AECOM

Final

Hydrogeologic Investigation, 1,416.5-Acre Hoskings Ranch, Julian, San Diego County, California

Prepared for:
Genesee Properties, Inc.
3550 General Atomics Court
San Diego, CA 92121

Prepared by:
AECOM
7807 Convoy Ct, Suite 200
San Diego, CA 92111

Project No.: 60144610

April 2012

February 25, 2011 60144610

Lettie Flower
Genesee Properties, Inc.
3550 General Atomics Court
San Diego, CA 92121

Subject: Hydrogeologic Investigation, Hoskings Ranch, Julian, San Diego County, California.

Dear Lettie:

In accordance with your request, we have prepared this hydrogeologic report for Hoskings Ranch.

If you have any questions regarding this report, please contact our office. AECOM appreciates this opportunity to be of service.

Very truly yours,

AECOM, Inc.

PROFESSIONAL GEOLOGIST
DOUGLAS F. ROFF
No. 293
CERTIFIED HYDROGEOLOGIST
STATE OF CALIFORNIA

Douglas F. Roff, CHg 293
Senior Hydrogeologist

PROFESSIONAL GEOLOGIST
ROBERT M. SCHUMANN
No. 8354
STATE OF CALIFORNIA

Robert M. Schumann, PG 8354
Project Geologist

Distribution: (2) Addressee
(2) Mark Thompson – TRS Consultants

Table of Contents

List of Tables

List of Figures

List of Appendices

EXECUTIVE SUMMARY

AECOM conducted a groundwater investigation of the 1,416.5-acre Hoskings Ranch at the request of Genesee Properties. The subject property is located in the Julian area, in central San Diego County, California. The project proposes to subdivide the property into 28 agricultural/residential lots. An alternative project, the Consolidated Project Alternative (CPA), proposes to subdivide the property into 35 lots with 34 lots consolidated in a development area of approximately 233.5 acres in the eastern and north-central parts of the site." The study area is approximately 3,185 acres and encompasses the entire project site and an area ¼ mile beyond the property on all sides. The average annual rainfall recharge in the Hoskings Ranch study area was calculated to be about 892 acre-feet per year (afy). Assuming the general plan (GP) Update for the undeveloped land within the study area, maximum study area development would allow about 91 homes. At maximum usage in the study area under the GP update, the annual extraction is expected to be in the neighborhood of 54 acre-feet (about 6 percent of the average annual recharge). Based on the rainfall data from 1971/1972 through 2004/2005, the groundwater system could sustain the groundwater demand for both the main project and CPA study area at complete buildout.

1 BACKGROUND

1.1 Purpose

The purpose of this study was to evaluate the groundwater resource from which the proposed water will be extracted, and to evaluate the impact the proposed extraction will have on the groundwater system.

1.2 Scope of Services

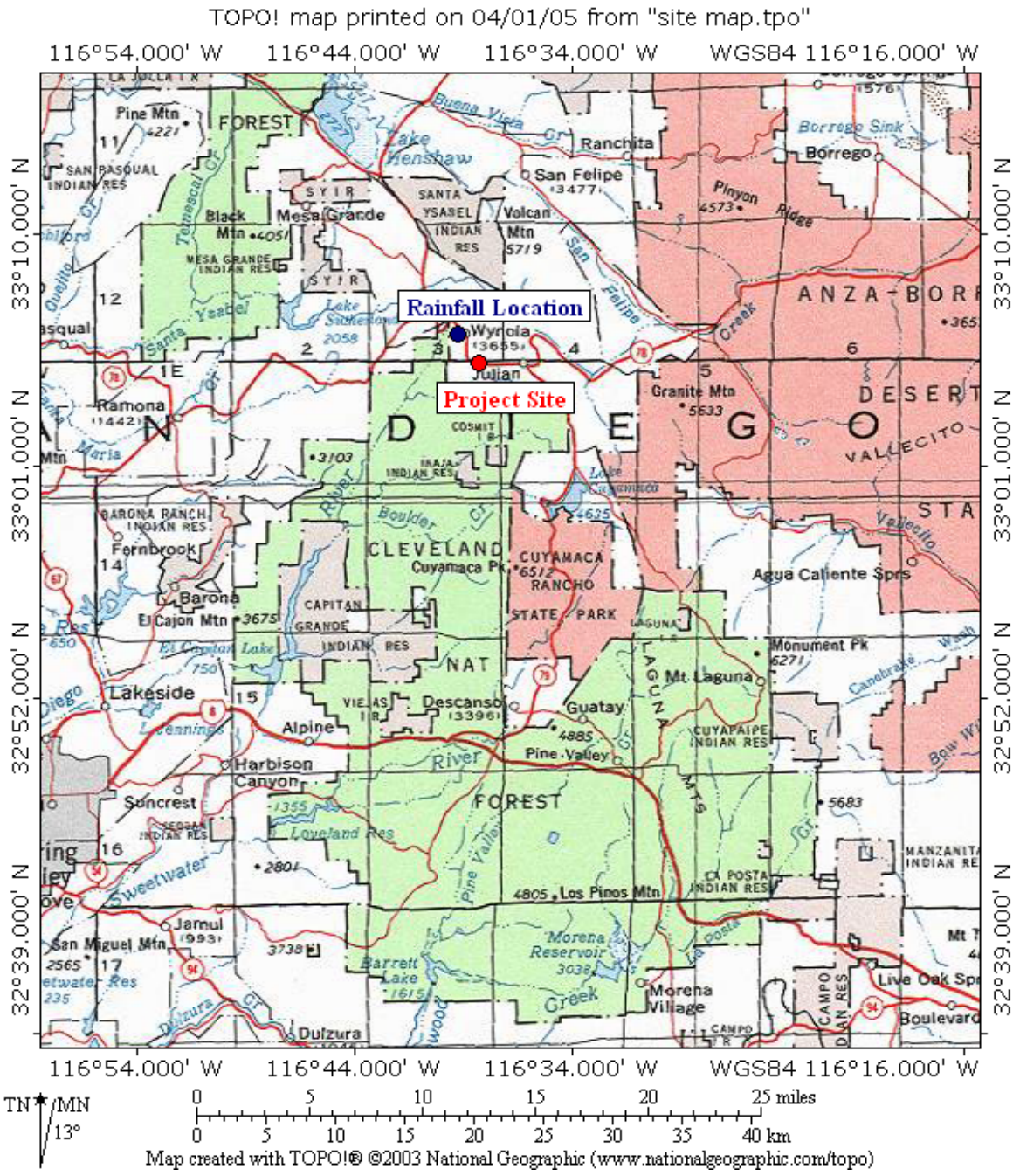
The scope of services for the groundwater investigation included the following:

- Discussions with the San Diego County Groundwater Geologist to define the scope of this study;
- Site reconnaissance;
- Coordinating the installation of thirteen production wells;
- Pump testing of eleven production wells;
- Water quality sampling of five production wells;
- Preparation and mailing of questionnaires to neighbors;
- Review of geologic maps and literature, topographic maps, and aerial photographs of the area;
- Evaluation of study area recharge and groundwater in storage;
- Evaluation of sustainable groundwater yield;
- Hydrogeological evaluation; and
- Preparation of this report.

2 PROJECT DESCRIPTION

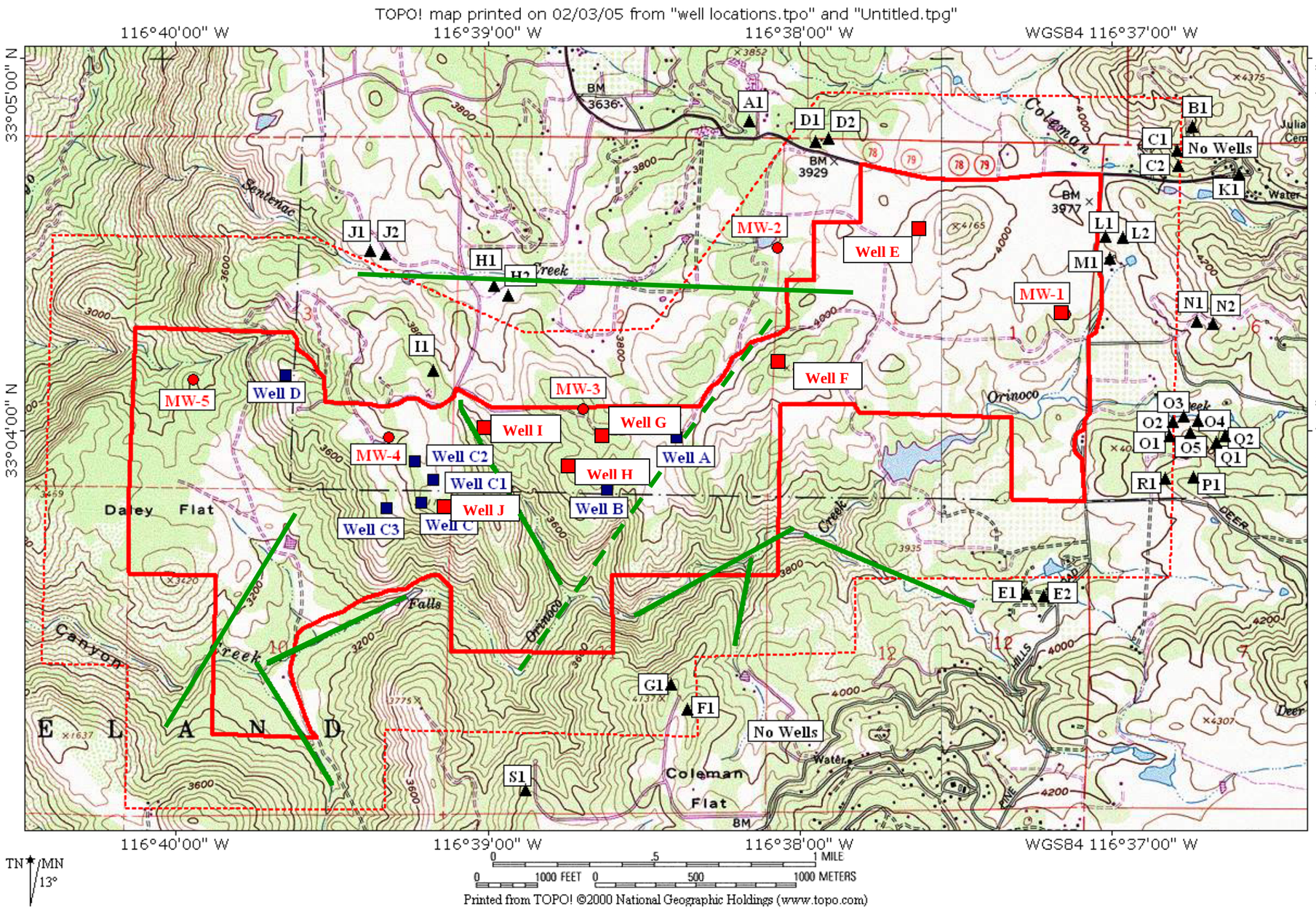
The 1,416.5-acre site is located in central San Diego County approximately one mile southwest of the town of Julian (Figure 1). The southern and western portions of the property are part of the Cleveland National Forest. Orinoco/Temescal Creek, which carries the runoff from Hoskings Ranch, passes through the site, flowing from east to west and ultimately drains into the San Diego River west of the project site. The site comprises both moderately steep, rocky slopes and rolling hills vegetated with oak, sagebrush and grasses. Figure 2 is a topographic map of the area showing the location of the Hoskings Ranch property and its relative position within the Julian area. The Julian study area includes an area of approximately 3,185 acres and consists of the entire 1,416.5-acre site and a ¼-mile strip around the project site. Approximately 1,050 acres of the study area and an additional 680 acres of the project site are located within the Cleveland National Forest.

Surrounding properties are relatively undeveloped with a few widely spaced single-family homes. Approximately 30 to 40 single-family homes are within ¼ mile of the property. Most of those homes are located along Pine Hills Road immediately east of the site. There are about 5 to 10 homes located along both the northern and southeastern portions of the study area that are located on relatively large lots and utilize groundwater for irrigation, potable uses, and cattle. All homes within the study area are groundwater dependent. The Julian Water District supplies potable water from wells to about 276 acres of downtown Julian located to the northeast of the project site. In addition, the Pine Hills Mutual Water Company provides potable water from wells to homes adjacent to the southern portion of the study area. Apple and pear orchards are successfully cultivated on the low hills and valley bottoms in the Julian area. More than a year after the Cedar fire, which occurred in October 2003, there was no significant replanting of orchards in the area. Although historically more orchards have been located in the area, photoreconnaissance in November 2004 and a review of infrared photos taken in August 2004 suggest that only about 2 acres were actively irrigated within a ¼-mile of the project boundary . As shown in Figure 3 recent photoreconnaissance (2009) suggests that actively irrigated area within the ¼-mile project boundary has increased to approximately 30 acres. Based on conversations with TRS we have assumed that this value won't increase with time. Approximately 160 acres immediately north of the central portion of the property (in the study area) are used for grazing cattle. Fifteen wells are located on the Hoskings Ranch property. Refer to Figure 2 for well locations and Appendix A for available onsite well logs.



AECOM

Figure 1
VICINITY MAP
Hoskings Ranch, Julian, San Diego County, California
April 2012
Project No. 69947

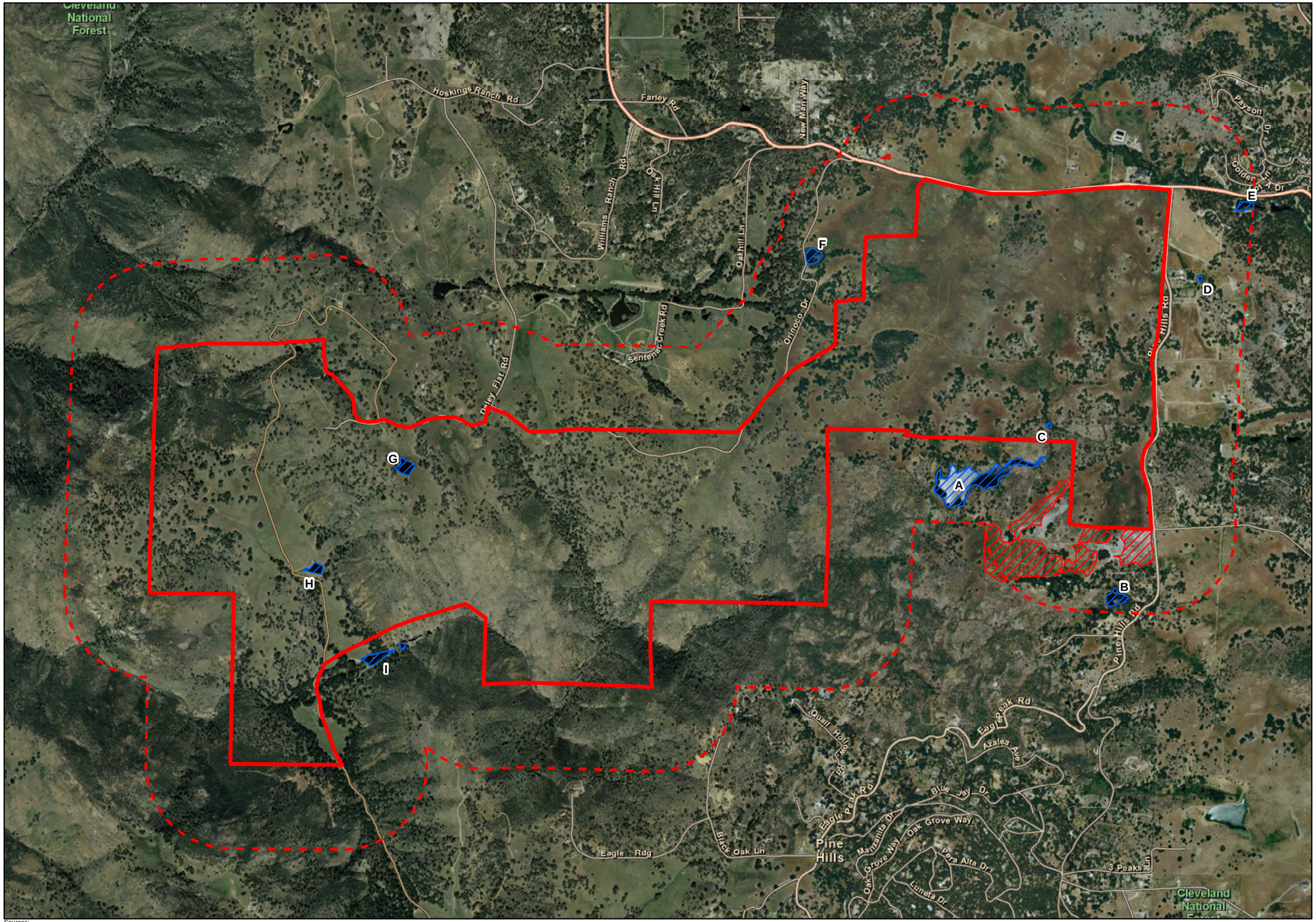


LEGEND:

- Property Boundary
- ¼-Mile Study Area
- Aerial Photo Lineaments
- Recently Pump-Tested Well
- Previously Pump-Tested Well
- Offsite Well
- Onsite Monitoring Well

AECOM

Figure 2
SITE MAP
Hoskings Ranch, Julian,
San Diego County, California
March 21, 2013
Project No. 60144610



Legend

- Ponds
- Irrigated Agriculture
- Project Boundary
- 1/4 Mile Boundary

N
W E
S

Figure 3
Ponds and Irrigated Agriculture within 1/4 Mile of Property
Hoskings Ranch, Julian, San Diego, California
October 17, 2011
AECOM
Project No. 60144610

Sources:
USGS, FAO, NPS, EPA, ESRI, DeLorme, TANA, other suppliers
ESRI, i-cubed, USDA FSA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGP

0 0.125 0.25 0.5 0.75 1 Miles
0 500 1,000 2,000 3,000 4,000 5,000 6,000 Feet

2.1 Main Project

We understand that the proposed development include 28 lots with a minimum of 40 acres per lot (main project). It is assumed that each of the 28 lots will have an individual well. Water for the project is to be supplied entirely from groundwater. Wastewater will be disposed via individual septic systems.

2.2 Consolidated Project Alternative

The Consolidated Project Alternative (CPA) proposes 35 lots. Thirty-four lots are consolidated within a development area of approximately 233.5 acres in the eastern and north-central parts of the site. Lots will range in size from 8.5 to 709.1 acres. Approximately 1,183.0 acres, or 83.5 percent of the site, will be retained in open space. Lots are focused on two areas. The first is in the eastern part of the site adjacent to SR 78/79 and Pine Hills Road and the second is in the north-central area focused on Daley Flat Road. Most of the site is under a Williamson Act Contract that requires 40-acre minimum lot sizes. The CPA requires the filing of a Notice of Non-Renewal of the Williamson Act Contract over the area currently under contract, consisting of approximately 1,291.9 acres. The General Plan (GP) Update proposes minimum lot sizes of 40 acres on the property. The CPA proposes a density of one dwelling unit per 40 acres (DU/A), which is consistent with the General Plan Update. However, the CPA proposes lot sizes of less than 40 acres in the east and north central as noted above, in order to preserve large blocks of land for open space.

It is assumed that each of the 34 lots will have an individual well. Water for the project is to be supplied entirely from groundwater. Wastewater will be disposed via individual septic systems.

2.3 Groundwater Demand

In accordance with the San Diego County Groundwater Ordinance, groundwater consumptive use for the main project and CPA is assumed to be 0.5 afy per residence or 12 afy and 17.5 afy respectively on a sustained basis for the Hoskings Ranch project and 31.5 afy for other residences within the study area, assuming the GP Update. Based on the Groundwater Ordinance, this is not considered a water-intensive use project since project demand is not anticipated to exceed 20 afy. We also assumed 2.9 acre-feet of water uses due to cattle (onsite and offsite) and 87 acre-feet for orchards for the main project. For the CPA, we assumed 1.6 acre-feet of water uses due to offsite cattle and 87 acre-feet for orchards. According to discussions with TRS (March 29, 2009) onsite agricultural uses for the main project are cattle breeding and grazing and some dry land cropping. There are no onsite agricultural uses proposed under the CPA. Currently there are about 30 to 40 dwelling units in the Hoskings Ranch study area. Based on the County of San Diego GP Update, much of the study area is designated as either Rural Land with minimum allowable parcel size of 40 acres or Semi-Rural with 10-or 20-acre parcel sizes. This results in an estimated 87 or 98 homes (24 or 35 onsite and 63 offsite) assuming the GP Update.

The following tables summarize the anticipated groundwater needs at maximum buildout for both the main project and CPA.

Table 1. Anticipated Groundwater Needs at Maximum Buildout – Main Project

Use Type	Current GP Quantities	GP Update Quantities	Water Demand (afy)	GP Update Total Use (afy)
On-site Residential	24 homes	24 homes	0.5/acre	12
Off-site Residential	192 homes	63 homes	0.5/acre	31.5
Offsite Cattle	100 head	100 head	0.016/head	1.6
Onsite Cattle	80 head	80 head	0.016/head	1.3
Offsite Orchards	30 acres	30 acres	2.9/acre	87
Total				***133***

Table 2. Anticipated Groundwater Needs at Maximum Buildout – Consolidated Project Alternative

Use Type	Current GP Quantities	GP Update Quantities	Water Demand (afy)	GP Update Total Use (afy)
On-site Residential	35 homes	35 homes	0.5/acre	17.5
Off-site Residential	192 homes	63 homes	0.5/acre	31.5
Offsite Cattle	100 head	100 head	0.016/head	1.6
Offsite Orchards	30 acres	30 acres	2.9/acre	87
			Total	***138***

2.4 Groundwater Wells

The majority of domestic water within the study area is obtained from private wells. Homes located in the northeast corner of the study area obtain water from the Julian Water District and were not included in our calculations. District water comes from wells located east of the study area. In order to evaluate potential impacts to neighboring wells, questionnaires were mailed to property owners within ¼ mile of the property boundary. Wells of those property owners responding to our questionnaire were included in the monitoring program. Among the information requested, was the depth of the wells on each property. This information is summarized in 3. Groundwater levels of onsite wells were measured during pump testing to evaluate potential

impacts from future onsite extraction. The well locations are shown on Figure 2. In order to maintain confidentiality, the wells on the following table are referred to by designators rather than owner names. All known groundwater users in the study area have well depths of at least 100 feet below ground surface (bgs) for one of their wells. Study area groundwater depths were generally between 24 to 220 feet bgs at the time of our investigation.

Table 3. Hoskings Ranch Offsite Well Information[1]

Well Designation	Well depth (feet)	Rate (gpm)
A1	750	*
B1	350	10
C1, C2	50?	Not Potable
D1, D2	50, 800	15
E1, E2	60, 100	*
F1	*	*
G1	245	17
H1, H2	*	*
I1	350	*
J1, J2	300	40
K1	*	Not In Use
L1, L2	252, 30	4 – 6
M1	373	6-8
N1, N2	232, 600	25, 1.5
R1	310	*
O1, O2, O3, O4, O5	30, 190, 368, 422, 3 – 400	*
P1	450	5
Q1, Q2	161, 563	10
S1	330	*

* - Information not provided

[1] Well information provided by homeowners.

3 GEOLOGY

3.1 General

The 1,416.5-acre site is located in the Julian Region of the Peninsular Ranges Province, a 300-mile long California geomorphic province with a long and active geologic history. This portion of the province lies near the geographic center of San Diego County and is predominantly composed of rocks of the Southern California Batholith and generally consists of Mesozoic-aged granitic rocks with steep alluvium-filled valleys. Figure 2 shows a small number of lineaments (potential fractures) within the project site. Three predominant rock types underlie the site. The first is the pre-Cretaceous metasedimentary Julian Schist, which is an interbedded quartz-mica schist and quartzite, local amphibolite schist and quartz-biotite gneiss. The second and more predominate rock type is a combination of pre-Cenozoic rocks consisting of strongly foliated migmatites, which is a mixture of igneous and metamorphic rocks. The metamorphic component is the Julian Schist and the igneous component is the Stonewall quartz diorite. The third rock type is the San Marcos Gabbro, which is a highly variable assemblage of rocks that weathers to deep reddish-brown residual clay (California Division of Mines and Geology 1992). The bedrock typically has a mantle of highly weathered rock known as residuum or decomposed granite (although it is not all weathered from granite or even granitic rock). Residuum is formed from the in-place chemical weathering of rock and can vary from non-existent on steep mountainsides to greater than 50 feet thick in the gentle terrain. According to driller's logs for the onsite wells, up to 50 feet of residuum overly the fractured bedrock in some areas. In some areas, especially the steep valley walls, relatively fresh bedrock materials extend to the surface with no decomposed granite overburden. The decomposed granite contact with unweathered bedrock varies throughout the property. Differential weathering of bedrock due to non-uniform fracturing and differences in mineralogy produces an undulating contact between the unweathered bedrock and decomposed granite. On-site elevations range from approximately 3,100 to 4,200 feet above mean sea level (msl) with gradients ranging from gently sloping hills along the northeastern portion of the property to steep cliffs along the southwestern side of the property. In addition, residuum, organic-rich topsoil, and minor amounts of alluvium, which was derived by weathering and erosion of granitic and metamorphic rock along the valley slopes, exist in the on-site drainages.

3.2 Hydrogeology

The eleven new onsite wells have been reported by the driller to produce from 3 to 130 gallons per minute (gpm) although two additional wells were reported as not capable of producing the required 3 gpm. Since groundwater levels in upland areas are deeper than the alluvium and/or residuum contact with bedrock, fractured bedrock represents the significant water-bearing unit throughout much of the study area. Because water can only occupy the fractures in the unweathered rock, specific yields (essentially equivalent to the interconnected [or effective]

porosity) in this rock are generally lower than in residuum and alluvium. Specific yields in fractured rock wells are generally on the order of 0.0001% to 1%. Onsite wells in the fractured rock range from 271 to 1,010 feet deep.

A review of aerial photographs indicates a few lineaments (potential fault and/or fracture zones) within the property and the study area. These lineaments are centrally located within the study area likely resulting from faulting along the Elsinore fault zone located approximately 3 miles to the east. Various fractures within this aquifer may be only partially interconnected, thereby restricting the hydraulic connection and groundwater flow. A review of driller's logs for this area indicates the presence of fractured and/or weathered zones occurring at various depths in each well. Some wells have as many as 4 to 5 zones in each well, with individual zones averaging one- to two-feet thick. Available driller's logs are provided in Appendix A.

Several ponds and inactive spring boxes were noted on site. These were apparently used in the past to provide water to grazing cattle. Since this field investigation was performed before the winter rains following several years of below average rainfall, few springs were noted on site, however, the presence of spring boxes and correspondence with property owners in the area indicates that seasonal springs are not uncommon throughout the study area.

On July 14, 2011 and September 16, 2011 AECOM conducted site visits to determine if ponds on the subject property and within ¼ mile of the project boundary are being augmented with groundwater. The ponds are labeled A through I and hatched in blue on Figure 3. Table 4 below summarizes the ponds by their location, their use of groundwater, and the source of information (site visits, interviews, or inference).

Table 4. Ponds Within Study Area

Pond Designation	Location	Augmented by Groundwater?	Source of Information
A	Off Site – 3607 Pine Hills Road	No	In-person Interview with Property Owner
B	Off Site – 3607 Pine Hills Road	No	In-person Interview with Property Owner
C	On Site	No	Site Visit
D	Off Site – 3203 Pine Hills Road	No	Interview with 3607 Pine Hills Road Owner
E	Off Site – 3021 Pine Hills Road	No	Telephone Interview with Property Owner
F	Off Site	No	Site Visit with Caretaker
G	On Site	No	Site Visit with Caretaker
H	On Site	No	Site Visit with Caretaker
I	Off Site	No	Site Visit with Caretaker

Based on the site visits, interviews with the property caretaker, and interviews with available off site property owners, it appears that none of the ponds on site or within the ¼-mile study boundary is augmented with groundwater.

It should be noted that AECOM was not able to reach the property owner of the small pond located at 3203 Pine Hills Road (labeled D on Fig 3) However, based on the conversation with the home owner at 3607 Pine Hills Rd, AECOM was informed that the pond is not augmented with groundwater.

The Hoskings Ranch property and study area is part of the larger Julian watershed, which includes over 13,000 acres. Groundwater within the study area generally flows towards Orinoco/Temescal Creek to the west and exits the study area near the southwestern portion of the property whereby the creek merges with the San Diego River flowing southwest. The approximate limits of the Hoskings Ranch study area are shown in Figure 2.

3.3 Soils

Based on the San Diego Area Soil Survey (United States Department of Agriculture 1973), soils that make up the majority of the study area and project site are classified as follows:

- The Sheephead series, which consists of well-drained, shallow fine sandy loams that formed in material weathered from micaceous schist and gneiss. These soils comprise the surface soils in the steeper areas throughout much of the western and central part of the study area.
- The Holland series, which consists of well-drained, moderately deep and deep fine sandy loams that formed in material weathered from micaceous schist. These soils comprise the surface soils primarily in the central part of the project site.
- The Crouch series, which consists of well-drained, deep to moderately deep coarse sandy loams that formed in material weathered from acid igneous rock and micaceous schist. These soils comprise the eastern portion of the project site and significant portions of the study area.
- The Reiff series, which consists of well-drained, very deep fine sandy loams that formed in alluvium derived from granititic rock. These soils comprise the creek areas in the western study area.
- Loamy alluvial land, which consists of somewhat poorly drained, very deep, very dark brown to black silt loams and sandy loams. Areas of this land were formerly wet meadows that were subsequently drained by head cutting of gullies. These soils comprise a small portion of the eastern project site.

The principal soil types of the subject site and the surrounding study area with their respective moisture-holding capacities and runoff potentials are noted in Tables 5, 6 and 7.

Table 5. Dominant Soil Types (Higher and Steeper Slopes)

Name	Moisture Holding Capacity (inches)	Runoff Potential	Approximate Area within 3,185-Acre Study area (acres)
Sheephead Rocky Fine Sandy Loam	2 – 3	Rapid to Very Rapid	948
Holland Stony Fine Sandy Loam	2.5 – 3	Rapid to Very Rapid	369
Crouch Rocky Coarse Sandy Loam	3.5 – 5.5	Rapid to Very Rapid	163
Total			***1,480***

Table 6. Dominant Soil Types (Mid Slopes)

Name	Moisture Holding Capacity (inches)	Runoff Potential	Approximate Area within 3,185-Acre Study area (acres)
Holland Fine Sandy Loam	3 – 7	Medium to Rapid	18
Holland Stony Fine Sandy Loam	2.5 – 4	Medium	319
Crouch Coarse Sandy Loam	4.5 – 7.5	Medium	522
Crouch Rocky Coarse Sandy Loam	3.5 – 5.5	Medium	339
Total			***1,199***

Table 7. Dominant Soil Types (Flatter and Lower Areas)

Name	Moisture Holding Capacity (inches)	Runoff Potential	Approximate Area within 3,185-Acre Study area (acres)
Reiff fine sandy loam	7.5 – 9.5	Slow to Medium	28
Holland Fine Sandy Loam	3 – 7	Slow to Medium	416
Loamy alluvial land	6 – 9	Slow	62
Total			***506***

4 FIELD INVESTIGATION

4.1 Well Installation

As part of the Hoskings Ranch main project hydrogeologic investigation, seven production wells[2] were installed onsite for testing. Well locations are provided on the Site Map (Figure 2). The San Diego County Groundwater Geologist was consulted prior to choosing the locations of these new wells.

Well A was installed approximately 50 feet south of Orinoco Drive and 3,780 feet east of the intersection of Daley Flat Road and Orinoco Drive at an elevation of approximately 3,925 feet above msl. Based on the County of San Diego Tentative Map (TM) 5312 prepared by TRS Consultants and Masson and Associates, the well is located on Lot 14 of the Hoskings Ranch project. The well was completed to a depth of 331 feet bgs. According to the driller's log, the geology consisted of decomposed granite from the surface to the contact with unweathered bedrock at 51 feet bgs. Fractured and/or weathered zones were encountered from 126 to 127, 129, 155, and 195 to 251 feet bgs.

Well B was installed approximately 1,010 feet south of Orinoco Drive and adjacent to the southern end of the proposed Tahoe Lane at an elevation of approximately 3,850 feet above msl. Based on TM 5312, the well is located on Lot 16. The well was completed to a depth of 271 feet bgs. According to the driller's log, the geology consisted of approximately 8 feet of clay (assumed to mean topsoil or fill) overlaying decomposed granite from the 8 feet bgs to the contact with unweathered bedrock at 48 feet bgs. Fractured and/or weathered zones were encountered from 95 to 96, and 220 to 221 feet bgs.

Well C was installed approximately 1,875 feet south of the intersection of Daley Flat Road and Orinoco Drive and approximately 785 feet west of the proposed Bear Run Lane at an elevation of approximately 3,900 feet above msl. Based on TM 5312, the well is located on Lot 21. The well was completed to a depth of 851 feet bgs and later redrilled to a depth of 1,032 feet bgs. According to the driller's logs, the geology consisted of decomposed granite from the surface to the contact with unweathered bedrock at 20 feet bgs. Fractured and/or weathered zones were encountered from 226 to 229, 247 to 250, 262 to 263, 300 to 303, 440 to 442, 500 to 502, 558 to 559 and 793 to 794 feet bgs.

Well C1 was installed approximately 1,500 feet south of the intersection of Daley Flat Road and Orinoco Drive and approximately 600 feet west of the proposed Bear Run Lane at an elevation of approximately 3,880 feet above msl. Based on TM 5312, the well is located on Lot 21. The well was completed to a depth of 1,071 feet bgs. According to the driller's log, the geology consisted of approximately 3 feet of topsoil overlaying

[2] Although seven production wells were installed, only eleven were pump tested. The remaining two were reported by the driller as being unable to produce the required 3gpm.

decomposed granite from 3 feet bgs to the contact with unweathered bedrock at 29 feet bgs. Fractured and/or weathered zones were encountered from 50 to 52 and 674 to 676 feet bgs.

Well C2 was installed approximately 1,300 feet southwest of the intersection of Daley Flat Road and Orinoco Drive and approximately 375 feet east of the proposed Lilac Blossom Lane at an elevation of approximately 3,830 feet above msl. Based on TM 5312, the well is located on Lot 21. The well was completed to a depth of 992 feet bgs. According to the driller's log, the geology consisted of approximately 4 feet of topsoil overlaying an additional 8 feet of red clay (assumed to mean topsoil or fill). The contact with decomposed granite was reported at a depth of 12 feet and the contact with unweathered bedrock at 15 feet bgs. Small fractures were encountered at 42 and 580 feet bgs.

Well C3 was installed approximately 450 feet due west of Well C and at the southern end of the proposed Lilac Blossom Lane at an elevation of approximately 3,730 feet above msl. Based on TM 5312, the well is located on Lot 24. The well was completed to a depth of 211 feet bgs. According to the driller's log, the geology consisted of approximately 5 feet of red clay (assumed to mean topsoil or fill) overlaying decomposed granite from 5 feet bgs to the contact with bedrock at 17 feet bgs. Fractured and/or weathered zones were encountered from 78 to 82 and at 168 feet bgs.

Well D was installed near the northwestern property boundary approximately 3 miles west of the intersection of Pine Hills Road and Highway 78/79 and approximately 500 feet west of the property boundary adjacent to Daley Flat Road at an elevation of approximately 3,615 feet above msl. Based on TM 5312, the well is located on Lot 32. The well was completed to a depth of 591 feet bgs. According to the driller's log, the geology consisted of decomposed granite from the surface to the contact with unweathered bedrock at 48 feet bgs. Fractured and/or weathered zones were encountered from 140 to 141, 213, 218 to 219, 286 to 290, 328 to 329 and 567 to 568 feet bgs.

Wells A, B, C, and D were installed by air percussion drilling between November 5, 2003 and December 2, 2003 by Acme Drilling Company, Inc. (Acme) and completed using 8 ¼-inch diameter blank steel casing from the surface to 20 feet bgs. Well A was completed using 4 ½-inch diameter PVC screen from 20 feet bgs to well completion depth. Well B was completed without casing and with a borehole diameter of 6 $^{7}/_{16}$ inches. Well C was completed without casing and with a borehole diameter of 6 $^{1}/_{8}$ inches. Well D was completed without casing and with a borehole diameter of 6 ¼ inches.

Wells C1, C2 and C3 were installed by air percussion drilling between January 19, 2004 and April 6, 2004 by Acme and completed using 13-inch diameter blank steel casing from surface to 20 feet bgs. Well C1 was completed without casing and with a borehole diameter of 6 ½ inches. Well C2 was completed without casing and with a borehole diameter of 6 ¼ inches. Well C3 was completed with 8-inch diameter blank steel casing to a

depth of 80 feet bgs and no casing from 80 bgs to well completion depth and with a borehole diameter of 6 ½ inches. All wells were completed with a sanitary seal (cement) from the ground surface to 20 feet bgs.

Consolidated Project Alternative Wells

As part of the investigation for the CPA, six additional wells (E through J) were installed on the property; four on the western part of the property, and three on the eastern portion.

Well E was installed approximately 2,000 feet east of Orinoco Drive and 1,000 feet south of Highway 79 at an elevation of approximately 4,040 feet above msl. Based on the County of San Diego Tentative Map (TM) 5312 prepared by TRS Consultants and Masson and Associates, the well is located on Lot 10 of the CPA. The well was completed to a depth of 310 feet bgs. According to the driller's log, the geology consisted of decomposed granite from the surface to the contact with unweathered bedrock at 55 feet bgs. Fractured and/or weathered zones were encountered from 150 to 160, 170 to 175, 200 to 260, and 285 to 310 feet bgs. The driller estimated the well yield at 80 gpm based on four hours of airlifting.

Well F was installed approximately 1,000 feet southwest of Orinoco Drive and 500 feet south of the proposed Tenaya Road at an elevation of approximately 4,800 feet above msl. Based on TM 5312, the well is located on Lot 26 of the CPA. The well was completed to a depth of 410 feet bgs. According to the driller's log, the geology consisted of decomposed granite from the surface to the contact with unweathered bedrock at 32 feet bgs. Fractured and/or weathered zones were encountered from 355 to 365 and 375 to 407 feet bgs. The driller estimated the well yield at 100 gpm based on four hours of airlifting.

Well G was installed just south and adjacent to Orinoco Drive at an elevation of approximately 3,900 feet above msl. Based on TM 5312, the well is located on Lot 29 of the CPA. The well was completed to a depth of 975 feet bgs. According to the driller's logs, the geology consisted of decomposed granite from the surface to the contact with unweathered bedrock at 76 feet bgs. Fractured and/or weathered zones were encountered from 103 to 110, 305 to 310, and 960 to 975 feet bgs. The driller estimated the well yield at 130 gpm based on four hours of airlifting.

Well H was installed approximately 1,000 feet south of Orinoco Drive and approximately 400 feet west of the proposed Tahoe Lane at an elevation of approximately 3,800 feet above msl. Based on TM 5312, the well is located on Lot 30 of the CPA. The well was completed to a depth of 310 feet bgs. According to the driller's log, the geology consisted of decomposed granite from the surface to the contact with unweathered bedrock at 42 feet bgs. Fractured and/or weathered zones were encountered from 125 to 135 and 225 to 240 feet bgs. The driller estimated the well yield at 40 gpm based on four hours of airlifting.

Well I was installed approximately 200 feet south of Orinoco Drive at an elevation of approximately 3,600 feet above msl. Based on TM 5312, the well is located on Lot 31 of the CPA. The well was completed to a depth of

510 feet bgs. According to the driller's log, the geology consisted of decomposed granite from the surface to the contact with unweathered bedrock at 28 feet bgs. Fractured and/or weathered zones were encountered from 195 to 205, 235 to 255, 280 to 295, and 435 to 460 feet bgs. The driller estimated the well yield at 60 gpm based on four hours of airlifting.

Well J was installed approximately 900 feet south Orinoco Drive and 100 feet east of proposed Bear Run Lane at an elevation of approximately 3,840 feet above msl. Based on TM 5312, the well is located on Lot 24. Based on TM 5312, the well is located on Lot 32 of the CPA. The well was completed to a depth of 1,010 feet bgs. According to the driller's log, the geology consisted of decomposed granite from the surface to the contact with bedrock at 28 feet bgs. Fractured and/or weathered zones were encountered from 28 to 34 and 100 to 110 feet bgs. The driller estimated the well yield at 3 gpm based on four hours of airlifting

Wells E, F, G, H, I, and J were installed by air percussion drilling between October 29, 2010 and November 29, 2010 by Stehly Brothers Drilling Company, Inc. (Stehly Brothers) and completed using 8-$^{5/8th}$-inch diameter blank steel casing from the surface to 80, 84, 42, 60, 63, and 42 feet bgs respectively. Each well was completed without casing and with a borehole diameter of 6 ½ inches. All wells were completed with a sanitary seal (cement) from the ground surface to 4 to 6 feet above the end of the surface casing. The bottom 4 to 6 feet of the annular space outside the surface casing was completed with bentonite.

4.2 Aquifer Testing

Section 67.722.C of the County Groundwater Ordinance specifies that a minimum of 3 residential well tests are required to pass the requirements for residential well tests stated in Section 67.703 of the Ordinance. Five onsite production wells were initially selected for well testing, and an additional six wells were selected as part of the CPA investigation. A temporary submersible pump was installed in wells A, B, C, C3 and D by Acme Drilling prior to each pump test, and removed after each production well had recovered approximately 90 percent. A temporary submersible pump was in installed in wells E, F, G, H, I, and J by Stehly Brothers prior to each pump test. Sounding tubes were installed in each production well so that measurements could be made without interference from the plumbing and electrical systems in these wells. Water levels were measured both with an electric water level meter and a pressure transducer. Flow was measured with an in-line flowmeter, and water was discharged and spread on the ground adjacent to the production well. Drawdown and recovery data are presented in graphical format in Appendix E.

Well A

A 24-hour constant-discharge pump test was performed on December 4 and 5, 2003. The temporary submersible pump was installed to a depth of 300 feet bgs. The initial water level was 49.6 feet bgs. Wells B, and C and Monitoring Wells (MW) 1, 2 and 3 were monitored throughout the duration of the test. A flowrate of 3 gpm was maintained throughout the test. The total volume pumped during the 24-hour test was about 4,320 gallons. With

a 6½-inch diameter borehole, this represents approximately 9 well-bore volumes. After 24 hours of pumping, the maximum drawdown was 224.2 feet, which equals a specific capacity of 0.013 gpm per foot.Recovery extrapolated to t/t' = 1 indicates no residual drawdown.. Although there were fluctuations before, during and after testing, there was no drawdown associated with our pump testing observed in the five unpumped monitoring wells (Wells B and C and MW-1, 2 and 3) throughout the duration of the test.

Table 8. Monitoring Wells for Well A

Well Name	Distance from Production Well (feet)	Depth to Groundwater at Beginning of Pump Test (feet bgs)	Depth to Groundwater at End of Pump Test (feet bgs)	Maximum Drawdown Associated with Pump Testing (feet)
Well A	N/A	49.6	273.8	224.2
Well B	1,580	95.31	95.26	0
Well C	4,230	219.63	219.05	0
MW-1	6,480	30.79	30.69	0
MW-2	3,450	24.06	24.10	0.04
MW-3	1,680	100.13	100.04	0

Well B

A 24-hour constant-discharge pump test was performed on December 9 and 10, 2003. The temporary submersible pump was installed to a depth of 260 feet bgs. Wells A, C, and MW-3 and 4 were monitored throughout the duration of the test. The initial water level for Well B was 96.1 feet bgs. A flowrate of 3 gpm was used throughout the test. The total volume pumped during the 24-hour test was about 4,320 gallons. With a $6^{7}/_{16}$-inch diameter borehole, this represents approximately 14 well-bore volumes. After 24 hours of pumping, the maximum drawdown was 30.6 feet, which equals a specific capacity of 0.1 gpm per foot. Recovery extrapolated to t/t' = 1 indicates 4 feet of residual drawdown. . No drawdown was observed in the four unpumped monitoring wells (Wells A, C, and MW-3, and MW-4) throughout the duration of the test.

Table 9. Monitoring Wells for Well B

Well Name	Distance from Production Well (feet)	Depth to Groundwater at Beginning of Pump Test (feet bgs)	Depth to Groundwater at End of Pump Test (feet bgs)	Maximum Drawdown (feet)
Well B	N/A	96.1	126.7	30.6
Well A	1,580	53.79	53.25	0
Well C	2,835	216.46	215.75	0
MW-3	1,380	100.18	100.10	0
MW-4	3,690	29.83	29.83	0

Well C

A 24-hour constant-discharge pump test was performed on December 22 and 23, 2000. The temporary submersible pump was installed to a depth of 760 feet bgs. Wells B, and D, and MW-3 and MW-4 were monitored throughout the duration of the test. The initial water level for Well C was 211.0 feet bgs. A flowrate of 3 gpm was used throughout the test. The total volume pumped during the 24-hour test was about 4,320 gallons. With a $6^{1}/_{8}$-inch diameter borehole, this represents approximately 3 well-bore volumes. After 24 hours of pumping, the maximum drawdown was 268.4 feet, which equals a specific capacity of 0.011 gpm per foot. At the completion of pumping, the water level had declined approximately 268.4 feet. Recovery extrapolated to t/t' = 1 indicates approximately 20 feet of residual drawdown. . No drawdown was observed in nearby unpumped monitoring wells (Wells B, and D, and MW-3 and 4) throughout the duration of the test.

Table 10. Monitoring Wells for Well C

Well Name	Distance from Production Well (feet)	Depth to Groundwater at Beginning of Pump Test (feet bgs)	Depth to Groundwater at End of Pump Test (feet bgs)	Maximum Drawdown (feet)
Well C	N/A	211.0	479.4	268.4
Well B	2,835	97.55	97.35	0
Well D	3,225	319.41	319.35	0
MW-3	2,865	100.25	100.03	0
MW-4	1,215	29.99	30.05	0

Since 90% recovery was not achieved with the pump test on Well C, it was redrilled to a depth of 1,032 feet bgs and three additional wells were installed in the vicinity of Well C. According to the driller, the redrilled Well C and Wells C1 and C2 were not capable of producing the required 3 gpm so they were not pump tested. Following are the results of the pump test performed on Well C3.

Well C3

A 12-hour 43-minute constant-discharge pump test was performed on April 4, 2004. The temporary submersible pump was installed to a depth of 190 feet bgs. Wells C, C1, and C2 were monitored throughout the duration of the test. The initial water level for Well C3 was 59.1 feet bgs. A flowrate of 3 gpm was used throughout the test. The total volume pumped during the 12-hour 43-minute test was about 2,160 gallons. With a 6½-inch diameter borehole, this represents approximately 9 well-bore volumes. After 12 hours 43-minutes of pumping, the maximum drawdown was 8.4 feet, which equals a specific capacity of 0.36 gpm per foot. Recovery extrapolated to t/t' = 1 indicates no residual drawdown. . No drawdown was observed in nearby unpumped monitoring wells (Well C, C1, and C2) throughout the duration of the test.

Table 11. Monitoring Wells for Well C3

Well Name	Distance from Production Well (feet)	Depth to Groundwater at Beginning of Pump Test (feet bgs)	Depth to Groundwater at End of Pump Test (feet bgs)	Maximum Drawdown (feet)
Well C3	N/A	59.1	67.5	8.4
Well C	450	228.4	228.4	0
Well C1	560	50.9	50.9	0
Well C2	675	17.7	17.7	0

Well D

A 24-hour constant-discharge pump test was performed on December 12 and 13, 2003. The temporary submersible pump was installed to a depth of 540 feet bgs. Well C and MW-3, 4 and 5 were monitored throughout the duration of the test. The initial water level for Well D was 318.5 feet bgs. A flowrate of 3 gpm was used throughout the test. The total volume pumped during the 24-hour test was about 4,320 gallons. With a $6^{1}/_{4}$-inch diameter borehole, this represents approximately 10 well-bore volumes. After 24 hours of pumping, the maximum drawdown was 3.1 feet, which equals a specific capacity of 0.97 gpm per foot. Recovery extrapolated to t/t' = 1 indicates no residual drawdown. . No drawdown was observed in nearby unpumped monitoring wells (Well C and MW-3, 4 and 5) throughout the duration of the test.

Table 12. Monitoring Wells for Well D

Well Name	Distance from Production Well (feet)	Depth to Groundwater at Beginning of Pump Test (feet bgs)	Depth to Groundwater at End of Pump Test (feet bgs)	Maximum Drawdown (feet)
Well D	N/A	318.5	321.6	3.1

Well C	3,225	214.88	214.35	0
MW-3	4,905	100.20	100.13	0
MW-4	2,040	29.90	29.88	0
MW-5	1,260	24.89	24.88	0

Well E

A 24-hour constant-discharge pump test was performed on January 20 and 21, 2011. The temporary submersible pump was installed to a depth of 240 feet bgs. The initial water level was 54.80 feet bgs. MW-1 was also monitored throughout the duration of the test. A flowrate of 3.8 gpm was maintained throughout the test. The total volume pumped during the 24-hour test was about 5,472 gallons. With a 6½-inch diameter borehole, this represents approximately 17 well-bore volumes. After 24 hours of pumping, the maximum drawdown was 5.54 feet, which equals a specific capacity of 0.71 gpm per foot. Recovery extrapolated to t/t' = 1 indicates no residual drawdown. Although there were fluctuations of up to 0.03 before, during and after testing, there was no drawdown associated with our pump testing observed in the unpumped monitoring well (MW-1) throughout the duration of the test.

Table 13. Monitoring Wells for Well E

Well Name	Distance from Production Well (feet)	Depth to Groundwater at Beginning of Pump Test (feet bgs)	Depth to Groundwater at End of Pump Test (feet bgs)	Maximum Drawdown (feet)
Well E	N/A	54.80	60.34	5.54
MW-1	3,000	19.12	19.15	0.03

Well F

A 24-hour constant-discharge pump test was performed on January 27 and 28, 2011. The temporary submersible pump was installed to a depth of 320 feet bgs. Well A was also monitored throughout the duration of the test. The initial water level for Well F was 204.6 feet bgs. A flowrate of 3.8 gpm was used throughout the test. The total volume pumped during the 24-hour test was about 5,472 gallons. With a 6½-inch diameter borehole, this represents approximately 15 well-bore volumes. After 24 hours of pumping, the maximum drawdown was 1.43 feet, which equals a specific capacity of 2.7 gpm per foot. Recovery extrapolated to t/t' = 1 shows no residual drawdown. No drawdown was observed in the one unpumped monitoring well (Well A) throughout the duration of the test.

Table 14. Monitoring Wells for Well F

Well Name	Distance from Production Well (feet)	Depth to Groundwater at Beginning of Pump Test (feet bgs)	Depth to Groundwater at End of Pump Test (feet bgs)	Maximum Drawdown (feet)
Well F	N/A	204.6	206.03	1.43
Well A	2,200	25.15	25.14	0

Well G

A 24-hour constant-discharge pump test was performed on December 16 and 17, 2010. The temporary submersible pump was installed to a depth of 300 feet bgs. Wells H and MW-3 were also monitored throughout the duration of the test. The initial water level for Well G was 116.10 feet bgs. A flowrate of 3.7 gpm was used throughout the test. The total volume pumped during the 24-hour test was about 5,328 gallons. With a $6^{1/2}$-inch diameter borehole, this represents approximately 4 well-bore volumes. After 24 hours of pumping, the maximum drawdown was 13.53 feet, which equals a specific capacity of 0.27 gpm per foot. Recovery extrapolated to t/t' = 1 shows no residual drawdown. No drawdown was observed in nearby unpumped monitoring wells (H, and MW-3) throughout the duration of the test.

Table 15. Monitoring Wells for Well G

Well Name	Distance from Production Well (feet)	Depth to Groundwater at Beginning of Pump Test (feet bgs)	Depth to Groundwater at End of Pump Test (feet bgs)	Maximum Drawdown (feet)
Well G	N/A	116.10	129.63	13.53
Well H	900	93.56	93.45	0
MW-3	700	97.12	97.11	0

Well H

A 24-hour constant-discharge pump test was performed on January 17 and 18, 2011. The temporary submersible pump was installed to a depth of 200 feet bgs. Wells B, G, and MW-3 were also monitored throughout the duration of the test. The initial water level for Well H was 94.89 feet bgs. A flowrate of 3.7 gpm was used throughout the test. The total volume pumped during the 24-hour test was about 5,328 gallons. With a $6^{1/2}$-inch diameter borehole, this represents approximately 14 well-bore volumes. After 24 hours of pumping, the maximum

drawdown was 8.39 feet, which equals a specific capacity of 0.44 gpm per foot. Recovery extrapolated to t/t' = 1 shows no residual drawdown. No drawdown was observed in nearby unpumped monitoring wells (Wells B, and G, and MW-3 and 4) throughout the duration of the test.

Table16. Monitoring Wells for Well H

Well Name	Distance from Production Well (feet)	Depth to Groundwater at Beginning of Pump Test (feet bgs)	Depth to Groundwater at End of Pump Test (feet bgs)	Maximum Drawdown (feet)
Well H	N/A	94.89	103.28	8.39
Well B	900	48.05	48.05	0
Well G	800	104.24	101.70	0
Well MW-3	1,100	96.29	96.0	0

Well I

A 24-hour constant-discharge pump test was performed on February 3 and 4, 2011. The temporary submersible pump was installed to a depth of 260 feet bgs. Well C3, J, and MW-3 were also monitored throughout the duration of the test. The initial water level for Well I was 97.78 feet bgs. A flowrate of 3.9 gpm was used throughout the test. The total volume pumped during the 24-hour test was about 5,616 gallons. With a $6^{1/2}$-inch diameter borehole, this represents approximately 8 well-bore volumes. After 24 hours of pumping, the maximum drawdown was 23.37 feet, which equals a specific capacity of 0.17 gpm per foot. Recovery extrapolated to t/t' = 1 shows no residual drawdown. While we observed fluctuations of up to .02 feet in Well J, it does not appear to be related to pump testing. No drawdown was observed in nearby unpumped monitoring wells (Wells C3 and MW-3) throughout the duration of the test.

Table 17. Monitoring Wells for Well I

Well Name	Distance from Production Well (feet)	Depth to Groundwater at Beginning of Pump Test (feet bgs)	Depth to Groundwater at End of Pump Test (feet bgs)	Maximum Drawdown (feet)
Well I	N/A	97.78	121.15	23.37
Well C3	1,200	212.35	212.31	0
Well J	1,400	50.59	50.61	0.02
MW-3	1,600	94.91	94.84	0

Well J

A 24-hour constant-discharge pump test was performed on February 14 and 15, 2011. The temporary submersible pump was installed to a depth of 260 feet bgs. Well C3 and I, were also monitored throughout the duration of the test. The initial water level for Well J was 52.50 feet bgs. A flowrate of 3.4 gpm was used throughout the test. The total volume pumped during the 24-hour test was about 4,896 gallons. With a $6^{1/2}$-inch diameter borehole, this represents approximately 3 well-bore volumes. After 24 hours of pumping, the maximum drawdown was 39.85 feet, which equals a specific capacity of 0.09 gpm per foot. Recovery extrapolated to t/t' = 1 shows no residual drawdown. No drawdown was observed in nearby unpumped monitoring wells (Well C, and I) throughout the duration of the test. Nearby monitoring well C3 was obstructed at approximately 20 feet and not monitored.

Table 18. Monitoring Wells for Well J

Well Name	Distance from Production Well (feet)	Depth to Groundwater at Beginning of Pump Test (feet bgs)	Depth to Groundwater at End of Pump Test (feet bgs)	Maximum Drawdown (feet)
Well J	N/A	52.5	92.35	39.85
Well C	1000	211.41	211.41	0
MW-I	1,400	96.21	96.17	0

Well MW-1

A 24-hour constant-discharge pump test was performed on July 14 and 15, 2011. The existing submersible pump was at a depth of 110 feet bgs. Well E, was also monitored throughout the duration of the test. The initial water level for Well MW-1 was 22.00 feet bgs. A flowrate of 3.2 gpm was used throughout the test. The total volume pumped during the 24-hour test was about 4,608 gallons. With a $6^{1/2}$-inch diameter borehole, this represents approximately 3 well-bore volumes. After 24 hours of pumping, the maximum drawdown was 9.06 feet, which equals a specific capacity of 0.35 gpm per foot. Recovery extrapolated to t/t' = 1 indicates no residual drawdown. No drawdown was observed in nearby unpumped monitoring Well E throughout the duration of the test.

Table 19. Monitoring Wells for Well MW-1

Well Name	Distance from Production Well (feet)	Depth to Groundwater at Beginning of Pump Test (feet bgs)	Depth to Groundwater at End of Pump Test (feet bgs)	Maximum Drawdown (feet)
Well MW-1	N/A	22.00	31.06	9.06
Well E	3,000	57.10	57.08	0

The following table summarizes the results of pump testing eleven onsite production wells[3].

Table 20. Aquifer Tests of Hoskings Ranch Production Wells

Well Name	Test Start Day	Average Discharge (gpm)	Pumping Period (hours)	Water Depth Prior to Pumping (feet bgs)	Water Depth at Completion of Pumping (feet bgs)	Well Depth (feet bgs)	Maximum Drawdown (feet)	Residual Drawdown (feet)	Predicted Drawdown after Five Years (feet)[1]
Well A	12/4/03	3	24	49.6	273.8	331	224.2	0	23.8
Well B	12/9/03	3	24	96.1	126.7	271	30.6	4	6.1
Well C	12/22/03	3	24	211.0	479.4	1032	248.4	20	38.2
Well C3	4/14/04	3	12 hr 43 min	59.1	67.5	211	8.4	0	5.0
Well D	12/12/03	3	24	318.5	321.6	591	3.1	0	1.1
Well E	1/20/11	3.8	24	54.80	60.34	310	5.54	0	0.98
Well F	1/27/11	3.8	24	204.60	206.03	410	1.43	0	0.38
Well G	12/16/10	3.7	24	116.10	129.63	975	13.53	0	5.5
Well H	1/17/11	3.7	24	94.89	103.28	310	8.39	0	4.5
Well I	2/3/11	3.9	24	97.78	121.15	510	23.37	0	3.7
Well J	2/14/11	3.4	24	52.50	92.35	1,010	39.85	0	15.5
Well MW-1	7/14/11	3.2	24	22.00	31.06	Unk	9.06	0	

1: at a sustained pumping rate of 0.31 gpm

Of the twelve wells tested, ten wells (Well A, WellC3, Well D, Well E, Well F, Well G, Well H, Well I, Well J, and MW-1) passed the County Groundwater Ordinance residential well test requirements. Wells B and C both failed due to projected residual drawdown of 4 and 10 feet, respectively.

4.3 Evaluation of Pump Test Data

Drawdown and recovery data from the constant discharge pump testing of Wells A, B, C, C3, D, E, F, G, H, I, and J are presented in graphic format in Appendix E.

Aquifer transmissivity (i.e., the capacity to transmit water) can be estimated using the Cooper-Jacobs approximation (Cooper 1946) to the Theis equation, which states:

$T = 2.3\ Q/4\ \pi\ \Delta s$

Where:

T = Transmissivity (feet^2/minute)

Q = Discharge rate (feet^3/minute)

Δs = Drawdown (or residual drawdown) over 1 logarithmic cycle

Based on this equation, we calculated the following transmissivities for each production well.

Table 21. Calculated Transmissivities

Well Name	Transmissivity (feet^2/day)	
	Drawdown	**Recovery**
Well A	1	1
Well B	9	26
Well C	1	.3
Well C3	11	7
Well D	50	41
Well E	34	96
Well F	233	40
Well G	12	5
Well H	17	5
Well I	13	9
Well J	3	1
Well MW-1	19	11
Arithmetic Mean	36	20

Since aquifer thickness and transmissivity do not remain constant with time, the Jacob correction was used to correct measured drawdown during pumping and recovery. These corrected drawdown data are plotted against the logarithm of time since pumping started. Corrected recovery data are plotted against the ratio of time since pumping started divided by time since pumping stopped (t/t').

Recovery data were evaluated to assess long-term affects to the groundwater aquifers. Data plots of residual drawdown versus time since pumping started, divided by time since pumping stopped (t/t'), graphed on semi logarithmic paper, and were evaluated to assess impacts to storage from pumping. At t/t' equal to 1 (infinite time), a residual drawdown would indicate permanent aquifer dewatering. Wells A, C3, D, E, F, G, H, I, J, and MW-1 are predicted to have no residual drawdown. Well B is predicted to have a residual drawdown of 4 feet, and Well C is predicted to have 10 feet of residual drawdown.

Based on an assumed transmissivity of 30 $feet^2$/day and storativity 0.0001 for proposed onsite production wells and specific yield for fractured rock (Section 4), we used the Theis equation (Theis 1936) to predict drawdown in offsite wells. We assumed a production rate of 0.5 afy (or 0.31 gpm) for a period of five years, as well as a rate of 10 gpm for a period of 24 hours. The rate of 10 gpm for 24 hours is meant to represent drawdown resulting from a homeowner filling a 14,000-gallon swimming pool or similar usage.

The table below summarizes the distance from notional project wells to the hypothetical offsite well and the potential drawdown each project well would have on the hypothetical well for the 0.31 gpm production rate under the consolidated alternative. The sum of this potential drawdown for the consolidated alternative is approximately 17 feet. The calculations for the main project are in Appendix F and the sum of the potential drawdown for the main project is approximately 7 feet. Compared to the 20 threshold and per CEQA guidance neither alternative poses a significant impact.

Table 22. Drawdown Estimate for Potential Nearest Offsite Well – Consolidated Alternative

Lot #	Distance to Offsite Well	Drawdown (feet)
15	580	1.30
18	730	1.22
14	770	1.21
13	1230	1.06
11	1730	0.95
12	1920	0.92
16	2080	0.89

17	2270	0.87
19	2270	0.87
10	2310	0.86
8	2350	0.86
7	2890	0.79
20	3040	0.77
9	3120	0.77
6	3270	0.75
21	3540	0.73
5	3650	0.72
3	3850	0.70
22	3850	0.72
Total Cumulative Drawdown at Offsite Well		17

The table below summarizes the predicted drawdown for both the main project and the consolidated alternative under both the 5 year daily pumping rate (0.31 gpm) and the 24 hour pool filling rate (10 gpm).

Table 23. Predicted Drawdown at Nearest Offsite Well

Well	Rate (gpm)	Elapsed Time (days)	Main Project Predicted Cumulative Drawdown (feet)	Consolidated Project Alternative Predicted Cumulative Drawdown (feet)
Most Likely Impacted Offsite Well	0.31	1825	7	17
	10	1	0	2

Based on the representative aquifer parameters (transmissivity = 30 feet^2/day, storativity = 0.0001) on-site pumping should not pose a significant impact to the most likely impacted offsite well.

4.4 Water Quality

AECOM personnel obtained groundwater samples from Wells A and B on September 18, 2008 and Well D on September 17, 2008 after at least two well-bore volumes had been pumped from the wells. The samples were collected in laboratory-provided bottles, kept on ice, and sent via courier to Test America (a California-certified laboratory) to be analyzed for gross alpha, uranium, total dissolved solids (TDS), nitrate (as N) and total coliform. Laboratory analytical methods and preservation methods are provided on Table 24.

No groundwater samples exceeded the MCLs listed on Table 24 with the exception of total and fecal coliform in Well A and total and fecal coliform in Well D. These wells were disinfected and resampled on July 1, 2010 and found to be non-detect for total and fecal coliform. As part of the CPA investigation, water quality samples were collected from Well G on December 17, 2010 and Well E on January 12, 2011. None of these groundwater samples exceeded the MCLs listed on Table 24. All samples were analyzed within prescribed holding times.

Table 24. Laboratory Data

Analyte	Analytical Method	Container	Preservative	MCL	Result	Unit
Well A						
Gross Alpha	EPA 900.0	1 L Poly	HNO_3	15[4]	1.46 +/- 0.833	pCi/L
Uranium	EPA 200.8	500 mL Poly	HNO_3	20	<0.67	pCi/L[5]
TDS	EPA 160.0	1 L Poly	None	1,000[6] (500 recommended)	160	mg/L
Nitrate-N	EPA 300.0	500 mL Poly	None	10	0.11	mg/L
Total Coliform	SM9223B	100 mL Poly	None	Not Detectable[7]	122	MPN/100 mL
Fecal Coliform	SM9223B	100 mL Poly	None	Not Detectable	52	MPN/100 mL
Well A Resample 7/1/2010						
Total	SM9223B	100 mL	None	Not Detectable	Not Detected	MPN/100 mL

[4] MCL compliant when gross alpha minus uranium is less than 15 Pico Curries per Liter (pCi/L).

[5] Laboratory results provided in ug/L and converted to pCi/L. For uranium, 0.67 pCi/L is equal to 1 ug/L.

[6] Secondary MCL

[7] The presence of total coliform is not necessarily an MCL violation but further testing may be necessary.

Coliform		Poly				
Fecal Coliform	SM9223B	100 mL Poly	None	Not Detectable	Not Detected	MPN/100 mL
Well B						
Gross Alpha	EPA 900.0	1 L Poly	HNO_3	15[8]	1.41 +/- 0.790	pCi/L
Uranium	EPA 200.8	500 mL Poly	HNO_3	20	<0.67	pCi/L[9]
TDS	EPA 160.0	1 L Poly	None	1,000[10] (500 recommended)	300	mg/L
Nitrate-N	EPA 300.0	500 mL Poly	None	10	<0.11	mg/L
Total Coliform	SM9223B	100 mL Poly	None	Not Detectable	52	MPN/100 mL
Fecal Coliform	SM9223B	100 mL Poly	None	Not Detectable	52	MPN/100 mL
Well D						
Gross Alpha	EPA 900.0	1 L Poly	HNO_3	15	2.88 +/- 1.82	pCi/L
Uranium	EPA 200.8	500 mL Poly	HNO_3	20	<0.67	pCi/L[9]
TDS	EPA 160.0	1 L Poly	None	1,000[10] (500 recommended)	280	mg/L
Nitrate-N	EPA 300.0	500 mL Poly	None	10	<0.11	mg/L
Total Coliform	SM9223B	100 mL Poly	None	Not Detectable	30	MPN/100 mL
Fecal Coliform	SM9223B	100 mL Poly	None	Not Detectable	<1.0	MPN/100 mL
Well D Resample 7/1/2010						
Total Coliform	SM9223B	100 mL Poly	None	Not Detectable	Not Detected	MPN/100 mL
Fecal Coliform	SM9223B	100 mL Poly	None	Not Detectable	Not Detected	MPN/100 mL
Well E						

[9] Laboratory results provided in ug/L and converted to pCi/L. For uranium, 0.67 pCi/L is equal to 1 ug/L.

[10] Secondary MCL

Gross Alpha	EPA 900.0	1 L Poly	HNO_3	15[8]	4.10 +/- 0.790	pCi/L
TDS	EPA 160.0	1 L Poly	None	1,000[10] (500 recommended)	210	mg/L
Nitrate-N	EPA 300.0	500 mL Poly	None	10	<0.11	mg/L
Total Coliform	SM9223B	100 mL Poly	None	Not Detectable	Not Detected	MPN/100 mL
Fecal Coliform	SM9223B	100 mL Poly	None	Not Detectable	Not Detected	MPN/100 mL
Well G						
Gross Alpha	EPA 900.0	1 L Poly	HNO_3	15	0.399 +/- 0.874	pCi/L
Uranium	EPA 200.8	500 mL Poly	HNO_3	20	<0.67	pCi/L[9]
TDS	EPA 160.0	1 L Poly	None	1,000[10] (500 recommended)	240	mg/L
Nitrate-N	EPA 300.0	500 mL Poly	None	10	<0.11	mg/L
Total Coliform	SM9223B	100 mL Poly	None	Not Detectable	8.0	MPN/100 mL
Fecal Coliform	SM9223B	100 mL Poly	None	Not Detectable	<1.0	MPN/100 mL
Well G Resample 1/12/2011						
Total Coliform	SM9223B	100 mL Poly	None	Not Detectable	Not Detected	MPN/100 mL
Fecal Coliform	SM9223B	100 mL Poly	None	Not Detectable	Not Detected	MPN/100 mL

[10] Secondary MCL

5 GROUNDWATER IN STORAGE

Because there are often many years with little to no recharge, punctuated by years of abundance, water in storage must be adequate to provide for many years without recharge. Although actual site-specific storativity values are not known, these values can be estimated for purposes of this study. While the actual range for specific yield in rock likely ranges from about 0.0001% to 1%. . Specific yield values of 0.01% and 0.1%[3] were used for fractured rock in the slopes and flatter areas, respectively. Assuming a saturated thickness of 500 feet and specific yield values of 0.1% in valleys and mid-slope areas and 0.01% on steeper slopes and upland areas, an estimated 930 acre-feet of groundwater may be stored in the fractured rock within the 3,185-acre study area.

Assuming a specific yield value of 0.5% in decomposed granite and a saturated thickness of 20 feet, approximately 1 acre foot of water per acre may be stored in the residuum within the study area. The saturated residuum area, located in the flatter parts within the study area, is estimated to be 415 acres. This area was derived in consultation with the San Diego County Groundwater Geologist; and is a combination of well logs, topographic analysis, and soil types with less than 30% slopes as depicted on the USDA Soil Conservation Map. The saturated residuum is outlined on Figure 1 of Appendix C, This yields an estimated 415 acre-feet of groundwater in storage in the residuum within the 3,185-acre study area. Although there may be some saturated alluvium in the study area we have assumed no storage in this unit for this evaluation. The total calculated storage in the 3,185-acre study area is calculated to be 1,341.50 acre-feet.

Table 25. Groundwater in Storage (acre-feet)

Unit	Approximate Area (acres)	Average Saturated Thickness (feet)	Specific Yield	Water in Storage (acre-feet)
Fractured Bedrock (Flatter Areas)	1,705	500	0. 1%	852.5
Fractured Bedrock (Steep Slopes)	1,480	500	0.01%	74
Residuum	415	20	5%	415
Total				1,341.5

6 RAINFALL RECHARGE

Infiltration of precipitation can be estimated by calculating the amount of precipitation that percolates through the soil root zone to reach the underlying groundwater system after accounting for losses due to runoff, evapotranspiration, and field capacity (soil moisture capacity). The soil moisture balance equation commonly used to estimate groundwater recharge due to rainfall is:

$$R_i = P_i - RO_i - pET_i - (SMC - SM_i)$$

Where:

R_i = Recharge during the i^{th} month (inches)

P_i = Precipitation during the i^{th} month (inches)

RO_i = Runoff during the i^{th} month (inches)

pET_i = Potential evapotranspiration during the i^{th} month (inches)

SMC = Soil moisture holding capacity (inches)

SM_i = Soil moisture at beginning of the i^{th} month (inches)

Since Orinoco/Temescal Creek is ungauged, runoff must be estimated. Runoff can be estimated as a function of the average monthly moisture content of the soil using the following equation:

$$RO_i = RO_{max} x(((SM_i+SM_{i+1})/2)\ SMC)$$

Where:

RO_i = Runoff during the i^{th} month (inches)

RO_{max} = Maximum runoff potential (percent)

SM_i = Soil moisture at beginning of the i^{th} month (inches)

SM_{i+1} = Soil moisture at end of i^{th} month (inches)

SMC = Soil moisture holding capacity (inches)

The County provided rainfall data collected from the Wynola, Cuyamaca, and Santa Ysabel Rain Gauge Stations. The project site has an average elevation of approximately 3,600 feet above msl and is approximately 38 miles from the coast. Since Wynola is within the same rainfall belt and located less than 2 miles northwest of the site. At an elevation of approximately 3,600 feet above msl, it would likely be the most representative location. However, since there is only a partial record for this location, monthly data from Cuyamaca and Santa Ysabel were modified to create a representative data set (Appendix C). Those modified data for the rainfall years (July through June) 1971/1972 through 2004/2005 were used in our calculations.

The County of San Diego Groundwater Limitations Map dated May 2004 indicates that the Wynola Rain Gauge Location and the majority of the project site are located in the 21- to 24-inch mean annual rainfall belt, with the eastern portion of the project site situated in the 24- to 27-inch mean annual rainfall belt.

This information along with evapotranspiration rates which were obtained from the State of California Evapotranspiration Zones map, was used in a computer program called *Recharg2*, which solves the soil moisture balance equation.

Table 26. Monthly Potential Evapotranspiration

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
Evapotranspiration (inches)	9.3	8.37	6.3	4.34	2.4	1.55	1.55	2.52	4.03	5.7	7.75	8.7

Based on Tables 4, 5 and 6, we have assumed the following representative values for the 3,185-acre study area:

Table 27. Moisture Holding Capacity and Maximum Runoff

Location	Moisture Holding Capacity (inches)	Maximum Runoff (Percent)
Higher and Steeper Slopes	2.8	40
Mid-Slope	4.8	25
Flatter and Lower Areas	5.5	20

Utilizing these data in the *Recharg2* program, we calculated the following average rainfall recharge, runoff value, and average annual rainfall recharge volume for the 3,185-acre study area.

Table 28. Rainfall Recharge

Location	Average Annual Recharge (inches)	Average Annual Runoff (percent)	Area in Study Area (acres)[8]	Average Recharge Volume (afy)
Higher and Steeper Slopes	3.1	18.5	1,480	380
Mid-Slope	3.6	11.2	1,200	355
Flatter and Lower Areas	3.7	8.8	505	157
Total			*3,185*	*892*

The output from the *Recharg2* program is presented in Appendix D.

[8] Determined from soils map.

7 SUSTAINABLE YIELD

Based on the San Diego County Groundwater Ordinance (Groundwater Ordinance), the minimum parcel size for a site with mean annual precipitation of more than 21 inches is 4 acres. The proposed lot size for the property is a minimum of 40 acres. The Groundwater Ordinance does not specifically require a groundwater study be performed for the property; however, pursuant to the California Environmental Quality Act (CEQA) requirements to evaluate cumulative impacts to groundwater resources, the County has requested that a study be completed for this property. An evaluation of sustainable yield is part of this investigation.

In order to determine long-term sustainable yield for the subbasin, a storage volume of 1,341.5 acre-feet was used for these calculations. Appendix C contains a table that calculates the theoretical maximum groundwater in storage for the subbasin for the period of 1971/1972 to 2004/2005. As stated earlier, approximately 133 afy would be required at maximum main project build out assuming the GP Update. Approximately 138 afy would be required at maximum CPA buildout assuming the GP Update. In accordance with the County of San Diego Guidelines for Determining Significance – Groundwater Resources, storage cannot drop below 50% (or 671 acre-feet) of maximum storage. Based on the groundwater in storage calculations, the study area could sustain development at maximum buildout under the GP update. The lowest percent of maximum groundwater in storage is estimated to be 59% under the CPA. Our storage calculations assumed that the study area was full (i.e., contained 1,341.5 acre-feet of water) at the beginning. In addition, we assumed that the study area could not hold more than 1,341.5 acre-feet; therefore, if rainfall recharge was calculated to be in excess of this value, it was assumed the balance would run off, rather than recharge the groundwater system.

Because these calculations are heavily dependent on the assumed storage coefficient and this number is not well known, actual sustainable yield may vary.

Long-term sustainable groundwater yield is a function of several factors including rainfall recharge, streambed infiltration, groundwater inflow, septic system recharge, irrigation return flow, pumpage, phreatophyte loss, baseflow, other groundwater users in the study area, and groundwater outflow. The primary factors affecting sustainable yield on site are assumed to be study area-wide groundwater production, phreatophyte loss, and rainfall recharge. Although groundwater outflow is unknown, it is expected to decrease over time proportional to increased groundwater consumption within the study area. The other factors are expected to be insignificant or non-existent on this site. Rainfall recharge is that portion of the total rainfall in excess of the soil moisture capacity, after runoff and evapotranspiration losses.

8 CONCLUSIONS

Based upon the results of our study, we provide the following conclusions:

- The Main Project is expected to require 12 afy of groundwater for onsite residential and an additional 1.3 afy for onsite agricultural needs. The CPA is expected to require 17.5 afy of groundwater for onsite residential.

- The site is underlain by granitic and metamorphic rock and mantled by residuum and minor amounts of alluvium. The majority of groundwater within the study area is located in residuum and fractures within unweathered bedrock. Although reported well yields range from 1.5 to 110 gpm, typical yields are more likely to be less than 10 gpm. The County Groundwater Ordinance requires that three wells for the Main Project and four wells for the CPA on the Hoskings Ranch site be able to produce 3 gpm for at least 24 hours (unless after 8 hours of pumping the specific capacity is equal to or greater than 0.5 gpm/ft of 9 drawdown), must produce at least 2 full well bore volumes of water, must have no projected residual drawdown, and must indicate the amount of drawdown predicted to occur in the well after five years of continual pumping at the rate of projected water demand will not interfere with the continued production of sufficient water to meet the needs of the anticipated residential use(s).. Of the eleven pump-tested wells, nine wells were approved by the County as having met the Groundwater Ordinance requirements.

- The long-term average annual recharge to the 3,185-acre study area is expected to be approximately 890 afy.

- Based on these conclusions, extraction of up to 167 afy under the GP Update could be sustained without reducing groundwater in storage to less than 50%.

- A total of approximately 1,341.5 acre-feet of groundwater are thought to be in storage in the alluvium, residuum and fractured rock in the study area. The lowest percent of maximum groundwater in storage is 59%. Based on our groundwater availability calculations for the GP update, groundwater in storage is not anticipated to be a significant impact for the project.

- Based on an analysis of the proposed lot locations for both the main project and the CPA, we estimate that the maximum cumulative drawdown at the nearest potential offsite well from pumping a typical onsite well would be about 17 feet. Based on the representative aquifer parameters (transmissivity = 30 feet^2/day, storativity = 0.0001) on-site pumping as depicted on the figures in Appendix F should not pose a significant impact to offsite wells. According to the GP update, the study area could be

[9] Determined from soils map.

developed into an estimated 91 homes maximum. At maximum study area usage, annual extraction for the main project is expected to be in the neighborhood of 133 afy under the GP Update. At maximum study area usage, annual extraction for the CPA is expected to be in the neighborhood of 138 afy under the GP Update. Development in excess of these densities may result in an overdraft condition during prolonged periods of below average rainfall. This estimate is based on the assumption that groundwater demand will average 0.5 afy per dwelling (in accordance with the San Diego County Groundwater Ordinance).

- With proper disinfection, water quality in the existing wells meets the relevant drinking water standards for the required parameters tested; hence groundwater quality is not anticipated to be a significant impact for the project.

9 RECOMMENDATIONS

- In order to minimize potential impacts to offsite wells, we recommend that future onsite production wells be located a minimum of 300 feet from project and external property lines. The closest current offsite wells are thought to be no closer than 50 feet from the adjacent property line. This would allow for a distance of at least 350 feet from the nearest offsite production well.
- When wells are drilled and pumps are installed, measures should be employed to prevent groundwater contamination.
- We recommend that future onsite production wells be located as far as possible and upgradient of septic systems.
- Since open wells could provide a conduit for groundwater contamination and could present a safety hazard, all onsite wells should be secured with locking covers.

10 REFERENCES

1. Aerial Fotobank. October 12, 1992. Color aerial photographs CVSD92-9M, 9N. San Diego County, California.
2. California Department of Transportation (Caltrans). November 1, 2002. Highway Design Manual. Fifth Edition.
3. California Department of Water Resources. Crop Water Use in California. Bulletin 113-4. April 1986.
4. California Department of Water Resources. Cuyamaca East – SDCWC Evaporation Data. November 1979. Evaporation from Water Surfaces in California. Bulletin 73-79. Pg. 148.
5. California Division of Mines and Geology. 1992. Geologic Map of California - Santa Ana Sheet. Scale 1:250,000.
6. Cooper, H.H., Jr. and C.E. Jacobs. 1946. A Generalized Graphical Method for Evaluating Formation Constants and Summarizing Well Field History. *Transactions, American Geophyscial Union 27:526-34.*
7. County of San Diego. 1991a. Average Annual Precipitation. San Diego County, California.
8. County of San Diego, Department of Public Works. May 2004. Groundwater Limitations Map. Scale 1:250,000.
9. County of San Diego. Revised January 1985. Hydrology Manual.
10. County of San Diego. Amended January 31, 2007. San Diego County Groundwater Ordinance Number 7994. Sections 67.701 through 67.750.
11. County of San Diego. March 2007. Guidelines for Determining Significance and Report Format and Content Requirements – Groundwater Resources.
12. County of San Diego. 2008. Rainfall Data for Hoskings Ranch. *Modified from Cuyamaca, Wynola, and Santa Ysabel Rainfall Stations.* San Diego County, California.
13. County of San Diego. 1990. San Diego County General Plan. Part X Julian Community Plan.
14. County of San Diego. April 17, 2002. San Diego County General Plan. Part II Regional Land Use Element.
15. County of San Diego. 2004. 30-year Average Rainfall Data *(Excel File)*. San Diego County, California.
16. County of San Diego. May 2004. Groundwater Limitations Map. San Diego County, California.
17. Donnelly, Maurice. January 1934. Geology and Mineral Deposits of the Julian District, San Diego County, California. California Journal of Mines and Geology. Vol. 30. Pgs. 332-370.1989. National Geographic. 2000. California Seamless USGS Topographic Maps on CD-ROM (California TOPO!)
18. Masson and Associates. 2008. Vegetation Exhibit TM 5312 RPL 2. Hoskings Ranch, Julian, California.
19. National Geographic. 2000. California Seamless USGS Topographic Maps on CD-ROM (California TOPO!)
20. Seifert, Harry. November 25, 2003. Personal Communication. Julian Water District, Julian, California.

21. State of California. 1999. California Irrigation Management Information System (CIMIS) Reference Evapotranspiration (Eto) Zones Map.
22. Theis, C.V. 1936. Estimating the Transmissivity of a Water Table Aquifer from the Specific Capacity of a Well. U.S. Geological Survey Water Supply Paper 1536-I:332-336.
23. United States Department of Agriculture. December 1973. Soil Survey of San Diego Area, California.
24. United States Department of Agriculture. Natural Resources Conservation Service. http://websoilsurvey.nrcs.usda.gov. June 2008. Web Soil Survey 2.0. Soil Map-San Diego County Area, California.
25. United States Geological Survey. 1960. Santa Ysabel Quadrangle. San Diego County, California. Scale 1:24,000.
26. United States Geological Survey. 1960. Julian Quadrangle. San Diego County, California. Scale 1:24,000.

Appendix A.
Well Logs

DUPLICATE
Driller's Copy

Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 0903931

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

Owner's Well No. 1

Date Work Began 11/05/03 Ended 11/07/03

Local Permit Agency San Diego County Dept. of Environmental Health

Permit No. LWEL 15611 Permit Date 10/9/03 approved

GEOLOGIC LOG

ORIENTATION (✓): XX VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD air hammer FLUID

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION (Describe material, grain size, color, etc.)
0 4	Orange Clay- Decomposed Granite
4 11	Brown Decomposed Granite
11 17	Grey Decomposed Granite
17 51	Grey, Weathered Granite
51 126	Hard, salt & pepper Granite
126 127	Fracture in above
127 129	Salt & pepper Granite
129	Fracture
129 155	Salt & pepper Granite
155	FRacture w/ small amount WATER
155 195	Salt & pepper Granite
195 251	Altered Granite w/ several fractures & WATER
251 293	Salt & pepper Granite
293 311	Weathered Granite
311 331	Salt & pepper Granite
	Bottom hole bit gauge 6 1/2"

TOTAL DEPTH OF BORING 331 (Feet)

TOTAL DEPTH OF COMPLETED WELL 331 (Feet)

WELL OWNER

Name Genesee Properties, Inc

Mailing Address 3550 General Atomics Court

City San Diego, California 92121-1194 STATE ZIP

WELL LOCATION

Address Hasking Ranch - Orinoco Drive

City Julian, Ca.

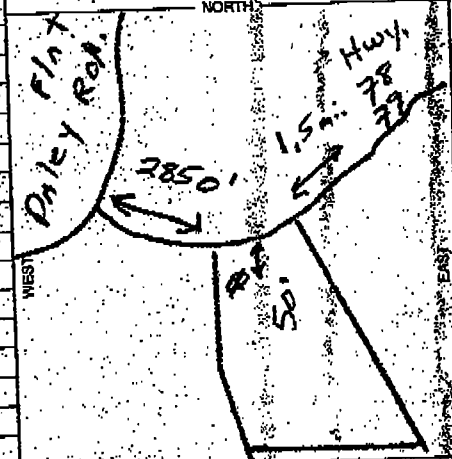
County San Diego

APN Book 289 Page 062 Parcel 04

Township 13S Range 3E Section 11

Lat DEG. MIN. SEC. N Long DEG. MIN. SEC

LOCATION SKETCH



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 (✓)

XX NEW WELL

___ MODIFICATION/REPAIR

___ Deepen

___ Other (Spe

___ DESTROY (Desc... Procedures and ... Under "GEOLOG...

USES (✓)

WATER SUPPLY

XX Domestic

XX Irrigation

___ MONITORI...

___ TEST WE...

___ CATHODIC PROTECTI...

___ HEAT EXCHAN...

___ DIRECT PU...

___ INJECTI...

___ VAPOR EXTRACTI...

___ SPARGI...

___ REMEDIAT...

___ OTHER (SPECI...

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 155 (FL.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 140+ (FL.) & DATE MEASURED 11/7/03

ESTIMATED YIELD * 4 (GPM) & TEST TYPE air lift

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (FL.)

* 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	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0 20	13"	X				Steel	8.249	.188	
0 331	6.5"	X	X			PVC liner	4.570	cl.160	1/8"

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER (TYPE
0 20	XXX			Type
151 311				

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 b...

NAME (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED) Acme Drilling Co. Inc.

ADDRESS 748 S. Vinewood St.-Ste. B-Escondido, Ca. 92-025... CITY STATE

Signed Robert Lundberg (WELL CONTRACTOR) DATE SIGNED 11/10/03 C-57 LICENSE 5268

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

DUPLICATE
Driller's Copy
Page 1 of 1
Owner's Well No. 1 (this parcel)
Date Work Began 11/10/03 Ended 11/11/03
Local Permit Agency San Diego Co. Dept. of Environmental Health
Permit No. LWEL 15610 Permit Date 10/8/03- approved

B

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 0903932

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

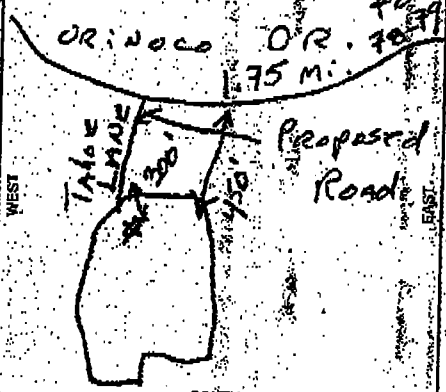
ORIENTATION (✓) XX VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD air hammer FLUID
DESCRIPTION
Describe material, grain size, color, etc.

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION
0 1	Brown Clay
2 8	Orange Clay
8 15	Light brown Decomposed Granite
15 31	Weathered Granite
31 48	Light grey Decomposed Granite
48 95	Hard, salt & pepper Granite
95 96	Fracture in above w/ small amount WATER ~1 gpm
96 220	Salt & pepper Granite
220 221	Fracture in above w/ WATER
221 271	Salt & pepper Granite
	Bottom hole bit gauge 6 7/16"

TOTAL DEPTH OF BORING 271 (Feet)
TOTAL DEPTH OF COMPLETED WELL 20 (Feet)

WELL OWNER
Name Genesee Properties, Inc.
Mailing Address 3550 General Atomics Court
City San Diego, Ca. ZIP 92121-1104

WELL LOCATION
Address Orinoco Drive
City Julian, Ca.
County San Diego
APN Book 289 Page 120 Parcel 32
Township 13S Range 23E Section 11
Lat DEG. MIN. SEC. Long DEG. MIN. SEC.

LOCATION SKETCH


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 (✓)
XX NEW WELL
___ MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

USES (✓)
WATER SUPPLY
XX Domestic ___ Public
XX 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 95 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 94 (Ft.) & DATE MEASURED 11/13/03
ESTIMATED YIELD * 7 (GPM) & TEST TYPE air lift
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (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)
0 20	13"	X				Steel	8.249	.188	
0 271	6.437					Open hole			

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE: CEMENT (✓)	(BEN)TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0 20	XXX			Type I-II

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 Acme Drilling Co. Inc. (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 748 S. Vinewood St.-Ste. B- CITY Escondido, STATE Ca. ZIP 92029-1929
Signed Robert Lundberg DATE SIGNED 11/13/03
C-57 LICENSED WATER WELL CONTRACTOR C-57 LICENSE NUMBER 526886

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

TRIPLICATE
Owner's Copy

Page 1 of 1

Owner's Well No. 3 (this parcel)

Date Work Began 3/26/04, Ended 4/6/04

Local Permit Agency San Diego County dept. of Environmental Health

Permit No. WEL 15893 Permit Date 3/30/04 approved

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 0903958

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) XX VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD air hammer FLUID

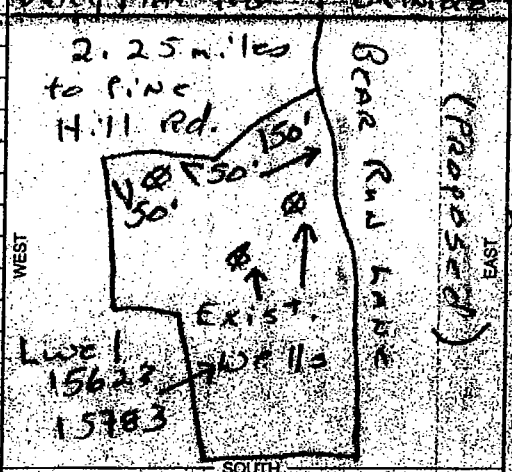
DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	5	Red Clay
5	12	Soft Decomposed Granite
12	17	Medium hard Decomposed Granite
17	78	Weathered Granite
78	82	Fracture in above w/ broken rock & WATER approx. 20 gpm
82	168	Grey Granite
168	211	Small fracture in above Hard grey Granite

Bottom hole bit gauge 6 1/2"

TOTAL DEPTH OF BORING 211 (Feet)
TOTAL DEPTH OF COMPLETED WELL 80 (Feet)

WELL OWNER
Name Franklin Barnes Family Trust (Barnes)
Mailing Address P.O. Box 1570
CITY Julian, Ca. 92036 STATE ZIP

WELL LOCATION
Address 5 XXXXXXXX Daley Flat Road
City Julian
County San Diego
APN Book 289 Page 180 Parcel 04
Township 13S Range 3E Section 12
Lat ___ DEG. ___ MIN. ___ SEC. N Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH


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 (✓)
XX NEW WELL
___ MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

USES (✓)
WATER SUPPLY
XX Domestic ___ Public
XX 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 78-80 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 80 (Ft.) & DATE MEASURED 4/6/2004
ESTIMATED YIELD 20 (GPM) & TEST TYPE air lift
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
May not be representative of a well's long-term yield.

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	CASING (S) TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	20	13"	X				Steel	8.249	.188	
0	80	8"	X				Steel	6.249	.188	
80	211	6.5"					open hole			

DEPTH FROM SURFACE Ft.	to Ft.	ANNULAR MATERIAL TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	XXXX			Type I-II

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 Acme Drilling Co. Inc. (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
748 S. Vinewood Street - Suite B - Escondido, Ca. 92029-1929
ADDRESS CITY STATE ZIP
Signed Robert Lundberg C-57 LICENSED WATER WELL CONTRACTOR
4/12/04 DATE SIGNED
526886 C-57 LICENSE NUMBER

DWR 188 REV. 05-03
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM.

D

ORIGINAL
File with DWR

Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 0903937

DWR USE ONLY - DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. 1 (this parcel)
Date Work Began 11/24/03, Ended 12/2/03
Local Permit Agency S.D. Co. Dept. of Environmental Health
Permit No. LWEL 15622 Permit Date 10/16/03-approved

GEOLOGIC LOG

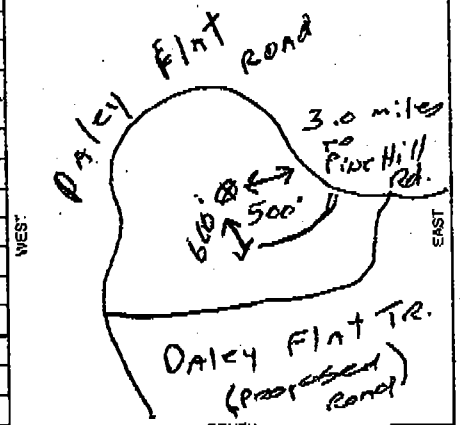
ORIENTATION (✓) XX VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD air hammer FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	11	Brown Decomposed Granite
11	16	Brown Decomposed Granite
16	48	Grey Decomposed Granite
48		Hard, salt & pepper Granite w/ seepage 1 GPM
48	140	Salt & pepper Granite
140	141	Small fracture
141	213	Salt & pepper Granite
213		FRacture
213	218	Salt & pepper Granite
218	219	Fracture
219	286	Salt & pepper Granite
286	290	Fractures
290	328	Salt & pepper Granite
328	329	Fracture
329	567	Salt & Pepper GRanite
567	568	Fracture w/ water- 50 GPM
568	591	Salt & pepper Granite
		Bottom hole bit gauge 6 1/4"

TOTAL DEPTH OF BORING 591 (Feet)
TOTAL DEPTH OF COMPLETED WELL 20 (Feet)

WELL OWNER
Name Genesee Properties, Inc.
Mailing Address 3550 General Atomics Court
San Diego, Ca. 92121-1194
CITY STATE ZIP

WELL LOCATION
Address Daley Flat Road
City Julian, Ca.
County San Diego
APN Book 289 Page 030 Parcel 07
Township 13S Range 3E Section 3
Lat ___ DEG. ___ MIN. ___ SEC. N Long ___ DEG ___ MIN. ___ SEC. W

LOCATION SKETCH
NORTH


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 (✓)
XXX NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)
WATER SUPPLY
XX Domestic ___ Public
XX 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 48 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 50' (Ft.) & DATE MEASURED 12/2/2003
ESTIMATED YIELD * 50 (GPM) & TEST TYPE air lift
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (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-STRUCTION	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	20	13"	X				Steel	8.249	.188	
0	591	6.250					Open hole			

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	XXXX			Type I-II

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 Acme Drilling Co. Inc. (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 748 S. Vinewood Street-Suite B- CITY Escondido, Ca. STATE 92029-1929 ZIP
Signed [signature] C-57 LICENSED WATER WELL CONTRACTOR
DATE SIGNED 12/3/03 C-57 LICENSE NUMBER 526886

OSP 03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM.

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 0943631

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Page ___ of ___
Owner's Well No. #4 Lot 10 WELL E
Date Work Began 11/12/10, Ended 11/15/10
Local Permit Agency San Diego County
Permit No. LWEL 20719 Permit Date 10/14/10

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Air Rotary FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	55	Brown D.G.
55	150	B&W Granite
150	160	Slightly Fractured B&W Granite Water: 10 GPM
160	170	B&W Granite
170	175	Slightly Fractured B&W Granite Water: 15 GPM Total
175	200	B&W Granite
200	260	Fractured B&W Granite Water: 80 GPM Total
260	285	B&W Granite
285	310	Fractured B&W Granite

TOTAL DEPTH OF BORING 310' (Feet)
TOTAL DEPTH OF COMPLETED WELL 310 (Feet)

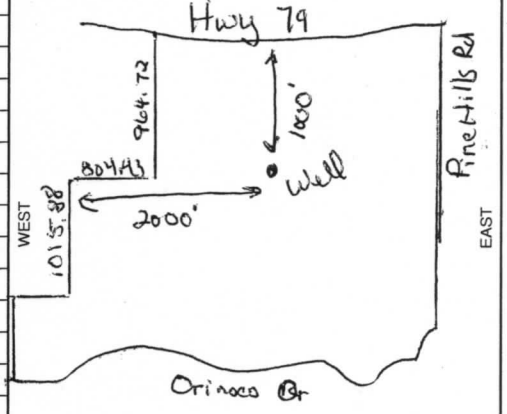
WELL OWNER

Name Genesee Properties, Inc.
Mailing Address P.O. Box 63.
CITY Berthoud, STATE CO ZIP 80513

WELL LOCATION

Address SW corner of Hwy 79 & Pine Hills Rd.
City Julian, CA 92036
County San Diego County
APN Book 289 Page 060 Parcel 34
Township 13S Range 3E Section 1
Lat 33 DEG. 04 MIN. 29 SEC. N
Long 116 DEG. 37 MIN. 35 SEC. W

LOCATION SKETCH



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 (✓)

✓ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
✓ 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 150 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 62 (Ft.) & DATE MEASURED 11/15/10
ESTIMATED YIELD * 80 (GPM) & TEST TYPE Air Lift
TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN ___ (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)
0	60	12	✓				Steel	8	.188	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	55	✓			
55	60		✓		

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 Stehly Brothers Drilling, Inc.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 13268 McNally Rd. CITY Valley Center, STATE CA ZIP 92082
Signed Paul Stehly
C-57 LICENSED WATER WELL CONTRACTOR
DATE SIGNED 11/30/10
C-57 LICENSE NUMBER 709686

DWR 188 REV. 05-03 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM OSP 03 78836

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page ___ of ___
Owner's Well No. #3 Lot 26 WELL F
No. 0943629
Date Work Began 11/9/10, Ended 11/10/10
Local Permit Agency San Diego County
Permit No. LWEL 20720 Permit Date 10/14/10

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

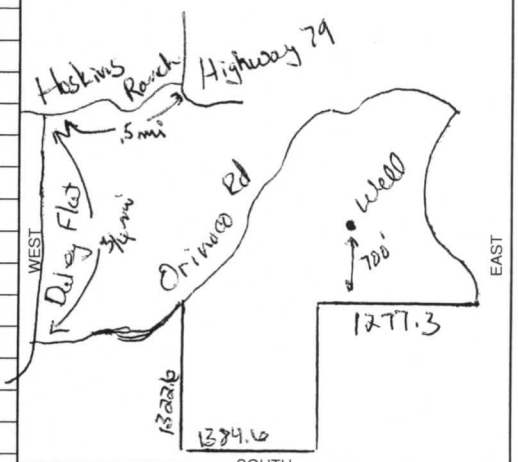
ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Air Rotary FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	32	Brown D.G.
32	34	Fractured B+W Granite
34	37	Brown D.G.
37	320	B+W Granite
320	355	B+W Granite Medium
355	365	Fractured B+W Granite Water: 10 GPM BAD ZONE
365	375	B+W Granite
375	407	Fractured B+W Granite Water: 100 GPM Total
407	410	B+W Granite

TOTAL DEPTH OF BORING 410' (Feet)
TOTAL DEPTH OF COMPLETED WELL 410' (Feet)

WELL OWNER
Name Genesse Properties, Inc.
Mailing Address P.O. Box 63
City Berthoud State CO. ZIP 80513

WELL LOCATION
Address Daley Flat Rd.
City Julian
County San Diego
APN Book 289 Page 062 Parcel 06
Township 13S Range 3E Section 1
Lat 33 DEG. 04 MIN. 10 SEC. N Long 116 DEG. 38 MIN. 05 SEC. W

LOCATION SKETCH


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 (✓)
✓ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)
WATER SUPPLY
✓ 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 355 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 210 (Ft.) & DATE MEASURED 11/10/10
ESTIMATED YIELD * 100 (GPM) & TEST TYPE Air lift
TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN ___ (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)
0	42	12	✓				Steel	8	.188	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	37	✓			
37	42		✓		

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 Stehly Brothers Drilling, Inc. (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 13268 McNally Rd. CITY Valley Center STATE CA ZIP 92082
Signed Paul Stehly C-57 LICENSED WATER WELL CONTRACTOR
DATE SIGNED 11/30/10
C-57 LICENSE NUMBER 709686

DWR 188 REV. 05-03 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM OSP 03 78836

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Page ___ of ___
Owner's Well No. #1 Lot 29 WELL G
No. 0943626
Date Work Began 10/21/10 Ended 10/29/10
Local Permit Agency County of San Diego
Permit No. LWEL 20723 Permit Date 10/14/10

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Air Rotary FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	76	Brown D.G. Medium Soft
76	103	B+W Granite
103	110	Slight Fracture B+W+Brown Granite
110	305	B+W Granite
305	310	Fractured B+W Granite Big Rocks Bad Zone Water! 9 GPM (Water tapers Off)
310	960	B+W Granite
960	974	Fractured B+W Granite
974	975	Fractured B+W Granite Water: 130 GPM Total

TOTAL DEPTH OF BORING 975' (Feet)
TOTAL DEPTH OF COMPLETED WELL 975' (Feet)

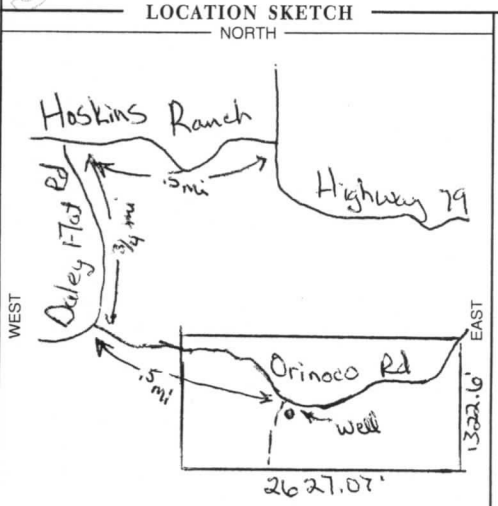
WELL OWNER

Name Genessee Properties, Inc.
Mailing Address P.O. Box 63
City Berthoud State Co. ZIP 80513

WELL LOCATION

Address Daley Flat Rd.
City Julian
County San Diego
APN Book 289 Page 062 Parcel 07
Township 13S Range 3E Section 2
Lat 33 DEG. 03 MIN. 59 SEC. N Long 116 DEG. 38 MIN. 37 SEC. W

LOCATION SKETCH



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 (✓)

✓ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
✓ 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 103 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 103 (Ft.) & DATE MEASURED 10/29/10
ESTIMATED YIELD * 130 (GPM) & TEST TYPE Air Lift
TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN ___ (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)
0	80	12	✓				Steel	8	.188	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	76	✓			
76	80		✓		

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 Stehly Brothers Drilling, Inc.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 13268 McNally Rd. CITY Valley Center STATE CA ZIP 92082
Signed Paul Stehly C-57 LICENSED WATER WELL CONTRACTOR
DATE SIGNED 11/30/10
C-57 LICENSE NUMBER 709686

DWR 188 REV. 05-02 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM OSP 03 78836

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 0943628

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Page ___ of ___
Owner's Well No. #2 Lot 30 WELL H
Date Work Began 11/4/10 Ended 11/5/10
Local Permit Agency San Diego County
Permit No. LWEL 20724 Permit Date 10/14/10

GEOLOGIC LOG

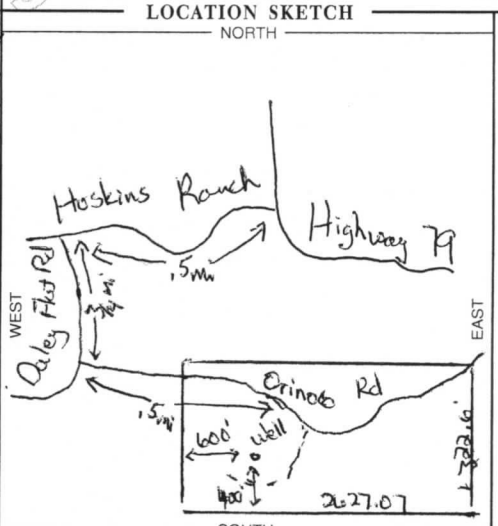
ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Air Rotary FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	42	Brown D.G.
42	56	B+W Granite
56	79	Brown D.G. Medium Soft
79	125	B+W Granite
125	135	Slight Fracture. B+W Granite Water: 20 GPM
135	225	B+W Granite
225	240	Slight Fracture B+W Granite Water: 40GPM Total
240	310	B+W Granite

TOTAL DEPTH OF BORING 310' (Feet)
TOTAL DEPTH OF COMPLETED WELL 310' (Feet)

WELL OWNER
Name Genessee Properties, Inc.
Mailing Address P.O. Box 63
City Berthoud State Co. ZIP 80513

WELL LOCATION
Address Daley Flat Rd.
City Julian
County San Diego
APN Book 289 Page 062 Parcel 07
Township 13S Range 3E Section 2
Lat 33 DEG. 03 MIN. 54 SEC. N Long 116 DEG. 38 MIN. 44 SEC. W

LOCATION SKETCH


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 (✓)
✓ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)
WATER SUPPLY
✓ 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 125 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 84 (Ft.) & DATE MEASURED 11/5/10
ESTIMATED YIELD * 40 (GPM) & TEST TYPE Air Lift
TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
** May not be representative of a well's long-term yield.*

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	CASING (S) TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	84	12	✓				Steel	8	.188	

DEPTH FROM SURFACE Ft.	to Ft.	ANNULAR MATERIAL TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	79	✓			
79	84		✓		

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 Stehly Brothers Drilling, Inc. (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 13268 McNally Rd. CITY Valley Center STATE CA ZIP 92082
Signed Paul Stehly C-57 LICENSED WATER WELL CONTRACTOR
DATE SIGNED 11/30/10
709686 C-57 LICENSE NUMBER

ORIGINAL
File with DWR

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 0943637

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Page ___ of ___
Owner's Well No. Well #5 Lot 31
Date Work Began 11/17/10, Ended 11/19/10
Local Permit Agency San Diego County
Permit No. LWEL 20751 Permit Date 12-7-10

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Air Rotary FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	28	Brown D.G.
28	34	Slightly Fractured Brown & Wht Granite
34	59	Brown D.G.
59	195	B&W Granite
195	205	Slight Fracture B&W Granite
205	235	B&W Granite
235	255	Slight Fracture B&W Granite Water: 5 GPM
255	280	B&W Granite
280	295	Slight Fracture B&W Granite Water: 10 GPM Total
295	400	B&W Granite
400	435	B&W Granite Loose
435	460	Fractured B&W Granite Water: 60 GPM Total
460	510	B&W Granite

TOTAL DEPTH OF BORING 510 (Feet)
TOTAL DEPTH OF COMPLETED WELL 510 (Feet)

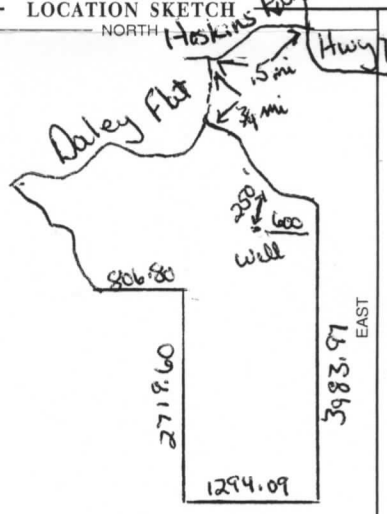
WELL OWNER

Name Genesse Properties, Inc
Mailing Address P.O. Box 63
Berthoud Co. 80513
CITY STATE ZIP

WELL LOCATION

Address Daley Flat Rd. Lot 31
City Julian
County San Diego
APN Book 289 Page 470 Parcel 38
Township 13S Range 3E Section 2
Lat 33 DEG. 04 MIN. 00 SEC. N
Long 116 DEG. 38 MIN. 59 SEC. W

LOCATION SKETCH



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 (✓)

✓ NEW WELL
___ MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)
WATER SUPPLY
✓ 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 235 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 131 (Ft.) & DATE MEASURED 11/19/10
ESTIMATED YIELD * 60 (GPM) & TEST TYPE Air Lift
TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN ___ (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)
0	63	12	✓				Steel	8	.188	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	57	✓			
57	63		✓		

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 Stehly Brothers Drilling, Inc.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

13268 McNally Rd. Valley Center, CA 92082
ADDRESS CITY STATE ZIP

Signed Paul Stehly
C-57 LICENSED WATER WELL CONTRACTOR

11/30/10
DATE SIGNED

709686
C-57 LICENSE NUMBER

DWR 188 REV. 05-03 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

OSP 03 78836

WELL J

STEHLY BROTHERS DRILLING, INC.

License: C-57 #709686
13268 McNally Road
Valley Center, California 92082
760-742-3668 / 760-742-4564 Fax

11/30/10

TRS Consultants
ATTN: Sheryll Givens
438 Camino Del Rio South, #223
San Diego, CA 92108
619-299-2525

Well Site: Hoskings Ranch Project Well#6 Lot 32
APN: 289-060-34 Lot 32
SW Corner of Hwy 79 & Pine Hills Rd.
Julian, CA 92036
Permit #LWEL

Well #6 Lot 32 Drilled for Hoskings Ranch Project at South West Corner of Hwy 79 and Pine Hills Road in Julian. Started Drilling 11/23/10 and Finished Well 11/29/10. APN: 289-060-34 Permit #LWEL

0-28	Brown D.G.
28-34	Slightly Fractured B&W & Brown Granite
34-100	B&W Granite
100-110	Slight Fracture B&W Granite Water: 3 GPM
110-810	B&W Granite
810-860	B&W Granite Loose
860-1010	B&W Granite

Comments:

Total Well Depth:	1010'
Hole Diameter:	6 ½" hole
Casing:	42' of 8 5/8" steel casing
Surface Seal:	Cement
Water:	3 GPM
Static Water Level:	96' 11/30/10

4 Hour Air Lift Test

1st Hour	10 GPM
2nd Hour	4 GPM
3rd Hour	3 GPM
4th Hour	3 GPM

****CAUTION!! Stehly Brothers Drilling, Inc. recommends installing liner and gravel pack in Well#6 Lot 32 before installing pump system.****

Appendix B.
Rainfall Data

1971	0.05	0.20	0.27	2.88	0.42	7.09	0.10	0.37	0.00	0.82	0.70	0.47
1972	0.01	0.07	0.61	2.23	5.26	3.97	4.02	5.76	8.52	0.82	0.34	0.04
1973	0.00	0.15	0.00	0.13	3.47	0.37	8.57	0.54	2.57	0.97	0.17	0.08
1974	1.34	0.24	0.73	3.88	0.96	2.42	0.65	3.43	6.51	5.24	0.48	0.33
1975	0.00	0.00	1.20	0.47	2.60	1.45	0.00	8.07	2.86	2.55	0.55	0.16
1976	0.16	0.00	4.51	0.76	1.03	1.80	3.82	0.99	2.87	0.72	3.25	0.07
1977	0.00	3.25	0.00	0.67	0.57	4.98	13.77	9.40	11.67	2.83	0.79	0.00
1978	0.00	0.00	1.17	0.10	5.19	5.11	6.76	3.07	9.06	0.25	0.52	0.00
1979	1.06	0.62	0.14	2.17	0.25	0.75	15.88	18.75	6.17	2.79	2.13	0.00
1980	0.00	0.00	0.00	0.47	0.00	2.01	1.73	4.43	5.75	1.53	0.71	0.00
1981	0.00	0.62	0.27	1.13	1.64	0.75	8.45	4.39	9.19	1.43	0.74	0.10
1982	0.12	0.43	0.54	0.28	4.15	0.00	3.89	6.17	12.31	3.04	0.45	0.00
1983	0.00	1.45	1.16	0.66	4.15	4.95	0.28	0.06	0.06	0.00	0.12	0.03
1984	3.64	0.00	0.00	0.43	2.07	7.39	1.70	2.02	4.18	1.31	0.09	0.17
1985	0.60	0.00	0.17	0.00	9.75	1.54	1.51	4.72	6.65	0.40	0.03	0.00
1986	1.36	0.14	1.73	1.08	0.82	1.68	3.18	1.62	5.00	0.82	0.20	0.00
1987	0.00	0.00	0.00	4.59	4.13	3.32	4.81	1.77	0.00	5.13	0.63	0.00
1988	0.00	0.77	0.14	0.00	1.85	3.55	1.31	2.42	2.85	0.22	0.51	0.00
1989	0.00	0.09	1.05	0.60	0.14	0.40	5.03	1.48	1.62	1.31	0.82	0.43
1990	0.03	0.77	0.09	0.17	1.51	2.04	1.99	5.74	12.45	2.48	0.03	0.00
1991	1.66	0.29	0.43	1.37	0.65	3.61	3.03	4.98	6.93	0.51	0.14	0.00
1992	0.14	1.52	0.00	2.02	0.07	6.14	18.92	8.38	2.46	0.00	0.43	1.01
1993	0.00	0.00	0.00	0.29	2.82	2.31	2.17	5.20	3.54	3.11	0.14	0.00
1994	0.00	0.79	0.00	0.22	2.02	1.66	13.21	5.42	9.39	2.09	1.73	0.65
1995	0.14	0.00	0.14	0.00	0.22	0.22	3.03	4.40	3.75	1.03	0.09	0.00
1996	0.09	0.14	0.63	1.39	2.13	3.13	4.58	0.00	0.00	0.20	0.03	0.12
1997	0.00	0.14	2.59	0.00	0.00	3.10	4.38	12.85	5.26	3.39	2.90	0.20
1998	0.00	0.03	0.03	0.74	0.00	4.83	0.00	1.03	0.74	2.70	0.09	0.79
1999	0.66	0.06	1.39	0.00	0.09	0.20	1.34	6.31	2.48	1.65	0.03	0.03
2000	0.00	0.60	0.20	1.05	0.74	0.09	2.42	3.36	1.22	2.64	0.00	0.00
2001	0.14	0.05	0.37	0.18	1.54	2.59	0.69	0.28	2.92	0.64	0.00	0.00
2002	0.05	0.00	1.08	0.05	4.80	5.93	0.41	10.18	5.69	4.14	2.17	0.00
2003	0.28	0.14	0.63	0.00	1.86	4.84	0.95	9.95	0.86	1.82	0.14	0.00
2004	0.00	0.14	0.00	9.64	2.50	6.92	10.74	10.02	2.90	1.68	0.40	0.05

Appendix C.
Groundwater Storage

Groundwater in Storage
3,185-Acre Hoskings Study Area
Maximum Buildout assuming GP Update

Maximum storage	1341.5	acre-feet
One half	670.8	acre-feet
Minimum calculated	807.9	acre-feet

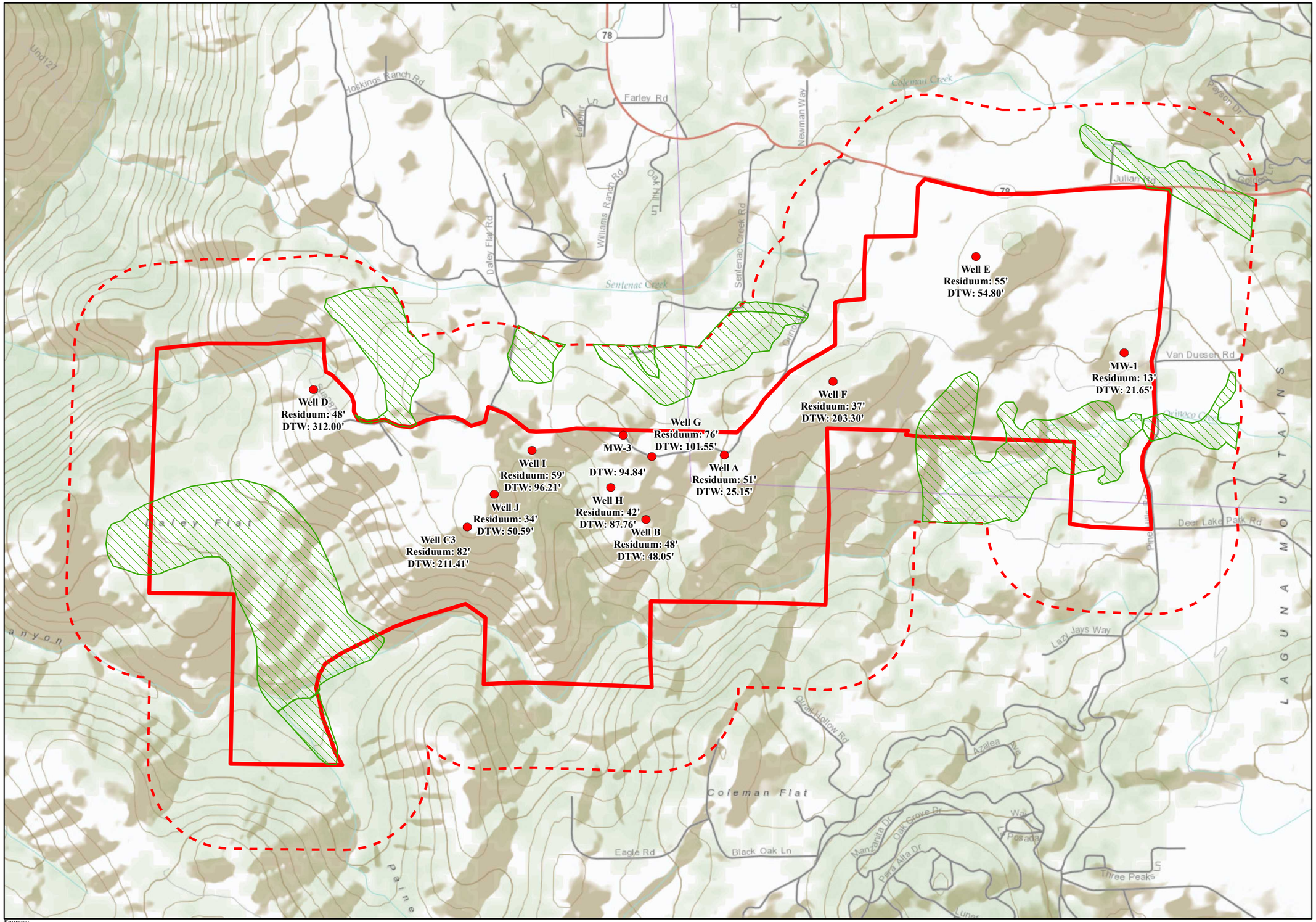
Rock Type	Saturated b	Area	S	Total in storage
Fractured Rock (Flat)	500	1705	0.001	852.5
Fractured Rock (Slopes)	500	1480	0.0001	74.0
DG	20	415	0.05	415.0
Alluvium	10	0	0.05	0.0
			Total Groundwater in Storage	1341.5

Year	Beginning Storage (af)	Total Rainfall (inches)	Recharge Flatter Elevations (inches/year)	Recharge Mid-Slope Elevations (inches/year)	Recharge Steeper Elevations (inches/year)	Recharge Flatter Elevations (afy)	Recharge Mid-Slope Elevations (afy)	Recharge Steeper Elevations (afy)	Total Recharge (afy)	Watershed Extraction (afy)	Cattle and Orchard Usage (afy)	Project Extraction (afy)	Ending Storage (af)	Ending Storage (af)	Percent Max Storage
1971-1972	1341.5	13.37	0	0	1.32	0.0	0.0	162.8	162.8	31.5	89.9	12.0	1,341.5	1,371	102%
1972-1973	1341.5	31.65	5.45	4.92	3	231.6	492.0	370.0	1,093.6	31.5	89.9	12.0	1,341.5	2,302	172%
1973-1974	1341.5	17.02	0.66	1.15	2.51	28.1	115.0	309.6	452.6	31.5	89.9	12.0	1,341.5	1,661	124%
1974-1975	1341.5	26.21	0	0	0	0.0	0.0	0.0	0.0	31.5	89.9	12.0	1,208.1	1,208	90%
1975-1976	1208.1	19.91	0	0	1.14	0.0	0.0	140.6	140.6	31.5	89.9	12.0	1,215.3	1,215	91%
1976-1977	1215.3	19.98	0	0	0	0.0	0.0	0.0	0.0	31.5	89.9	12.0	1,081.9	1,082	81%
1977-1978	1081.9	47.93	17.89	16.75	12.8	760.3	1675.0	1578.7	4,014.0	31.5	89.9	12.0	1,341.5	4,962	370%
1978-1979	1341.5	31.23	6.75	6.24	4.6	286.9	624.0	567.3	1,478.2	31.5	89.9	12.0	1,341.5	2,686	200%
1979-1980	1341.5	50.71	20.63	19.68	17.08	876.8	1968.0	2106.5	4,951.3	31.5	89.9	12.0	1,341.5	6,159	459%
1980-1981	1341.5	16.63	0	0	0	0.0	0.0	0.0	0.0	31.5	89.9	12.0	1,208.1	1,208	90%
1981-1982	1208.1	28.71	4.87	4.68	4.01	207.0	468.0	494.6	1,169.5	31.5	89.9	12.0	1,341.5	2,244	167%
1982-1983	1341.5	31.38	5.33	5.04	3.92	226.5	504.0	483.5	1,214.0	31.5	89.9	12.0	1,341.5	2,422	181%
1983-1984	1341.5	12.92	0	0	0.32	0.0	0.0	39.5	39.5	31.5	89.9	12.0	1,247.6	1,248	93%
1984-1985	1247.6	23.00	0	0.12	1.56	0.0	12.0	192.4	204.4	31.5	89.9	12.0	1,318.6	1,319	98%
1985-1986	1318.6	25.37	2.86	2.67	2.6	121.6	267.0	320.7	709.2	31.5	89.9	12.0	1,341.5	1,894	141%
1986-1987	1341.5	17.63	0	0	0	0.0	0.0	0.0	0.0	31.5	89.9	12.0	1,208.1	1,208	90%
1987-1988	1208.1	24.38	0.12	0.48	0.88	5.1	48.0	108.5	161.6	31.5	89.9	12.0	1,236.3	1,236	92%
1988-1989	1236.3	13.62	0	0	0	0.0	0.0	0.0	0.0	31.5	89.9	12.0	1,102.9	1,103	82%
1989-1990	1102.9	12.97	0	0	0	0.0	0.0	0.0	0.0	31.5	89.9	12.0	969.5	970	72%
1990-1991	969.5	27.30	4.32	4.23	3.4	183.6	423.0	419.3	1,025.9	31.5	89.9	12.0	1,341.5	1,862	139%
1991-1992	1341.5	23.60	0.84	0.75	0.1	35.7	75.0	12.3	123.0	31.5	89.9	12.0	1,331.1	1,331	99%
1992-1993	1331.1	41.09	16.77	15.91	12.87	712.7	1591.0	1587.3	3,891.0	31.5	89.9	12.0	1,341.5	5,089	379%
1993-1994	1341.5	19.58	0	0	0	0.0	0.0	0.0	0.0	31.5	89.9	12.0	1,208.1	1,208	90%
1994-1995	1208.1	37.18	10.22	9.84	8.56	434.4	984.0	1055.7	2,474.1	31.5	89.9	12.0	1,341.5	3,549	265%
1995-1996	1341.5	13.02	0	0	0	0.0	0.0	0.0	0.0	31.5	89.9	12.0	1,208.1	1,208	90%
1996-1997	1208.1	12.44	0	0	0.05	0.0	0.0	6.2	6.2	31.5	89.9	12.0	1,080.9	1,081	81%
1997-1998	1080.9	34.81	6.55	6.24	5.18	278.4	624.0	638.9	1,541.2	31.5	89.9	12.0	1,341.5	2,489	186%
1998-1999	1341.5	10.98	0	0	0	0.0	0.0	0.0	0.0	31.5	89.9	12.0	1,208.1	1,208	90%
1999-2000	1208.1	14.24	0	0	0	0.0	0.0	0.0	0.0	31.5	89.9	12.0	1,074.7	1,075	80%
2000-2001	1074.7	12.32	0	0	0	0.0	0.0	0.0	0.0	31.5	89.9	12.0	941.3	941	70%
2001-2002	941.3	9.40	0	0	0	0.0	0.0	0.0	0.0	31.5	89.9	12.0	807.9	808	60%
2002-2003	807.9	34.50	5.3	4.98	4.48	225.3	498.0	552.5	1,275.8	31.5	89.9	12.0	1,341.5	1,950	145%
2003-2004	1341.5	21.47	2.68	2.86	3.08	113.9	286.0	379.9	779.8	31.5	89.9	12.0	1,341.5	1,988	148%
2004-2005	1341.5	44.99	15.45	14.25	11.22	656.6	1425.0	1383.8	3,465.4	31.5	89.9	12.0	1,341.5	4,674	348%
	Mean	**24.2**	**3.7**	**3.6**	**3.1**	**158.4**	**355.3**	**379.7**	**893.3**	**31.5**	**89.9**	**12.0**		**893.3**	

Groundwater in Storage
3,185-Acre Hoskings Study Area
Maximum Buildout assuming GP Update

Rock Type	Saturated b	Area	S	Total in storage
Fractured Rock (Flat)	500	1705	0.001	852.5
Fractured Rock (Slopes)	500	1480	0.0001	74.0
Residuum	20	415	0.05	415.0
Alluvium	10	0	0.05	0.0
			Total Groundwater in Storage	1341.5

Recharge Mid-Slope Elevations (inches/year)	Recharge Steeper Elevations (inches/year)	Recharge Flatter Elevations (afy)	Recharge Mid-Slope Elevations (afy)	Recharge Steeper Elevations (afy)	Total Recharge (afy)	Watershed Extraction (afy)	Cattle and Orchard Usage (afy)	Project Extraction (afy)	Ending Storage (af)	Ending Storage (af)	Percent Max Storage
0	1.32	0.0	0.0	162.8	162.8	31.5	89.9	17.5	1,341.5	1,365	102%
4.92	3	231.6	492.0	370.0	1,093.6	31.5	89.9	17.5	1,341.5	2,296	171%
1.15	2.51	28.1	115.0	309.6	452.6	31.5	89.9	17.5	1,341.5	1,655	123%
0	0	0.0	0.0	0.0	0.0	31.5	89.9	17.5	1,202.6	1,203	90%
0	1.14	0.0	0.0	140.6	140.6	31.5	89.9	17.5	1,204.3	1,204	90%
0	0	0.0	0.0	0.0	0.0	31.5	89.9	17.5	1,065.4	1,065	79%
16.75	12.8	760.3	1675.0	1578.7	4,014.0	31.5	89.9	17.5	1,341.5	4,940	368%
6.24	4.6	286.9	624.0	567.3	1,478.2	31.5	89.9	17.5	1,341.5	2,681	200%
19.68	17.08	876.8	1968.0	2106.5	4,951.3	31.5	89.9	17.5	1,341.5	6,154	459%
0	0	0.0	0.0	0.0	0.0	31.5	89.9	17.5	1,202.6	1,203	90%
4.68	4.01	207.0	468.0	494.6	1,169.5	31.5	89.9	17.5	1,341.5	2,233	166%
5.04	3.92	226.5	504.0	483.5	1,214.0	31.5	89.9	17.5	1,341.5	2,417	180%
0	0.32	0.0	0.0	39.5	39.5	31.5	89.9	17.5	1,242.1	1,242	93%
0.12	1.56	0.0	12.0	192.4	204.4	31.5	89.9	17.5	1,307.6	1,308	97%
2.67	2.6	121.6	267.0	320.7	709.2	31.5	89.9	17.5	1,341.5	1,878	140%
0	0	0.0	0.0	0.0	0.0	31.5	89.9	17.5	1,202.6	1,203	90%
0.48	0.88	5.1	48.0	108.5	161.6	31.5	89.9	17.5	1,225.3	1,225	91%
0	0	0.0	0.0	0.0	0.0	31.5	89.9	17.5	1,086.4	1,086	81%
0	0	0.0	0.0	0.0	0.0	31.5	89.9	17.5	947.5	948	71%
4.23	3.4	183.6	423.0	419.3	1,025.9	31.5	89.9	17.5	1,341.5	1,835	137%
0.75	0.1	35.7	75.0	12.3	123.0	31.5	89.9	17.5	1,325.6	1,326	99%
15.91	12.87	712.7	1591.0	1587.3	3,891.0	31.5	89.9	17.5	1,341.5	5,078	379%
0	0	0.0	0.0	0.0	0.0	31.5	89.9	17.5	1,202.6	1,203	90%
9.84	8.56	434.4	984.0	1055.7	2,474.1	31.5	89.9	17.5	1,341.5	3,538	264%
0	0	0.0	0.0	0.0	0.0	31.5	89.9	17.5	1,202.6	1,203	90%
0	0.05	0.0	0.0	6.2	6.2	31.5	89.9	17.5	1,069.9	1,070	80%
6.24	5.18	278.4	624.0	638.9	1,541.2	31.5	89.9	17.5	1,341.5	2,472	184%
0	0	0.0	0.0	0.0	0.0	31.5	89.9	17.5	1,202.6	1,203	90%
0	0	0.0	0.0	0.0	0.0	31.5	89.9	17.5	1,063.7	1,064	79%
0	0	0.0	0.0	0.0	0.0	31.5	89.9	17.5	924.8	925	69%
0	0	0.0	0.0	0.0	0.0	31.5	89.9	17.5	785.9	786	59%
4.98	4.48	225.3	498.0	552.5	1,275.8	31.5	89.9	17.5	1,341.5	1,923	143%
2.86	3.08	113.9	286.0	379.9	779.8	31.5	89.9	17.5	1,341.5	1,982	148%
14.25	11.22	656.6	1425.0	1383.8	3,465.4	31.5	89.9	17.5	1,341.5	4,668	348%
3.6	**3.1**	**158.4**	**355.3**	**379.7**	**893.3**	**31.5**	**89.9**	**17.5**		**893.3**	



Legend

- Onsite Wells
- Saturated Residuum
- Project Boundary
- 1/4 Mile Boundary

N
W E
S

Appendix C - Figure 1
Saturated Residuum Within the Study Area
Hoskings Ranch, Julian, San Diego, California
April 9, 2012
AECOM
Project No. 60144610

Sources:
USGS, FAO, NPS, EPA, ESRI, DeLorme, TANA, other suppliers
ESRI, i-cubed, USDA FSA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGP
Copyright© 2010 ESRI, DeLorme, AND, Tele Atlas, UNEP-WCMC

0 0.125 0.25 0.5 0.75 1 Miles
0 500 1,000 2,000 3,000 4,000 5,000 6,000 Feet

Appendix D.
Recharge2 Output

Hoskings Ranch Recharge 2 Results
Flatter Slopes

Soil Moisture Capacity =	5.5
Calculated Average Recharge =	3.73
Assumed maximum runoff =	20.00 Percent.
Calculated average runoff =	8.78 Percent.

Year	Total Rainfall	Calculated Runoff	Calculated Recharge
1971	13.37	0.76	0
1972	31.65	4.62	5.45
1973	17.02	1.24	0.66
1974	26.21	1.16	0
1975	19.91	1.3	0
1976	19.98	0.33	0
1977	47.93	7.09	17.89
1978	31.23	4.92	6.75
1979	50.71	6.94	20.63
1980	16.63	1.12	0
1981	28.71	3.72	4.87
1982	31.38	3.98	5.33
1983	12.92	0.82	0
1984	23	2	0
1985	25.37	3.8	2.86
1986	17.63	0.47	0
1987	24.38	1.72	0.12
1988	13.62	0.47	0
1989	12.97	0.61	0
1990	27.3	3	4.32
1991	23.6	2.61	0.84
1992	41.09	5.87	16.77
1993	19.58	1.39	0
1994	37.18	4.57	10.22
1995	13.02	0.92	0
1996	12.44	0.72	0
1997	34.81	4.39	6.55
1998	10.98	0.51	0
1999	14.24	0.82	0
2000	12.32	0.25	0
2001	9.4	0.09	0
2002	34.5	4.81	5.3
2003	21.47	2.1	2.68
2004	44.99	7.05	15.45

Hoskings Ranch Recharge 2 Results
Mid Slopes

Soil Moisture Capacity =	4.8
Calculated Average Recharge =	3.55
Assumed maximum runoff =	25.00 Percent.
Calculated average runoff =	11.15 Percent.

Year	Total Rainfall	Calculated Runoff	Calculated Recharge
1971	13.37	0.94	0
1972	31.65	5.87	4.92
1973	17.02	1.53	1.15
1974	26.21	1.48	0
1975	19.91	1.67	0
1976	19.98	0.47	0
1977	47.93	9	16.75
1978	31.23	6.14	6.24
1979	50.71	8.65	19.68
1980	16.63	1.51	0
1981	28.71	4.64	4.68
1982	31.38	5.14	5.04
1983	12.92	1.17	0
1984	23	2.5	0.12
1985	25.37	4.7	2.67
1986	17.63	0.6	0
1987	24.38	2.07	0.48
1988	13.62	0.59	0
1989	12.97	0.83	0
1990	27.3	3.85	4.23
1991	23.6	3.41	0.75
1992	41.09	7.48	15.91
1993	19.58	1.68	0
1994	37.18	5.69	9.84
1995	13.02	1.21	0
1996	12.44	0.94	0
1997	34.81	5.54	6.24
1998	10.98	0.63	0
1999	14.24	1.04	0
2000	12.32	0.35	0
2001	9.4	0.12	0
2002	34.5	5.91	4.98
2003	21.47	2.64	2.86
2004	44.99	9.03	14.25

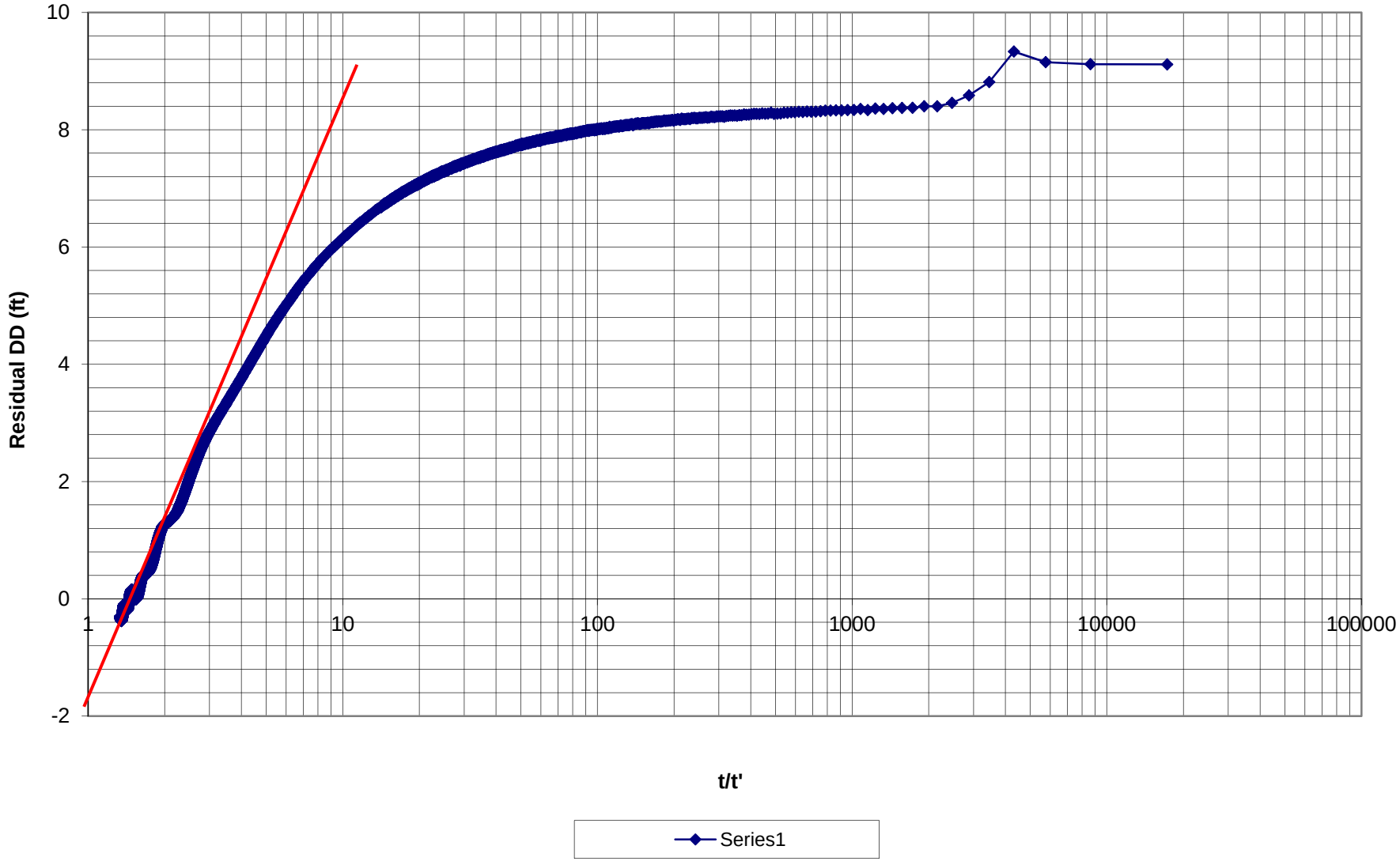
Hoskings Ranch Recharge 2 Results
Steeper Slopes

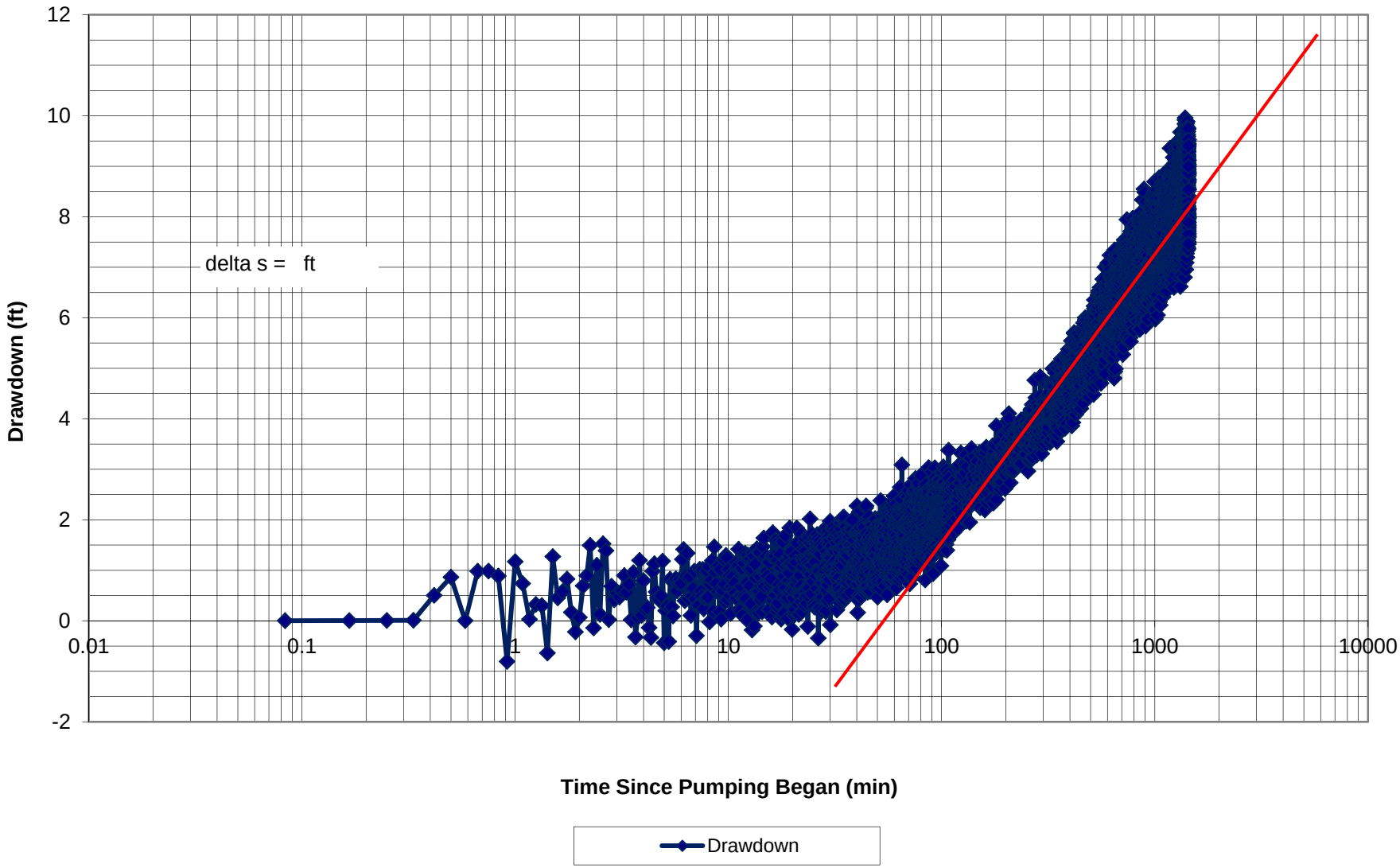
Soil Moisture Capacity = 2.8
Calculated Average Recharge = 3.08
Assumed maximum runoff = 40.00 Percent.
Calculated average runoff = 18.50 Percent.

Year	Total Rainfall	Calculated Runoff	Calculated Recharge
1971	13.37	1.48	1.32
1972	31.65	9.84	3
1973	17.02	2.33	2.51
1974	26.21	2.63	0
1975	19.91	2.45	1.14
1976	19.98	0.98	0
1977	47.93	15.14	12.8
1978	31.23	9.79	4.6
1979	50.71	13.51	17.08
1980	16.63	2.72	0
1981	28.71	7.41	4.01
1982	31.38	8.81	3.92
1983	12.92	2.1	0.32
1984	23	3.17	1.56
1985	25.37	6.98	2.6
1986	17.63	1.16	0
1987	24.38	3.74	0.88
1988	13.62	1.18	0
1989	12.97	1.4	0
1990	27.3	6.86	3.4
1991	23.6	6.1	0.1
1992	41.09	12.64	12.87
1993	19.58	3.04	0
1994	37.18	9.09	8.56
1995	13.02	2.17	0
1996	12.44	1.76	0.05
1997	34.81	9.02	5.18
1998	10.98	1.02	0
1999	14.24	1.77	0
2000	12.32	0.78	0
2001	9.4	0.29	0
2002	34.5	8.78	4.48
2003	21.47	4.41	3.08
2004	44.99	14.15	11.22

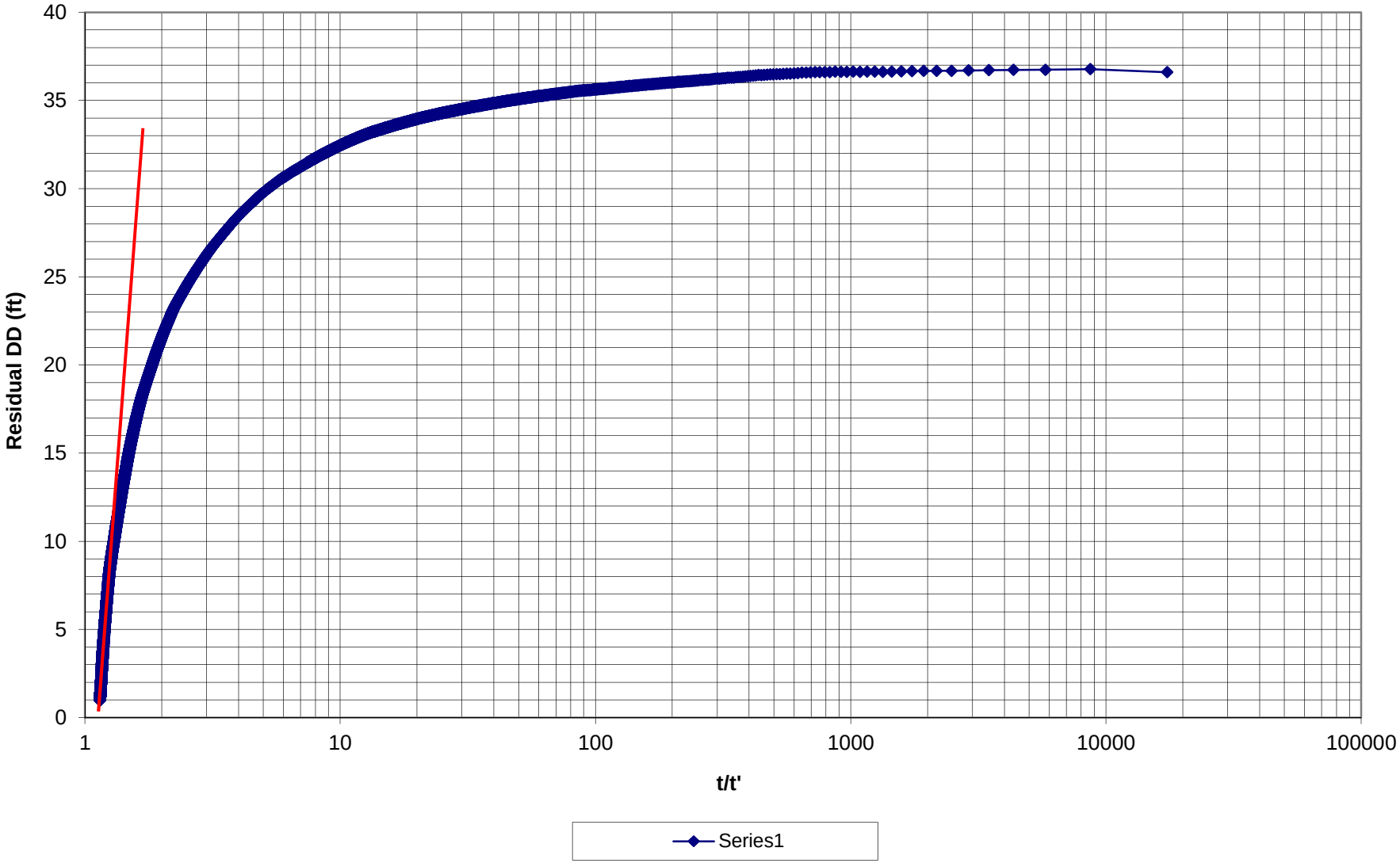
Appendix E.
Drawdown and Recovery Graphs

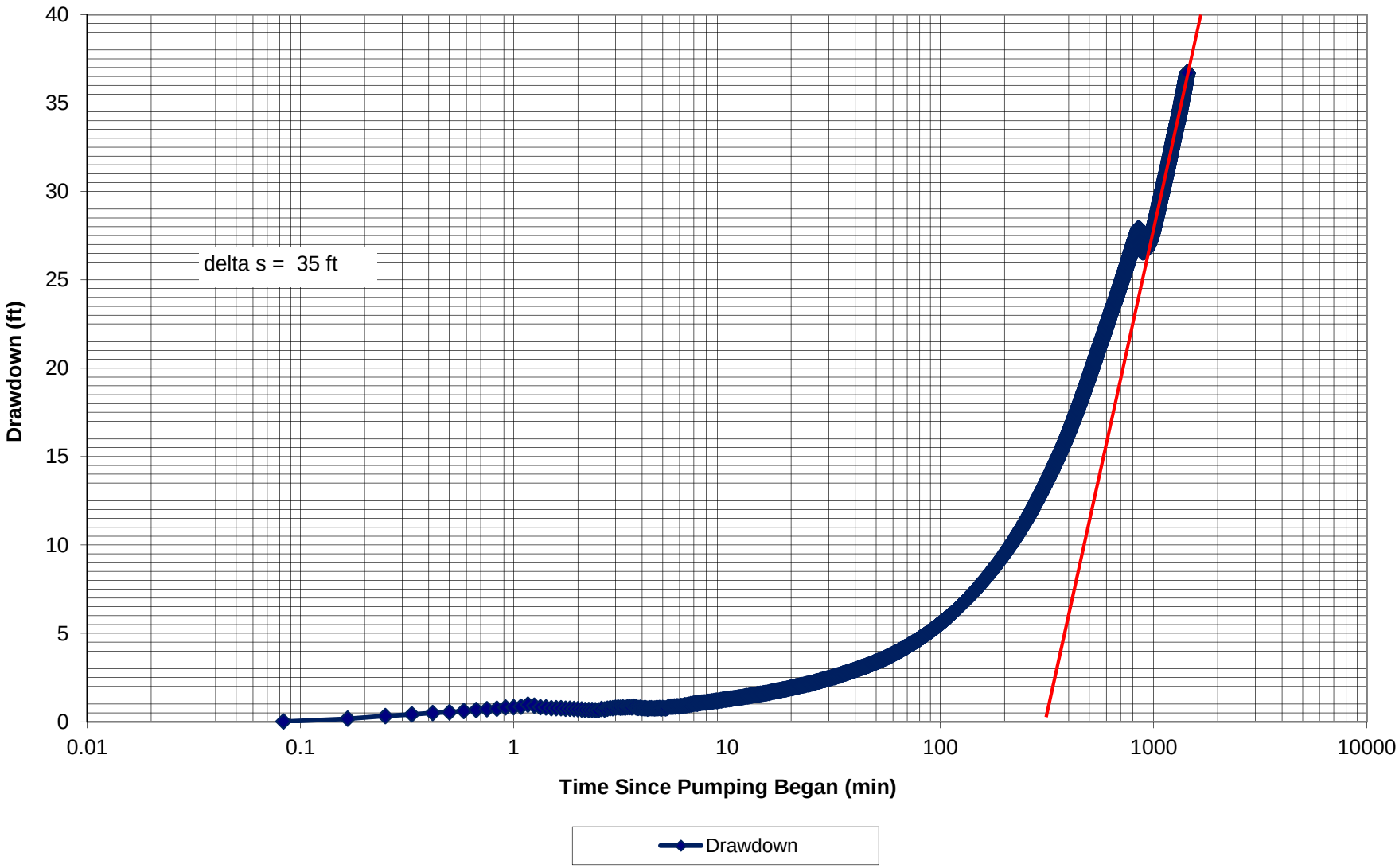
Hoskings MW-1 Pump Test - Corrected Recovery



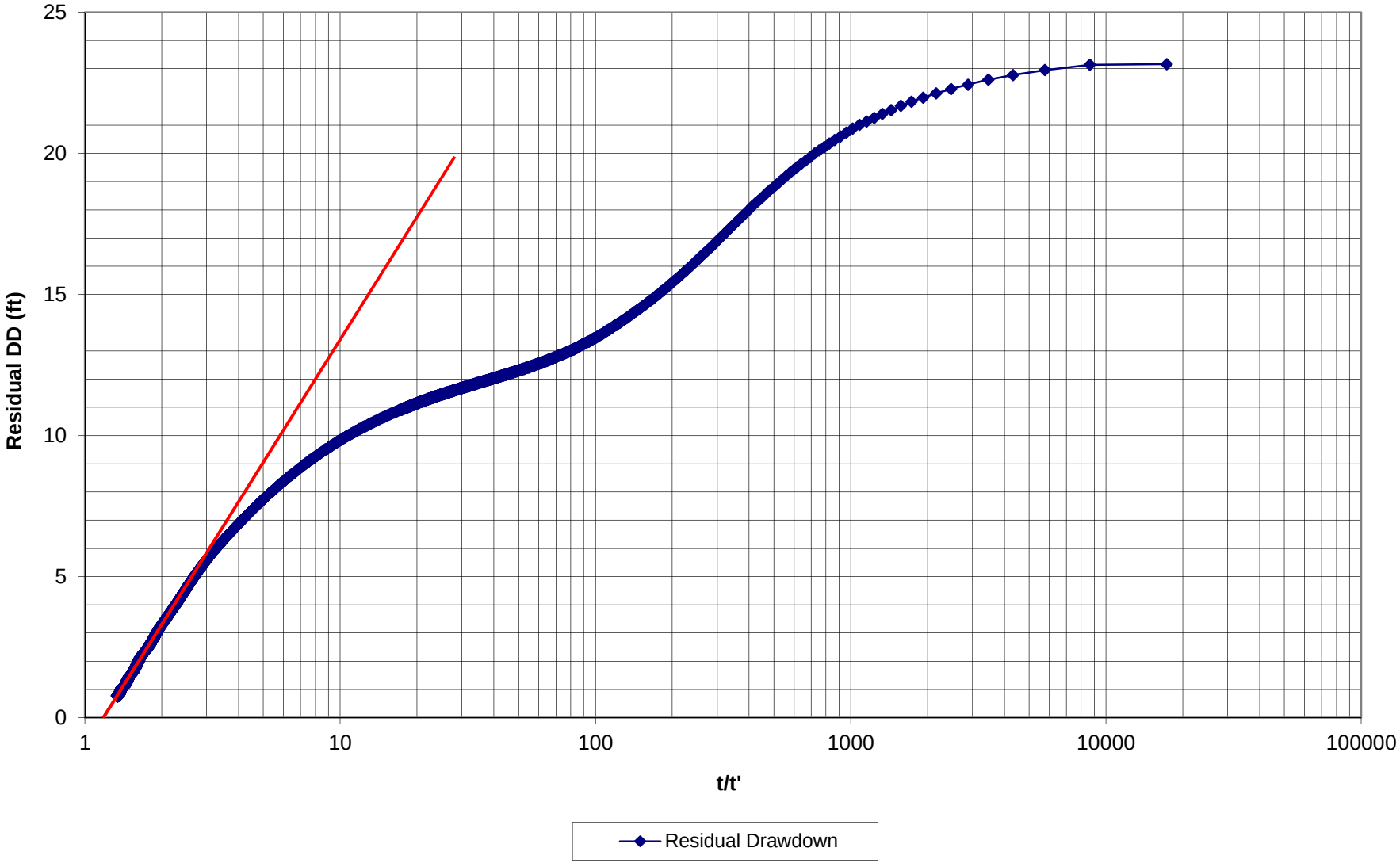

Hoskings MW-1 Pump Test - Corrected Drawdown
12
10
8
6
4
2
0
-2
Drawdown (ft)
delta s = ft
0.01
0.1
1
10
100
1000
10000
Time Since Pumping Began (min)
Drawdown

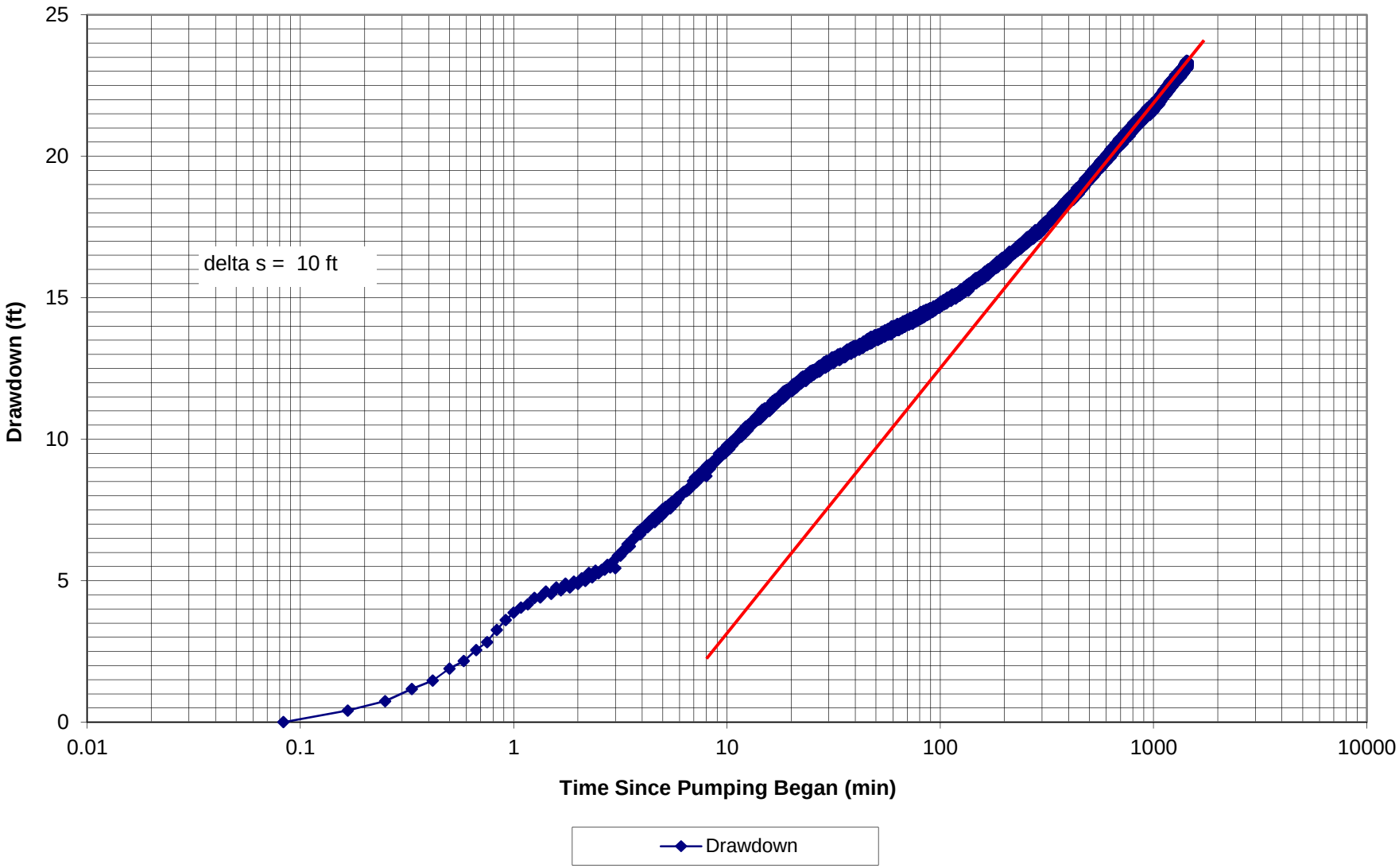
Hoskings Well J Pump Test - Corrected Recovery

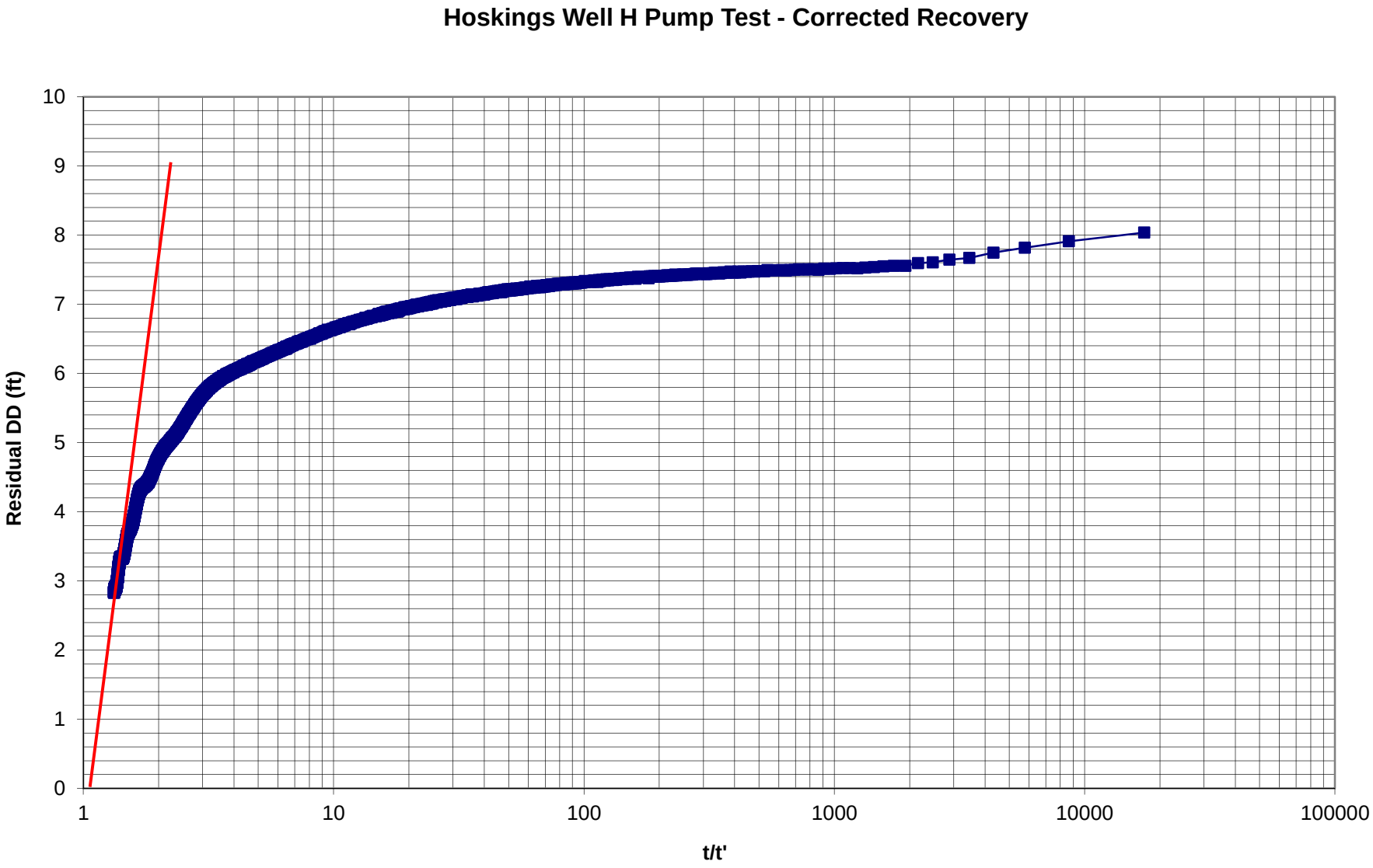


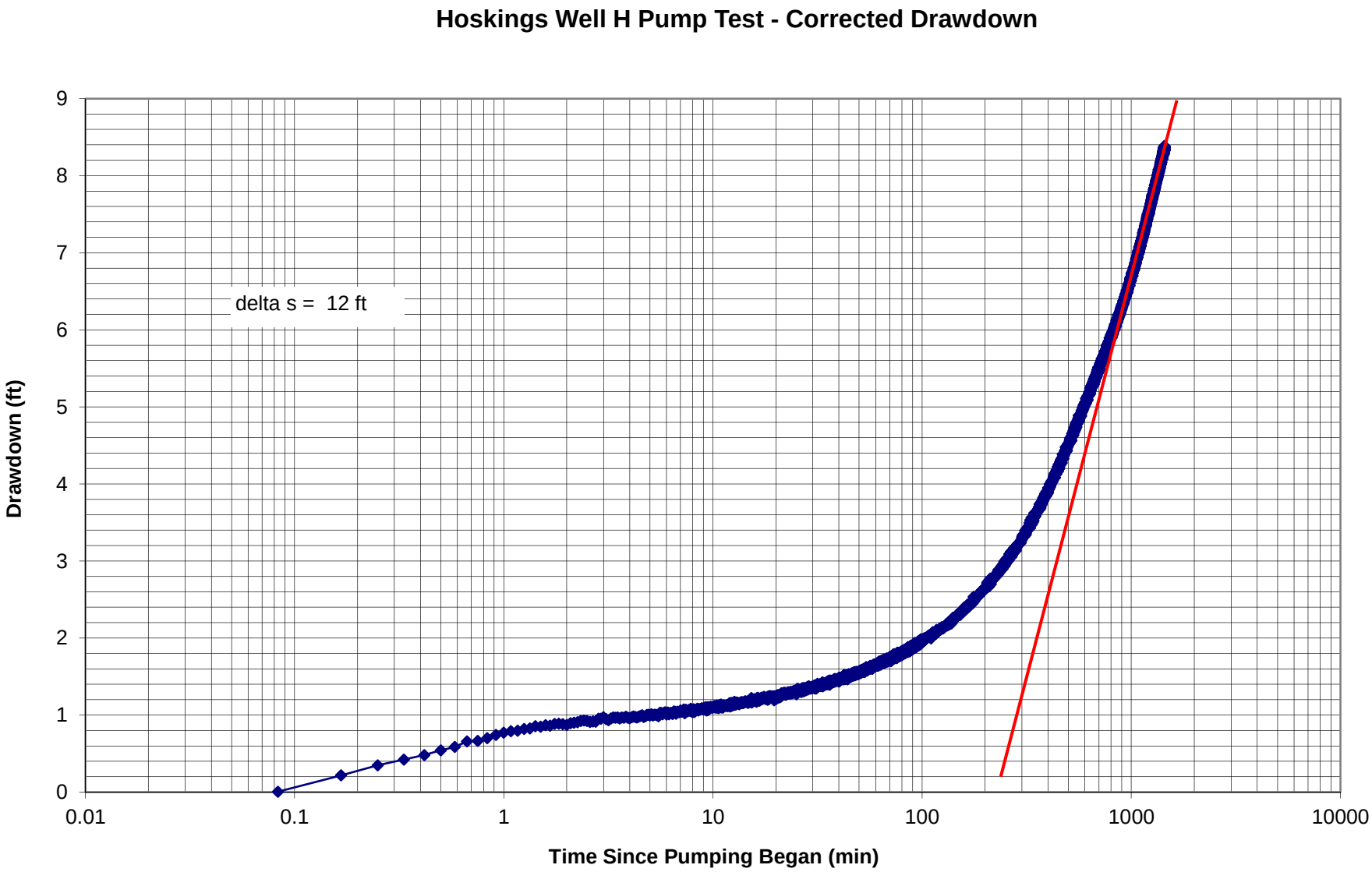

Hoskings Well J Pump Test - Corrected Drawdown
delta s = 35 ft
Drawdown (ft)
40
35
30
25
20
15
10
5
0
0.01
0.1
1
10
100
1000
10000
Time Since Pumping Began (min)
Drawdown

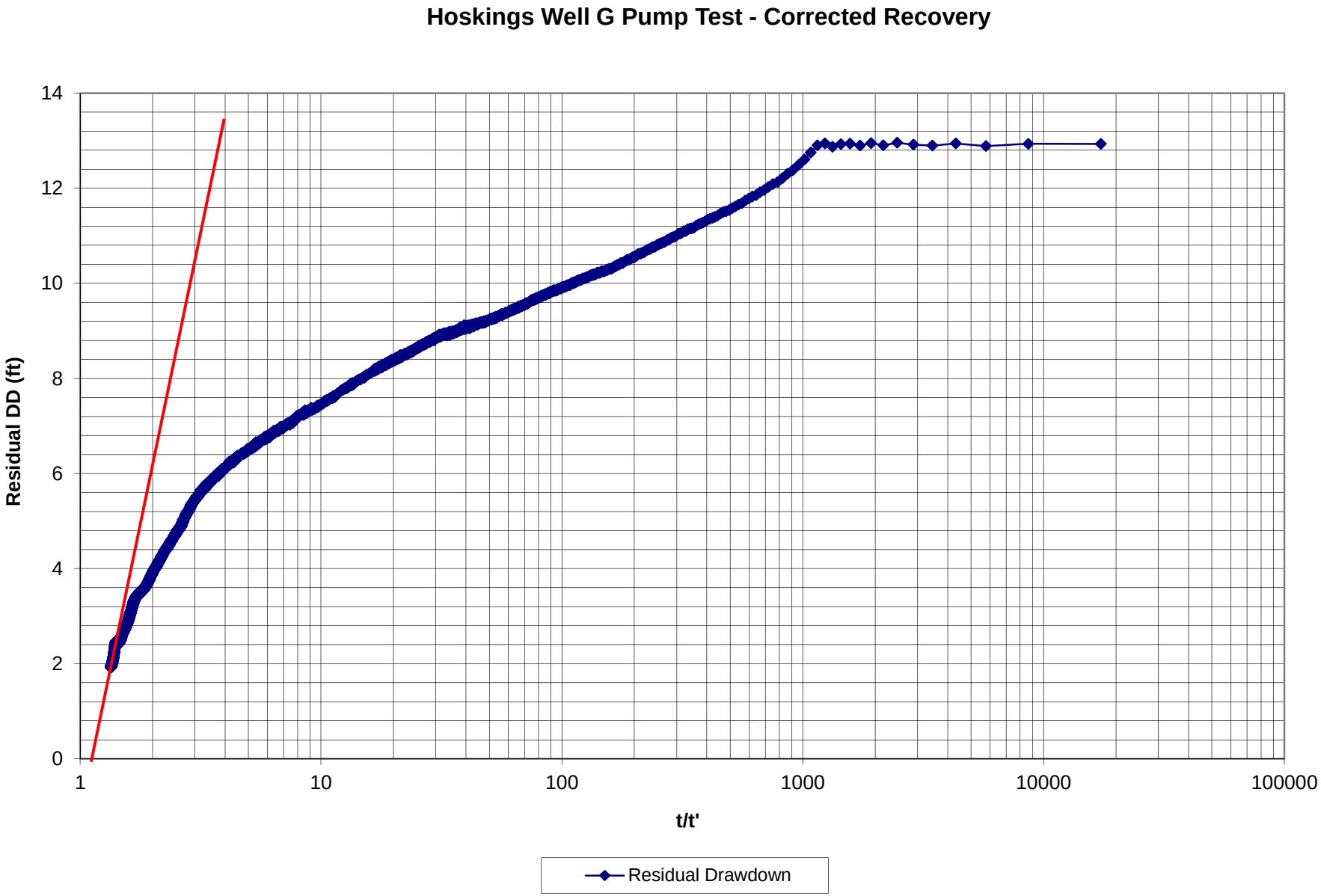
Hoskings Well I Pump Test - Corrected Recovery

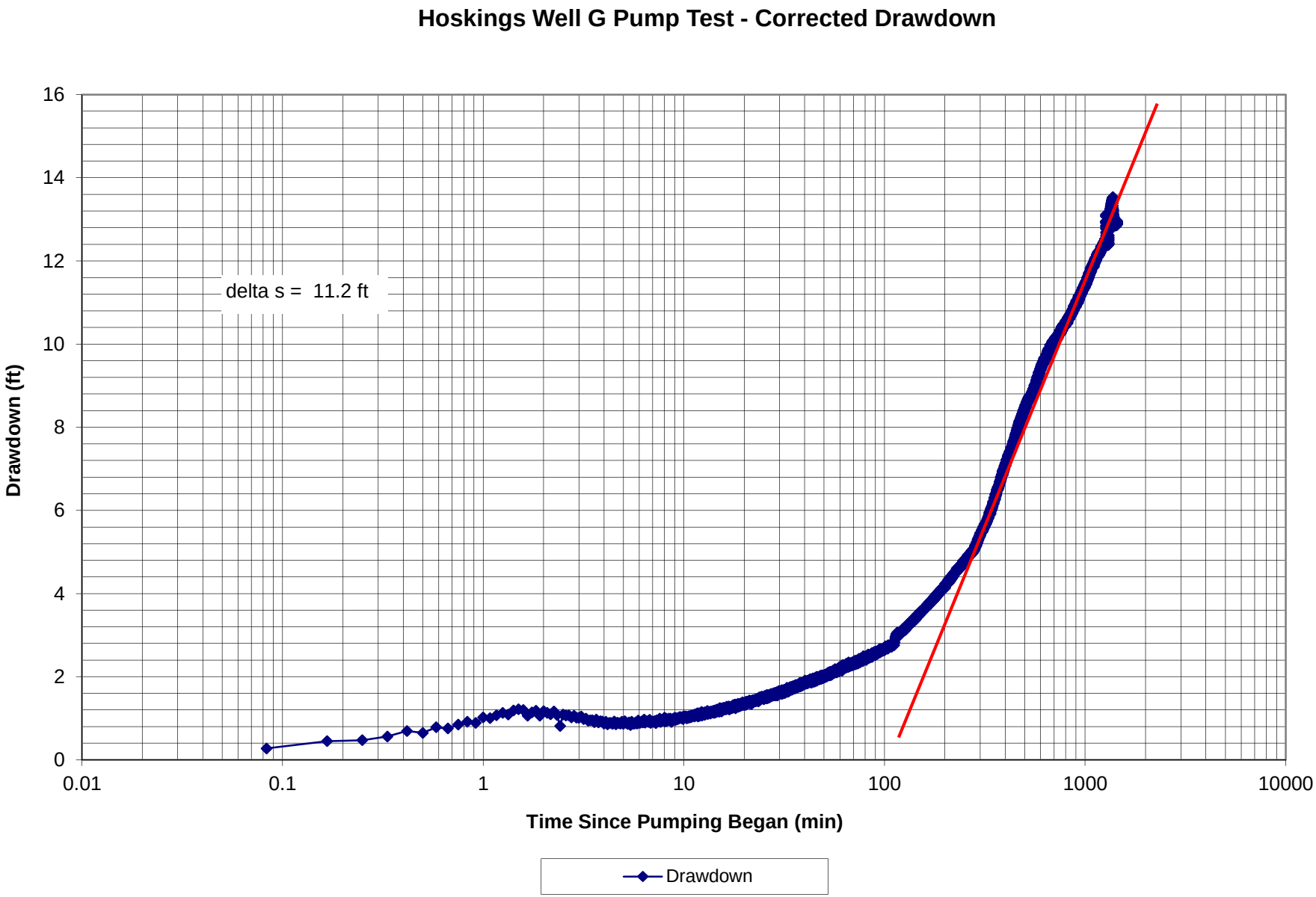


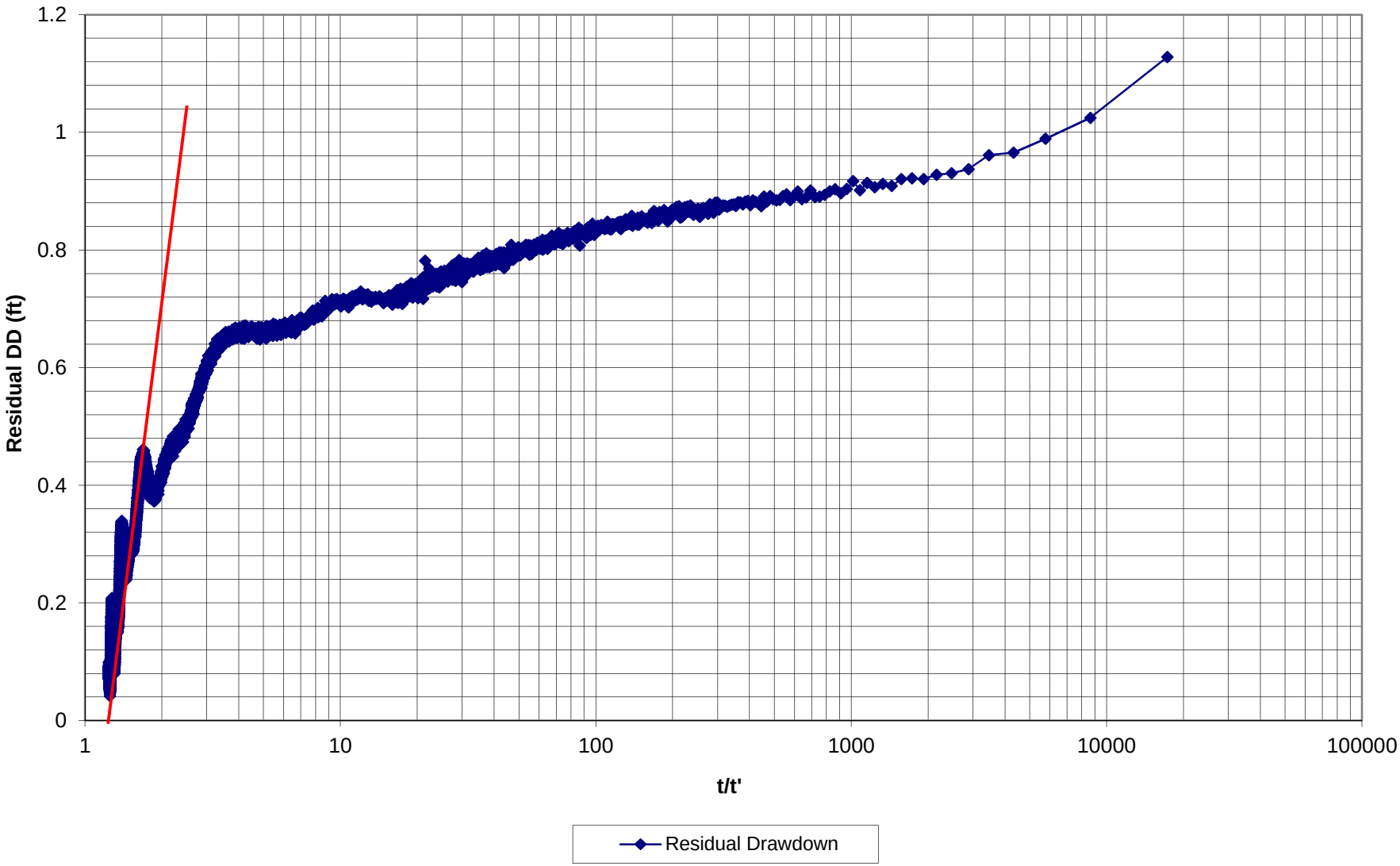

Hoskings Well I Pump Test - Corrected Drawdown
25
20
15
10
5
0
Drawdown (ft)
delta s = 10 ft
0.01
0.1
1
10
100
1000
10000
Time Since Pumping Began (min)
Drawdown

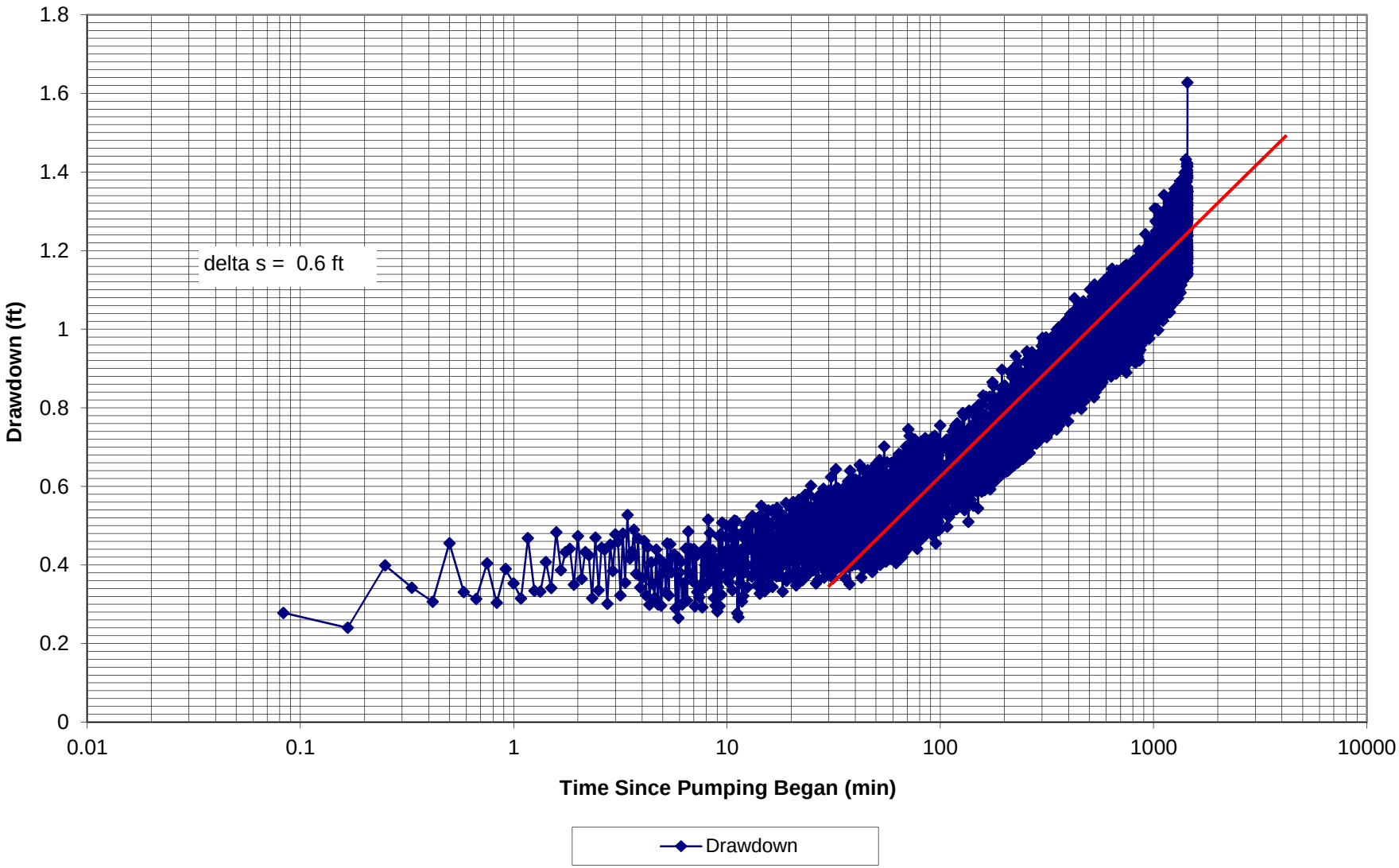

Hoskings Well H Pump Test - Corrected Recovery
Residual DD (ft)
0
1
2
3
4
5
6
7
8
9
10
1
10
100
1000
10000
100000
t/t'


Hoskings Well H Pump Test - Corrected Drawdown
delta s = 12 ft
Drawdown (ft)
0
1
2
3
4
5
6
7
8
9
0.01
0.1
1
10
100
1000
10000
Time Since Pumping Began (min)

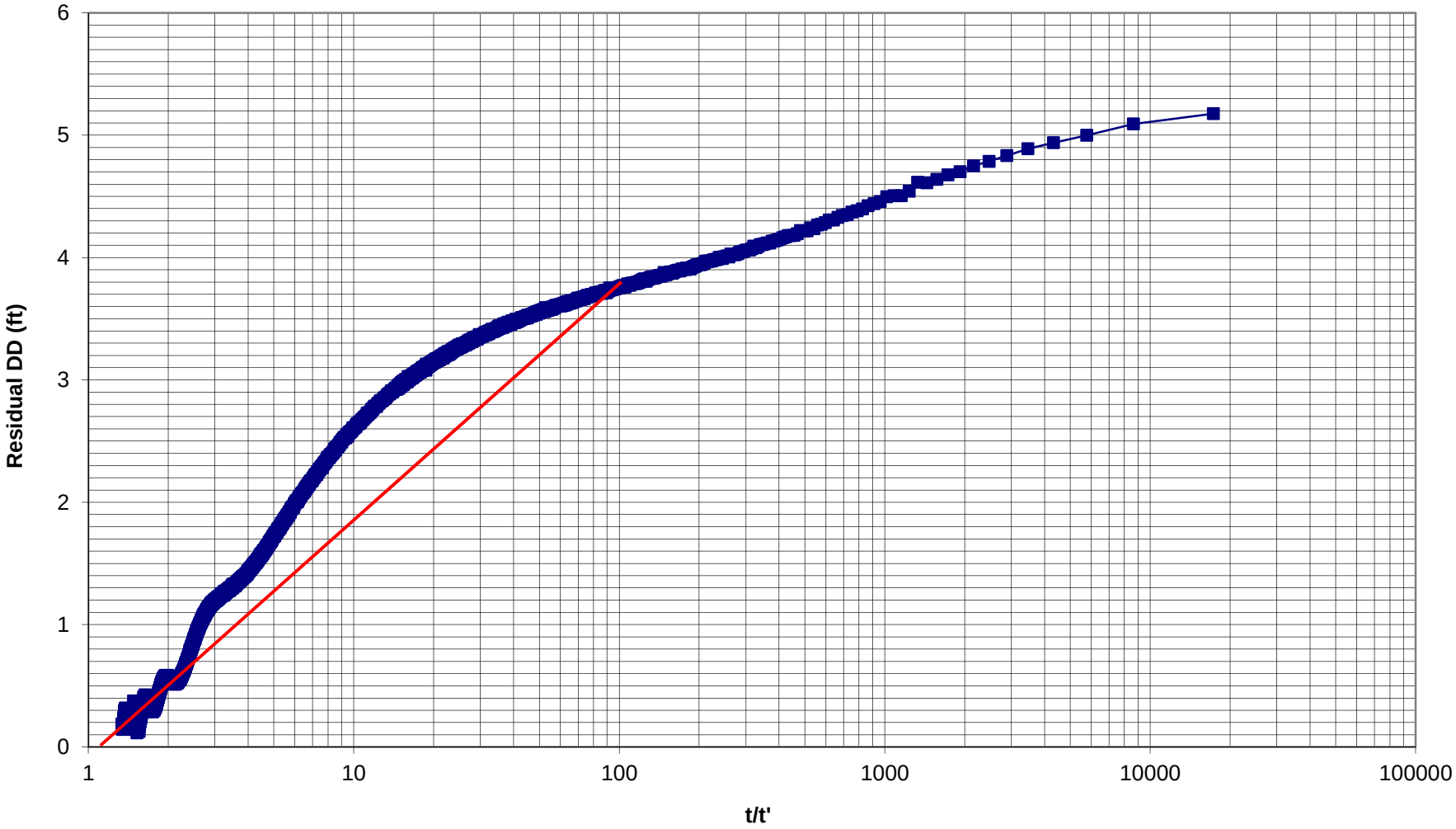

Hoskings Well G Pump Test - Corrected Recovery
Residual DD (ft)
0
2
4
6
8
10
12
14
1
10
100
1000
10000
100000
t/t'
Residual Drawdown


Hoskings Well G Pump Test - Corrected Drawdown
delta s = 11.2 ft
Drawdown (ft)
16
14
12
10
8
6
4
2
0
0.01
0.1
1
10
100
1000
10000
Time Since Pumping Began (min)
Drawdown

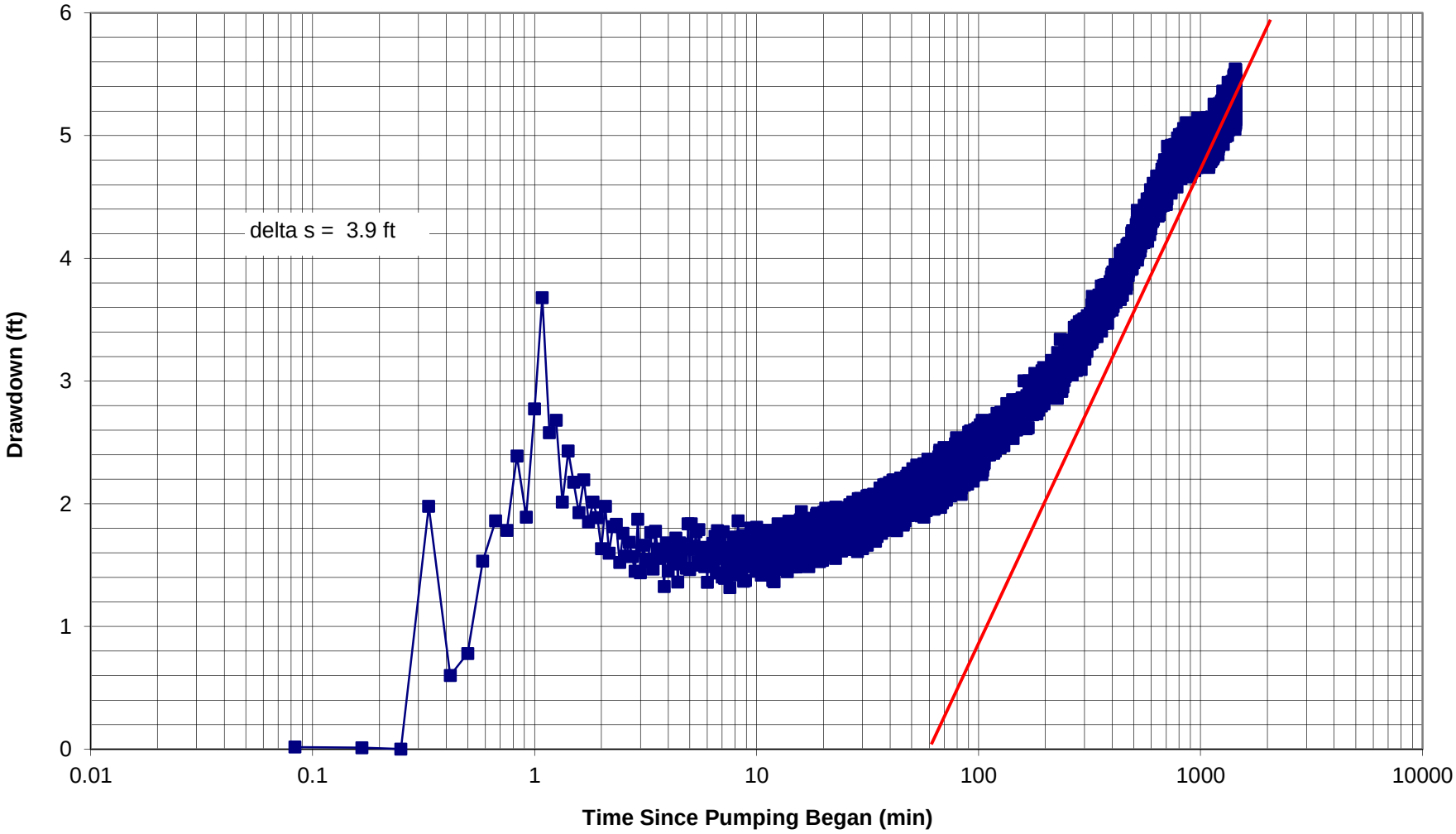

Hoskings Well F Pump Test - Corrected Recovery
Residual DD (ft)
1.2
1
0.8
0.6
0.4
0.2
0
1
10
100
1000
10000
100000
t/t'
Residual Drawdown

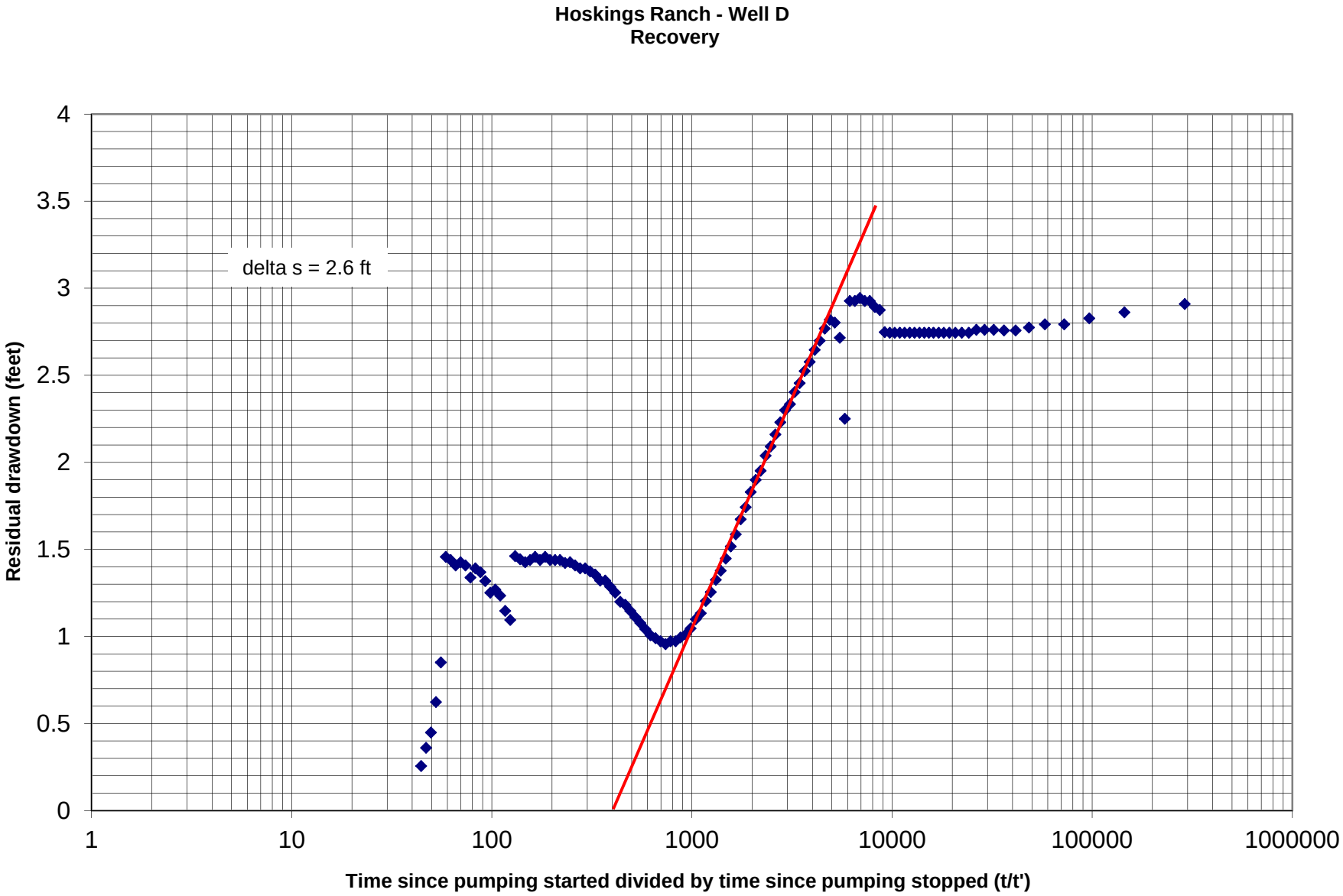

Hoskings Well F Pump Test - Corrected Drawdown
delta s = 0.6 ft
Drawdown (ft)
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.01
0.1
1
10
100
1000
10000
Time Since Pumping Began (min)
Drawdown

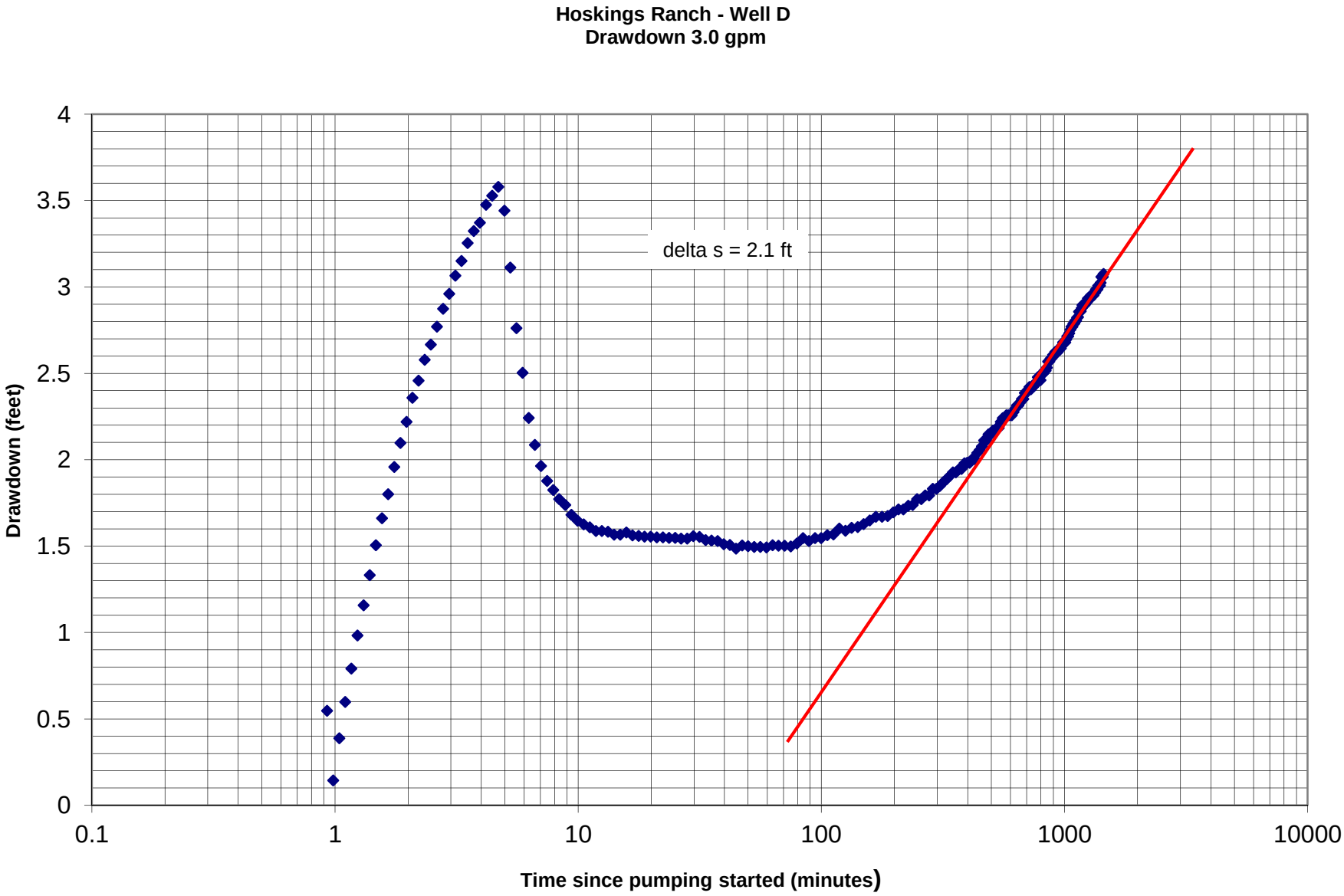
Hoskings Well E Pump Test - Corrected Recovery



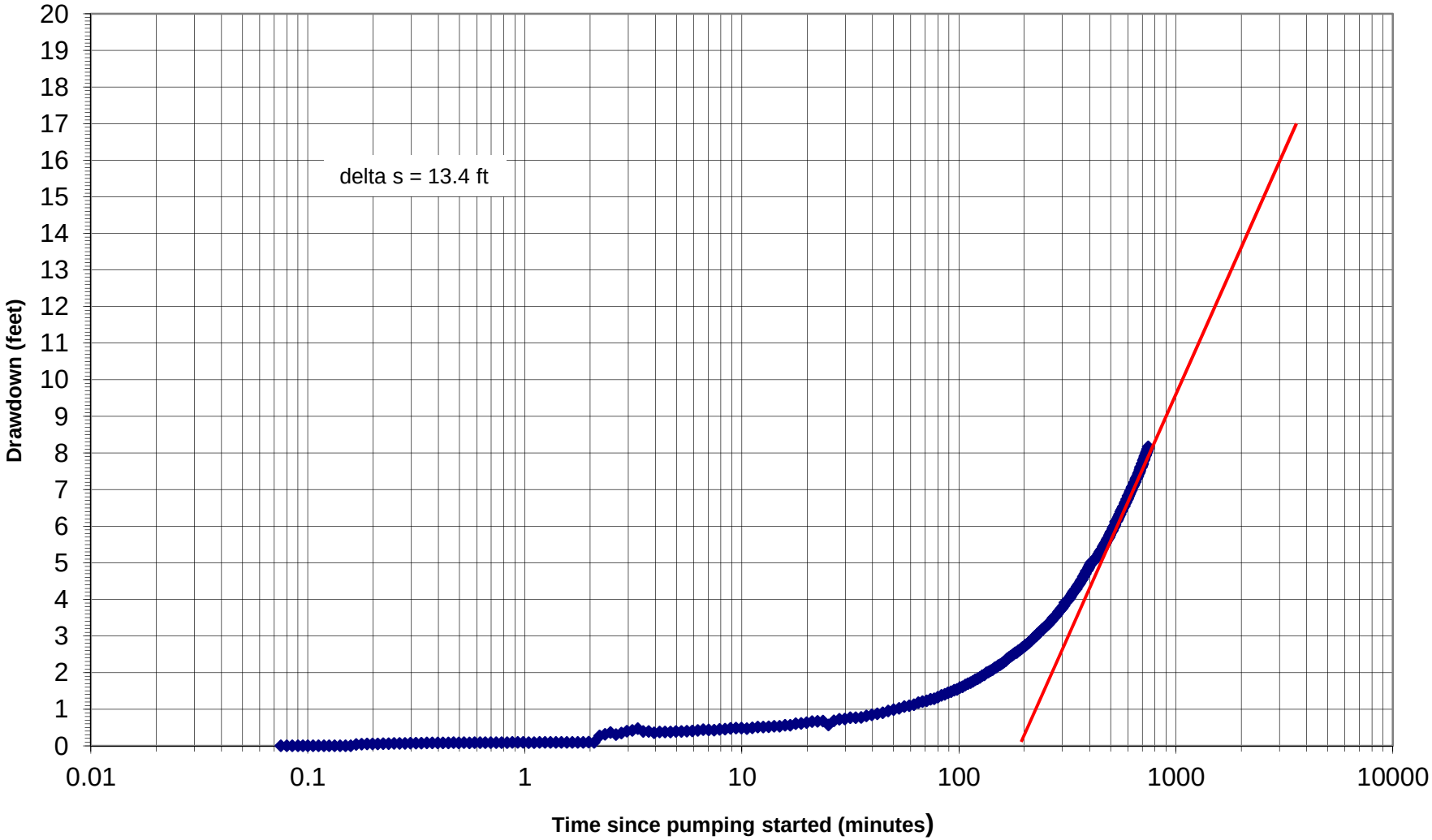
Hoskings Well E Pump Test - Corrected Drawdown

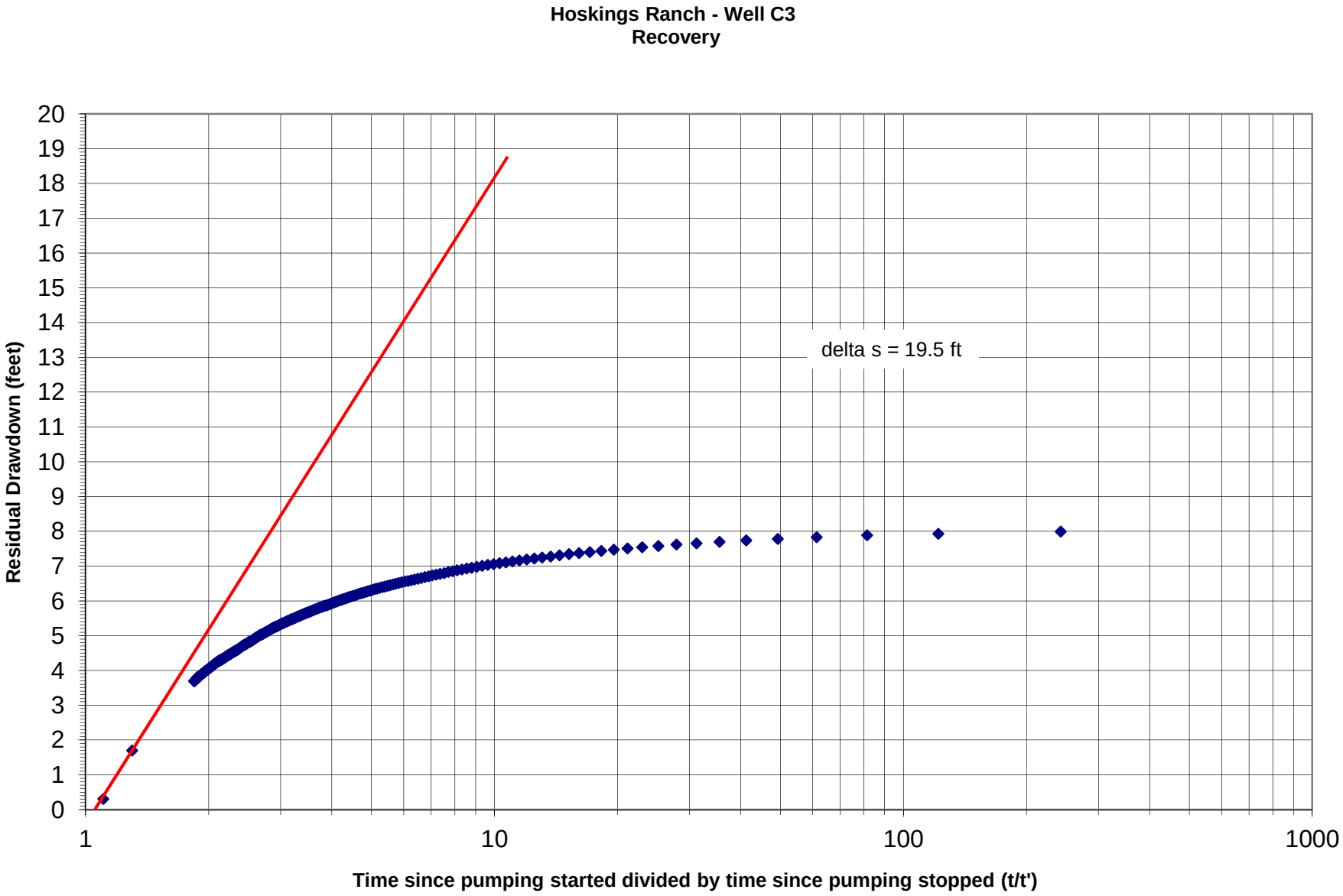


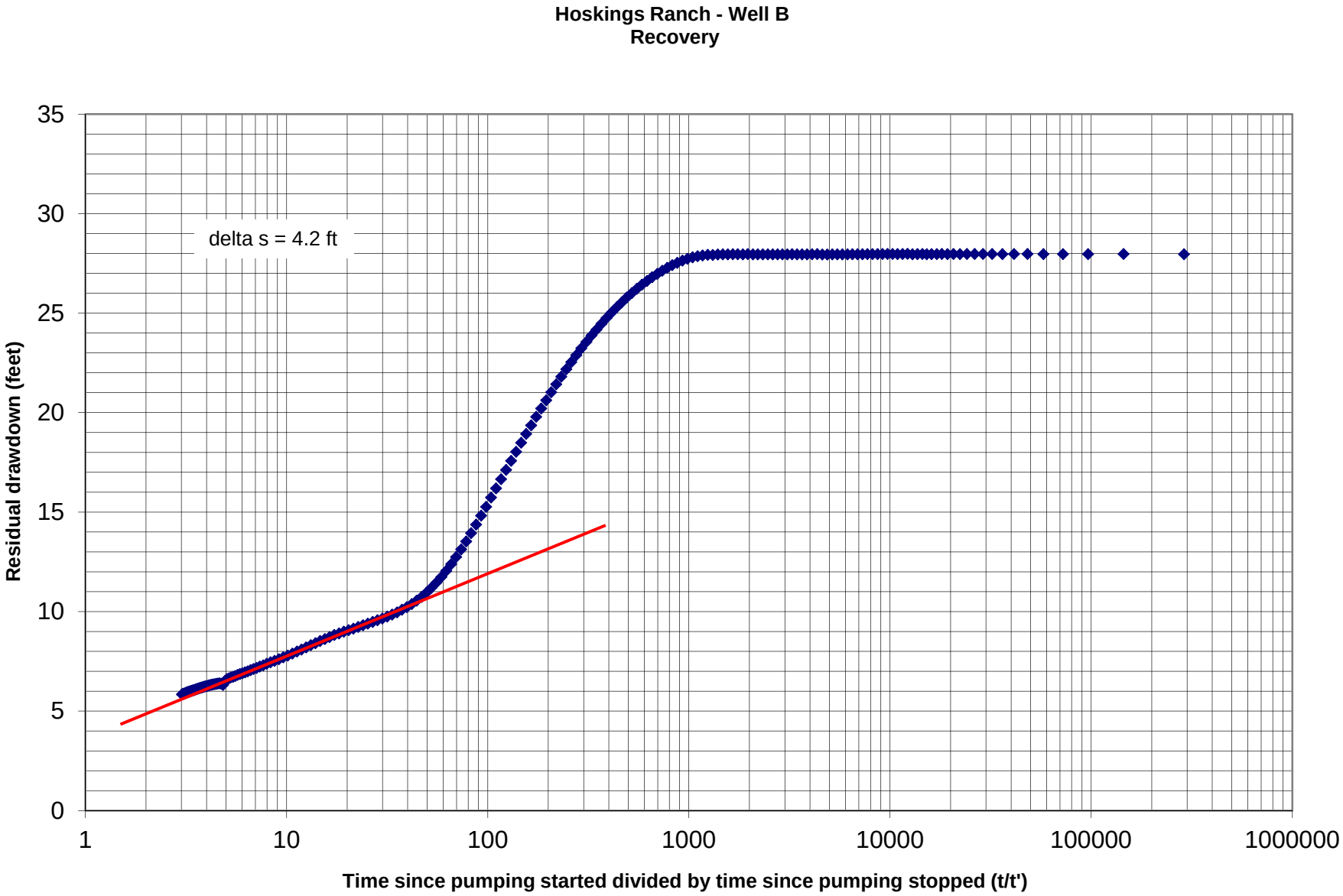

Hoskings Ranch - Well D
Recovery
delta s = 2.6 ft
Residual drawdown (feet)
4
3.5
3
2.5
2
1.5
1
0.5
0
1
10
100
1000
10000
100000
1000000
Time since pumping started divided by time since pumping stopped (t/t')

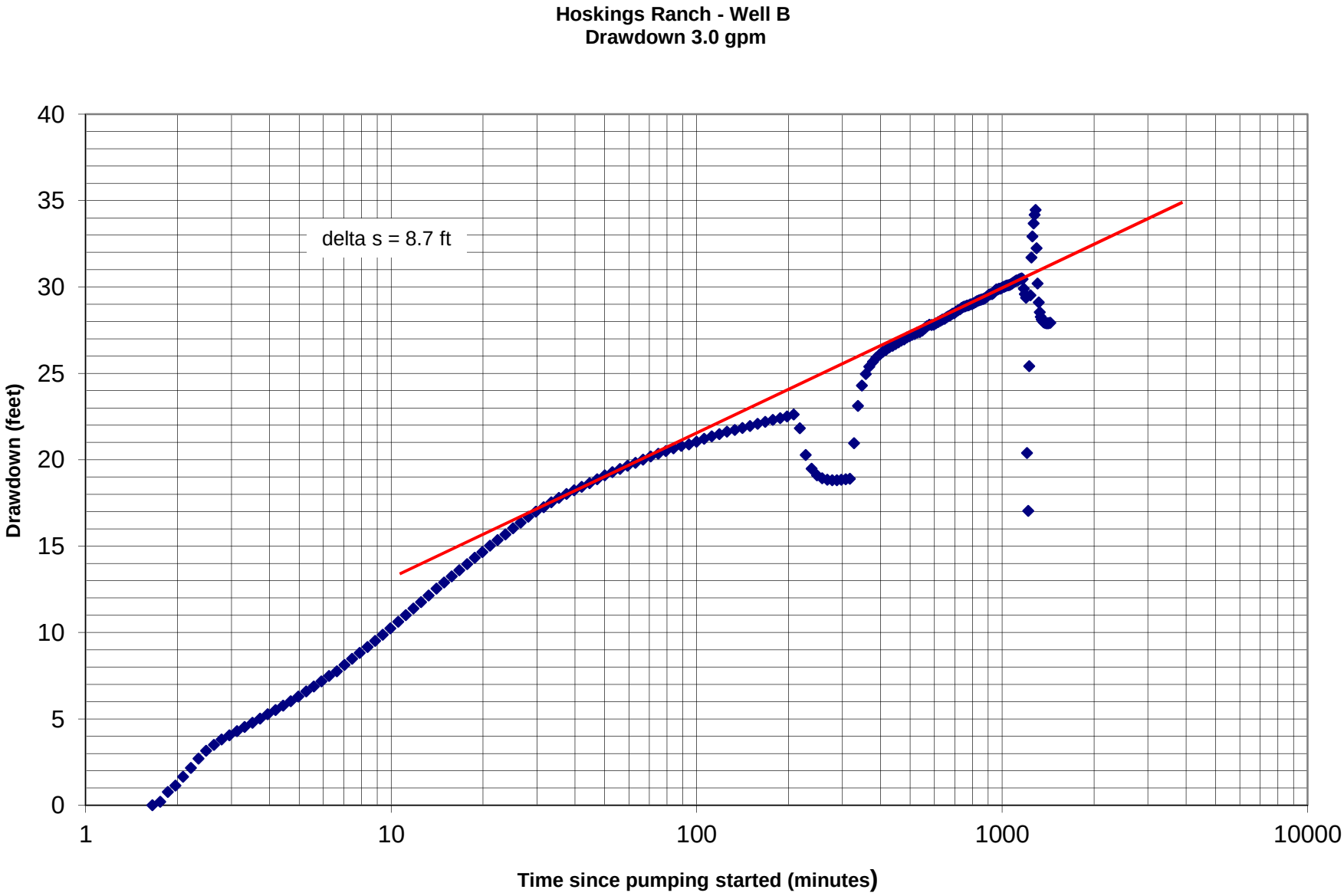

Hoskings Ranch - Well D
Drawdown 3.0 gpm
delta s = 2.1 ft
Drawdown (feet)
Time since pumping started (minutes)
0
0.5
1
1.5
2
2.5
3
3.5
4
0.1
1
10
100
1000
10000

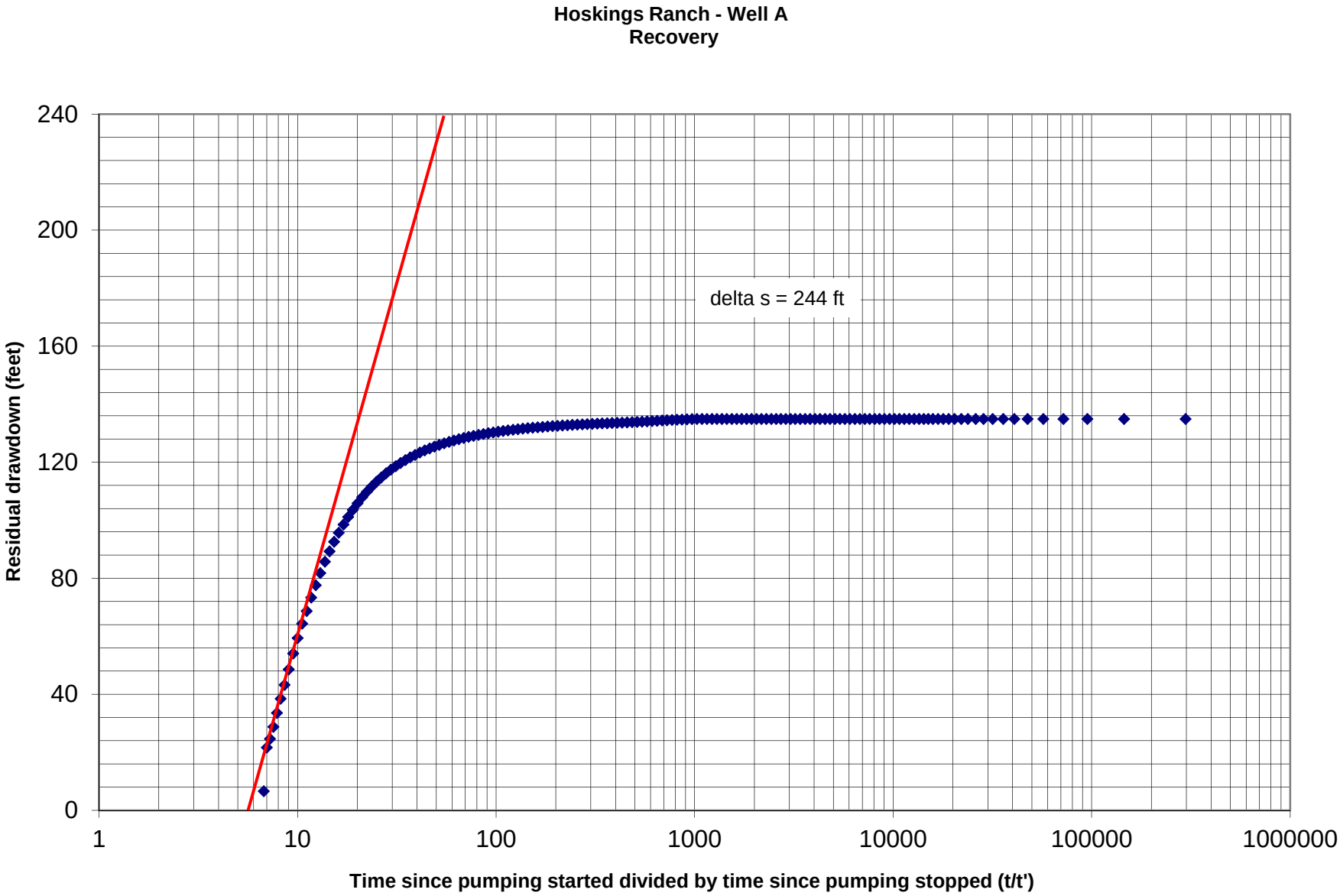
Hoskings Ranch - Well C3
Drawdown 3.0 gpm



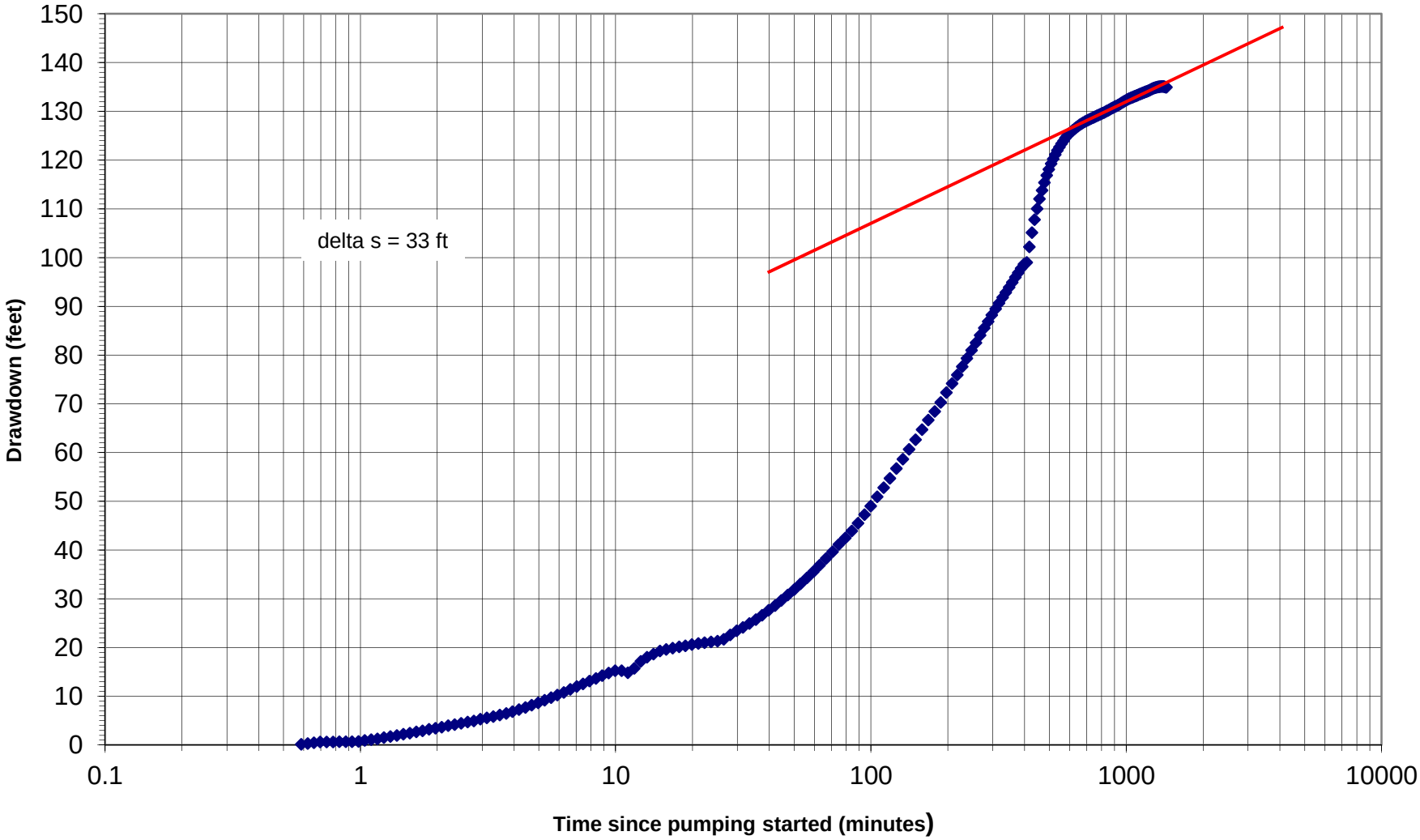

Hoskings Ranch - Well C3
Recovery
Residual Drawdown (feet)
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
delta s = 19.5 ft
1
10
100
1000
Time since pumping started divided by time since pumping stopped (t/t')


Hoskings Ranch - Well B
Recovery
delta s = 4.2 ft
Residual drawdown (feet)
0
5
10
15
20
25
30
35
1
10
100
1000
10000
100000
1000000
Time since pumping started divided by time since pumping stopped (t/t')


Hoskings Ranch - Well B
Drawdown 3.0 gpm
delta s = 8.7 ft
Drawdown (feet)
Time since pumping started (minutes)
0
5
10
15
20
25
30
35
40
1
10
100
1000
10000


Hoskings Ranch - Well A
Recovery
delta s = 244 ft
Residual drawdown (feet)
240
200
160
120
80
40
0
1
10
100
1000
10000
100000
1000000
Time since pumping started divided by time since pumping stopped (t/t')

Hoskings Ranch - Well A
Drawdown 3.0 gpm



Appendix F.
Drawdown Calculations

Potential Nearest Offsite Well **Drawdown estimate** **s = 0.183Q/T x log (2.25Tt/r^2S)**

Consolidated Alternative

rate	**Q**	60	feet^3/day	rate	**Q**	1925	feet^3/day
time	**t**	1825	days	time	**t**	1	day
Transmissivity	**T**	30	feet^2/day	Transmissivity	**T**	30	feet^2/day
Storativity	**S**	0.0001		Storativity	**S**	0.0001	
Radius of pumping well	**r**	0.5	feet	Radius of pumping well	**r**	0.5	feet
Drawdown in pumping well	**s**	**3.53**	**feet**	Drawdown in pumping well	**s**	**75.53**	**feet**
		0.31	**gpm**			**10**	**gpm**

		Distance From Well	Drawdown		Distance From Well	Drawdown
Consolidated Alternative						
Proposed Project Well Lot #	15	577	**1.30**	15	577	**4**
	18	731	**1.22**	18	731	**1**
	14	769	**1.21**	14	769	**1**
	13	1231	**1.06**	13	1231	**0**
	11	1731	**0.95**	11	1731	**0**
	12	1923	**0.92**	12	1923	**0**
	16	2077	**0.89**			
	17	2269	**0.87**			
	19	2269	**0.87**			
	10	2308	**0.86**			
	8	2346	**0.86**			
	7	2885	**0.79**			
	20	3038	**0.77**			
	9	3115	**0.77**			
	6	3269	**0.75**			
	21	3538	**0.73**			
	5	3654	**0.72**			
	3	3846	**0.70**			
	22	3846	**0.70**			
Cumulative Drawdown Potential Nearest Offsite Well			**16.92**			

Potential Nearest Offsite Well **Drawdown estimate** **s = 0.183Q/T x log (2.25Tt/r^2S)**

Main Project

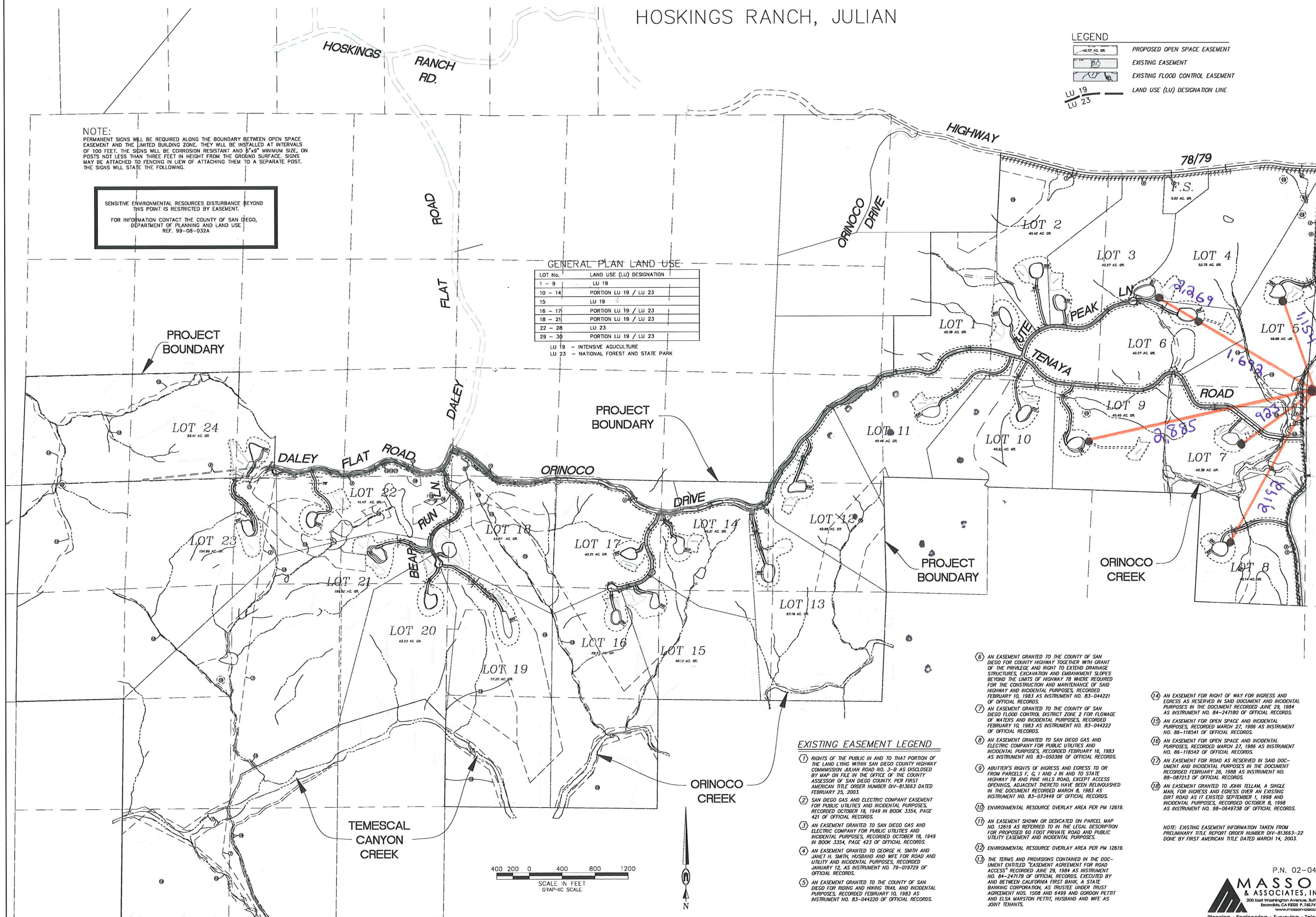
rate	**Q**	60	feet^3/day	rate	**Q**	1925	feet^3/day
time	**t**	1825	days	time	**t**	1	day
Transmissivity	**T**	30	feet^2/day	Transmissivity	**T**	30	feet^2/day
Storativity	**S**	0.0001		Storativity	**S**	0.0001	
Radius of pumping well	**r**	0.5	feet	Radius of pumping well	**r**	0.5	feet
Drawdown in pumping well	**s**	**3.53**	**feet**	Drawdown in pumping well	**s**	**75.53**	**feet**
		0.31	**gpm**			**10**	**gpm**

		Distance From Well	Drawdown		Distance From Well	Drawdown
Main Project						
Proposed Project Well Lot #	7	923	**1.15**	7	923	**0**
	5	1154	**1.08**	5	1154	**0**
	6	1692	**0.96**	6	1692	**0**
	8	2192	**0.88**	8	2192	**0**
	4	2269	**0.87**	4	2269	**0**
	9	2885	**0.79**	9	2885	**0**
	3	3269	**0.75**			
	10	3538	**0.73**			
Cumulative Drawdown Potential Nearest Offsite Well			**7.20**			

COUNTY OF SAN DIEGO TRACT NO. TM 5312 RPL 2

SHEET 1 OF 1

HOSKINGS RANCH, JULIAN



LEGEND

- PROPOSED OPEN SPACE EASEMENT
- EXISTING EASEMENT
- EXISTING FLOOD CONTROL EASEMENT
- LU 19 / LU 23 — LAND USE (LU) DESIGNATION LINE

NOTE:

PERMANENT SIGNS WILL BE REQUIRED ALONG THE BOUNDARY BETWEEN OPEN SPACE EASEMENT AND THE LIMITED BUILDING ZONE. THEY WILL BE INSTALLED AT INTERVALS OF 100 FEET. THE SIGNS WILL BE CORROSION RESISTANT AND 6"x9" MINIMUM SIZE, ON POSTS NOT LESS THAN THREE FEET IN HEIGHT FROM THE GROUND SURFACE. SIGNS MAY BE ATTACHED TO FENCING IN LIEW OF ATTACHING THEM TO A SEPARATE POST. THE SIGNS WILL STATE THE FOLLOWING.

> SENSITIVE ENVIRONMENTAL RESOURCES DISTURBANCE BEYOND THIS POINT IS RESTRICTED BY EASEMENT.
>
> FOR INFORMATION CONTACT THE COUNTY OF SAN DIEGO, DEPARTMENT OF PLANNING AND LAND USE
> REF. 99-08-032A

GENERAL PLAN LAND USE

LOT No.	LAND USE (LU) DESIGNATION
1 – 9	LU 19
10 – 14	PORTION LU 19 / LU 23
15	LU 19
16 – 17	PORTION LU 19 / LU 23
18 – 21	PORTION LU 19 / LU 23
22 – 28	LU 23
29 – 30	PORTION LU 19 / LU 23

LU 19 – INTENSIVE AGUCULTURE
LU 23 – NATIONAL FOREST AND STATE PARK

EXISTING EASEMENT LEGEND

1. RIGHTS OF THE PUBLIC IN AND TO THAT PORTION OF THE LAND LYING WITHIN SAN DIEGO COUNTY HIGHWAY COMMISSION JULIAN ROAD NO. 3-B AS DISCLOSED BY MAP ON FILE IN THE OFFICE OF THE COUNTY ASSESSOR OF SAN DIEGO COUNTY. PER FIRST AMERICAN TITLE ORDER NUMBER DIV-813663 DATED FEBRUARY 25, 2003.
2. SAN DIEGO GAS AND ELECTRIC COMPANY EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED OCTOBER 18, 1949 IN BOOK 3354, PAGE 421 OF OFFICIAL RECORDS.
3. AN EASEMENT GRANTED TO SAN DIEGO GAS AND ELECTRIC COMPANY FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED OCTOBER 18, 1949 IN BOOK 3354, PAGE 423 OF OFFICIAL RECORDS.
4. AN EASEMENT GRANTED TO GEORGE H. SMITH AND JANET H. SMITH, HUSBAND AND WIFE FOR ROAD AND UTILITY AND INCIDENTAL PURPOSES, RECORDED JANUARY 12, AS INSTRUMENT NO. 79-019729 OF OFFICIAL RECORDS.
5. AN EASEMENT GRANTED TO THE COUNTY OF SAN DIEGO FOR RIDING AND HIKING TRAIL AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 10, 1983 AS INSTRUMENT NO. 83-044220 OF OFFICIAL RECORDS.
6. AN EASEMENT GRANTED TO THE COUNTY OF SAN DIEGO FOR COUNTY HIGHWAY TOGETHER WITH GRANT OF THE PRIVILEGE AND RIGHT TO EXTEND DRAINAGE STRUCTURES, EXCAVATION AND EMBANKMENT SLOPES BEYOND THE LIMITS OF HIGHWAY 78 WHERE REQUIRED FOR THE CONSTRUCTION AND MAINTENANCE OF SAID HIGHWAY AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 10, 1983 AS INSTRUMENT NO. 83-044221 OF OFFICIAL RECORDS.
7. AN EASEMENT GRANTED TO THE COUNTY OF SAN DIEGO FLOOD CONTROL DISTRICT ZONE 2 FOR FLOWAGE OF WATERS AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 10, 1983 AS INSTRUMENT NO. 83-044222 OF OFFICIAL RECORDS.
8. AN EASEMENT GRANTED TO SAN DIEGO GAS AND ELECTRIC COMPANY FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 16, 1983 AS INSTRUMENT NO. 83-050386 OF OFFICIAL RECORDS.
9. ABUTTER'S RIGHTS OF INGRESS AND EGRESS TO OR FROM PARCELS F, G, I AND J IN AND TO STATE HIGHWAY 78 AND PINE HILLS ROAD, EXCEPT ACCESS OPENINGS, ADJACENT THERETO HAVE BEEN RELINQUISHED IN THE DOCUMENT RECORDED MARCH 8, 1983 AS INSTRUMENT NO. 83-073449 OF OFFICIAL RECORDS.
10. ENVIRONMENTAL RESOURCE OVERLAY AREA PER PM 12619.
11. AN EASEMENT SHOWN OR DEDICATED ON PARCEL MAP NO. 12619 AS REFERRED TO IN THE LEGAL DESCRIPTION FOR PROPOSED 60 FOOT PRIVATE ROAD AND PUBLIC UTILITY EASEMENT AND INCIDENTAL PURPOSES.
12. ENVIRONMENTAL RESOURCE OVERLAY AREA PER PM 12619.
13. THE TERMS AND PROVISIONS CONTAINED IN THE DOCUMENT ENTITLED "EASEMENT AGREEMENT FOR ROAD ACCESS" RECORDED JUNE 29, 1984 AS INSTRUMENT NO. 84-247179 OF OFFICIAL RECORDS. EXECUTED BY AND BETWEEN CALIFORNIA FIRST BANK, A STATE BANKING CORPORATION, AS TRUSTEE UNDER TRUST AGREEMENT NOS. 1508 AND 6499 AND GORDON PETTIT AND ELSA MARSTON PETTIT, HUSBAND AND WIFE AS JOINT TENANTS.
14. AN EASEMENT FOR RIGHT OF WAY FOR INGRESS AND EGRESS AS RESERVED IN SAID DOCUMENT AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED JUNE 29, 1984 AS INSTRUMENT NO. 84-247180 OF OFFICIAL RECORDS.
15. AN EASEMENT FOR OPEN SPACE AND INCIDENTAL PURPOSES, RECORDED MARCH 27, 1986 AS INSTRUMENT NO. 86-118541 OF OFFICIAL RECORDS.
16. AN EASEMENT FOR OPEN SPACE AND INCIDENTAL PURPOSES, RECORDED MARCH 27, 1986 AS INSTRUMENT NO. 86-118542 OF OFFICIAL RECORDS.
17. AN EASEMENT FOR ROAD AS RESERVED IN SAID DOCUMENT AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED FEBRUARY 26, 1988 AS INSTRUMENT NO. 88-087213 OF OFFICIAL RECORDS.
18. AN EASEMENT GRANTED TO JOHN TELLAM, A SINGLE MAN, FOR INGRESS AND EGRESS OVER AN EXISTING DIRT ROAD AS IT EXISTED SEPTEMBER 1, 1998 AND INCIDENTAL PURPOSES, RECORDED OCTOBER 8, 1998 AS INSTRUMENT NO. 98-0649738 OF OFFICIAL RECORDS.

NOTE: EXISTING EASEMENT INFORMATION TAKEN FROM PRELIMINARY TITLE REPORT ORDER NUMBER DIV-813663-22 DONE BY FIRST AMERICAN TITLE DATED MARCH 14, 2003.

P.N. 02-040

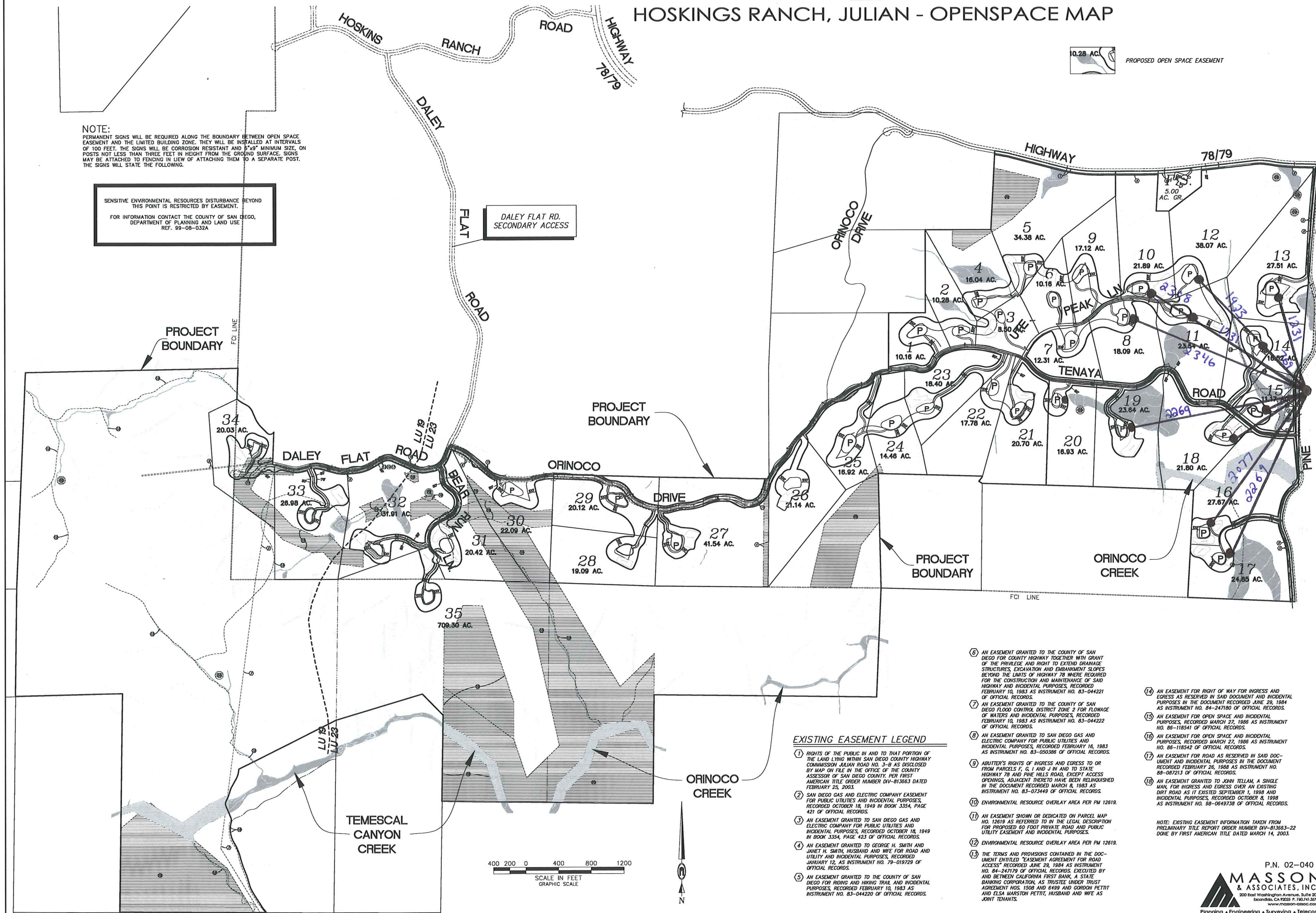
MASSON & ASSOCIATES, INC.
200 East Washington Avenue, Suite 200
Escondido, CA 92025 P. 760.741.3570
www.masson-assoc.com
Planning ▲ Engineering ▲ Surveying ▲ Telecom

CALIF. COORD. INDEX: 322-1872(X)

COUNTY OF SAN DIEGO TRACT NO. TM 5312 RPL 2 (CONSOLIDATED)

SHEET 1 OF 1

HOSKINGS RANCH, JULIAN - OPENSPACE MAP



NOTE:
PERMANENT SIGNS WILL BE REQUIRED ALONG THE BOUNDARY BETWEEN OPEN SPACE EASEMENT AND THE LIMITED BUILDING ZONE. THEY WILL BE INSTALLED AT INTERVALS OF 100 FEET. THE SIGNS WILL BE CORROSION RESISTANT AND 6"x9" MINIMUM SIZE, ON POSTS NOT LESS THAN THREE FEET IN HEIGHT FROM THE GROUND SURFACE. SIGNS MAY BE ATTACHED TO FENCING IN LIEW OF ATTACHING THEM TO A SEPARATE POST. THE SIGNS WILL STATE THE FOLLOWING.

> SENSITIVE ENVIRONMENTAL RESOURCES DISTURBANCE BEYOND THIS POINT IS RESTRICTED BY EASEMENT.
>
> FOR INFORMATION CONTACT THE COUNTY OF SAN DIEGO, DEPARTMENT OF PLANNING AND LAND USE
> REF. 99-08-032A

EXISTING EASEMENT LEGEND

1. *RIGHTS OF THE PUBLIC IN AND TO THAT PORTION OF THE LAND LYING WITHIN SAN DIEGO COUNTY HIGHWAY COMMISSION JULIAN ROAD NO. 3-B AS DISCLOSED BY MAP ON FILE IN THE OFFICE OF THE COUNTY ASSESSOR OF SAN DIEGO COUNTY. PER FIRST AMERICAN TITLE ORDER NUMBER DIV-813663 DATED FEBRUARY 25, 2003.*
2. *SAN DIEGO GAS AND ELECTRIC COMPANY EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED OCTOBER 18, 1949 IN BOOK 3354, PAGE 421 OF OFFICIAL RECORDS.*
3. *AN EASEMENT GRANTED TO SAN DIEGO GAS AND ELECTRIC COMPANY FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED OCTOBER 18, 1949 IN BOOK 3354, PAGE 423 OF OFFICIAL RECORDS.*
4. *AN EASEMENT GRANTED TO GEORGE H. SMITH AND JANET H. SMITH, HUSBAND AND WIFE FOR ROAD AND UTILITY AND INCIDENTAL PURPOSES, RECORDED JANUARY 12, AS INSTRUMENT NO. 79-019729 OF OFFICIAL RECORDS.*
5. *AN EASEMENT GRANTED TO THE COUNTY OF SAN DIEGO FOR RIDING AND HIKING TRAIL AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 10, 1983 AS INSTRUMENT NO. 83-044220 OF OFFICIAL RECORDS.*
6. *AN EASEMENT GRANTED TO THE COUNTY OF SAN DIEGO FOR COUNTY HIGHWAY TOGETHER WITH GRANT OF THE PRIVILEGE AND RIGHT TO EXTEND DRAINAGE STRUCTURES, EXCAVATION AND EMBANKMENT SLOPES BEYOND THE LIMITS OF HIGHWAY 78 WHERE REQUIRED FOR THE CONSTRUCTION AND MAINTENANCE OF SAID HIGHWAY AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 10, 1983 AS INSTRUMENT NO. 83-044221 OF OFFICIAL RECORDS.*
7. *AN EASEMENT GRANTED TO THE COUNTY OF SAN DIEGO FLOOD CONTROL DISTRICT ZONE 2 FOR FLOWAGE OF WATERS AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 10, 1983 AS INSTRUMENT NO. 83-044222 OF OFFICIAL RECORDS.*
8. *AN EASEMENT GRANTED TO SAN DIEGO GAS AND ELECTRIC COMPANY FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 16, 1983 AS INSTRUMENT NO. 83-050386 OF OFFICIAL RECORDS.*
9. *ABUTTER'S RIGHTS OF INGRESS AND EGRESS TO OR FROM PARCELS F, G, I AND J IN AND TO STATE HIGHWAY 78 AND PINE HILLS ROAD, EXCEPT ACCESS OPENINGS, ADJACENT THERETO HAVE BEEN RELINQUISHED IN THE DOCUMENT RECORDED MARCH 8, 1983 AS INSTRUMENT NO. 83-073449 OF OFFICIAL RECORDS.*
10. *ENVIRONMENTAL RESOURCE OVERLAY AREA PER PM 12619.*
11. *AN EASEMENT SHOWN OR DEDICATED ON PARCEL MAP NO. 12619 AS REFERRED TO IN THE LEGAL DESCRIPTION FOR PROPOSED 60 FOOT PRIVATE ROAD AND PUBLIC UTILITY EASEMENT AND INCIDENTAL PURPOSES.*
12. *ENVIRONMENTAL RESOURCE OVERLAY AREA PER PM 12619.*
13. *THE TERMS AND PROVISIONS CONTAINED IN THE DOCUMENT ENTITLED "EASEMENT AGREEMENT FOR ROAD ACCESS" RECORDED JUNE 29, 1984 AS INSTRUMENT NO. 84-247179 OF OFFICIAL RECORDS. EXECUTED BY AND BETWEEN CALIFORNIA FIRST BANK, A STATE BANKING CORPORATION, AS TRUSTEE UNDER TRUST AGREEMENT NOS. 1508 AND 6499 AND GORDON PETTIT AND ELSA MARSTON PETTIT, HUSBAND AND WIFE AS JOINT TENANTS.*
14. *AN EASEMENT FOR RIGHT OF WAY FOR INGRESS AND EGRESS AS RESERVED IN SAID DOCUMENT AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED JUNE 29, 1984 AS INSTRUMENT NO. 84-247180 OF OFFICIAL RECORDS.*
15. *AN EASEMENT FOR OPEN SPACE AND INCIDENTAL PURPOSES, RECORDED MARCH 27, 1986 AS INSTRUMENT NO. 86-118541 OF OFFICIAL RECORDS.*
16. *AN EASEMENT FOR OPEN SPACE AND INCIDENTAL PURPOSES, RECORDED MARCH 27, 1986 AS INSTRUMENT NO. 86-118542 OF OFFICIAL RECORDS.*
17. *AN EASEMENT FOR ROAD AS RESERVED IN SAID DOCUMENT AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED FEBRUARY 26, 1988 AS INSTRUMENT NO. 88-087213 OF OFFICIAL RECORDS.*
18. *AN EASEMENT GRANTED TO JOHN TELLAM, A SINGLE MAN, FOR INGRESS AND EGRESS OVER AN EXISTING DIRT ROAD AS IT EXISTED SEPTEMBER 1, 1998 AND INCIDENTAL PURPOSES, RECORDED OCTOBER 8, 1998 AS INSTRUMENT NO. 98-0649738 OF OFFICIAL RECORDS.*

NOTE: EXISTING EASEMENT INFORMATION TAKEN FROM PRELIMINARY TITLE REPORT ORDER NUMBER DIV-813663-22 DONE BY FIRST AMERICAN TITLE DATED MARCH 14, 2003.

P.N. 02-040

MASSON & ASSOCIATES, INC.
200 East Washington Avenue, Suite 200
Escondido, CA 92025 P. 760.741.3570
www.masson-assoc.com
Planning ▲ Engineering ▲ Surveying ▲ Telecom

DATE: Sep 29, 11 12:03pm by: dmasson FILE: I:\DWG\02\2040A\PROD\TM\2040PCTM-rpl2-35-Consolidated.DWG

CALIF. COORD. INDEX: 322-1872(X)

About AECOM

AECOM (NYSE: ACM) is a global provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental, energy, water and government. With approximately 45,000 employees around the world, AECOM is a leader in all of the key markets that it serves. AECOM provides a blend of global reach, local knowledge, innovation, and collaborative technical excellence in delivering solutions that enhance and sustain the world's built, natural, and social environments. A *Fortune 500* company, AECOM serves clients in more than 130 countries and has annual revenue in excess of $8.0 billion.

More information on AECOM and its services can be found at www.aecom.com.

Address
Phone number
Other Contact Information