

TO: BOARD OF DIRECTORS  
FROM: MICHAEL LEBRUN *ML*  
DATE: APRIL 23, 2010



**ACCEPT PROPOSAL FOR REBUILD OF VIA CONCHA WELL**

**ITEM**

Accept proposal for rebuild of Via Concha Well and authorize execution of work order.  
[ACCEPT PROPOSAL AND AUTHORIZE CONTRACT EXECUTION]

**BACKGROUND**

The Via Concha Well is one of the three largest producing wells providing approximately 19% of the District's water supply. It was drilled in 1992 and completed fall 1994 for a total cost of approximately \$170,000.00. District production records show the well produced 4,912 acre-feet (1.6 **Billion** gallons) between 2001 and 2008, with an average annual production of 614 acre-feet or 200 million gallons. During this same time period, repairs to the well totaled \$15,513.00, making the Via Concha Well easily the Districts most efficient pumper.

The 2007 Master Plan Update provided a nominal flow capacity of 750 gpm based on the long-term average of flow records. Recent well-efficiency testing indicated a decrease in pumping over the last several years to between 600-700 gpm, which was verified by District data. Last fall staff noted excessive vibration, and the well was placed in emergency-operation-only status. Pulling the well for inspection was postponed until the Sundale Well could be returned to service.

A work order contract was entered with Fisher Pump for the amount of \$4,120.00. The contract included pulling the pump and inspecting the well, including a video log of the well casing and an estimate for repair.

As soon as the well head was pulled, it was apparent that the column around the inner shaft had split, and the inner shaft had dropped. In order to facilitate removal of the well pump, the inner shaft had to be cut. The outer pipe is severely corroded from years of down-hole chlorination, but there was no evidence of the PVC pipe that the chemical tubing is fed through. The video log showed the PVC chemical feed piping at the bottom of the well. The video log of the well also indicated some minor clogging of the screen, which can be cleaned with high-velocity zone pumping. Inspection of the pump indicates that it is worn out.

Staff requested estimates for a new motor as well as for cost of rebuilding the existing motor. Staff recommends purchasing a new motor and rebuilding the old motor to keep as a spare. The benefit of having a spare motor on hand is that the motor can be replaced within a half day, vs. nearly a week of downtime to have the motor removed, rebuilt and replaced. The District has a spare, rebuilt motor for the Eureka Well on hand.

Staff requested estimates from three well contractors, Filliponi and Thompson, Fisher Pump and Well Service, and Layne Christensen Company. Filliponi and Thompson declined to submit an estimate. The lowest, most responsive estimate was from Layne Christensen in the amount of \$69,447.10, which includes rewinding the existing motor. The cost for a new motor is an additional \$6,789.67 plus sales tax.

Staff is requesting approval for the rehabilitation of the Via Concha Well from Layne Christensen Company, including a new motor and rebuilding the existing motor for a total cost of \$76,796.77.

**FISCAL IMPACT**

The 2009-2010 Budget Fund #-805 Water allowed for \$100,000.00 for repairs and maintenance. Staff is requesting \$76,796.77 for this repair.

**RECOMMENDATION**

Staff recommends that your Honorable Board approve the estimate for rehabilitation of the Via Concha Well from Layne Christensen, and authorize execution of a contract for \$76,796.77.

**ATTACHMENTS**

- Estimate from Fisher Pump and Well Services
- Estimate from Layne Christensen Company

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**Fisher Pump & Well Service**  
 2285 "A" Street  
 Santa Maria, CA 93458

Phone: 805-346-2422  
 Fax: 805-346-1844  
 Cell: 805-310-2576

**ESTIMATE**

Date April 21, 2010

**Nipomo Community Service District**  
 148 South Wilson Street  
 Nipomo, Calif 93444

Contact  
 Telephone No  
 Fax  
 Cell No

**Tina Grietens**  
 805 929 1133  
 805 929 1932

Remove PVC Debris From Well Bottom  
 Brush And Zone Pump Well With Submersible Pump  
 Replace All Downhole Equipment, Pump Set At 425 Ft  
 Original Design Conditions Of 700 GPM At 693 Feet Head.

Qty:	Item	Each	Extension
<b>Anticipated Materials</b>			
1	Pump Unit, Bowl Assembly 10"-18 Stage, Epoxy Coated OD, SS Bolting, Threaded Suction	\$ 19,734.00	\$ 19,734.00
1	10 Ft Epoxy In/Out Suction Pipe w/ 316SS Strainer, 8 x 6 Adaption	1,305.00	1,305.00
420	Ft Column Assembly, 425 Feet, 8 x 2.5 x 1.5, T&C Pipe Epoxy Coated Pipe In & Out, Tubing On OD	118.00	49,560.00
1	Ft Epoxy Coated Top Section Of Inner Column And Rehab'd Tube Nut	1,280.00	1,280.00
425	Three Downhole PVC Lines	1.20	510.00
<b>Projected Labor</b>			
10	Adapt Tool, "Fish" For PVC Sounding Chute At Well Bottom	200.00	2,000.00
8	Set Up, Brush Well, Nylon Brush	200.00	1,600.00
56	Install "Zone" Pump To Perf Area, "Work" Well With Isolated Sub Pump Intake Throughout The Inlet Zone, 390-690 Feet, Remove Pump At Completion, Transport	200.00	11,200.00
3	Submersible Control Panel, Set Up, Rental	125.00	375.00
16	Clear Old Pump Components, Set New, Prep To Install	165.00	2,640.00
30	Install Equipment As Outlined, Start & Check w/Customer	200.00	6,000.00
4	Supr On Site For Coordination, Supervision & Start Up w/Customer	95.00	380.00
	Selling Price Including Tax And Installation		\$ 96,584.00

Removal Of Pump, Evaluation And Video Log Has Been Completed

Separate Billing

David S. Fisher, President

Pricing Valid For 30 Days. Payment Due Within 15 Days.

Accepted By \_\_\_\_\_

Date \_\_\_\_\_



**Fisher Pump & Well Service**  
 2285 "A" Street  
 Santa Maria, CA 93458

Phone: 805-346-2422  
 Fax: 805-346-1844  
 Cell: 805-310-2576

**ESTIMATE**


**Nipomo Community Service District**  
 148 South Wilson Street  
 Nipomo, Calif 93444

Contact  
 Telephone No  
 Fax  
 Cell No

**Tina Grietens**  
 805 929 1133  
 805 929 1932

Via Concha Motor Options

Qty:	Item	Each	Extension
1	Transport Motor, Disassemble, Inspect, Clean, Bake, Retreat Change Thrust & Guide Bearings, Reassemble, Shop HiPot Test		\$ 3,528.00
	Option /		
1	New 150HP, VHS Motor, WP1, 1760 RPM, NRR, 460V 175% Thrust Bearing, Inverter Duty Rated, Delivered To Site		\$ 9,215.00

  
 \_\_\_\_\_  
 David S. Fisher, President

Pricing Valid For 30 Days. Payment Due Within 15 Days.

Accepted By \_\_\_\_\_

Date \_\_\_\_\_



# Layne Christensen Company

2360 THOMPSON WAY, SUITE D, SANTA MARIA, CA 93455  
 CONTRACTOR LICENSE NO. 510011

PHONE 805 925 9931  
 FAX 805 925 9642



**Nipomo Community Service District**  
 Peter Sevcik  
 P.O. Box 326  
 Nipomo, CA 93444

April 20, 2010

**Estimate For Via Concha Well Rehabilitation**  
 Equipment Outline By Customer Per fax April 20, 2010

Description		Total	
<b>Anticipated Materials</b>			
1	Ea	Goulds 10RJHC - 18 Stage Bowl Assembly w/Epoxy Coated OD, SS Bolting Threaded Suction, 6x8 Adaptation <i>Design Point: 700 GPM @ 693 TDH</i>	12,397.31
1	Ea	Clean, Bake, Retreat 150 HP VHS US Motor <b>Add 2656.00 for New 150 HP V11S Motor</b>	4,133.67
1	Ea	8" x 10' Suction Pipe, Epoxy Coated Inside&Out	357.14
1	Ea	6" 316SS Cone Strainer	651.41
425	Ft	8" Column Pipe, Epoxy Coated Inside&Out, T&C	10,625.00
425	Ft	2 1/2" x 1 1/2" Inner Column Assembly, Epoxy Coated OD	13,933.48
1	Ea	Top Section of Inner Column Assembly and Refurbished Tube Nut	680.00
425	Ft	1" PVC Tubing	358.21
850	Ft	3/4" PVC Tubing	534.28
21	Ea	1" PVC Couplings	25.80
21	Ea	3/4" PVC Couplings	22.50
1	Set	SS Banding Material 1/2"	68.00
1	Set	Hardware Items To Reset Pump	132.00
		Materials	\$ 43,918.80
		Sales Tax 8.25%	3,623.30
		<b>Total</b>	<b>\$ 47,542.10</b>
<b>Labor</b>			
1	LS	1. Mobilization/Demobilization 2. Fish for PVC sounding chute at well bottom 3. Brush, zone pump well w/isolated submersible pump intake throughout the inlet zone, 390-690' 4. Clear old pump components, set and install new pump, reinstall all piping, meters, flush valve, start up and test for proper operation	
		<b>Labor Total</b>	<b>\$ 20,030.00</b>

**Rentals**

1 LS Generator Rental - 1 Week

Rental Total \$ 1,875.00  
\$ 1,875.00

For Project \$ 69,447.10

Pricing Valid For 14 Days.

*Layne* Standard Conditions Of Sale Apply.

We Look Forward To Assisting You.

Please Contact Me With Any Questions.

Tim Oman

\_\_\_\_\_  
Accepted By

\_\_\_\_\_  
Date

\_\_\_\_\_

TO: BOARD OF DIRECTORS  
FROM: MICHAEL LEBRUN *ML*  
DATE: APRIL 23, 2010



**REVIEW MESA AIR QUALITY STUDY**

**ITEM**

Review recent Nipomo Mesa air quality study released by County Air Pollution Control District

**BACKGROUND.**

The Nipomo Mesa area has historically experienced relatively high levels of particulate matter in the air. The County APCD began studying the issue in 2004, and in February 2010, the District released a report which indicates off-highway vehicle activity in the Guadalupe-Nipomo Dunes may contribute to the high particulate levels.

**RECOMMENDATION**

It is recommended that the Board provide direction to Staff.

**ATTACHMENTS**

- Executive Summary, February 2010 South County Phase 2 Particulate Study, San Luis Obispo County Air Pollution Control District

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**SOUTH COUNTY PHASE 2  
PARTICULATE STUDY**

**San Luis Obispo County  
Air Pollution Control District**

**EXECUTIVE SUMMARY**

**February 2010**



## EXECUTIVE SUMMARY

Historical ambient air monitoring on the Nipomo Mesa has documented atypical concentrations of airborne particulate matter compared to other areas of San Luis Obispo County and other coastal areas of California. These historical measurements show that the California health standard for PM10 (airborne particles with a mean aerodynamic diameter of 10 microns or less) is regularly exceeded in many locations on the Nipomo Mesa. Population-based studies in hundreds of cities in the U.S. and around the world have demonstrated that both short-term and long-term exposure to elevated particulate levels can cause significant increases in hospital admissions, emergency room visits, asthma attacks and premature deaths. Groundbreaking long-term studies of children's health conducted in California have also shown that particle pollution may significantly reduce lung function growth in children.

To better understand the extent and sources of these unusually high concentrations of particulate pollution on the Nipomo Mesa, the San Luis Obispo County Air Pollution Control District (SLO APCD) has conducted comprehensive air monitoring studies in that region. The Phase 1 South County Particulate Matter (PM) Study began in 2004 and utilized filter-based manual particulate samplers measuring both PM10 and PM2.5 (particles 2.5 microns in diameter or less) concentrations at 6 monitoring sites located throughout the Mesa. Samples were collected over a one year period and analyzed for mass and elemental composition; meteorological measurements of wind speed and direction were also performed at numerous locations in the study area.

Data from the Phase 1 study showed air quality on the Nipomo Mesa exceeds the state 24-hour PM10 health standard at one or more monitoring locations on over one quarter of the sample days. Elemental analysis of PM2.5 filter samples demonstrated that on these high particulate days, the largest fraction of particles are composed of the wind blown crustal material containing silicon, iron, aluminum, and calcium. Meteorological data showed that high wind events entraining crustal particulate from the dune fields at the Oceano Dunes State Recreational Vehicle Area (SRVA) upwind of the Nipomo Mesa area and transporting them inland as the likely cause; data from a directional PM10 sampler on the Mesa that only operated on high wind days strongly supported this conclusion. Further analysis of Phase 1 study data was unable to provide a conclusive determination on whether off-road vehicle (OHV) activity in the SVRA played a role, either direct or indirect, in the particulate pollution observed on the Nipomo Mesa.

The Phase 1 Study Report was presented to the SLO APCD Board of Directors in March of 2007. The Board directed staff to design and conduct a follow-up study with the primary goal of determining if OHV activity on the SVRA played a role in the high particulate levels measured on the Nipomo Mesa; a secondary goal of the study was to determine what, if any, particulate impacts on the Mesa are due to fugitive dust from the petroleum coke piles at the ConocoPhillips Refinery complex. To help design and conduct the Phase 2 study, the SLO APCD retained the services of the Delta Group, an affiliation of scientists, mostly from the University of California at Davis (UCD), dedicated to the detection and evaluation of aerosol transport. The Great Basin Unified Air Pollution Control District (GBUAPCD), a recognized leader nationwide in understanding and mitigating wind blown particulate pollution, also lent their considerable expertise to the design and implementation of the study. Scientists from the Santa Barbara County APCD, the California Air Resources Board (CARB) and the California State Parks Department also provided significant input in the design phase of the study.

The Phase 2 Study design involved three independent investigations using a broad array of technologies and measurement techniques to better understand the source(s) and activities responsible for the observed particulate pollution problem on the Nipomo Mesa. Determining the role of OHV activity on the SVRA was a key focus of the study, so it was important to conduct measurements and analyses both within and downwind of the dunes at the SVRA, as well within and downwind of “control site” dunes north and south of the SVRA where offroad vehicles are not allowed, to evaluate the differences between them. PM and meteorological measurements downwind of the refinery coke piles and agricultural fields on the Mesa were also a necessary design element to determine potential contributions from those areas. Further, since the Phase 1 study showed that high PM concentrations on the Mesa occur primarily on high wind days, it was critical to ensure that study measurements captured the high wind events that typically occur during the early spring and late fall months.

The field measurement phase of the study was conducted from January 2008 through March 2009. The portion of the study performed by the SLO APCD entailed the deployment and use of real-time particulate monitors and wind sensors at a variety of locations downwind of both the SVRA and the control sites, as well as downwind of the coke piles and agricultural fields. These measurements were designed to assess the relative levels of airborne particulate coming from those areas, particularly on high wind days.

The portion of the study directed by the GBUAPCD involved measuring the amount of sand movement at different wind speeds, both in the SVRA and a control site, to better understand the mechanism and potential source location responsible for wind blown emissions. The Delta Group was responsible for deploying and operating sophisticated research sampling instruments designed to measure the mass, size distribution and elemental composition of the particulate pollution. These samplers were located downwind from the SVRA and a number of control sites that currently do not allow OHV activity. The samplers were also used to look for tracer elements to assess if petroleum coke from the ConocoPhillips refinery facility was being entrained by winds and impacting ambient PM levels in the area. The Delta Group also collected and analyzed soil samples upwind from each monitoring station.

The 3-pronged field investigation effort for the Phase 2 study gathered well over two million data points, requiring nearly a year to review, validate and analyze the data and compile the results. The data analysis was performed by the three independent research groups involved in designing and implementing the study, followed by peer review of the draft study report by a diverse and respected group of scientists with expertise in this field. This wealth of data and critical review of the results by numerous independent experts, combined with the results from the Phase 1 study, provides a much more complete understanding of the particulate pollution problem in the area, leading to the following major findings:

- The airborne particulate matter predominantly impacting the region on high episode days does not originate from an offshore source.
- Neither the petroleum coke piles at the ConocoPhillips facility nor agricultural fields or activities in and around the area are a significant source of ambient PM on the Nipomo Mesa.
- The airborne particulate matter impacting the Nipomo Mesa on high episode days predominantly consists of fine sand material transported to the Mesa from upwind areas under high wind conditions.

- The primary source of high PM levels measured on the Nipomo Mesa is the open sand sheets in the dune areas of the coast.
- The open sand sheets subject to OHV activity on the SVRA emit significantly greater amounts of particulates than the undisturbed sand sheets at the study control sites under the same wind conditions.
- Vegetated dune areas do not emit wind blown particles; the control site dunes have significantly higher vegetation coverage than is present at the SVRA.

The major findings resulting from detailed analysis of the diverse and comprehensive data sets generated during the Phase 1 and Phase 2 South County PM Studies clearly lead to a definitive conclusion: OHV activity in the SVRA is a major contributing factor to the high PM concentrations observed on the Nipomo Mesa.

There are two potential mechanisms of OHV impact. The first is direct emissions from the vehicles themselves, which includes fuel combustion exhaust and/or dust raised by vehicles moving over the sand. Elemental analysis of study data shows combustion exhaust particles are not a significant component in the samples during high concentration periods. However, analysis of SVRA vehicle activity data does show a weak relationship between high PM10 concentrations and high vehicle activity. This indicates a very small direct emissions impact from OHV activity caused by wind entrainment of dust plumes raised by vehicles moving across the open sand. While significant, the study data shows this is not the major factor responsible for the high PM levels downwind from the SVRA.

The second potential mechanism of impact from OHV activities involves indirect emission impacts. Offroad vehicle activity on the dunes is known to cause de-vegetation, destabilization of dune structure and destruction of the natural crust on the dune surface. All of these act to increase the ability of winds to entrain sand particles from the dunes and carry them to the Mesa, representing an indirect emissions impact from the vehicles. The data strongly suggests this is the primary cause of the high PM levels measured on the Nipomo Mesa during episode days.