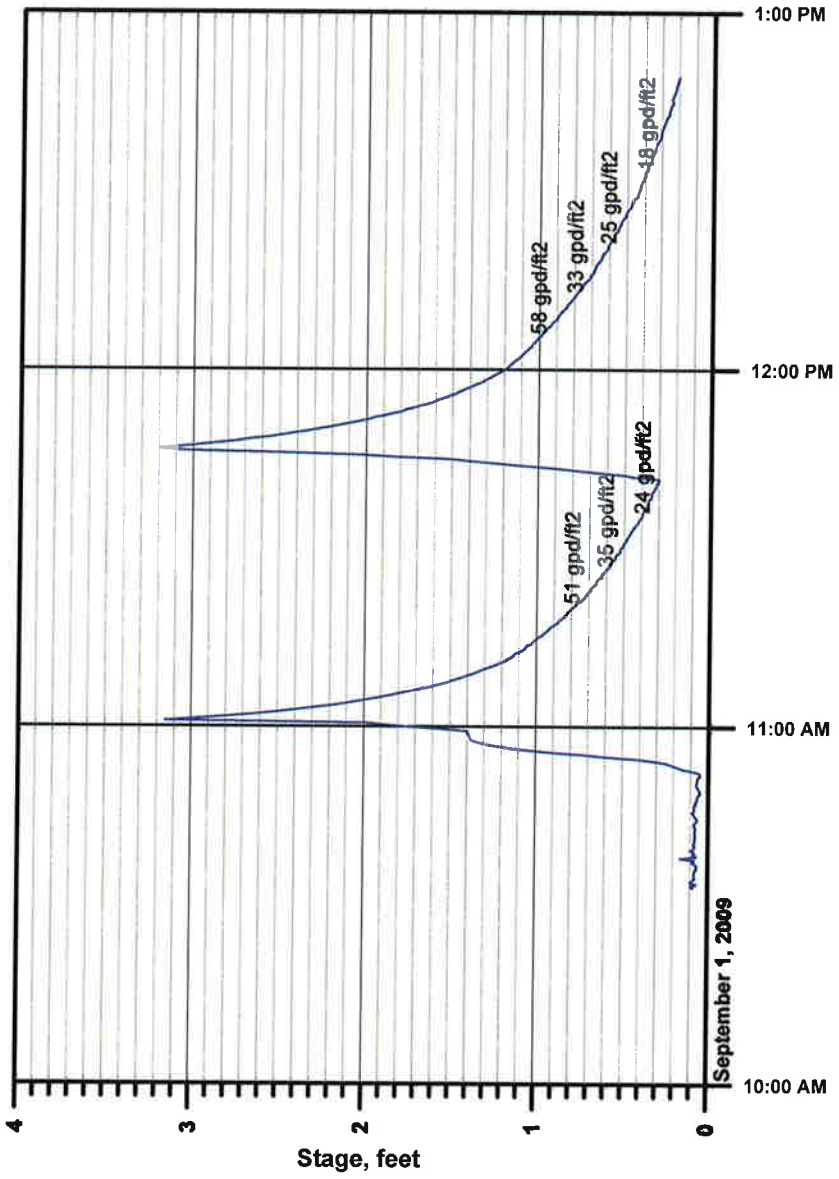
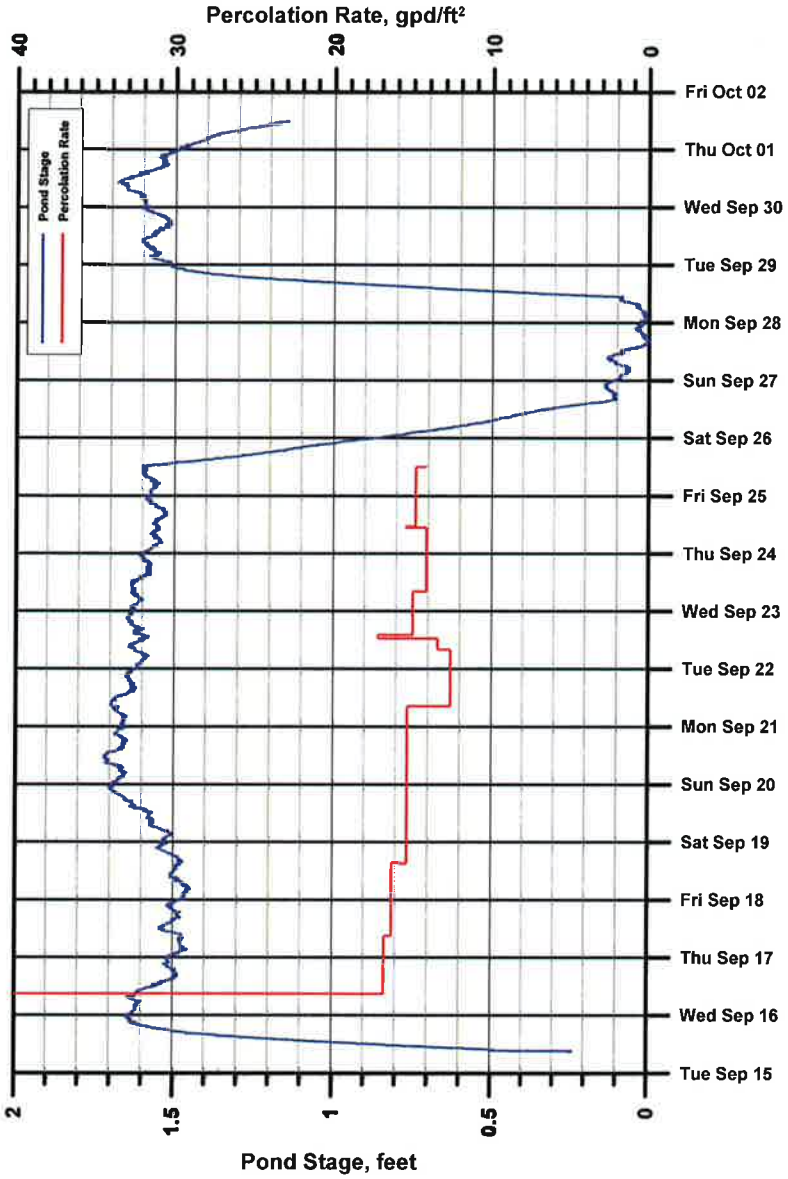


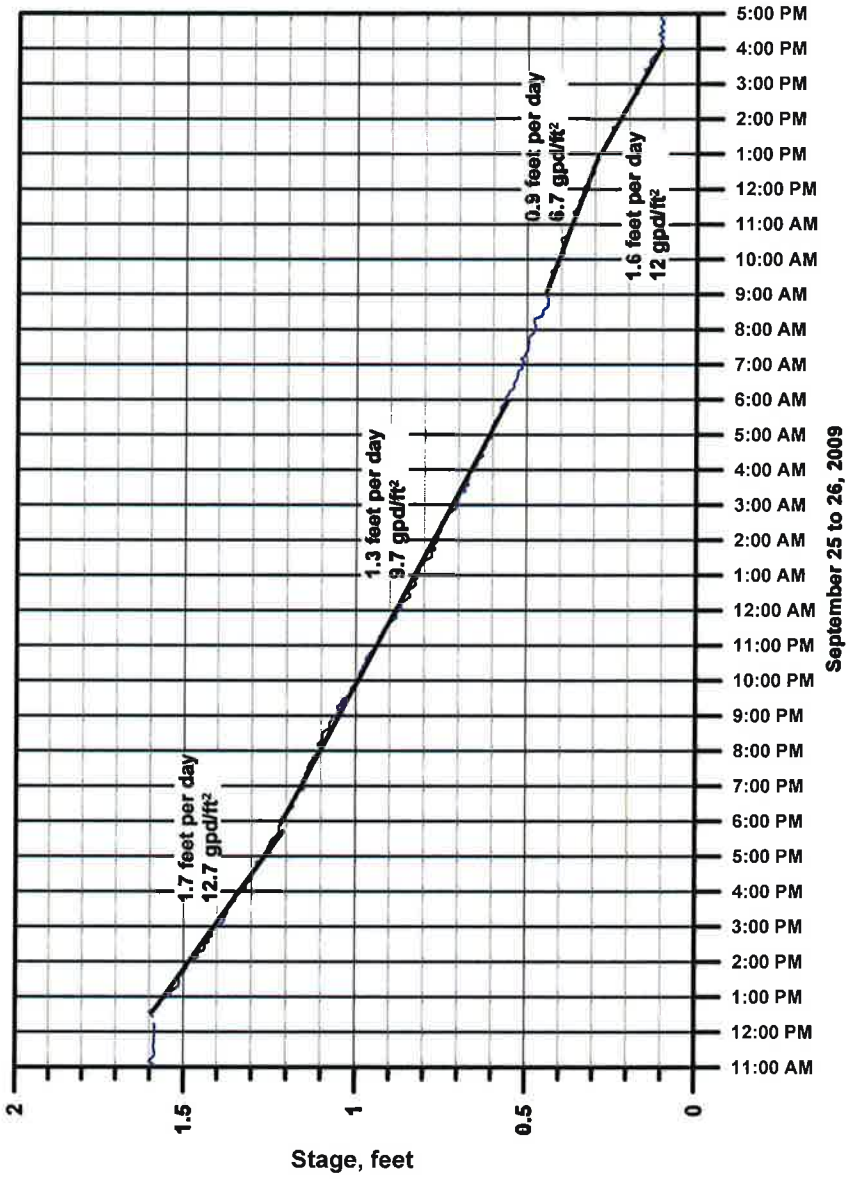
CONVENTIONAL PERCOLATION TEST, SITE 9
Pasquini Property Investigation
Nipomo, California

PLATE 11



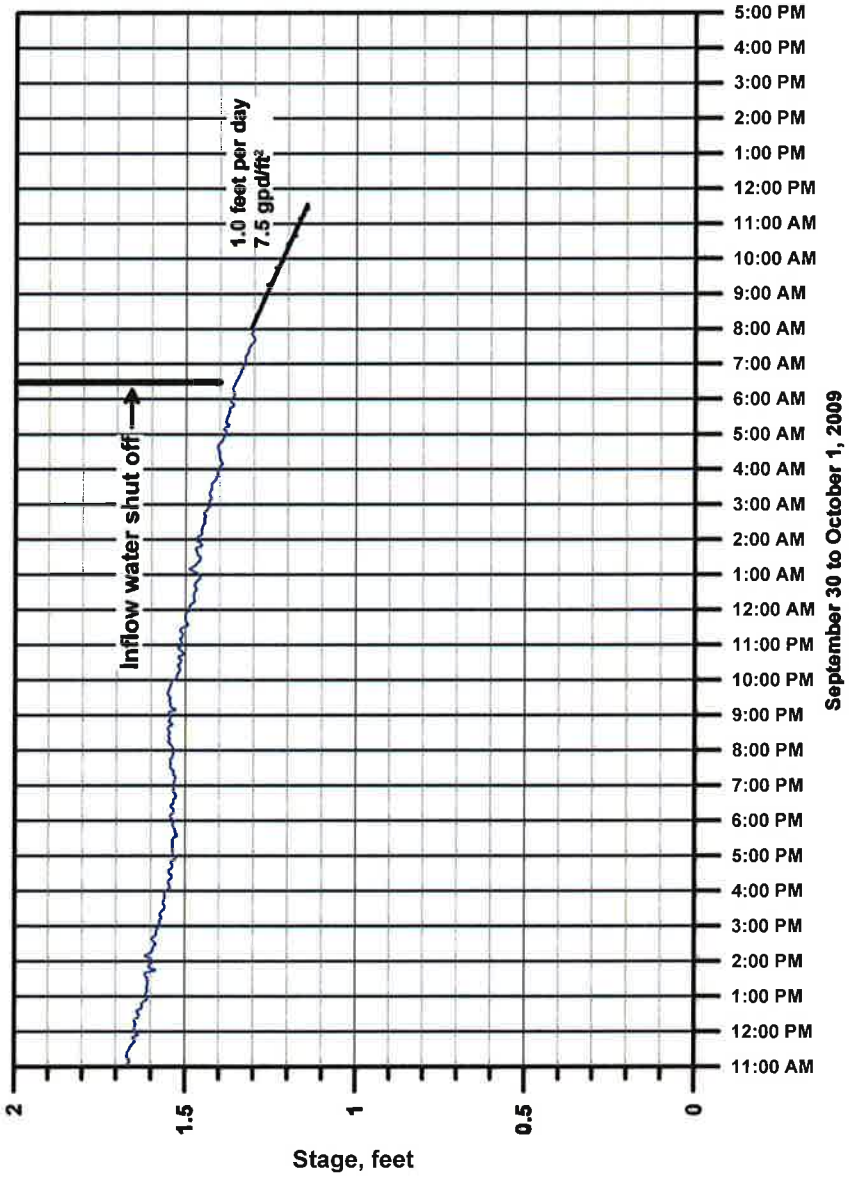
PROTOTYPE PERCOLATION POND HYDROGRAPH
Pasquini Property Investigation
Nipomo, California

PLATE 12



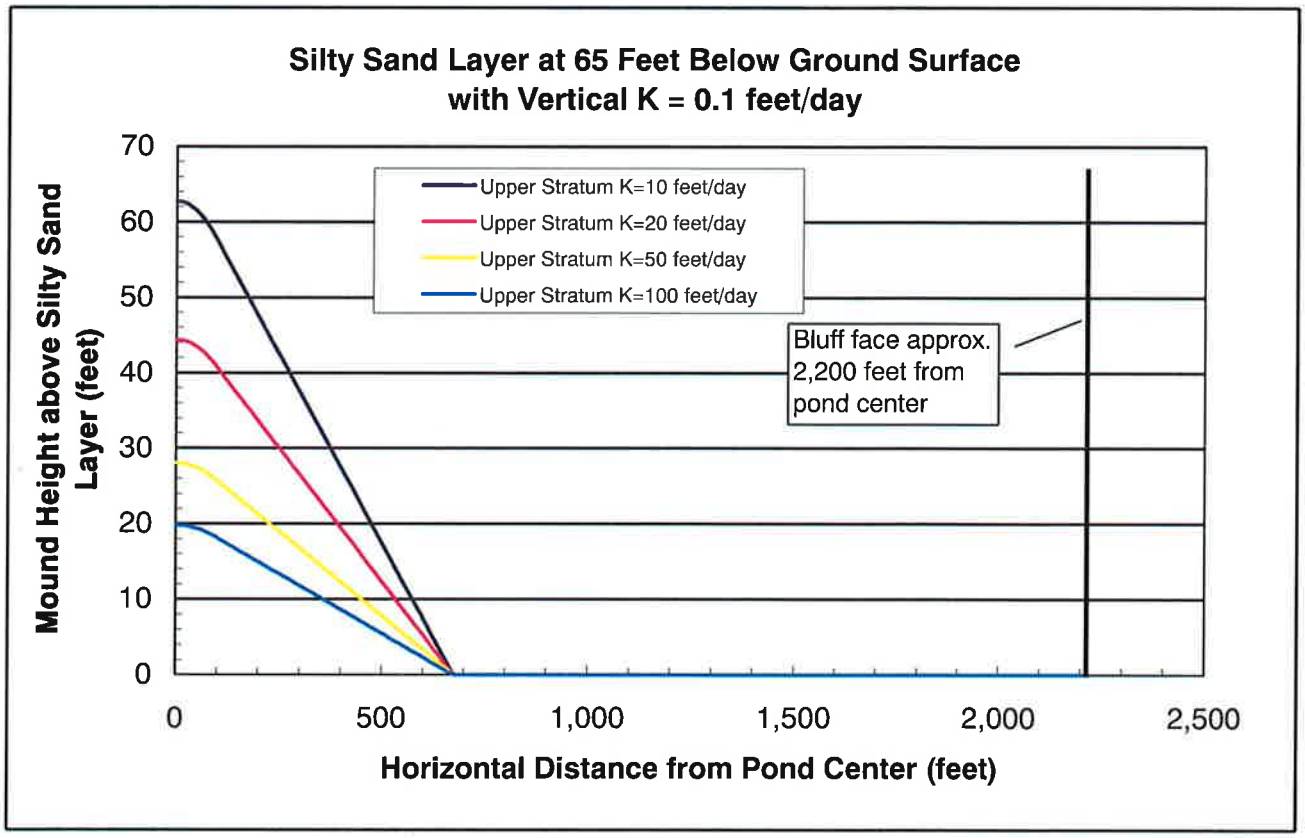
PROTOTYPE PERCOLATION POND FALLING HEAD TEST
September 25 to 26, 2009
Pasquini Property Investigation
Nipomo, California

PLATE 13



PROTOTYPE PERCOLATION POND FALLING HEAD TEST
September 30 to October 1, 2009
Pasquini Property Investigation
Nipomo, California

PLATE 14



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GROUNDWATER MOUND HEIGHTS ABOVE SILTY SAND LAYER
VARYING UPPER STRATUM HORIZONTAL HYDRAULIC CONDUCTIVITY VALUES
Pasquini Property Investigation
Nipomo, California

PLATE 15

APPENDIX A

Nicely, Tim [FWI]

August 27, 2009 Pasquini

Comparison of percolation test methods:
SLO County: Presoak until water level stabilizes (?). No pre-saturation is required if 6 inches drop in 25 minutes twice, then test run for 1 hour. Final 10 minutes is used for percolation rate.
Otherwise, pre-soak overnight,
Ventura County: no soaking needed if, after filling twice to 12 inches, water seeps away in less than 10 minutes. Then, if final 6 inches dprops in 30 minutes, run for 1 hour.

3:40 pm
Perc hole 6 (5 feet deep, all silty sand)
4:30 pm filled with 12 inches of water (24 inches from top.
Drop 19.5 to 13.5 inches (0.5 feet):
To 18.5: 1.25 minutes, (75 seconds)
To 17.5: 3.0 minutes, (105 seconds)
To 16.5: 4.75 minutes, (105)
15.5: 7 minutes, (135 seconds)
14.5: 9 mins, 35 seconds (155 seconds)
13.5: 13 mins, 35 seconds (240 seconds)

4:50
Drop 1 inch to marker at top of pipe: 3 minutes, 56 seconds (236 seconds).

5:05
Drop 1 inch: 4 minutes, 32 seconds (272 seconds). +15 percent.

5:12
Drop 1 inch: 5 minutes, 7 seconds (307 seconds). +13 percent.

Filled to within 1 foot of surface.
Installed transducer at 5:20, recording water levels at 20 second intervals to record drop of final foot.

Dug hole at 5 and 2.
Site 5: Silty sand to 5 feet, moist below 3 feet.

6:35 or so, filled site 6 to near ground surface. 6:45 pm. Filled uncased hole at site 5.
7 pm. Left site.

Nicely, Tim [FWI]

August 28, 2009 Pasquini
7:30 am Removed equipment from site 6.

Site 2 not accesible by vehicle and at topographic high, a location less preferred for testing because it is likely to be removed.

Moved to Site 1, dug to 5 feet (silty sand to depth). Installed 6-inch casing to 5 feet bgs. Installed transducer at 20 second interval.

8:50 am. Filled to about 3 feet depth with water.
Removed transducer at 10:50 am. About 3.25 inches (of inital 36) left in hole.
Stopped test and moved to site 5.

Site 5
Filled hole and performed test to 5 feet.

Site 2, 11 feet deep. Performed test by filling with water at ~4 pm.

Nicely, Tim [FWI]

September 1, 2009 Pasquini
Nipomo CSD, Pasqini Phase 2 Investigation
9:00 am
Ended test at deeper percolation hole, dug and tested site 9 and site 7, met with Bryan Gresser and Peter Sevcik, refilled site 7. Entire site is recently irrigated. Left site at 2 pm.

Nicely, Tim [FWI]

September 2, 2009 Pasquini

Nipomo CSD, Pasquini Site
Backhoe operator, Pat with R. Baker, on site to dig 20 by 20 foot hole for test basin to 2 feet. Pat is going to seperate top 1 to 1.5 feet of soil from bottom-most soil, to ultimately replace it whereis. The 60 by 60 foot work area is located at northwest corner of central intersection. The 20 by 20 foot pit will be located approximately 3 feet from the northwest corner of the work area. A tank, if needed will be located in the southwest corner of the work area.

Sprinklers on eastern side of site are on.

10:00 Pat started digging. Area has been irrigated on Monday and sprinklers removed.
Top 12 to 16 inches is moist moderate yellowish brown fine silty sand.

11:00 Completed hole to 12 to 16 inches.
12:15 Completed digging with backhoe.
Leveling.
Base of test pond is moist and quite compactable, therefore walking within pond is to be avoided. Pat will scarify / scrape bottom. Construction can be performed from without.
Walls are 2 to 3 feet high and base is level. Length of a wall is 20 feet, 2 inches, so Pat is going to widen length and width slightly.

Dug step at high side of hole.

Dug Pit 1, located ~200 feet southwest of southwest corner of pond.

Dark yellowish brown silty sand to 4 feet,
Reddish brown silty sand to 8 to 9 feet,
Pale yellowish brown sand with silt to 10 feet,
Pale yellow sand to 14 feet.
All moist.

Pit 2 ~200 ft NW of NW corner of pond.
Dark yellowish brown silty sand to 4
To reddish brn to 8 or 9 feet wet at 8
Pale yellowish sand 9 to 15 feet, beds of silty sand, dyb. Wet.

Pit 4 is 200 ft S of SE corner.
Dyb silty sand to 4 ft
Pale sand w silt to 6 ft wet
Pale yellow sand w minor color changes to 12 ft, moist to wet
11 to interbedded with silty sand, moist

Pit 3 is 250 NNE of NE corner of pond
Dyb silty sand to 5 feet

Pale yellow silty sand to 9 moist wet at 10 ft
Pale yellow sand w minor silt 11 to 13.
Off site at 4:45 pm.

Nicely, Tim [FWI]

September 3, 2009 Pasquini
Purchased equipment for and constructed the shoring for the test basin.

10:30 or so: performed Perc test at Site 7, at southeast corner of site.

4:30 pm or so: built 4-inch solid pipe percolation test pushed 3 inches into the base of the test pond; filled with water.

Nicely, Tim [FWI]

September 4, 2009 Pasquini

7:00 On site to meet delivery of 21,000 gallon tank for test pond
7:30 Valve is 4x3 gheen, which the ranch manager offered to supply.
8:00 Tank is installed along and parallel to the north-south road.
Water source is 4-inch male pvc, which needs to rise about 10.5 feet, then flow 30 feet across tank to inlet.
Outflow is either 2-inch male or 4-inch female. 45 degree, 20 feet, 45 degree, 15 feet to NE corner of test pond.

Bought plumbing supplies except 4-inch pipe. 1 inch meter accurate between 0.75 (3%) to 50 gpm (1.5%). 3/4 inch meter accurate 0.5 (3%) to 30 gpm (1.5%).

Nicely, Tim [FWI]

September 10, 2009 Pasquini

Nipomo CSD Pasquini
Discussed irrigation schedules and fittings with Bryan Gresser. We are going to plumb and fill the tank and start the test Monday. Will rent 3-inch VEO valve in AG.

Nicely, Tim [FWI]

September 14, 2009 Pasquini
Nipomo Pasquini Site. Completed plumbing for tank. Left site. Returned at 4 pm to start test.

Pasquini site
5:30 pm. Although the water was supposed to be ready to fill the 21,000 gallon tank, alas, the operator Steve is not ready because of problems with the well pump and valves. They will be ready tomorrow at 8 am.
Left site.

September 15, 2009 Pasquini

8 am on site. Steve will be ready for me to open my 4-inch valve to fill tank at 8:50 am.

8:45 am to 10:15 filled tank to overflowing. Gauge on side of tank doesn't work.

524,230 gallons
Opened at 9:46 am
10:00 am 524,404 gallons, 13 gpm
10:15 am 524,609 gallons, 13.7 gpm 15 minute average
At 12 gpm, tank would
10:30 left site.

2:30 on site
3:00 pm 528,301 gallons, 1-minute rate of 11.5 gpm, pond filled to over one foot and up to float.

Topped off tank, slowly (1 turn) 3 pm to 3:20 pm.

3:05 water depth 1.16 feet deep.

Nicely, Tim [FWI]

September 18, 2009 Pasquini

2:30 at Pasquini to fill tank
2:37 pm 550,761 gallons (4.5 gpm)
Tank water level down 3 feet 5 inches from top, which is approximately 14,640 gallons left, according to label on side of tank.

Alas, Steve's irrigators are not available, so Steve assures me that he will fill it tomorrow morning and again Monday morning.

3:03 pm 550,872 gallons: 4.3 gpm

Nicely, Tim [FWI]

September 25, 2009 Pasquini

9:50 left office

11:45 On-site at Southland WTP
Meter at 12:00 pm: 591,560 gallons. 1 minute rate: 4.2 gpm. 1.55 feet stage. (0.45 ft below top of wall).

12:10 Tank down 2 ft, 7 inches (2.6 ft or 31 inches). Volume based on side label: 15,494 gallons.

12:20 Downloaded diver. All data looks fine.

12:30 Stopped inflow into pond. Flow: 3.8 gpm (1 minute). Meter: 591,678 gallons. Test is hereby ended. Average rate between 9/19 and end of test: 4.2 gpm.
1 pm left site.

Nicely, Tim [FWI]

October 1, 2009 Pasquini

6:30 to 7:15 am remove piping and drain tank. Tank is empty and water is not flowing in to the test pond. About 15 inches of water is in the pond.
Meter: 605,794 gallons.

Nipomo Community Services District
Pasquini Property Test Percolation Pond, September 15 to 25, 2009

Date and Time	Elapsed time (minutes)	Meter (Gallons)	Total Meter (Gallons)	Flow Rate (av. gpm)	Flow Rate (gpm)	K (gpd/ft2)	K (ft/d)	Notes	Tank Status
9/15/09 9:46 AM	0.1	524,230						Started filling Test Pond	Filling from empty
9/15/09 3:00 PM	314	528,301	4,071.0	13.0	12	47	6.2	3:05 1.16 ft depth	Down ~2 feet, topping off
9/16/09 8:56 AM	1,390	535,778	11,548.0	6.9	5.2	25	3.3	About 2 ft pond depth	1/2 to 2/3 full
9/17/09 8:55 AM	2,829	542,440	18,210.0	4.6	4.2	17	2.2	Tank quite low	Filled tank to full by 10:30 am
9/17/09 9:52 AM	2,886				6.5			Manual Reading	
9/18/09 2:37 PM	4,611	550,761	26,531.0	4.7	4.5	16	2.2	Steve can't fill today, will tomorrow morning	3 feet 5 inches: 14,600 gallons
9/18/09 3:03 PM	4,637	550,872	26,642.0	4.3	4.5	16	2.2		
9/19/09 9:00 AM	5,714							Steve filled in our absence	
9/20/09 9:00 AM	7,154							Steve filled in our absence	
9/21/09 8:24 AM	8,558	567,510	43,280.0	4.2		15	2.0		
9/22/09 8:03 AM	9,977	573,126	48,896.0	4.0	3.5	13	1.7	Filled tank	Tank 1/3 full
9/22/09 12:41 PM	10,255	574,160	49,930.0	3.7		13	1.8		
9/22/09 2:07 PM	10,341	574,570	50,340.0	4.8	6.1	17	2.3	Tank full	Full
9/23/09 8:07 AM	11,421	579,060	54,830.0	4.2	4.0	15	2.0		
9/24/09 10:38 AM	13,012	585,300	61,070.0	3.9	3.7	14	1.9		1/4 to 1/3 full
9/24/09 11:20 AM	13,054	585,480	61,250.0	4.3	5.5	15	2.1	Tank full	Full
9/25/09 12:00 PM	14,534	591,560	67,330.0	4.1	4.2	15	2.0		31 Inches: 15,494 gallons
9/25/09 12:30 PM	14,564	591,678	67,448.0	3.9	3.8	14	1.9	Ended Test	
				4.2					
9/29/09 8:30 AM					2.3				71 inches: 7000

DRAFT

AECOM

AECOM
1194 Pacific St, Su 204, San Luis Obispo, CA 93401
T 805.542.9840 F 805.542.9990 www.aecom.com

Mr. Bruce Buel
Nipomo Community Services District
PO Box 326
Nipomo, CA and 93444

June 5, 2009

Dear Mr. Buel,

Subject: DRAFT Conceptual Percolation Pond Layout, Pasquini Property (APN 090-311-001)

At the request of the District, AECOM has prepared a conceptual layout for percolation ponds on the Pasquini Property, APN 090-311-001. The property is one of several in the area being investigated for feasibility for percolation of treated effluent from Southland Wastewater Treatment Facility.

The Pasquini property is a 192-acre parcel southwest of Orchard Road, extending approximately 3,500 feet to Riverside Road. The southern edge of the property is formed by the Santa Maria River Valley floodplain, creating a naturally steep bluff face, 80 to 130 feet high.

In May 2008, Fugro West performed a hydrogeologic and geotechnical assessment of the property and submitted their findings and analysis in a report dated July 30, 2008 (Hydrogeologic and Geotechnical Assessment of APN 090-31-001, Nipomo, California). The purpose was to assess the appropriateness of the property for percolation (i.e., estimate percolation capacity of the soils, and investigate the potential for the presence of aquitards), and evaluate the potential for percolated water to daylight on the bluff.

The Fugro report contained several conclusions and recommendations, briefly summarized as follows:

- Discharge of treated wastewater within the northerly third of the Pasquini property (adjacent to and immediately south of Orchard Road within an approximate 35-acre area) would be at a sufficient distance from the bluff of the floodplain, and would not daylight on the slope face. This conclusion should be confirmed with supplemental field work.
- Soils could be expected to percolate at a rate of 10 gallons per day per square foot (gpd/ft^2) of clean water. This conclusion should be confirmed with supplemental field work.
- Percolation ponds within the northern 35 acres area considered are unlikely to adversely impact the existing bluff face, provided that groundwater elevations remain below the base of the bluff.
- Stability of the bluff face is predominately influenced by erosion that has resulted from groundwater daylighting on the slope during high groundwater periods and storm events. Surface drainage should be controlled such that surface water does not run towards or over the bluff slope.
- To assess the percolation capacity of the surficial soils, Fugro recommends a series of conventional percolation tests be performed (approximately 1 test per every 2 acres of proposed percolation basin area).
- A small, on-site pilot test is recommended by Fugro. A 10- to 20- foot square percolation basin, constructed onsite would allow additional tests to more closely estimate the percolation capacity of the soils.
- Construction of four monitoring wells will provide water level data and background water quality information. Water level data is needed to estimate fate and transport of percolation water. Water quality data can ultimately be used to satisfy Regional Water Quality Control Board requirements

DRAFT

should the site be used for the proposed project in the future.

- A groundwater flow model could be constructed from the data gathered to better predict the fate and transport of treated wastewater discharged into the percolation basins.

To assist with the site testing, a conceptual layout was prepared for potential future percolation basins at the Pasquini property (Figure 1, attached). The following assumptions were used to prepare the layout:

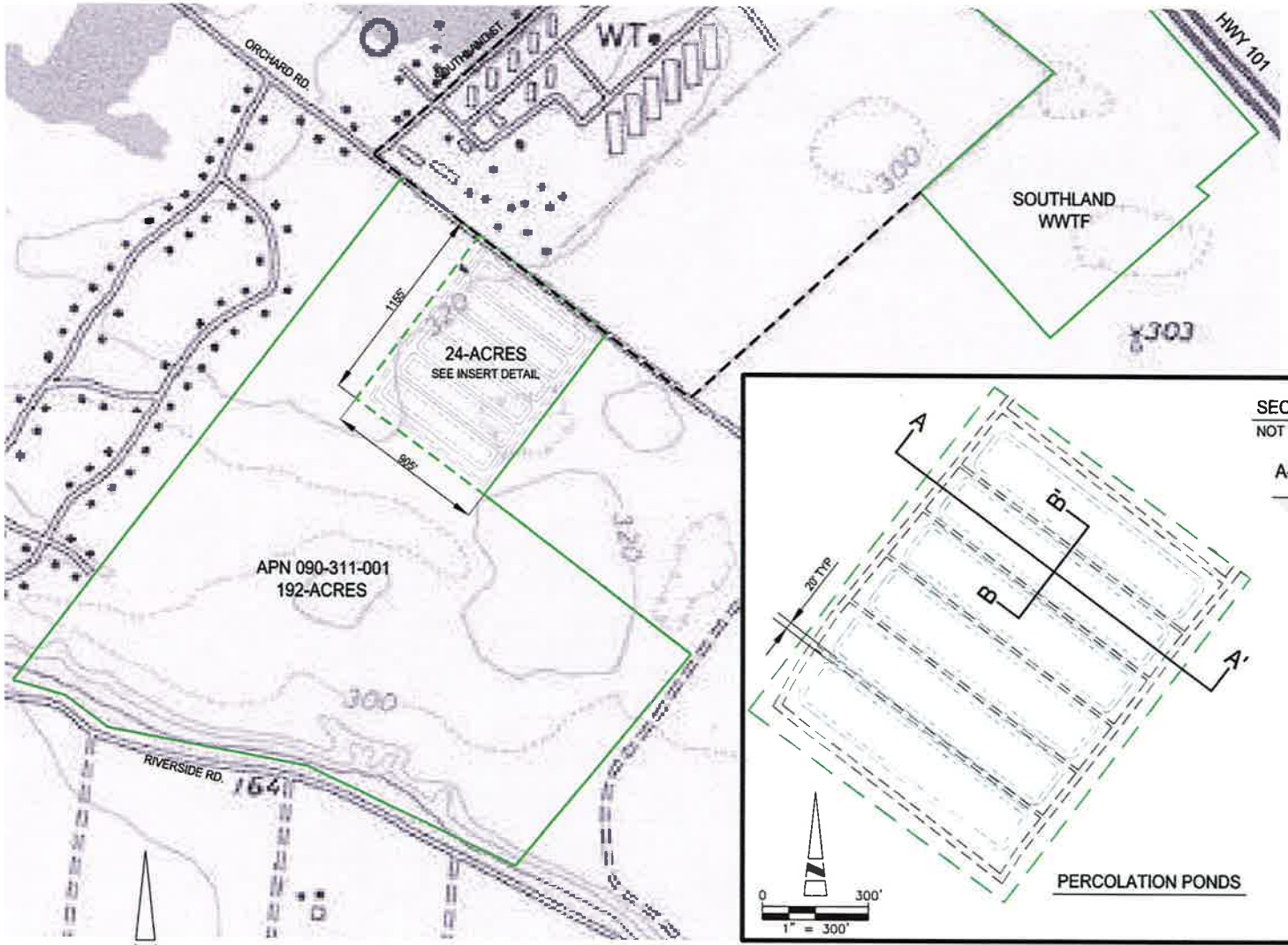
- Site soils have a percolation rate of 10 gpd/ft^2 for clean water. Assuming a de-rating of 50% for treated wastewater, the conceptual percolation rate is assumed to be 5 gpd/ft^2 for treated wastewater
  - Percolation Rate = 5 gpd/ft^2
- Future (2030) WWTF influent flow rates = 1.8 MGD, based on the maximum monthly flow (MMF) from the January 2009 NCSD Southland WWTF Master Plan (AECOM).
  - Hydraulic Loading = 1.8 MGD (future MMF)
- Dividing the hydraulic loading by the percolation rate, a net percolation area of 8.3 acres is needed.

The attached conceptual layout shows 6 percolation basins contained in a gross area of 24 acres. Basin floors are approximately 115 feet by 702 feet, providing just over 11 acres of percolation area. The total pond depth is 5 feet with a minimum freeboard of 2.5 feet. During max month flows, three ponds could handle the percolation without creating standing water. Periodically operations will cycle to the other three ponds, allowing the first three to dry completely. Once dried, the ponds should be scarified with a rake or light disc to maintain percolation rates. An operations and maintenance schedule should be developed based on results of the site-specific percolation tests.

Yours sincerely,

Eileen Shields, EIT

CC: Peter Sevcik (NCSD), Josh Reynolds (AECOM), Mike Nunley (AECOM), Paul Sorensen (Fugro)



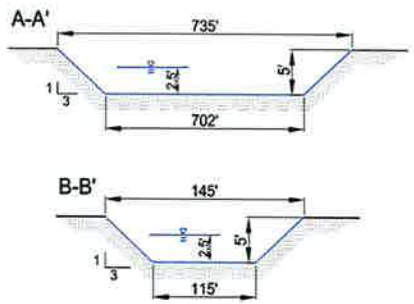
LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- POTENTIAL PIPELINE ALIGNMENTS
- APPROXIMATE PERCOLATION POND BOUNDARY
- DIRT ROAD

PERCOLATION PONDS

SECTIONS OF TYPICAL PERCOLATION POND

NOT TO SCALE



AECOM AECOM USA, Inc. 1194 Pacific Street, Suite 204 San Luis Obispo, California 93401 T 805.542.9840 F 805.542.9990 www.aecom.com	NIPOMO COMMUNITY SERVICES DISTRICT CONCEPTUAL PERCOLATION POND LAYOUT PASQUINI PROPERTY	AECOM PROJECT NO. 60100054	FIGURE 1

APPENDIX B

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8/27/2009 3:13:26 PM

8/27/2009 3:33:48 PM

8/27/2009 4:04:17 PM

8/28/2009 8:13:59 AM

9/1/2009 12:37:00 PM

9/1/2009 12:37:23 PM

9/2/2009 8:57:47 AM

9/2/2009 9:07:16 AM

9/2/2009 9:08:00 AM

9/2/2009 9:28:44 AM