L	< 1.0				1.0	N/A	01/14/09	*Acceptable*
Zinc (Zn)	RBLK	N/A	ND	µg/L	< 50				50	N/A	01/14/09	*Acceptable*

StarLims Run 166078 includes the following BSK Sample ID# :

1072176 1072215 1072455 1072456 1072479 1072653 1072685 1072686 1072877 1072879 1076232 1076233 1076234

Approved by: Maria C Manuel

%Rec: Percent Recovered
RPD: Relative Percent Difference
UCL: Upper Control Limit
LCL: Lower Control Limit
LCS: Laboratory Control Sample
LCSD: Laboratory Control Sample Duplicate
LDUP: Laboratory Sample Duplicate

Parent Sample: Sample used as background matrix for MS/MSD
OOS-High: QC Result Above UCL
OOS-Low: QC Result Below LCL
MS: Matrix Spike
MSD: Matrix Spike Duplicate
RBLK: Reagent (Method) Blank
Surrogate results for QC standards are not evaluated for acceptability (due to definition of a surrogate standard)

Sample Integrity

Pg. 1 of 2

2009010133 01/06/2009

CLIE ENVIROMAT TAT: Standard

16066

Date Received 1/6/09

Pr

Section 1- Sampled Same Day

Sample Transport: Walk In SJVC BSK-Courier Transported In: Ice Chest Box Hand

Has chilling process begun? Y N Samples Received: Chilled to Touch / Ambient / On Ice

Section 2- Sampled Previously

Sample Transport: CAO UPS SJVC Walk-In BSK-Courier GSO Fed Exp. Other:_____

No. Coolers/Ice Chests: 1 Temperature(s): Ø'

Was Temperature In Range : Y N Received On Ice: Wet Blue

Describe type of packing materials: Bubble Wrap Foam Packing Peanuts Paper Other:_____

Were ice chest custody seals present? Y N Intact: Y N

Section 3- COC Info.	Completed Yes	Completed No	Info From Container		Completed Yes	Completed No	Info From Container
Was COC Received	✓			Analysis Requested	✓		
Date Sampled	✓			Any hold times less than 72hr		✓	
Time Sampled	✓			Client Name	✓		
Sample ID	✓			Address	✓		
Special Storage/Handling Ins.		✓		Telephone #	✓		

Section 4- Bottles / Analysis	Yes	No	N/A	Comment
Did all bottles arrive unbroken and intact?:	✓			
Were bottle custody seals present?		✓		
Were bottle custody seals intact?		✓		
Did all bottle labels agree with COC?:	✓			
Were correct containers used for the tests requested?:	✓			
Were correct preservations used for the tests requested?:	✓			
Was a sufficient amount of sample sent for tests indicated?:	✓			
Were bubbles present in VOA Vials?: **(Volatile Methods Only)**			✓	
Were Ascorbic Acid Bottles received with the VOAs			✓	

Section 5- Comments / Discrepancies

Sample(s) Split/Preserve: Yes No Container: 32oz Preservation: HNO3 Init.:____

Was Client Service Rep. notified of discrepancies: Yes No N/A CSR: Notified By:

Explanations / Comments

Report Comment Entered:

SR-FL-0002-02

Labeled by: N Labels checked by: KW

Sample Integrity Pg 2 of 2

SR-FL-0002-02

BSK Bottles Yes (No)

2009010133 01/06/2009
ENVIROMAT
16066
TAT: Standard

8oz (A) 16oz (B) 32oz (C) Amber Glass (AG)

Container(s) Received	1						
Bacti $Na_2S_2O_3$							
None (p) White Cap							
None (p) Blue Cap							
HNO_3 (p) Red Cap	2C						
H_2SO_4 (p) Yellow Cap							
NaOH (p) Green Cap							
Other:							
Dissolved Oxygen 300ml (g)							
250ml (AG) None							
250ml (AG) H_2SO_4 COD Yellow Label							
250ml (AG) $Na_2S_2O_3$ 515,547 Blue Label							
250ml (AG) $Na_2S_2O_3$+ MCAA 531.1 Orange Label							
250ml (AG) NH_4Cl 552 Purple Label							
250ml (AG) EDA DBPs Brown Label							
250ml (AG) Other:							
500ml (AG) None							
500ml (AG) H_2SO_4 TPH-Diesel Yellow Label							
1 Liter (AG) None							
1 Liter (AG) H_2SO_4 O&G Yellow Label							
1 Liter (AG) $Na_2S_2O_3$ 548 / 525 / 521 Blue Label							1/6/08
1 Liter (P) $Na_2S_2O_3$+ H_2SO_4 549							
1 Liter (AG) NaOH+ZnAc Sulfide							
1 Liter (AG) Ascorbic/EDTA/Pot Citrate 527 Grey Label							
1 Liter (AG) CuSO4/Trizma 529 Turquoise Label							
1 Liter (AG) Na_2SO_3 / HCL 525 **UCMR** Neon Green Label							
1 Liter (AG) Ammonium Chloride 535 Purple Label							
40ml VOA Vial Clear – HCL							
40ml VOA Vial Amber – $Na_2S_2O_3$							
40ml VOA Vial Clear – None							
40ml VOA Vial Clear - $Na_2S_2O_3$ 504, 505							
40ml VOA Vial Clear – H_3PO_4							
Other:							
Asbestos 32oz Plastic/Foil							
Radiological GA / GB (½ Gal Plastic)							
Radiological 226 / 228 (32 oz plastic N-BSK)							
Radon 200ml Clear (g)							
Low Level Hg/Metals Double Baggie							
THM-FP 4-40ml VOA None							
250 Clear Glass Jar							
500 Clear Glass Jar							
1 Liter Clear Glass Jar							
Plastic Bag							
Soil Tube Brass / Steel / Plastic							
Tedlar Bags							

Ø

SUBCONTRACT ORDER

EnviroMatrix Analytical, Inc.

0812449

2009010133 01/06/2009
ENVIROMAT TAT: Standard
16066

SENDING LABORATORY:

EnviroMatrix Analytical, Inc.
4340 Viewridge Ave., Ste. A
San Diego, CA 92123
Phone: (858) 560-7717
Fax: (858) 560-7763
Project Manager: Jamey A. Cote

RECEIVING LABORATORY:

BSK Analytical Laboratories [S]
1414 Stanislaus St.
Fresno, CA 93706
Phone :(800) 877-8310
Fax: (559) 485-6935

STANDARD TAT

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: 0812449-01	**Water**	**Sampled:12/15/08 09:00**		1072879
Uranium	~~12/24/08 16:00~~	06/13/09 09:00		
Gross alpha	~~12/24/08 16:00~~	06/13/09 09:00		
Containers Supplied:				
1L Poly - Unpres (A)	1L Poly - Unpres (B)			

Send report to jbeyer@enviromatrixinc.com, llwick@enviromatrixinc.com, and reports@enviromatrixinc.com

please return cooler and blue ice

Released By	Date	Received By	Date
	01/5/09		
		~~AA Fed Ex~~ 820	1/6/09 900
Released By	**Date**	**Received By**	**Date**

EnviroMatrix Analytical, Inc.

page____of____

CHAIN-OF-CUSTODY FORM

4340 Viewridge Ave., Ste. A - San Diego, CA 92123 - Phone (858) 560-7717 - Fax (858) 560-7763

EMA LOG #: 0812449

Client: Reuteria

Attn: John Peterson

Sampler(s): John Peterson

Address: 5580 La Jolla Blvd #398, La Jolla Ca.

Phone: 858-220-0877 Fax: 858-551-7548

Email: Petersonenv@hotmail.com

Billing Address: Same as above

Project ID: Reuteria 12-15-08

Project #: Same PO#:

SAMPLE DETAILS

#	Client Sample ID	Sample Date/Time		Sample Matrix	Container(s) # of / Type
01	Reuteria 12-15-08	12-15	0900	DW SW	Lab
02					
03					
04					
05					
06					
07					
08					
09					
10					

REQUESTED ANALYSIS

#	Oil & Grease □413.1 □413.2 □1664	418.1 (Total Recoverable Petroleum Hydrocarbons)	8015B (TPH) □Gas □Diesel □Ext □ASTM D2887	624 / 8260 (VOC) □Full □BTXE □MTBE □Oxy □Nap	625 / 8270 (Semi Volatile Organics) □ PAH only	608 / 8081 (Organochlorine Pesticides)	608 / 8082 (Polychlorinated Biphenyls)	8141 (Organophosphorus Pesticides)	TBT (Organotin Compounds)	☒ □pH □Conductivity (EC) □TSS ☒TDS	☒ □Nitrate ☒Nitrite □TKN □NH3	TTLC Metals (CAC Title 22) / (CAM 17)	STLC Metals (CAC Title 22) / (CAM 17)	TCLP (RCRA) □Metals □Organics	Cd Pb Cr Ni Zn As Se Ag	☒ Coliform, Total (MTF) □Total (MTF) □Fecal (MTF) □Colilert-TNTC Coli	Enterococcus, □MTF □Idexx	Heterotrophic Plate Count (HPC)	☒ Uranium	☒ Cross Alpha							Method Notes
01										✓	✓					✓		✓	✓							
02																										
03																										
04																										
05																										
06																										
07																										
08																										
09																										
10																										

Sample Matrix Codes: GW=ground water WW=waste water DW=drinking water SW=storm water

A=air SED=sediment O=oil T=tissue S=solid other (specify) L=liquid other (specify)

Shipped By: □Courier □UPS □FedEx □USPS ☒Client drop off □Other_____

*Turnaround Time: □Same day □24 hr □48 hr □3 day □4 day □5 day ☒STD (5 day)

*Reporting Requirements: □Fax ☒PDF □Excel □Geotracker EDF ☒Other mail

*Sample Disposal: □By Laboratory □*Return to client: P/U or Delivery □Archive until ___/___/___

SAMPLE INTEGRITY

Correct Containers: Yes No N/A

Custody Seals Intact: Yes No N/A

COC/Labels Agree: Yes No N/A

Containers Properly Preserved: Yes No N/A

Temperature @ Receipt: _____

Sampled By: □Client □EMA □Autosampler

Project Comments:

CHAIN OF CUSTODY RECORD

RELINQUISHED BY		RECEIVED BY		DATE/TIME STAMP
Signature	John Pet	Signature		12/15/08
Print	John Peterson	Print	Sean Elvy	11:00
Company	Peterson Env Services	Company	EMA Inc	
Signature		Signature		
Print		Print		
Company		Company		
Signature		Signature		
Print		Print		
Company		Company		

White - EMA Canary - Accounting Pink - Client (w/Report) Goldenrod - Client (Relinquish Samples)

*Additional costs may apply, consult a project manager for details.

EMA reserves the right to return any samples that do not match our waste profile.

[illegible] for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of the invoice. Sample(s) will be

EnviroMatrix Analytical, Inc.

12 January 2009

Peterson Environmental Services
Attn: John Peterson
5580 La Jolla Blvd, Suite 398
La Jolla, CA 92037

EMA Log #: 0901052

Project Name: Renteria

Enclosed are the results of analyses for samples received by the laboratory on 01/05/09 12:38. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that this data is in compliance both technically and for completeness.

Dan Verdon
Laboratory Director

CA ELAP Certification #: 2564

4340 Viewridge Avenue, Suite A - San Diego, California 92123 - (858) 560-7717 - Fax (858) 560-7763
Analytical Chemistry Laboratory

Client Name: Peterson Environmental Services
Project Name: Renteria

EMA Log #: 0901052

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Renteria	0901052-01	Drinking Water	01/05/09 12:00	01/05/09 12:38

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Peterson Environmental Services
Project Name: Renteria

EMA Log #: 0901052

Microbiological Parameters by Standard Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Date Prepared / Date Analyzed	Method	Notes
Renteria (0901052-01) Drinking Water	**Sampled: 01/05/09 12:00**		**Received: 01/05/09 12:38**					
Total Coliforms	Absent		None	1	9010646	01/05/09 14:00 01/06/09 14:15	SM9223	
E. Coli	Absent		"	"	"	01/05/09 14:00 01/06/09 14:15	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Peterson Environmental Services
Project Name: Renteria

EMA Log #: 0901052

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

CHAIN-OF-CUSTODY FORM

EnviroMatrix Analytical, Inc.
4340 Viewridge Ave., Ste. A · San Diego, CA 92123 · Phone (858) 560-7717 · Fax (858) 560-7763

page____of____

EMA LOG #: 0901052

Client: ~~Reuterria~~ Peterson Env. Services
Attn: John Peterson
Sampler(s): same
Address: 5580 La Jolla Blvd #388
La Jolla Ca.
Phone: 858-454-9989 Fax:
Email: petersonenv@hotmail.com
Billing Address: same

Project ID: Reuterria
Project #: PO#:

SAMPLE DETAILS

#	Client Sample ID	Sample Date/Time	Sample Matrix	Container(s) # of / Type
01	Reuterria	1/12 ~~[illegible]~~	DW	
02		1/5 12:00	GW	
03				
04				
05				
06				
07				
08				
09				
10				

REQUESTED ANALYSIS

#	Oil & Grease ☐413.1 ☐413.2 ☐1664	418.1 (Total Recoverable Petroleum Hydrocarbons)	8015B (TPH) ☐Gas ☐Diesel ☐Ext ☐ASTM D2887	624 / 8260 (VOC) ☐Full ☐BTXE ☐MTBE ☐Oxy ☐Nap	625 / 8270 (Semi Volatile Organics) ☐PAH only	608 / 8081 (Organochlorine Pesticides)	608 / 8082 (Polychlorinated Biphenyls)	8141 (Organophosphorus Pesticides)	TBT (Organotin Compounds)	☐pH ☐Conductivity (EC) ☐TSS ☐TDS	☐Nitrate ☐Nitrite ☐TKN ☐NH3	TTLC Metals (CAC Title 22) / (CAM 17)	STLC Metals (CAC Title 22) / (CAM 17)	TCLP (RCRA) ☐Metals ☐Organics	Cd Cr Cu Pb Ni Ag Zn ☐Dissolved	Coliform, ☐Total (MTF) ☐Fecal (MTF) ☒Coliform,T+E.Coli	Enterococcus, ☐MTF ☐Idexx	Heterotrophic Plate Count (HPC)									Micro/Notes	Sample Comments
01																X				Fecal/Coliform only								
02																				Not total count								
03																												
04																												
05																												
06																												
07																												
08																												
09																												
10																												

Sample Matrix Codes: GW=ground water WW=waste water DW=drinking water SW=storm water
A=air SED=sediment O=oil T=tissue S=solid other (specify) L=liquid other (specify)

Shipped By: ☐Courier ☐UPS ☐FedEx ☐USPS ☐Client drop off ☐Other_____
[1]Turnaround Time: ☐Same day ☐24 hr ☐48 hr ☐3 day ☐4 day ☐5 day ☐STD (7 day)
[1]Reporting Requirements: ☐Fax ☒PDF ☐Excel ☐Geotracker EDF ☐Other email
[1]Sample Disposal: ☐By Laboratory ☐[2]Return to client: P/U or Delivery ☐Archive until ___/___/___

SAMPLE INTEGRITY

Correct Containers: Yes No N/A
Containers Properly Preserved: Yes No N/A
Custody Seals Intact: Yes No N/A
Temperature @ Receipt: _____
COC/Labels Agree: Yes No N/A
Sampled By: ☐Client ☐EMA ☐Autosampler

Project Comments:

CHAIN-OF-CUSTODY RECORD

	RELINQUISHED BY	RECEIVED BY	DATE/TIME STAMP
Signature	John P	[illegible]	1/5/07
Print	John Peterson	Seem Flora	12 38
Company	Peterson Env services	Fund In	
Signature		Signature	
Print		Print	
Company		Company	
Signature		Signature	
Print		Print	
Company		Company	

[1]Additional costs may apply, consult a project manager for details.
[2]EMA reserves the right to return any samples that do not match our waste profile.

White - EMA Canary - Accounting Pink - Client (w/Report) Goldenrod - Client (Relinquish Samples)

Note: By relinquishing samples to EnviroMatrix Analytical, Inc., client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of the invoice. Sample(s) will be disposed of after 30 days unless otherwise noted. All work is subject to EMA's terms and conditions.

T=13°C on ice

Water Quality Sample Results for

Radium 226 and 228 and Gross Alpha

Sample Collected by Al Renteria October 6, 2008

EnviroMatrix Analytical, Inc.

INVOICE

Invoice To:
Al Renteria
Aguilar, Elena
559 Merlot Pl
Chula Vista, CA 91913

Client Project Manager
Al Renteria

PO Number
Prepaid

Invoice Number
8110107

Invoiced On:
11/10/08

Received
10/06/08

Terms
NET 30

Remit To:
Accounts Receivable
EnviroMatrix Analytical, Inc.
4340 Viewridge Ave., Ste. A
San Diego, CA 92123

Project
No Project

Project Number
No Project

Project Manager
Jamey A. Cote

Work Order(s)
0810117

Quantity	Analysis/Description	Matrix	Unit Cost	Extended Cost
Subcontracted Analyses				
1	Radium 228 [Normal TAT]	Water	$220.00	$220.00
1	Radium 226 [Normal TAT]	Water	$130.00	$130.00
1	Gross alpha [Normal TAT]	Water	$65.00	$65.00
Additional Items				
1	Shipping Fee		$40.39	$40.39

THIS INVOICE HAS BEEN PREPAID AND IS FOR YOUR RECORDS.
DO NOT SUBMIT PAYMENT.

Invoice Total: **$455.39**

ENVIRONMENTAL

Analytical Chemists

November 10, 2008

Enviro Matrix Analytical, Inc.
4340 Viewridge Avenue
Suite A
San Diego, CA 92123

Description : 0810117-01
Project : 0810117

Lab ID : SP 0811077-001
Customer ID : 2-19971

Sampled On : October 6, 2008-10:00
Sampled By : Not Available
Received On : October 8, 2008-10:00
Matrix : Drinking Water

Sample Result - Radio

Constituent	Result ± Error	MDA	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Radio Chemistry[PH15]								
Gross Alpha	15.7 ± 2.06	0.940	pCi/L	15/5	900.0	10/17/08:210567	900.0	10/22/08:213071
Total Alpha Radium (226)	3.39 ± 0.481	0.373	pCi/L	3	903.0	10/22/08:210782	903.0	11/03/08:213401
Ra 228	0.000 ± 0.956	0.262	pCi/L	2	Ra - 05	10/20/08:210618	Ra - 05	10/23/08:212978

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: HNO3 pH < 2

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = (Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:
Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

ENVIRONMENTAL

Analytical Chemists
November 10, 2008

Enviro Matrix Analytical, Inc.
4340 Viewridge Avenue
Suite A
San Diego, CA 92123

Lab ID : SP 0811077
Customer : 2-19971

Laboratory Report

Introduction: This report package contains total of 4 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(1 page)	: Results for each sample submitted.
Quality Control	(1 page)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
0810117-01	10/06/2008	10/08/2008	SP 0811077-001	DW

Sampling and Receipt Information: The sample was received, prepared and analyzed within the method specified holding times. All samples arrived at 16 °C. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

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

Radio QC

900.0	10/22/2008:213071 All analysis quality controls are within established criteria.
	10/17/2008:210567 All preparation quality controls are within established criteria, except: The following note applies to Gross Alpha: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
903.0	11/03/2008:213401 All analysis quality controls are within established criteria.
	10/23/2008:210782 All preparation quality controls are within established criteria.
Ra - 05	10/23/2008:212978 All analysis quality controls are within established criteria.
	10/20/2008:210618 All preparation quality controls are within established criteria.

ENVIRONMENTAL

Analytical Chemists

November 10, 2008
Enviro Matrix Analytical, Inc.

Lab ID : SP 0811077
Customer : 2-19971

Quality Control - Radio

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Radio								
Alpha	900.0	10/22/2008:213071	CCV	cpm	10970	78.6 %	61 - 105	
			CCB	cpm		0.0800	0.15	
	903.0	11/03/2008:213401	CCV	cpm	10970	82.1 %	61 - 105	
			CCB	cpm		0.100	0.23	
Beta	Ra - 05	10/23/2008:212978	CCV	cpm	11460	88.4 %	84 - 94	
			CCB	cpm		0.4400	0.75	
Gross Alpha	900.0	10/17/2008:210567	Blank	pCi/L		-0.31	3	
			LCS	pCi/L	146.4	83.5 %	75-125	
			MS	pCi/L	146.4	55.6 %	60-140	435
		(SP 0811204-001)	MSD	pCi/L	146.4	59.2 %	60-140	435
			MSRPD	pCi/L	146.4	6.29 %	≤30	
Ra 228	Ra - 05	10/20/2008:210618	RgBlk	pCi/L		-0.01	3	
			LRS	pCi/L	93.71	34.4 %	27-59	
			BS	pCi/L	93.71	77.8 %	75-125	
			BSD	pCi/L	93.71	98.6 %	75-125	
			BSRPD	pCi/L	93.71	23.6 %	≤25	
Total Alpha Radium (226)	903.0	10/23/2008:210782	RgBlk	pCi/L		0.05	2	
			LCS	pCi/L	18.12	88.4 %	52-89	
			BS	pCi/L	18.12	70.9 %	43-92	
			BSD	pCi/L	18.12	74.2 %	43-92	
			BSRPD	pCi/L	18.12	4.69 %	≤35.5	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
Blank	: Method Blank - Prepared to verify that the preparation process is not contributing contamination to the samples.
RgBlk	: Method Reagent Blank - Prepared to correct for any reagent contributions to sample result.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: 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.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
BS	: Blank Spikes - A blank is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
BSD	: Blank Spike Duplicate of BS/BSD pair - A blank duplicate is spiked with a known amount of analyte. It is prepared to verify that the preparation process is not affecting analyte recovery.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
BSRPD	: BS/BSD Relative Percent Difference (RPD) - The BS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

November 10, 2008
Enviro Matrix Analytical, Inc.

Lab ID : SP 0811077
Customer : 2-19971

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 electronic signature.

KD:DMB

Approved By **Michel M. Franco, B.A.** Digitally signed by Michel M. Franco, B.A.
Title Radiochemistry Lab Manager
Date 2008-11-10