

# NIPOMO COMMUNITY SERVICES DISTRICT

MONDAY, JUNE 22, 2009

2:00 P. M.

## **SPECIAL MEETING NOTICE & AGENDA** **INFRASTRUCTURE COMMITTEE**

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### COMMITTEE MEMBERS

ED EBY, CHAIR  
MICHAEL WINN, MEMBER

### PRINCIPAL STAFF

BRUCE BUEL, GENERAL MANAGER  
LISA BOGNUDA, ASSIST. GENERAL MANAGER  
DONNA JOHNSON, BOARD SECRETARY  
JON SEITZ, GENERAL COUNSEL  
PETER SEVCIK, DISTRICT ENGINEER

### MEETING LOCATION

District Board Room, 148 S. Wilson Street, Nipomo, California

1. **CALL TO ORDER, ROLL CALL AND FLAG SALUTE**  
ACTION RECOMMENDED: None
2. **REVIEW STATUS OF SUPPLEMENTAL WATER DEVELOPMENT**  
ACTION RECOMMENDED: Forward Recommendations to Board
3. **DISCUSS TIMELINE FOR ASSESSMENT PROCEEDINGS**  
ACTION RECOMMENDED: Forward Recommendations to Board
4. **DISCUSS PERMIT STRATEGY TECHNICAL MEMORANDUM**  
ACTION RECOMMENDED: Provide Feedback to Staff
5. **REVIEW STATUS OF SOUTHLAND WWTF UPGRADE PROJECT**  
ACTION RECOMMENDED: Forward Recommendations to Board
6. **DISCUSS KAMINAKA GEO-PHYSICAL RESEARCH**  
ACTION RECOMMENDED: Forward Recommendations to Board
7. **SET NEXT COMMITTEE MEETING**  
ACTION RECOMMENDED: Set Time/Date for Next Committee Meeting
8. **ADJOURN**

\*\*\* End Special Meeting Notice \*\*\*

TO: COMMITTEE MEMBERS  
FROM: BRUCE BUEL *BB*  
DATE: JUNE 19, 2009

**AGENDA ITEM**  
**2**  
**JUNE 22, 2009**

**REVIEW SUPPLEMENTAL WATER DEVELOPMENT STATUS**

**ITEM**

Review status of supplemental water development [Forward Recommendations to Board].

**BACKGROUND – WATERLINE INTERTIE PROJECT**

Mike Nunley from AECOM (Boyle Engineering) is scheduled to summarize the attached Monthly Report at the Committee Meeting.

The Wallace Group is preparing the Assessment Engineer's Report (See Agenda Item 3).

Staff and AECOM are compiling permit applications (See Agenda Item 4).

Staff has initiated the appraisal process for purchase of easements and real property. Staff, District Legal Counsel and Special Counsel is negotiating with the City of Santa Maria to finalize the Water Purchase Agreement. Staff and District Legal Counsel have been negotiating with the Woodlands, Rural and GSWC regarding their participation in WIP Funding. Staff has been negotiating with SLO County regarding the formation of an assessment district including properties outside of NCSD's boundaries. Staff has filed the Notice of Determination on the WIP FEIR.

**BACKGROUND – DESALINATION**

Staff is monitoring the progress of the South County Sanitation District regarding their desalination project. SCSD has yet to set a meeting to discuss their preliminary results.

**RECOMMENDATION**

Staff recommends that the Committee receive the staff updates and provide feedback and recommendations to the Board.

**ATTACHMENT**

\* MONTHLY REPORT

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## Memorandum

Date: June 22, 2009  
 To: Bruce Buel, General Manager – Nipomo Community Services District  
 From: Michael K. Nunley, PE  
 Subject: Waterline Intertie Project – Design Phase Status Report

Distribution: Josh Reynolds, PE Eileen Shields  
 Cesar Romero, PE Jim Froelicher  
 Peter Sevcik, PE Jon Hanlon, PE

The Project Team has completed the following work items this month:

1. AECOM attended a meeting with Padre and ACOE to discuss the River and levee crossing and investigate the need for a 404 permit. The ACOE requested a Jurisdiction Determination request letter with the plan and profile of the crossing and the biological survey map. The letter will state that we believe the project is outside of the ACOE jurisdiction with regard to the 404 permit and request a response in agreement. Padre will provide a draft to the District.
2. Technical Memorandum #6 was completed and submitted to the District for review and comments.
3. The Draft Narrative Report was submitted to the District for review and comment.
4. Bids for potholing services were collected by AECOM and provided to the District along with a recommendation for award of contract. The District Board awarded a contract to MGE. Potholing is expected to begin in July.
5. AECOM submitted the 60% design plans and specifications for Bid Package #1 – Santa Maria River Crossing. Copies were delivered to the District, the peer reviewers, and the construction management team.
6. AECOM met with NCSD staff and legal council to discuss the prequalification process for HDD, and contract documents for all bid packages. Over the next month, AECOM will compile draft contract documents and an HDD prequalification package and submit them for review by District staff and legal support.

### Schedule

The Project Schedule is attached.

### Budget Status

As shown on the attached Design Budget and Invoice Summary, our fee earned matches the amount expended. This indicates we are on budget as of this date.

Yours Sincerely



Michael K. Nunley, PE

Enclosures: Design Budget and Invoice Summary; Project Budget Summary; and Project Schedule

| ID | Task Name  | Start        | Duration  | Group By Summary |
|----|--|--------------|-----------|------------------|
| 1  | 1 Kickoff meeting  | Wed 7/16/08  | 1 day     |                  |
| 2  | 2 Right of Entry Agreements and Coordination                               | Thu 7/17/08  | 63 days   |                  |
| 3  | 3 Permitting and Approvals for Field Work at River                         | Thu 7/17/08  | 67 days   |                  |
| 4  | 4 Concept Design Report  | Thu 7/17/08  | 234 days  |                  |
| 5  | 5 101 - Geotechnical Report for HDD Technical Memorandum                   | Thu 11/18/08 | 2.5 mons  |                  |
| 6  | 6 102 - Project Bidding Strategy Technical Memorandum                      | Mon 10/20/08 | 1.15 mons |                  |
| 7  | 7 103 - Pipeline Alignment Technical Memorandum                            | Mon 10/13/08 | 102 days  |                  |
| 8  | 8 104 - Pump Station Design Technical Memorandum                           | Tue 12/23/08 | 2.45 mons |                  |
| 9  | 9 105 - Reservoir Design Technical Memorandum                              | Tue 12/23/08 | 2.45 mons |                  |
| 10 | 10 106 - Permitting Strategy Technical Memorandum                          | Mon 1/12/09  | 5.25 mons |                  |
| 11 | 11 107 - Chloramination Systems Technical Memorandum                       | Mon 10/13/08 | 1.4 mons  |                  |
| 12 | 12 108 - Back-up Power, Controls, and Instrumentation Technical Memorandum | Tue 2/17/09  | 1 mon     |                  |
| 13 | 13 109 - Pressure Reduction Study  | Thu 7/17/08  | 1 mon     |                  |
| 14 | 14 110 - Survey and Base Map (by Wallace Group)                            | Tue 9/2/08   | 4.7 mons  |                  |
| 15 | 15 111 - Geotechnical Report (by Fugro)                                    | Mon 10/20/08 | 3 mons    |                  |
| 16 | 16 112 - Draft Concept Report  | Tue 3/31/09  | 1 day     |                  |
| 17 | 17 113 Review and Finalize Concept Design Report                           | Wed 4/1/09   | 1 mon     |                  |
| 18 | 18 114 - Narrative Report  | Wed 5/13/09  | 1 mon     |                  |
| 19 | 19 Construction Plans and Specifications                                   | Wed 4/29/09  | 201 days  |                  |
| 20 | 20 Bid Package 1 - HDD   | Wed 4/29/09  | 10 mons   |                  |
| 21 | 21 60% Submittal   | Wed 6/10/09  | 1 day     |                  |
| 22 | 22 Peer Review   | Thu 6/11/09  | 2 wks     |                  |
| 23 | 23 District Review   | Thu 6/25/09  | 1 wk      |                  |
| 24 | 24 90% Submittal   | Wed 12/9/09  | 1 day     |                  |
| 25 | 25 Peer Review   | Thu 12/10/09 | 2 wks     |                  |
| 26 | 26 District Review   | Thu 12/24/09 | 1 wk      |                  |
| 27 | 27 100% Submittal  | Wed 2/3/10   | 1 day     |                  |
| 28 | 28 Bid Package 2 - NCSD System Pipeline Improvements                       | Wed 4/29/09  | 8.25 mons |                  |
| 29 | 29 60% Submittal   | Wed 7/22/09  | 1 day     |                  |
| 30 | 30 Peer Review   | Thu 7/23/09  | 2 wks     |                  |
| 31 | 31 District Review   | Thu 8/6/09   | 1 wk      |                  |
| 32 | 32 90% Submittal   | Wed 10/7/09  | 1 day     |                  |
| 33 | 33 Peer Review   | Thu 10/8/09  | 2 wks     |                  |
| 34 | 34 District Review   | Thu 10/22/09 | 1 wk      |                  |
| 35 | 35 100% Submittal  | Wed 12/16/09 | 1 day     |                  |
| 36 | 36 Bid Package 3 - Blosser Road Water Main and Flow Meter                  | Wed 4/29/09  | 6.75 mons |                  |
| 37 | 37 60% Submittal   | Wed 7/8/09   | 1 day     |                  |
| 38 | 38 Peer Review   | Thu 7/9/09   | 2 wks     |                  |
| 39 | 39 District Review   | Thu 7/23/09  | 1 wk      |                  |

Project WIP Design Schedule  
Date: Thu 6/18/09

Group By Summary  
Deadline

Task

- Progress
- Baseline
- Milestone

Split

- Baseline Split
- External Tasks
- Project Summary

Baseline Milestone

- Summary
- Roll Up Task
- Roll Up Milestone

Roll Up Milestone

- Roll Up Progress

Baseline Milestone

- Summary
- Roll Up Task
- Roll Up Milestone

Roll Up Milestone

- Roll Up Progress

Page 1

**Project Budget Summary**

5/29/2009

**Engineering Services for NCSD - SWP Desigr**

**Nipomo CSD**

|  | <b>Total Budget</b>   | <b>Amount<br/>Previously Invoiced</b> | <b>Current<br/>Invoice Amount</b> | <b>% of Budget<br/>Earned to date</b> | <b>% of Work<br/>Complete</b> |
|--|-----------------------|---------------------------------------|-----------------------------------|---------------------------------------|-------------------------------|
| Task Group 1 - Concept Design Report                                   | \$426,361.00          | \$426,361.00                          | \$0.00                            | 100%                                  | 100%                          |
| Task Group 2 - Permitting  | \$30,607.00           | \$25,658.22                           | \$1,506.60                        | 89%                                   | 89%                           |
| Task Group 3 - Construction Documents                                  | \$350,691.00          | \$95,863.57                           | \$78,711.21                       | 50%                                   | 50%                           |
| Task Group 4 - Project Management                                      | \$43,520.00           | \$36,522.08                           | -\$4,842.45                       | 73%                                   | 73%                           |
| Task Group 5 - Assistance During Bids                                  | \$48,942.00           | \$0.00                                | \$0.00                            | 0%                                    | 0%                            |
| Task Group 6 - Office Engineering During Construction (5 Bid Packages) | \$175,837.00          | \$0.00                                | \$0.00                            | 0%                                    | 0%                            |
| <b>Total</b>   | <b>\$1,075,958.00</b> | <b>\$584,404.87</b>                   | <b>\$75,375.36</b>                | <b>61%</b>                            | <b>61%</b>                    |

|                 | <b>Amount<br/>Previously Invoiced</b> | <b>Current<br/>Invoice Amount</b> | <b>Total Permitting<br/>Fees to date</b> |
|-----------------|---------------------------------------|-----------------------------------|--|
| Permitting Fees | \$1,572.91                            | \$0.00                            | \$1,572.91                               |

## Waterline Intertie Project

Opinion of Probable Project Costs from Concept Design Report (April 2009)

**Table 8.1 – Opinion of Probable Project Costs**

| <b>Item</b> | <b>Description</b>   | <b>Budgeted Amount<br/>May 2008 Preliminary<br/>Engineering Memo.</b> | <b>Updated Amount<br/>22-Apr-09<br/>Concept Design Report</b> |
|-------------|--|---|---|
| 1           | Mobilization   | \$580,000   | \$607,000   |
| 2           | Blosser Extension (18-in)                                  | \$1,247,000   | \$1,129,000 -   |
| 3           | Pump Station No. 1 turnout & meter (Blosser Rd)            | \$61,000  | \$158,000   |
| 4           | River Crossing (24-in HDD & levee jack & bore)             | \$6,135,000   | \$5,462,500   |
| 5           | 24-in Pipeline to Joshua                                   | \$656,000   | \$400,000   |
| 6           | Reservoir (0.5-MG)   | \$1,361,000   | \$1,365,000   |
| 7           | Pump Station No. 2   | \$603,000   | \$1,572,500   |
| 8           | Pressure Regulators (200 homes)                            | \$30,000  | --  |
| 9           | Pressure Reducing Valve Stations                           | \$18,000  | \$243,000   |
| 10          | Chloramination (Joshua & 5 wellheads)                      | \$707,000   | \$739,500   |
| 11          | Upgrade Southland to 12-in                                 | \$799,500 (1)   | \$849,000 (7)   |
| 12          | Upgrade Frontage to 12-in                                  | \$1,101,300 (1)   | \$957,000 (7)   |
| 13          | Upgrade Orchard to 12-in                                   | \$509,000   | \$1,103,500 (8)   |
| 14          | Upgrade Division to 10-in between Allegre and Meridian (6) | \$53,000  | --  |
| 15          | Oakglen Avenue 12-in main (5)                              | --  | \$457,000   |
| 16          | Darby Lane 12-in main (5)                                  | --  | \$153,000   |
| 17          | HWY 101 Bore & Jack (5)                                    | --  | \$241,000   |
| 18          | Isolation Valves (5)                                       | --  | \$12,000  |
| 19          | Pump Station All Weather Access Road                       | --  | \$128,000   |
|             | <b>Construction Subtotal</b>                               | <b>\$13,860,800</b>   | <b>\$15,577,000</b>   |
| 20          | Contingency  | \$3,643,000   | \$3,115,400 (10)  |
|             | <b>Construction Subtotal + Contingency</b>                 | <b>\$17,503,800</b>   | <b>\$18,692,400</b>   |
| 21          | Property Allowance   | <i>not included</i> (4)   | \$500,000 (4)   |
| 22          | Design-Phase Engineering                                   |   |   |
|             | Original Agreement (July 2008)                             |   | \$744,993   |
|             | Budget Revision 1 - Pressure Reduction                     |   | \$132,798   |
|             | Budget Revision 2 - Biological Survey for HDD              |   | \$4,050   |
|             | Budget Revision 3 - Modeling for GSW/Woodlands Turnouts    |   | \$8,380   |
|             | Budget Revision 4 - Additional Survey Services             |   | \$9,900   |
| 23          | Office Engineering during construction                     |   | \$175,837   |
| 24          | Estimated Construction Management (3)                      | \$2,428,000 (2)   | \$1,507,170 (9)   |
| 25          | Permitting Fees To Date                                    | --  | \$1,573   |
| 26          | Non-Final Design Funds Spent To Date                       | <i>not included</i>   | \$1,402,879 (11)  |
| 27          | Estimated Other Costs (Assessment, etc)                    | <i>not included</i>   | \$415,420 (11)  |
|             | <b>PROJECT TOTAL (Rounded to 1000)</b>                     | <b>\$19,932,000</b>   | <b>\$23,596,000</b>   |

Waterline Intertie Project

Opinion of Probable Project Costs from Concept Design Report (April 2009)

**Table 8.1 (continued)**

Table 8.1 Notes:

ENR CCI: March 2008 = 8109; March 2009 = 8534

- (1) Costs are from the December 2007 Water and Sewer Master Plan (Cannon).
- (2) Engineering and Construction Management were originally presented as a "lump sum" amount
- (3) Includes material testing, construction staking, and environmental monitoring
- (4) Estimate only. Item not included in previous construction cost opinions, but was added to the Concept Design Report to provide a complete assessment of anticipated project costs.
- (5) These work items were added to relieve high pressures on Mesa as an alternative to service pressure regulating valves (See Tech Memo 9). One PRV station at Maria Vista was required initially. Four are recommended for revised project. This was design Budget Revision #1.
- (6) Based on review of record drawings, this pipeline is already a 10-in main
- (7) Initial estimate incorporated Master Plan project costs. Revised estimate includes higher unit costs to reflect paving 1 traffic lane, per County standards
- (8) Updated unit costs include higher costs to reflect paving 1 traffic lane, per County standards
- (9) To be provided by CM team - Has not been revised to reflect additional work for construction management of Oakglen, Darby, and Orchard extensions.
- (10) Contingency was modified to 20% which is more appropriate for 30% design phase.
- (11) Provided by District staff.

*not included* = Item was not included in previous construction cost opinions, but was added into the Concept Design Report to provide a complete assessment of anticipated project costs.

TO: COMMITTEE MEMBERS  
FROM: BRUCE BUEL *BB*  
DATE: JUNE 19, 2009

**AGENDA ITEM**  
**3**  
**JUNE 22, 2009**

**DISCUSS TIMELINE FOR ASSESSMENT PROCEEDING**

**ITEM**

Discuss Timeline for Assessment Proceeding [Forward Recommendations to Board].

**BACKGROUND**

At the May Committee Meeting Chairman Eby requested that staff provide a timeline for completion of the assessment proceeding. Given the uncertainty with the County regarding the formation of a JPA, it is impossible to forecast exact dates. Following is Staff's best guess in regards to the timeline assuming that a JPA can be formed by Mid September 2009:

- Wallace Group Submits Research – Early August
- Board Review of Research – 8/12/09
- Notice Mailed to Property Owners – 8/31/09
- Wallace Group Submits Preliminary Engineer's Report – Mid September
- Hearings for Property Owners who request alternate Assessment – 9/30 to 10/28
- Wallace Group Submits Final Report – Mid November
- Adoption of Preliminary Bond Resolutions (County) – December
- Ballots Mailed – early January 2010
- Ballots Counted – Late February 2010
- Adoption of Final Bond Resolutions – March 2010
- Sale of Bonds – March 2010
- Year #1 Assessments – FY2010-2011

**RECOMMENDATION**

Staff recommends that the Committee discuss this item and provide recommendations for Board Consideration.

**ATTACHMENT – NONE**

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TO: COMMITTEE MEMBERS  
FROM: BRUCE BUEL *BB*  
DATE: JUNE 19, 2009

**AGENDA ITEM**  
**4**  
**JUNE 22, 2009**

DISCUSS PERMIT STRATEGY TECHNICAL MEMORANDUM

**ITEM**

Discuss Permit Strategy TM [Forward Recommendations to Board].

**BACKGROUND**

Attached is the draft TM from AECOM.

**RECOMMENDATION**

Staff recommends that the Committee review the draft TM and forward recommendations to the Board.

**ATTACHMENT**

- DRAFT TM

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## Memorandum

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Date: June 5, 2009  
To: Bruce Buel, General Manager - Nipomo Community Services District  
From: Michael K. Nunley, PE  
Subject: Technical Memorandum No. 6 – Permitting Strategy

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Distribution: Peter Sevcik, PE  
Eric Snelling, Padre Associates  
Eileen Shields, AECOM  
Josh Reynolds, PE, AECOM  
Cesar Romero, PE, AECOM  
Dave Arthurs, AECOM  
Craig Camp, PE, Jacobs Associates

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This Memorandum is AECOM's submittal for Task Group 1, Task 106, of the Waterline Intertie Project Design agreement between AECOM and Nipomo Community Services District. AECOM's scope of work is to provide a strategy for obtaining the required permits, summarize the recommended environmental monitoring/studies prior to and during construction, and recommended environmental mitigation measures.

### 1.0 Anticipated Permits and Approvals

A list of permits that may be required for the project is provided in Table 1.

**TABLE 1  
ANTICIPATED PERMITS**

| <b>Agency</b>  | <b>Permit/<br/>Approval</b>   | <b>Regulated Activity</b>  | <b>Review Timing</b>                                   |
|--|---|--|--|
| <b>Local Agencies</b>  |   |  |  |
| County of San Luis Obispo  | Minor Use Permit (not required, pending review of 60% design)<br>Encroachment Permit                                  | Construction of project<br><br>Work in County roads  | Use permit issuance 2-3 months<br>3-4 weeks            |
| Santa Barbara County Flood Control and Water Conservation District | Easement/<br>Encroachment –<br>Plan review & approval   | Tunneling under flood control levee  | 2-3 months   |
| City of Santa Maria  | Encroachment permit (possible, dependent on agreement with City)  | Work within City streets and drainage areas  | 4 weeks  |
| San Luis Obispo APCD   | Naturally occurring asbestos review, NESHAP asbestos notification for demolition, Stationary engine permit to operate | Naturally-occurring asbestos<br><br>Asbestos demolition notification<br><br>Emergency diesel-fueled generators | 2 weeks<br><br>10 days prior to start<br><br>4-8 weeks |
| Santa Barbara APCD   | NESHAP asbestos notification  | Asbestos demolition notification   | 10 days prior to start                                 |
| <b>State Agencies</b>  |   |  |  |
| Cal Trans  | Encroachment Permit   | Jack and bore installation underneath HWY 101 at Grande/Darby  | 30-60 days typically                                   |
| Cal-OSHA   | Tunneling permit  | Tunneling under flood control levee and roadways   | 30 days prior to start of tunneling                    |
| California Department of Public Health (CDPH)                      | Domestic Water Supply Permit Amendment  | Changes to water system & supply   | > 3 months before WIP is operational                   |
| California Department of Fish and Game (CDFG)                      | 1602 Streambed Alteration Agreement   | Crossing of streams, rivers that cause major disturbance to  | 6-8 weeks  |

| Agency                                       | Permit/ Approval   | Regulated Activity  | Review Timing   |
|--|--|---|---|
|  |  | streambed.  |   |
| Regional Water Quality Control Board (RWQCB) | NPDES  | Construction Stormwater General Permit  | Submittal of Notice of Intent 2 weeks prior to construction (by Contractor) |
| <b>Federal Agencies</b>                      |  |   |   |
| U.S. Army Corps of Engineers (USACE)         | Section 404 Nationwide permit (not required pending Jurisdictional Determination by Corps) | Discharge of dredged or fills material into waters of the U.S. during construction. Jurisdictional waters include rivers, streams and wetlands (to be avoided by HDD under river) | 3 months  |
|  | Levee Crossing Permit  | Tunneling under Santa Maria River levee   | 2-3 months  |

**2.0 Strategy for Permit Applications and Approvals**

2.1 County of San Luis Obispo: Minor Use Permit (MUP) – AECOM and District staff will present the Concept Design Report to County Planning Staff in order to determine the need for a Minor Use Permit. At this time, it is assumed an MUP will not be required. If required, AECOM staff will prepare an application packet with preliminary plans and follow the County’s MUP procedure.

2.2 County of San Luis Obispo: Encroachment Permit – The County Public Works staff reviewed the 30% plans and provided preliminary fee estimates and recommendations for edge of pavement restoration. The County staff requested a follow-up meeting around the 90% design level. AECOM staff will follow up with County staff, then complete an Encroachment Permit Application and submit it to the County.

2.3 Santa Barbara County Flood Control and Water Conservation District (FCWCD): Encroachment Permit and Approval for Levee Crossing – FCWCD staff has been consulted on depth and construction technique for crossing the levee, and their comments are being incorporated into the preliminary levee crossing plans. District property negotiation and legal staff will support easement acquisition if needed.

2.4 City of Santa Maria: Encroachment Permit – The Concept Design Report was provided to City staff for review and determination of encroachment requirements.

2.5 San Luis Obispo County APCD – The San Luis Obispo APCD presented a list of requirements in their July 24, 2008 letter to NCSD. Included in this letter were the following items: 1) submittal of geologic evaluation and exemption request for naturally occurring asbestos (NOA), 2) submittal of NESHAP asbestos demolition notifications for any demolition activities (including pipe removal), and 3) permits for stationary engines, including the HDD drilling rig and a proposed diesel-fuel powered emergency generator at the proposed Pump Station No. 2. Padre will assist AECOM with the completion of the geologic evaluation and submittal of the NOA exemption request to APCD. The APCD must be notified at least 10-days prior to any demolition or piping removal activities as part of the project. The contractor bid specifications for HDD activities will include a requirement to either use a HDD drilling rig with a state-wide portable engine registration or to obtain a permit

from the APCD. Finally, an authority to construct/permit to operate for the proposed emergency generator at Pump Station No. 2 will be required prior to installation.

2.6 Santa Barbara County APCD - The APCD must be notified at least 10-days prior to any demolition or piping removal activities as part of the project within Santa Barbara County.

2.7 Cal Trans: Encroachment Permit – AECOM will submit an application and construction plans for this crossing to Cal Trans for review and approval. Cal Trans has been consulted informally and their input is being incorporated into the construction plans.

2.8 Cal-OSHA Tunneling Permit – This permit should be obtained by the contractor, as required by Cal-OSHA regulations. Cal-OSHA requires that the agency proposing the tunneling project submit the geotechnical information to the Division for review and classification relative to flammable vapors or gas. The preliminary classification shall be obtained prior to bidding.

2.9 California Department of Public Health Services: Domestic Water Supply Permit Amendment – The application for Amendment to the Domestic Water Supply Permit requires several accompanying documents: an updated Total Coliform Rule Bacteriological Monitoring Plan, an updated Disinfectant Residual Monitoring Plan, project plans and specifications, and proof of notification to the public. The application packet should be submitted to CDPHS at least three months before the project is operational.

2.10 Regional Water Quality Control Board: General Permit for Stormwater Discharge from Construction Sites – AECOM will include a performance specification for the Stormwater Pollution Prevention Plan and will require that the Contractor submit the Notice of Intent in the construction specifications for the project. A Section 401 water quality certification from the RWQCB will not be required if the USACE does not require a Section 404 authorization.

2.11 California Department of Fish and Game: Streambed Alteration Agreement (SAA) – The 30% plan and profile for the river crossing has been completed and is available for review and correspondence with the permit agencies. Padre contacted CDFG and determined that a SAA will be required for HDD activities under the Santa Maria River. Padre and AECOM will prepare a SAA application for NCSD review and authorization. A HDD Frac-Out Monitoring, Response and Cleanup Plan will be required as part of the submittal to CDFG.

2.12 U.S. Army Corps of Engineers: Section 404 Authorization – The 30% plan and profile for the river crossing has been completed and is available for review and correspondence with the permit agencies. USACE consultation with the U.S. Fish and Wildlife Services and NOAA Fisheries regarding potential impacts to engendered species also would be required as part of a 404 permit approval. Padre has met with the USACE regarding the need for a Section 404 permit if no disturbance will occur to the bed or bank of the Santa Maria River during construction activities, and determined that a permit will not be required provided that the HDD bore pit does not encroach in the river bed or bank. AECOM and Padre will confirm this understanding with USACE through submittal of a preliminary jurisdictional determination request to the USACE. Also, a levee crossing permit is required by the Corps Operations Section for tunneling under the existing flood control levee. The levee crossing will require coordination with the Corps and SBFCWCD to ensure that there are no conflicts with the proposed Corps levee improvement project. A Draft Environmental Assessment for the levee improvement project was released by the Corps in April 2009.

### **3.0 Mitigation and Monitoring Requirements from Environmental Impact Report**

Design-related requirements from the EIR are described in Table 2.

**TABLE 2  
SUMMARY OF IMPACTS AND MITIGATION MEASURES**

| <b>Description of Impact</b>  | <b>Mitigation Measure Summary</b>   | <b>Recommended Approach</b>  |
|---|---|--|
| <p><b>A-1.</b> The proposed project may impact land uses in areas adjacent to short-term project construction activities or long-term project operations.</p> | <p><b>A-1:</b> For any construction staging or storage proposed on prime farmland, permanent impacts to soil resources can be avoided with the following measures</p> <ul style="list-style-type: none"> <li>• A geotextile membrane shall be placed on top of native soils prior to the placement of any stockpile, fill, base materials or construction materials. Upon completion of the project, native soil will be replaced to its previous condition in terms of soil texture, water holding capacity and soil permeability</li> <li>• Pipelines will be placed five to six feet below existing grade through agricultural farmland</li> <li>• All excavated soils will be stockpiled during construction in a manner that protects the soils' physical, chemical and biological characteristics. Biologically active topsoil (A horizon) shall be segregated from deeper soils during construction and replaced in a similar manner upon completion of construction</li> <li>• At the conclusion of construction, soils will be replaced in a manner that mimics the pre-construction characteristics of the soils, including compacting the soils to the same soil permeability, soil texture and available water holding capacity</li> </ul> <p><b>A-2:</b> Project construction shall be coordinated with property owners and any farm lessee/operators. Impacts to agricultural use of the property can be avoided or minimized with the following measures</p> <ul style="list-style-type: none"> <li>• All existing irrigation systems shall be located in order to avoid damaging buried irrigation lines, wells, risers and other agricultural infrastructure</li> <li>• Early notice of any planned closures or detours on existing roadways either within the fields or along existing paved roads with regular updates about forthcoming closures or detours shall be provided to area agricultural producers so that adequate planning can be made for the movement of agricultural goods and personnel.</li> </ul> | <p>Requirements to be incorporated in design plans and specifications.</p> |

| Description of Impact (Cont.)  | Mitigation Measure Summary (Cont.)   | Recommended Approach (Cont.)   |
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| <p><b>C-1.</b> The proposed project may result in the creation of water quality incompatibility due to the differences in water treatment employed by the City of Santa Maria and the NCSD</p> | <p><b>C-1:</b> A public awareness program shall be implemented by the Nipomo Community Services District that alerts District customers to the potential harmful effects of chloramines on certain aquatic species and reptiles and to treatment products that are readily available to treat water for fish tanks. Users of ultra-pure water, kidney dialysis patients and chloramine-sensitive manufacturing processes shall also be notified of the addition of chloramine to the District water supplies.</p>  | <p>District to provide public information, brochures, and workshops</p>  |
| <p><b>C-2.</b> The proposed project may result in degradation of surface and shallow groundwater quality as a result of underground horizontal directional drilling-related frac-outs.</p>     | <p><b>C-2:</b> Construction shall occur during the dry season (i.e., April 15 to November 15) when there is little or no flow in the Santa Maria River in order to reduce potential contact of frac-out fluids with surface waters.</p> <p><b>C-3:</b> The Nipomo Community Services District shall complete a preliminary geotechnical investigation along the underground horizontal directional drilling route to further define the stratigraphy and determine the appropriate depth of drilling to avoid frac-outs (i.e., the depth of finest grained sediments) and to determine appropriate methods (i.e., appropriate drilling mud mixtures for specific types of sediments). Drilling pressures shall be closely monitored so that they do not exceed those needed to penetrate the formation.</p> <p><b>C-4:</b> The Nipomo Community Services District shall prepare a Frac-out Monitoring, Response and Clean-up Plan that shall be approved by the Regional Water Quality Control Board prior to any underground horizontal directional drilling activities. The Plan shall include the following elements:</p> <ul style="list-style-type: none"> <li>• Description of the equipment and procedures for controlling fluid pressures to reduce the risk of hydraulic fracturing.</li> <li>• Description of monitoring procedures to detect surface exposures of drilling mud in dry areas and in flowing waters or to groundwater.</li> </ul> | <p><b>C-2:</b> Construction window for HDD to be limited to this timeframe.</p> <p><b>C-3:</b> Geotechnical Report has been completed</p> <p><b>C-4:</b> Frac-out Monitoring, Response, and Cleanout Plan to be provided with construction plans</p> |

| Description of Impact (Cont.)   | Mitigation Measure Summary (Cont.)   | Recommended Approach (Cont.)   |
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|   | <ul style="list-style-type: none"> <li>• Description of equipment and procedures to respond to hydraulic fractures that break out at the ground surface or to the groundwater including overland access routes, containment methods and materials, equipment to be used and availability, environmental protection measures, emergency response plan, and post-containment clean up and restoration.</li> <li>• Description of equipment, procedures and materials for grouting and abandoning an incomplete pilot hole that cannot be advanced further.</li> <li>• Evaluation plan and criteria for continuing drilling. Agency notification and post-event permitting.</li> </ul>  |  |
| <p><b>D-2.</b> Construction activities within the proposed pipeline alignments, storage tank and pump station locations could adversely affect nesting activities of protected migratory birds and raptors.</p> | <p><b>D-1:</b> Pipeline, water storage tank and pump station construction operations shall be conducted prior to, or after, the nesting season (February 15 to September 15) to avoid any potential impacts to nesting birds. This shall include any necessary vegetation and/or tree removals which could disrupt nesting birds. Therefore, construction activities should be conducted between the months of October and January to the extent feasible. If the above measure is not feasible, preconstruction surveys shall be conducted by a qualified biologist two weeks prior to the initiation of construction activities initiated between February 15 and September 15 to identify potential bird nesting sites.</p> <ul style="list-style-type: none"> <li>• If active nest sites of common bird species protected under the Migratory Bird Treaty Act (e.g., Northern mockingbird, House finch, etc.) and Fish and Game Code Sections 3503 and 3503.5 are observed within 300 feet of construction activities, then the project shall be modified and/or delayed as necessary to avoid direct take of the identified nests, eggs and/or young.</li> <li>• If active nest sites of raptors and/or species of special concern are observed within the vicinity of project</li> </ul> | <p>District will provide biological monitor to perform a preconstruction survey to allow construction during the February to September period.</p> |



| Description of Impact (Cont.)   | Mitigation Measure Summary (Cont.)  | Recommended Approach (Cont.)   |
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|   | <p>construction activities, construction shall avoid the nest site or be terminated until the California Department of Fish and Game is contacted and an appropriate buffer zone around the nest site is established. Construction activities in the buffer zone shall be prohibited until the young have fledged the nest or the nest is abandoned.</p>  |  |
| <p><b>D-3.</b> Construction activities could adversely affect special-status terrestrial and avian species potentially occurring in the project area.</p> | <p><b>D-2:</b> All equipment staging and construction crew parking areas shall be located within pre-designated staging areas identified on construction plans which avoid identified sensitive habitats as determined by a qualified biological monitor. This shall include pre-designation of all staging areas, proposed horizontal directional drilling and jack-and-bore operations. Additionally, all construction access routes shall be established in previously disturbed areas and/or existing roadways.</p> <p><b>D-3:</b> Exclusionary and silt fencing will be erected at the boundaries of the construction areas to avoid equipment and human intrusion into adjacent habitats with emphasis on protection of areas containing special-status species. The exact location of exclusionary and silt fencing for each construction area shall be determined by a qualified biological monitor. The fencing shall remain in place throughout the construction phase for each project component.</p> <p><b>D-4:</b> A qualified biological monitor shall conduct a worker orientation for all construction contractors (site supervisors, equipment operators and laborers), which emphasizes the presence and identification of special-status species within the project area, their habitat requirements and applicable regulatory policies and provisions regarding their protection and measures being implemented to avoid and/or minimize impacts.</p> <p><b>D-5:</b> If nighttime construction activities are warranted, all equipment lighting</p> | <p>Requirements to be included in plans and specifications. Biological monitor to be provided by District.</p> |

| Description of Impact (Cont.) | Mitigation Measure Summary (Cont.)  | Recommended Approach (Cont.) |
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|                               | <p>shall be shielded away from adjacent wildlife habitat areas and the open sky in order to minimize lighting/glare impacts of wildlife while still providing safe working conditions for construction personnel.</p> <p><b>D-6:</b> A dust control program during the construction phase of the project shall be implemented to minimize dust impacts to adjacent vegetation communities and associated special status species.</p> <p><b>D-7:</b> A qualified biologist shall conduct a pre-activity survey to determine presence/absence of California horned lizard within and adjacent to the horizontal directional drilling laydown areas and jack-and-bore locations along the southern boundary of the Santa Maria River. Surveys shall only be required during the active period of California horned lizards (generally April through September). If California horned lizards are identified adjacent to and/or within work areas, hand rakes or an equivalent method shall be utilized by the biologist in order to scarify the ground surface and encourage the horned lizards (and other wildlife) to vacate the immediate area prior to construction. Alternatively, drift fences shall be used to capture horned lizards. As necessary, the qualified biologist shall physically relocate any California horned lizards to suitable habitat located outside the construction zone(s). Procedures and protocols for relocation shall be based up on pre-project consultation with the California Department of Fish and Game.</p> <p><b>D-8:</b> A qualified biological monitor shall be onsite during all vegetation clearing and shall periodically monitor the project area during construction activities in order to inspect protective fencing, equipment staging areas and to physically relocate or remove any special-status wildlife species entering the construction zone (e.g., California horned lizard, etc.). All special status species shall be relocated to suitable habitat located outside the construction zone by the qualified biologist. Exact procedures and protocols for relocating shall be based upon pre-project</p> |                              |

| Description of Impact (Cont.)   | Mitigation Measure Summary (Cont.)  | Recommended Approach (Cont.)  |
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|   | <p>consultation with California Department of Fish and Game.</p> <p><b>D-9:</b> Nesting bird surveys shall be conducted between February 15 and August 15 to identify nest sites of special-status bird species including Loggerhead shrike, California horned lark, Northern harrier, Cooper's hawk, White-tailed kite and Tricolored blackbird.</p>   |   |
| <p><b>D-4.</b> Pipeline construction activities could adversely affect aquatic and semi-aquatic special-status species within the Santa Maria River, Blosser Road drainage canal, and agricultural stock ponds located along the Nipomo Mesa.</p> | <p><b>D-10:</b> Site disturbance and construction activities associated with the Santa Maria River pipeline crossing, including the horizontal directional drilling operations shall not occur during the rainy season (October 15 to April 15). No construction activities shall occur during or immediately following a rain event or if water is flowing within the Santa Maria River.</p> <p><b>D-11:</b> A qualified biological monitor shall conduct a worker orientation which emphasizes the presence of semi-aquatic, special-status species within the project area (e.g., California red-legged frog, Two-striped garter snake, etc.), their habitat requirements, applicable regulatory policies and provisions regarding their protection and measures being implemented to avoid and/or minimize impacts.</p> <p><b>D-12:</b> The Blosser Road drainage canal shall be illustrated on all final construction plans. At no time shall any equipment and/or materials staging be allowed within the bed or banks of the drainage feature. In addition, a row of silt fencing or equivalent shall be installed along the perimeter of the drainage canal during project operations to prohibit CRLF movement into the work zone.</p> <p><b>D-13:</b> All work areas within 100 feet of known California red-legged frog habitat shall be surveyed by a qualified biologist each day prior to the initiation of construction activities. As necessary, the qualified biologist shall physically relocate semi-aquatic, special-status species (e.g., Southwestern pond turtle, Two-striped garter snake, etc.) and common semi-aquatic species (e.g., Western toad, Pacific chorus frog, etc.) to</p> | <p>See previous comments regarding biological monitor, Frac-Out Response Plan, and incorporation of requirements in plans and specifications.</p> |

| Description of Impact (Cont.) | Mitigation Measure Summary (Cont.)  | Recommended Approach (Cont.) |
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|                               | <p>suitable habitat areas located outside the construction zone(s). Exact procedures and protocols for relocation of the special-status species shall be based upon pre-project consultation with the California Department of Fish and Game. In the event California red-legged frog is identified in a work area, all work shall cease until the California red-legged frog has safely vacated the work area. At no time shall any California red-legged frog be relocated and/or affected by project operations without prior approval from the U.S. Fish and Wildlife Service. Exclusionary fencing will be erected at the boundaries of the construction areas to avoid equipment and human intrusion into adjacent habitats with emphasis on protection of areas containing special-status species. In addition, silt fencing will be installed around temporary aquatic habitats (i.e. trenches that have perched groundwater) that have formed during project activities, to minimize the potential for migration of CRLF from the adjacent agricultural pond. The exact location of exclusionary and silt fencing shall be determined by a qualified biological monitor. The fencing shall remain in place throughout the construction phase for each individual project component.</p> <p><b>D-14:</b> Prior to commencing construction, NCS D shall prepare the following plans and agency permit applications and shall implement all plans prior to, during and immediately following construction activities.</p> <ul style="list-style-type: none"> <li>• In compliance with the San Luis Obispo County Land Use Ordinance, the District shall prepare an Erosion and Sedimentation Control Plan (ESCP) outlining the measures to address both temporary (i.e., site disturbance, stock piling and horizontal directional drilling activities) and final (i.e., post-construction) methods for stabilizing soil and minimizing soil loss from the proposed project site. All applicable measures shall be included on final construction plans and adhered to throughout the project.</li> </ul> |                              |

| Description of Impact (Cont.) | Mitigation Measure Summary (Cont.)   | Recommended Approach (Cont.) |
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|                               | <ul style="list-style-type: none"> <li data-bbox="610 340 1078 705">• All project operations shall comply with the requirements under the General Construction Storm Water General Permit, issued by the State Water Resources Control Board. Such requirements will include preparation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall include provisions for the installation and maintenance of Best Management Practices to reduce the potential for erosion of disturbed soils at the project site.</li> <br/> <li data-bbox="610 739 1078 1566">• A Spill Contingency Plan (SCP) shall be prepared outlining measures to prevent the release of petroleum and hazardous materials including containment methods for emergency clean-up operations. Prevention measures shall include, but not be limited to identification of appropriate fueling areas away from sensitive habitat areas such as swales and/or drainages, a maintenance schedule for equipment, and a list of appropriate containment and spill response materials to be stored on-site. All vehicles shall be staged only in appropriately marked and protected areas and at no time shall any cleaning and/or refueling of equipment be allowed upslope and/or within the vicinity of any drainages and/or wetland habitat areas, including agricultural stock ponds. If an accidental spill of a hazardous or toxic material occurs, the Regional Water Quality Control Board (RWQCB), the California Department of Fish and Game and California Department of Toxic Substances Control (DTSC) shall be notified.</li> <br/> <li data-bbox="610 1600 1078 1852">• The District shall submit an application for a Streambed Alteration Agreement (SAA) to the California Department of Fish and Game. If required, the final SAA shall be received prior to project construction. All conditions in the final SAA shall be strictly adhered to during construction.</li> <br/> <li data-bbox="610 1885 1078 1906">• A Frac-out Contingency Plan (FCP)</li> </ul> |                              |

| Description of Impact (Cont.)  | Mitigation Measure Summary (Cont.)   | Recommended Approach (Cont.) |
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|  | <p>shall be prepared for horizontal directional drilling operations within the Santa Maria River channel and shall include appropriate measures for containment of spills, agency notifications (including a detailed call-down list of all applicable regulatory agency representatives), clean-up protocols, and procedures for restoring the river channel to pre-disturbance conditions. The "Frac-out" clean-up procedures shall emphasize minimizing and/or avoiding impacts to the main channel and alluvial scrub habitat areas of the Santa Maria River. Lastly, the FCP shall include the conditions by which the boring operation would be abandoned, if applicable, and how many repeated bores may be attempted.</p> <p><b>D-15:</b> Prior to commencing project construction, the District shall retain a biological monitor experienced with horizontal directional drilling technology. The biological monitor shall be responsible for conducting field inspections of horizontal directional drilling operations, reporting, and enforcement of all applicable conditions of approval, including any required conditions from the California Department of Fish and Game SAA. Specifically, the qualified monitor shall be on-site to inspect the river corridor and pipeline alignment during drilling activities that have the potential for a spill or "Frac-out" (i.e. pull back operations, etc.) to ensure no impacts occur to the Santa Maria River. In the event of a spill or "Frac-out" within the Santa Maria River corridor, all work shall be halted and the spill shall be contained using the procedures outlined in the FCP.</p> <p><b>D-16:</b> Spill containment equipment shall be available on-site during all construction activities. As necessary, this shall include placement of individual spill response trailers at each active work area during project operations.</p> |                              |
| <p><b>D-5.</b> Construction activities could result in short-term impacts to the sensitive habitat areas of the Santa Maria River,</p> | <p>Mitigation Measures D-10 through D-14 require provision of (pre-designated staging and fueling areas and equipment access routes, exclusionary fencing to</p>   | <p>See previous comment</p>  |

| Description of Impact (Cont.)  | Mitigation Measure Summary (Cont.)  | Recommended Approach (Cont.)  |
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| including jurisdictional Waters of the United States and designated critical habitat of the Southern California ESU Steelhead  | <p>protect sensitive habitat areas, dust control measures, etc.).</p> <p><b>D-17:</b> In the event that a "Frac-out" occurs within the Santa Maria River channel due to horizontal directional drilling operations, the appropriate permits shall be obtained by the governing regulatory agency to facilitate clean-up and restoration of the affected portions of river channel to pre-project conditions. As necessary, this shall include a 404 Permit from the Army Corps of Engineers, a 401 Permit from the Regional Water Quality Control Board and Streambed Alteration Agreement from the California Department of Fish and Game.</p> <p><b>D-18:</b> The restoration component of the Frac-out Contingency Plan (Mitigation Measure D-14) shall be implemented as necessary to ensure that the affected portions of stream channel and associated sensitive habitat areas are restored to pre-project conditions. The restored portions of stream channel shall be monitored until all performance criteria have been met as specified by the regulatory agency permits.</p> |   |
| <b>D-6.</b> Horizontal directional drilling operations along the southern boundary of the Santa Maria River have the potential to result in the permanent loss of special status plant species | <p><b>D-19:</b> Prior to project construction, a qualified botanist shall complete a focused botanical survey of the pipeline alignment along the southern boundary of the Santa Maria River. All Blochman's ragwort identified within 50 feet of the proposed horizontal directional drilling laydown area and pipeline alignment shall be marked with temporary flagging.</p> <p><b>D-20:</b> Protective fencing shall be installed around populations of Blochman's ragwort to prevent loss of this special-status plant species. As necessary, this shall include minor modifications of the designated horizontal directional drilling laydown area to avoid Blochman's ragwort to the extent feasible.</p>  | Biologist/botanist to be provided by the District.  |
| <b>D-7.</b> The proposed project may result in long-term impacts to the large eucalyptus trees located along the proposed pipeline alignment located on Southland Street, Orchard              | <b>D-21:</b> The proposed waterline shall be aligned to avoid impacting the root systems of large eucalyptus trees located on Southland Street, Orchard Road, South Frontage Road and Darby Lane. The precise location shall be reviewed by   | District will provide arborist with preliminary plans to review proposed pipeline location. |

| Description of Impact (Cont.)  | Mitigation Measure Summary (Cont.)   | Recommended Approach (Cont.)  |
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| Road, South Frontage Road and Darby Lane. These trees may represent potential habitat for Monarch butterflies or nesting raptors.  | a qualified arborist to insure avoidance of or minimize impacts to the root systems of large trees throughout pipeline alignment at these locations.   |   |
| <b>D-8.</b> Long-term impacts associated with the potential generation of silt and sedimentation sources along the pipeline alignments, water storage tank and pump stations could result in adverse effects to adjacent habitat areas and associated special-status wildlife species. | <b>D-22:</b> Mitigation Measure D-14 includes provisions for stabilizing soils surrounding the water storage tank, pump station sites and pipeline alignments affected by project construction and monitoring. As necessary, this shall include the following: <ul style="list-style-type: none"> <li>• Implementation of standard Best Management Practices (e.g., hydroseeding, wattles, and earthen swales, etc.) along the recontoured sites and erosion control monitoring during subsequent rainy seasons to ensure that previously disturbed areas are stabilized.</li> <li>• Installation of long-term drainage devices at all water storage tank and pump stations, including, as necessary, catchment basins, culverts with downdrains and storm flow energy dissipating devices (riprap or diffusers).</li> </ul> | Requirements to be incorporated in design plans and in SWPPP.   |
| <b>D-9.</b> Pipeline operation and maintenance activities may result in long-term adverse impacts to special status species.   | <b>D-23:</b> All water storage tank and pump station facility lighting shall be shielded away from adjacent wildlife habitat areas and sky to minimize lighting/glare impacts of wildlife, to the extent feasible while still providing safe working conditions for facility personnel.  | Requirements to be incorporated in design plans and specifications  |
| <b>E-2.</b> Project infrastructure facilities may degrade views from adjacent areas.   | <b>E-1:</b> Prior to project construction, a Landscape Screening Plan shall be prepared for the District which provides landscaped screening consisting of trees and/or shrubs adjacent to proposed booster stations or any above ground water storage facilities. Trees or shrubs will be provided which will reach six (6) feet surrounding the booster station without sacrificing safety considerations within two years of construction of these facilities.  | Landscape plans to be submitted with 90% submittal. District will provide Landscape Maintenance Plan.<br><br>Color board to be required as a submittal from Contractor prior to construction. |



| Description of Impact (Cont.)   | Mitigation Measure Summary (Cont.)   | Recommended Approach (Cont.)  |
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|   | <p><b>E-2:</b> Prior to project construction, a Landscape Maintenance Plan shall be prepared which provides a program for growing and maintaining the proposed vegetative screens so that they achieve the two-year growth plan for vegetation. The plan shall also identify the long range maintenance and vegetative replacement plan to insure that said screening will be maintained for 15 years, including replacement of any trees which may die.</p> <p><b>E-3:</b> Prior to project construction, a color board will be provided which identifies the exterior colors and materials to be utilized on proposed water storage tanks and booster stations. The colors and materials selected will involve muted tones which match or are comparable with the colors found in the surrounding areas.</p> |   |
| <p><b>E-3.</b> Long-term project operations may result in the generation of light and glare into surrounding areas.</p>   | <p><b>E-4:</b> Prior to project construction, an Exterior Lighting Plan shall be prepared for the District which indicates the height, location and intensity of all proposed exterior lighting. All light fixtures shall be shielded so that neither the lamp nor the reflective interior surface is visible from beyond 50 feet of project facilities. All light poles, fixtures and hoods shall be dark (non-reflective) colored. All exterior lighting sources shall be low level adjusted so that light is directed downward. Security lighting shall be shielded so as not to create glare when viewed from adjacent properties with lighting heights no more than is absolutely necessary. All project lighting shall not be obtrusive to travelers along any adjacent roadways.</p>                    | <p>Requirement to be included in Design Plans.</p>  |
| <p><b>F-1.</b> Project construction may disturb or materially alter areas containing prehistoric cultural resources which may be related to an identified prehistoric site.</p> | <p><b>F-1:</b> Cultural resource monitoring shall accompany construction trenching and excavation along the South Frontage Road near Grande Avenue (SLO-808), between Division Street and Story Street (SLO-1254) as well as along a 100 meter area on the south side of Southland Street directly south of 641 Southland. A Cultural Resource Monitoring Plan shall be developed and approved by the County of San Luis Obispo which will include project review, a pre-construction archeological workshop, Chumash</p>  | <p>Cultural resources monitor to be provided by District. Vacant lot to be excluded from consideration as a staging area.</p> |

| Description of Impact (Cont.)  | Mitigation Measure Summary (Cont.)  | Recommended Approach (Cont.)                                       |
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|  | <p>involvement, networking with all involved members of the project and the production of a final monitoring report.</p> <p><b>F-2:</b> The vacant lot located southeast of the intersection of Tefft Street and Highway 101 containing SLO-1394 shall not be utilized during any project construction activities including, but not limited to, a staging area for project construction.</p>   |  |
| <p><b>F-2.</b> Project grading and construction may result in the discovery of currently unknown cultural resources.</p>                                     | <p><b>F-3:</b> An archaeological workshop shall be conducted by a qualified archaeologist at the preconstruction meeting for construction personnel to educate them about what types of cultural material may be encountered during construction grading and excavation. A procedure for notification of accidental discovery and communication network shall be developed so that if any suspected cultural materials are unearthed, they can be quickly examined and evaluated by a qualified archaeologist and appropriate recommendations can be made.</p> <p><b>F-4:</b> During any grading or excavation associated with the project, if any cultural materials are unearthed, work in that area shall be halted until all cultural materials can be examined by a qualified archaeologist and appropriate recommendations made pursuant to County Land Use Ordinance Section 22.0.</p> | <p>Requirement to be included in the plans and specifications.</p> |
| <p><b>G-3.</b> The proposed project could result in substantial soil erosion or the loss of topsoil into the Santa Maria River or other local drainages.</p> | <p><b>G-1:</b> The following shall be included in Final Grading and Drainage Plans to prevent erosion induced siltation of on-site and off-site drainages:</p> <ul style="list-style-type: none"> <li>• The use of temporary berms and sedimentation traps, such as silt fencing, straw bales, and sand bags, to be installed in association with project excavations, grading and underground horizontal directional drilling activities in order to minimize erosion of soils and sedimentation into the Santa Maria River and other local drainages. Sedimentation basins and traps shall be cleaned periodically with silt removal and disposal in a location approved by the District.</li> </ul>  |  |

| Description of Impact (Cont.)  | Mitigation Measure Summary (Cont.)   | Recommended Approach (Cont.)                                       |
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|  | <ul style="list-style-type: none"> <li>• A prohibition against grading during the rainy season (November 1-April 15) unless erosion control measures found adequate by the District are implemented.</li> <li>• Methods for revegetation of disturbed soils for long-term stabilization.</li> </ul>  |  |
| <p><b>H-2.</b> Project construction activities may result in the diversion of traffic creating an unacceptable level of service, insufficient parking, blocking or impeding access to adjacent properties or result in hazards to pedestrians or bicyclists.</p> | <p><b>H-1:</b> All project construction sites accessing onto or occurring adjacent to public roadways shall provide adequate signage, barriers and, if necessary, flagmen in order to insure the safe diversion of traffic, bicyclists and/or pedestrians. These measures shall also insure continued access from adjacent properties to local roadways.</p>   | <p>Requirement to be included in the plans and specifications.</p> |
| <p><b>I-1.</b> The proposed project will generate construction noise which may impact surrounding areas containing noise sensitive uses.</p>   | <p><b>I-1:</b> All project construction activities shall comply with the County of San Luis Obispo Noise Ordinance Section 22.06.042(d) which limits noise-generating construction activities to the hours between 7:00 a.m. and 9:00 p.m. on weekdays and 8:00 a.m. and 5:00 p.m. on Saturdays and Sundays.</p> <p><b>I-2:</b> All construction equipment utilizing combustion engines shall be equipped with "critical" grade (rather than "stock" grade) noise mufflers that are in good condition. Noise level reductions with the use of "critical" grade mufflers can be as high as 5 dBA. Back up "beepers" will also be tuned to insure lowest possible noise levels.</p> <p><b>I-3:</b> All necessary measures to muffle, shield or enclose construction equipment shall be implemented in order to insure that noise levels at the property line of the nearest residence do not exceed an exterior noise level of 60 dBA. During project construction, noise monitoring shall be conducted by a qualified acoustical engineer in order to insure the acceptable noise threshold of 60 dBA at the property line of the nearest sensitive receptor.</p> | <p>Requirement to be included in the plans and specifications.</p> |
| <p><b>I-2.</b> The proposed project will generate increased noise levels due to long-term project operations.</p>  | <p><b>I-4:</b> Stationary noise sources (i.e. pump stations and other project facilities) shall be located at least 300 feet from any occupied residential dwellings unless noise-reducing engine housing enclosures or other appropriate noise</p>  | <p>Pump station design meets these criteria.</p>                   |

| Description of Impact (Cont.)   | Mitigation Measure Summary (Cont.)   | Recommended Approach (Cont.)                                       |
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|   | <p>screens are provided in order to insure that exterior noise levels do not exceed 60 CNEL.</p>   |  |
| <p><b>J-1.</b> The proposed project will result in the generation of air pollutants during project construction activities.</p> | <p><b>J-1:</b> Water trucks or sprinkler systems shall be used in sufficient quantities to prevent airborne dust from leaving any construction site. Increased watering frequency will be required whenever wind speeds exceed 15 mph. Reclaimed water, if available, shall be used for dust control and other construction-related purposes during project construction.</p> <p><b>J-2:</b> All dirt stock-pile areas shall be sprayed daily as needed.</p> <p><b>J-3:</b> Exposed ground areas that are planned to be reworked at dates greater than one month shall be sown with a fast-germinating native grass seed and watered until vegetation is established.</p> <p><b>J-4:</b> All disturbed soil areas not subject to revegetation shall be stabilized using approved chemical soil binders, jute netting or other methods approved by the APCD.</p> <p><b>J-5:</b> All roadways, driveways, sidewalks, etc. to be paved shall be completed as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soilbinders are used.</p> <p><b>J-6:</b> Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at a construction site.</p> <p><b>J-7:</b> All trucks hauling dirt, sand, soil or other loose materials shall be covered or maintain at least two feet of freeboard.</p> <p><b>J-8:</b> Where vehicles enter and exit unpaved roads onto streets, wheel washers or gravel pads shall be installed or trucks and equipment will be washed when leaving the site.</p> <p><b>J-9:</b> Streets shall be swept at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used where possible.</p> | <p>Requirement to be included in the plans and specifications.</p> |

| Description of Impact (Cont.) | Mitigation Measure Summary (Cont.)  | Recommended Approach (Cont.) |
|-------------------------------|---|------------------------------|
|                               | <p><b>J-10:</b> All material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice a day with complete coverage, preferably in the late morning and after work is done for the day.</p> <p><b>J-11:</b> All PM10 mitigation measures required must be included on any grading or building plans. These plans shall indicate the source of reclaimed water to be used for dust control. In addition, the contractor shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of particulate matter off site. Their duties shall include holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the APCD prior to construction.</p> <p><b>J-12:</b> All construction equipment shall be properly maintained and tuned according to manufacturer's specifications.</p> <p><b>J-13:</b> All off-road and portable, diesel-powered equipment, including, but not limited to, bulldozers, grading, cranes, loaders, scrapers, backhoes, generator sets, compressors or auxiliary power units, shall be fueled exclusively with CARB motor vehicles diesel fuel. Such equipment shall be stored within a fenced enclosure during non-working hours in order to minimize potential vandalism.</p> <p><b>J-14:</b> Where possible, diesel powered equipment shall be replaced with gasoline, electrical, CNG or LPG powered equipment.</p> <p><b>J-15:</b> Diesel equipment used in proposed horizontal directional drilling shall either be certified pursuant to the California Air Resources Board's Portable Equipment Registration Program or will be subject to an Authority to Construct issued by the San Luis Obispo County Air Pollution Control District (APCD). This permit will allow implementation of Best Available Control Technologies including diesel particulate filters and/or proper fuel</p> |                              |

| Description of Impact (Cont.)  | Mitigation Measure Summary (Cont.)   | Recommended Approach (Cont.)  |
|--|--|---|
|  | <p>selection.</p> <p><b>J-16:</b> Prior to any project grading, a geologic analysis will be performed in order to determine if asbestos-bearing serpentine rock is present. If naturally occurring asbestos is found at the project site, an Asbestos Health and Safety Program and an Asbestos Dust Control Plan will be submitted to the Air Pollution Control District for review and approval prior to project grading.</p>  |   |
| <p><b>J-2.</b> The proposed project will generate pollutants associated with long-term project operations.</p> | <p><b>J-17:</b> The daily water pumping operations for the proposed projects shall utilize electric-powered pumps; diesel pumps shall be provided for backup (standby) operation to be used only on an emergency basis during power outages or equipment breakdown.</p> <p><b>J-18:</b> The District shall investigate the feasibility and cost-effectiveness of the use of solar power or other alternative energy sources to power water pumps or other project facilities. This analysis shall assess the existing technologies and tradeoffs in order to determine the feasibility of alternate energy sources including solar power. This assessment will be based upon cost constraints, reliability, space requirements and other implementation factors.</p> | <p><b>J-17:</b> Pump station design meets these criteria.</p> <p><b>J-18:</b> District will perform evaluation of alternative energy sources.</p> |

#### 4 Recommendations

The next steps for project permitting are:

- Review of this draft memorandum
- Completion of applications for permits
- Incorporated mitigation measures in plans and specifications

Our recommendations for permitting and compliance with EIR mitigation requirements are presented above for review and concurrence by District staff, Douglas Wood & Associates (EIR Author), and MNS Engineers (Construction Management team). Regarding the permits involved with crossing the Santa Maria River, Padre Associates will contact the agencies and provide the HDD plan and profile for review by CDFG, RWQCB, and USACE. Schedules and updates for individual permits will be provided beginning with the June 22<sup>nd</sup> progress report submittal.

TO: COMMITTEE MEMBERS  
FROM: BRUCE BUEL *BBB*  
DATE: JUNE 19, 2009



REVIEW STATUS OF SOUTHLAND WWTF UPGRADE PROJECT

**ITEM**

Review status of Southland WWTF Upgrade Project [Forward Recommendations to Board].

**BACKGROUND**

Attached is the latest Monthly Report from AECOM along with a draft project Budget.

DWA is proceeding to prepare the Draft EIR.

It should be noted that the Board has already funded the proposed project and the District already owns the land for construction.

**RECOMMENDATION**

Staff recommends that the Committee receive AECOM's presentation and ask questions as appropriate.

**ATTACHMENT**

- MONTHLY REPORT AND BUDGET

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**AECOM**  
1194 Pacific Street, Suite 100  
San Luis Obispo CA 93401  
T 805.542.9840 F 805.542.9990 www.aecom.com

## Memorandum

---

Date: June 22, 2009  
To: Bruce Buel, General Manager – Nipomo Community Services District  
From: Michael K. Nunley, PE  
Subject: Southland WWTF Upgrade Project – Design Phase Status Report

---

Distribution: Josh Reynolds, PE  
Peter Sevcik, PE  
Jon Hanlon, PE  
Eileen Shields  
Jim Froelicher

---

The Project Team has completed the following work items this month:

1. AECOM attended a meeting with District staff and the District's EIR consultant to discuss the project upgrades and future equipment uses and the potential for California Red-Legged Frog (CRLF) habitat in the project area. The EIR Consultant will provide a proposed scope of work and fee for CLRF surveys.
2. AECOM returned comments on the internal draft of the Preliminary Geotechnical Report to Fugro.

### Schedule

The Project Schedule is attached.

### Budget Status

The Invoice Summary is attached. The Invoice Summary shows 2% complete, which is consistent with the work completed to date. The project cost opinion has not been updated since the January 2009 Master Plan. A project budget summary table was prepared and submitted recently to the District staff for feedback. The project budget summary will be included with the July Progress Report.

Yours Sincerely



Michael K. Nunley, PE

Enclosures: Project Schedule  
Invoice Summary  
Project Budget Summary (pending)



### Southland WWTF Design Schedule

Thu 6/18/09

| ID | Task Name   | Duration | Start        | Finish       | Gantt Chart |         |         |         |         |         |         |         |         |         |         |  |
|----|---|----------|--------------|--------------|-------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|
|    |   |          |              |              | Q1 2009     | Q2 2009 | Q3 2009 | Q4 2009 | Q1 2010 | Q2 2010 | Q3 2010 | Q4 2010 | Q1 2011 | Q2 2011 | Q3 2011 |  |
| 1  | Negotiation and Notice to Proceed                             | 20 days  | Thu 2/26/09  | Wed 3/25/09  | 100% 3/25   |         |         |         |         |         |         |         |         |         |         |  |
| 2  | <b>Design</b>   | 335 days | Thu 3/26/09  | Wed 7/7/10   | 0% 6/17     |         |         |         |         |         |         |         |         |         |         |  |
| 3  | Survey  | 60 days  | Thu 3/26/09  | Wed 6/17/09  | 0% 6/17     |         |         |         |         |         |         |         |         |         |         |  |
| 4  | Preliminary Soils Report                                      | 65 days  | Thu 3/26/09  | Wed 6/24/09  | 80% 6/24    |         |         |         |         |         |         |         |         |         |         |  |
| 5  | Draft Site Plan   | 65 days  | Thu 3/26/09  | Wed 6/24/09  | 0% 6/24     |         |         |         |         |         |         |         |         |         |         |  |
| 6  | Draft Soils Report  | 40 days  | Thu 6/25/09  | Wed 8/19/09  | 0% 8/19     |         |         |         |         |         |         |         |         |         |         |  |
| 7  | Operations Plan - TM 1  | 20 days  | Thu 6/18/09  | Wed 7/15/09  | 0% 7/15     |         |         |         |         |         |         |         |         |         |         |  |
| 8  | Administrative Draft Concept Report                           | 65 days  | Thu 8/20/09  | Wed 11/18/09 | 0% 11/18    |         |         |         |         |         |         |         |         |         |         |  |
| 9  | District Review   | 10 days  | Thu 11/19/09 | Wed 12/2/09  | 0% 12/2     |         |         |         |         |         |         |         |         |         |         |  |
| 10 | Draft Concept Report  | 5 days   | Thu 12/3/09  | Wed 12/9/09  | 0% 12/9     |         |         |         |         |         |         |         |         |         |         |  |
| 11 | District / Peer Review  | 10 days  | Thu 12/10/09 | Wed 12/23/09 | 0% 12/23    |         |         |         |         |         |         |         |         |         |         |  |
| 12 | Final Concept Report  | 20 days  | Thu 12/24/09 | Wed 1/20/10  | 0% 1/20     |         |         |         |         |         |         |         |         |         |         |  |
| 13 | 80% Plans, Specifications, and Estimates                      | 60 days  | Thu 1/21/10  | Wed 4/14/10  | 0% 4/14     |         |         |         |         |         |         |         |         |         |         |  |
| 14 | District / Peer Review  | 10 days  | Thu 4/15/10  | Wed 4/28/10  | 0% 4/28     |         |         |         |         |         |         |         |         |         |         |  |
| 15 | 95% Plans, Specifications, and Estimates                      | 20 days  | Thu 4/29/10  | Wed 5/26/10  | 0% 5/26     |         |         |         |         |         |         |         |         |         |         |  |
| 16 | District / Peer Review  | 10 days  | Thu 5/27/10  | Wed 6/9/10   | 0% 6/9      |         |         |         |         |         |         |         |         |         |         |  |
| 17 | Final Plans, Specifications, and Estimates                    | 20 days  | Thu 6/10/10  | Wed 7/7/10   | 0% 7/7      |         |         |         |         |         |         |         |         |         |         |  |
| 18 |   |          |              |              |             |         |         |         |         |         |         |         |         |         |         |  |
| 19 | <b>Environmental Impact Report</b>                            | 231 days | Wed 4/8/09   | Wed 2/24/10  | 0% 4/8      |         |         |         |         |         |         |         |         |         |         |  |
| 20 | Notice of Award   | 1 day    | Wed 4/8/09   | Wed 4/8/09   | 0% 4/8      |         |         |         |         |         |         |         |         |         |         |  |
| 21 | Preparation of Public Draft EIR                               | 22.8 wks | Thu 4/9/09   | Tue 9/15/09  | 0% 9/15     |         |         |         |         |         |         |         |         |         |         |  |
| 22 | EIR Public Review Period                                      | 7.4 wks  | Fri 9/25/09  | Mon 11/16/09 | 0% 11/16    |         |         |         |         |         |         |         |         |         |         |  |
| 23 | Preparation of Administrative Final EIR/Responses to Comments | 1 mon    | Tue 11/17/09 | Mon 12/14/09 | 0% 12/14    |         |         |         |         |         |         |         |         |         |         |  |
| 24 | Completion and Receipt of Comments from District on Final EIR | 6 days   | Tue 12/15/09 | Tue 12/22/09 | 0% 12/15    |         |         |         |         |         |         |         |         |         |         |  |
| 25 | Completion of Final EIR                                       | 2 wks    | Fri 1/1/10   | Thu 1/14/10  | 0% 1/14     |         |         |         |         |         |         |         |         |         |         |  |
| 26 | Completion of Findings of Fact                                | 11 days  | Fri 1/15/10  | Fri 1/29/10  | 0% 1/29     |         |         |         |         |         |         |         |         |         |         |  |
| 27 | Public Hearings/EIR Certification                             | 11 days  | Wed 2/10/10  | Wed 2/24/10  | 0% 2/24     |         |         |         |         |         |         |         |         |         |         |  |
| 28 |   |          |              |              |             |         |         |         |         |         |         |         |         |         |         |  |
| 29 | <b>Bid Phase</b>  | 55 days  | Thu 7/8/10   | Wed 9/22/10  | 0% 8/18     |         |         |         |         |         |         |         |         |         |         |  |
| 30 | Advertisement   | 30 days  | Thu 7/8/10   | Wed 8/18/10  | 0% 8/18     |         |         |         |         |         |         |         |         |         |         |  |
| 31 | Bid Opening   | 5 days   | Thu 8/19/10  | Wed 8/25/10  | 0% 8/25     |         |         |         |         |         |         |         |         |         |         |  |
| 32 | Bid Review and Notice of Award                                | 20 days  | Thu 8/26/10  | Wed 9/22/10  | 0% 9/22     |         |         |         |         |         |         |         |         |         |         |  |
| 33 |   |          |              |              |             |         |         |         |         |         |         |         |         |         |         |  |
| 34 | <b>Construction</b>   | 295 days | Thu 4/15/10  | Wed 6/1/11   | 0% 5/12     |         |         |         |         |         |         |         |         |         |         |  |
| 35 | Retain Design Firm to Perform Services During Construction    | 20 days  | Thu 4/15/10  | Wed 5/12/10  | 0% 5/12     |         |         |         |         |         |         |         |         |         |         |  |
| 36 | Construct   | 160 days | Thu 9/23/10  | Wed 5/4/11   | 0% 5/4      |         |         |         |         |         |         |         |         |         |         |  |
| 37 | Startup   | 10 days  | Thu 5/5/11   | Wed 5/18/11  | 0% 5/18     |         |         |         |         |         |         |         |         |         |         |  |
| 38 | Testing   | 10 days  | Thu 5/19/11  | Wed 6/1/11   | 0% 6/1      |         |         |         |         |         |         |         |         |         |         |  |

Project: Southland Design 5 20 09.mpp  
Date: Thu 6/18/09

|      |          |          |           |                    |         |                |                         |                     |                  |                    |                              |                    |       |                |                |                 |                  |          |
|------|----------|----------|-----------|--------------------|---------|----------------|-------------------------|---------------------|------------------|--------------------|------------------------------|--------------------|-------|----------------|----------------|-----------------|------------------|----------|
| Task | Progress | Baseline | Milestone | Baseline Milestone | Summary | Rolled Up Task | Rolled Up Critical Task | Rolled Up Milestone | Baseline Summary | Rolled Up Baseline | Rolled Up Baseline Milestone | Rolled Up Progress | Split | Baseline Split | External Tasks | Project Summary | Group By Summary | Deadline |
|------|----------|----------|-----------|--------------------|---------|----------------|-------------------------|---------------------|------------------|--------------------|------------------------------|--------------------|-------|----------------|----------------|-----------------|------------------|----------|

Project Budget Summary

Engineering Services for NCSD - Southland WWTF Design

Nipomo CSD

|  | Total Budget | Amount<br>Previously Invoiced | Current<br>Invoice Amount | % of Budget<br>Earned to date |
|--|--------------|-------------------------------|---------------------------|-------------------------------|
| Task Group 1 - Concept Design Report                                   | \$188,622.00 | \$13,504.05                   | \$0.00                    | 7%                            |
| Task Group 2 - Construction Documents                                  | \$478,948.00 | \$0.00                        | \$0.00                    | 0%                            |
| Task Group 3 - Project Management                                      | \$68,787.00  | \$3,946.05                    | \$0.00                    | 6%                            |
| Task Group 4 - Assistance During Bids                                  | \$39,539.00  | \$0.00                        | \$0.00                    | 0%                            |
| Task Group 5 - Office Engineering During Construction (5 Bid Packages) | \$147,198.00 | \$0.00                        | \$0.00                    | 0%                            |
| Total  | \$923,094.00 | \$17,450.10                   | \$0.00                    | 2%                            |



| Item | Description   | Budgeted Amount<br>Jan 2009 Master Plan | Updated Amount<br>22-Jun-09 |
|------|---|---|-----------------------------|
| 1    | Frontage Road sewer upgrade (street to influent pump station) | \$366,000 (4) (5)                       | \$366,000                   |
| 2    | Influent pump station upgrade                                 | \$670,900                               | \$670,900                   |
| 3    | Influent screening system                                     | \$327,400                               | \$327,400                   |
| 4    | Grit removal system   | \$402,700                               | \$402,700                   |
| 5    | Phase I Biolac system   | \$3,877,500                             | \$3,877,500                 |
| 6    | Phase I Sludge holding lagoons                                | \$67,700                                | \$67,700                    |
| 7    | Phase I Sludge drying beds                                    | \$1,160,700                             | \$1,160,700                 |
|      | <b>Construction Subtotal</b>                                  | <b>\$6,872,900</b>                      | <b>\$6,872,900</b>          |
| 8    | Contingency   | \$2,061,870 (6)                         | \$2,061,870                 |
| 9    | Design-Phase Engineering                                      | \$923,093                               | \$923,093                   |
| 10   | Construction Management                                       | \$1,138,777 (7)                         | \$1,138,777                 |
| 11   | Environmental Mitigation                                      | -- (8)                                  | -- (8)                      |
| 12   | Environmental Monitoring                                      | -- (8)                                  | -- (8)                      |
| 13   | Permitting Fees   | -- (8)                                  | -- (8)                      |
|      | <b>PROJECT TOTAL (Rounded to 1000)</b>                        | <b>\$10,997,000</b>                     | <b>\$10,997,000</b>         |

Notes:

- (1) ENR CCI: November 2008 = 8602
- (2) Costs are from the January 2009 Southland WWTF Master Plan.
- (3) Costs are escalated by 4 % per year to anticipated midpoint of construction (2011).
- (4) The Frontage Rd Sewer Upgrade project includes the sewer main from Division St. to the influent pump station. The portion between the street and the influent pump station is currently included in the Southland WWTF Upgrades project scope of work, but may be moved to the Waterline Intertie Project for expedited construction.
- (5) The cost for this portion of Frontage Rd was estimated by prorating the cost opinion for the Frontage Road Sewer Upgrade (based on linear footage) to arrive at the 2008 Construction Cost Opinion. A 4% per year escalation was used to arrive at the 2011 midpoint of construction cost opinion.
- (6) Contingency is estimated at 30% of construction subtotal.
- (7) To be updated by CM Team, assumed to be 30% of construction subtotal minus the engineering fee.
- (8) Costs to be developed with EIR process

TO: COMMITTEE MEMBERS  
FROM: BRUCE BUEL *BB*  
DATE: JUNE 19, 2009

**AGENDA ITEM**  
**6**  
**JUNE 22, 2009**

DISCUSS KAMINAKA GEO-PHYSICAL RESEACH

**ITEM**

Discuss Kaminaka Geo-Physical Research [Forward Recommendations to Board].

**BACKGROUND**

Attached is an excerpt from Fugro's report. Paul Sorensen from Fugro is scheduled to summarize the report at the meeting.

**RECOMMENDATION**

Staff recommends that the Committee receive the presentation and ask questions as appropriate.

**ATTACHMENT**

- EXCERPT FROM REPORT

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FUGRO WEST, INC.

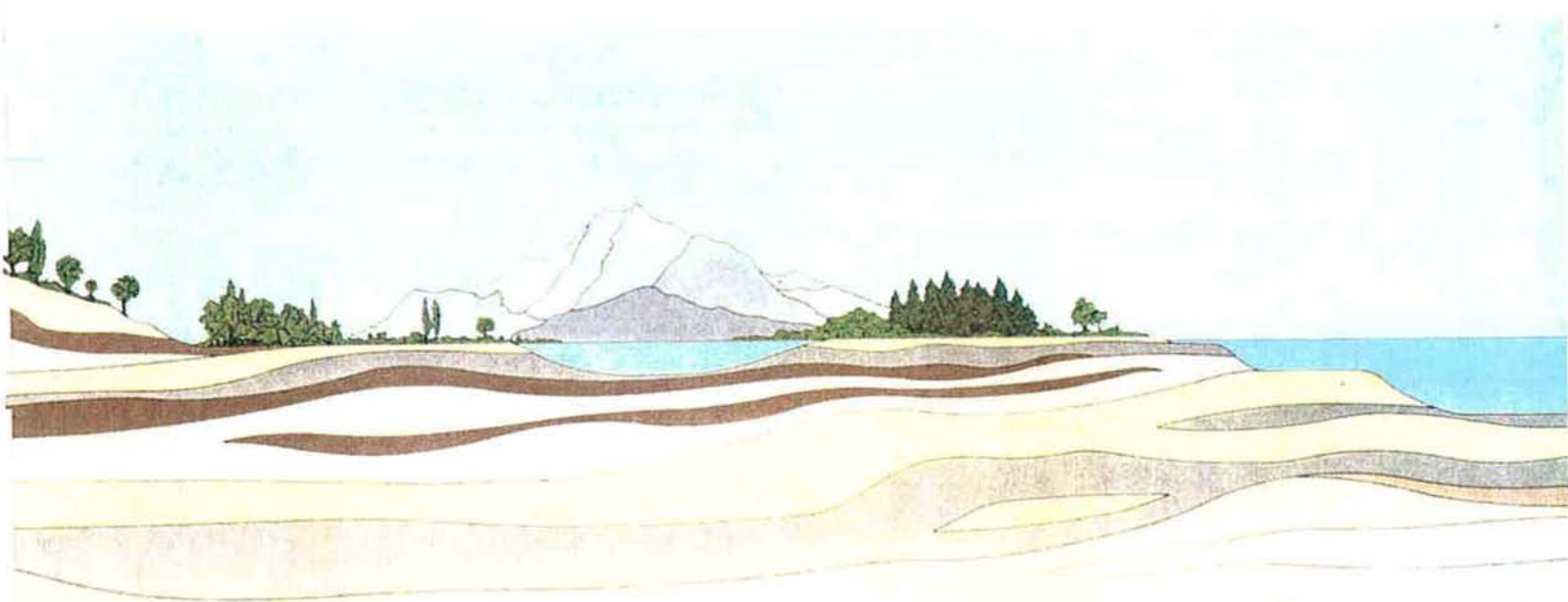


**HYDROGEOLOGIC ASSESSMENT,  
KAMINAKA PROPERTY,  
NIPOMO, CALIFORNIA**

Prepared for:  
NIPOMO COMMUNITY SERVICES DISTRICT

Prepared by:  
FUGRO WEST, INC.

June 2009





**FUGRO WEST, INC.**

660 Clarion Court, Suite A  
San Luis Obispo, California 93401  
Tel: (805) 542-0797  
Fax: (805) 542-9311

June 8, 2009  
Project No. 3596.004

Nipomo Community Services District  
Post Office Box 326  
148 S. Wilson Street  
Nipomo, California 93444

Attention: *Mr. Bruce Buel*  
*General Manager*

**Subject: Hydrogeologic Assessment, Kaminaka Property, Nipomo, California**

Dear Mr. Buel:

Fugro West Inc. is pleased to submit this preliminary feasibility analysis and hydrogeologic assessment of the approximately 20-acre northern half of the 50-acre Kaminaka property (APN 091-232-036), located south of Pomeroy Road in Nipomo, California. The objective of the study was to assess the feasibility of the site as a supplemental treated wastewater effluent disposal site as part of the planned upgrade and expansion of the percolation ponds associated with Nipomo Community Services District's Southland Wastewater Treatment Facility (WWTF). This report presents our understanding of the hydrogeology of the site, documents the work conducted during the investigation, and summarizes our findings, conclusions, and recommendations.

If you have any questions, please do not hesitate to call.

Sincerely,

FUGRO WEST, INC.

A handwritten signature in black ink that reads "Timothy A. Nicely".

Timothy A. Nicely, P.G., C.Hg.  
Project Hydrogeologist

A handwritten signature in black ink that reads "Paul A. Sorensen".

Paul A. Sorensen, P.G., C.Hg.  
Principal Hydrogeologist  
Project Manager

A member of the Fugro group of companies with offices throughout the world



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### TABLES

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### PLATES (FOLLOWING TEXT)

|         |                                      |
|---------|--------------------------------------|
| Plate 1 | Vicinity Map                         |
| Plate 2 | Site Map and Cross Section Locations |
| Plate 3 | Subsurface Cross Section A-A'        |
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| Plate 5 | Subsurface Cross Section C-C'        |
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### APPENDICES

|            |   |
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| Appendix A | CPT and Hollow Stem Auger Borehole Logs |
| Appendix B | Laboratory Test Results                 |
| Appendix C | Water Quality Data                      |
| Appendix D | Water Level Data                        |





## HYDROGEOLOGIC ASSESSMENT, KAMINAKA PROPERTY, NIPOMO, CALIFORNIA

### SITE DESCRIPTION AND BACKGROUND

The Nipomo Community Services District (District) is planning for the expansion of the District's Southland Wastewater Treatment Facilities (WWTF). One site being investigated for expansion of the effluent disposal component of the WWTF is the approximately 20-acre northern portion of a 50-acre parcel southwest of Pomeroy Road (APN 091-232-036) in Nipomo, California, known as the Kaminaka property (Plate 1). The intent of this investigation was to provide a preliminary hydrogeologic assessment of the site for percolation of treated wastewater.

It is our understanding that the District has the need to ultimately dispose of approximately 1.8 million gallons per day (MGD) of treated wastewater by 2030. If it is assumed that an upgraded Southland WWTF will be capable of disposing 0.57 MGD, as described by Fugro (2008a), then the capability to dispose of an additional 1.23 MGD at a new, different site will be required. In order to dispose of up to a total of 1.8 MGD of treated effluent, the District is in the process of conducting feasibility investigations of various sites for disposal of the treated wastewater. The Kaminaka site is one such investigation, and is being evaluated as a potential location for the installation of a subsurface infiltration system to dispose of the treated effluent. This report documents a feasibility-level investigation of the hydrogeology and percolation capacity of the Kaminaka property.

The Kaminaka property is located approximately three miles northwest of the Southland WWTF. The property is agricultural land, which has been used in the recent past to grow strawberries. At the time of the field investigation, approximately five acres of the property were in production. As shown on Plate 2, the entire parcel extends 1,500 to 2,000 feet south of Pomeroy Road to Camino Caballo, which defines the southern edge of the parcel. The eastern edge of the parcel is defined by Calle Fresa and the western edge by houses along Waypoint Drive. The parcel is approximately bisected by an approximately 20 foot high bluff, which runs northeast-southwest through the site. The southern side of the site is elevated relative to the northern side. The northern approximately half of the property is the extent of this investigation and occupies approximately 20 acres. The central portion of the parcel is occupied by several small houses and agricultural support buildings. The existing site grade ranges from approximately elevation 280 feet above mean sea level (MSL) in the central, lowest-lying portion of the site, to approximately elevation 330 feet MSL in the southern half of the site near Camino Caballo. The location of the site is presented on Plate 1 – Vicinity Map. A map of the site is presented on Plate 2 – Site Map and Cross Section Locations.



## INVESTIGATION

### PURPOSE AND SCOPE

The purpose of this investigation was to determine whether the site is suitable for percolation of treated effluent. To be considered suitable, the geologic materials beneath the site must have sufficiently high and uniform vertical and horizontal permeability (hydraulic conductivity) to allow for percolation of the treated effluent to the regional water table. This preliminary investigation assessed the percolation capacity, the local hydrogeology, the depth to groundwater, and the chemical character of groundwater within the receiving aquifer. Site exploration was performed using Cone Penetrometer Test soundings (CPT), hollow stem auger (HSA) borings, and laboratory analysis of subsurface samples collected during the hollow stem auger drilling task. Based on the results of the exploration, subsurface cross sections were prepared to evaluate the gross suitability of the site for percolation.

### FIELD EXPLORATION

The exploration program consisted of advancing a total of six CPT soundings (CPT 1–6) and two HSA borings (DH-1 and DH-2) to depths of between 90 and 134 feet below ground surface (bgs). A summary of the exploration is presented as Table 1 – Summary of CPT and Hollow Stem Auger Exploration. The locations of the CPT soundings and HSA are presented on Plate 2. Logs of the CPT and HSA exploration program are included in Appendix A.

**Table 1. Summary of CPT and Hollow Stem Auger Exploration**

| Exploration | Total Depth (feet) | Surface Elevation (feet, MSL) | Easting CA SPZ5 NAD83 Ft | Northing CA SPZ5 NAD83 Ft |
|-------------|--------------------|-------------------------------|--------------------------|---------------------------|
| CPT-1       | 129                | 320                           | 5,806,914                | 2,210,042                 |
| CPT-2       | 120                | 310                           | 5,806,511                | 2,209,980                 |
| CPT-3       | 107                | 323                           | 5,806,194                | 2,210,314                 |
| CPT-4       | 129                | 312                           | 5,805,992                | 2,210,056                 |
| CPT-5       | 107                | 297                           | 5,806,118                | 2,209,807                 |
| CPT-6       | 90                 | 285                           | 5,805,606                | 2,209,357                 |
| DH-1        | 129                | 318                           | 5,805,676                | 2,209,483                 |
| DH-2        | 134                | 283                           | 5,806,761                | 2,210,065                 |

### Cone Penetrometer Testing

Fugro Geosciences of Santa Fe Springs, California performed the CPT soundings on Monday, March 16 and Tuesday, March 17, 2009. The CPT soundings were performed using an electric cone penetrometer advanced into the ground using hydraulic rams mounted in a truck, which weighs approximately 20 tons. The cone penetrometer has a diameter of



approximately 1.4 inches. Cone tip resistance ( $q_c$ ) and sleeve friction ( $f_s$ ) were recorded on the penetrometer during all CPT soundings. Data was recorded at approximately 2 centimeter intervals using an on-board computer to provide a near-continuous profile of the soil conditions encountered during penetration. The friction ratio (FR) was computed for each recorded value of  $q_c$  and  $f_s$ .

A total of six CPT soundings were advanced at the site to depths ranging from 90 to 129 feet bgs. The data were retrieved electronically, from which soil behavior type classifications were assigned to preliminarily evaluate the subsurface conditions at the site. The locations of the CPT soundings on the Kaminaka property are shown on Plate 2. Logs of the CPT soundings are presented in Appendix A.

### **Hollow Stem Auger Drilling**

Consolidated Testing Drilling Company of Porterville, California drilled two borings with a truck mounted Failing F-10 with the hollow stem auger method on Monday, March 30 and Tuesday, March 31, 2009. The borings were advanced to depths of 129 and 134 feet bgs, respectively for DH-1 and DH-2. The locations of the borings are shown on Plate 2. After drilling, the borings were backfilled with the soil cuttings to a depth of 25 feet. The boreholes were then filled with bentonite grout from 25 feet bgs up to 5 feet bgs, in accordance with local Environmental Health Department permit requirements. The topmost 5 feet of each borehole was filled with native cuttings and tamped. A description of the subsurface materials, the sample depths, N-values, and other field and laboratory data are presented on the logs of the borings in Appendix A.

The borings were sampled using a 2-inch outside diameter standard penetration test (SPT) split-spoon sampler and a 3-inch outside diameter modified California sampler. The modified California sampler was equipped with 1-inch high brass rings. The SPT sampler was used without liners. The samplers were driven into the materials at approximately 5-foot intervals. Groundwater was encountered while drilling at depths of 119 and 124 feet bgs, respectively, for DH-1 and DH-2.

### **LABORATORY TESTING**

Laboratory testing was performed on 15 samples from DH-1 and 14 samples from DH-2 obtained from the field exploration. Samples from both borings were analyzed for moisture content, dry density, grain size, percentage passing U.S. Sieve No. 200 and permeability (ASTM D5084). The tests were performed in accordance with applicable ASTM standards. Generally, the samples analyzed consisted entirely of poorly graded sand (SP) to silty sand (SP-SM). The percentages of "fines" (material which passes the number 200 sieve) varied between 3 and 20 percent. In all samples, the sand was classified as fine to medium grained. Results of the laboratory testing are presented in Appendix B.



## WATER QUALITY TESTING

Three water wells exist on the site, each of which is perforated within the deep, regional aquifer that underlies the site and vicinity. The locations of the three wells are shown on Plate 2. The northernmost well is referred to as the "Kaminaka Well" (11N/35W-13D01), which is perforated between the depths of 440 and 540 feet bgs. The two other wells, the "North Well" (11N/35W-13E2) and the "South Well" (11N/35W-13E3) are located near each other in the central portion of the site. The North Well is perforated in four intervals between 306 and 426 bgs. The South Well is perforated in three intervals between 255 and 315 feet bgs. The construction details of each well are provided in Appendix D.

To determine the water quality characteristics of the receiving water, a water sample was collected from the "Kaminaka Well," which is the well that the operator indicates is most frequently used for site irrigation. The water quality sample was analyzed for general mineral, general physical and inorganic constituents. The results of the water quality analyses are provided in Appendix C.

The District's Olympic Well, located approximately 0.4 miles east of the Kaminaka site, has a history of water quality data that was obtained and reviewed in context of comparing the data with the Kaminaka well as well as developing an historical perspective of the deep aquifer water quality. The Olympic well water quality data were reviewed and is presented along with the Kaminaka well water quality in Appendix C.

## SITE CONDITIONS

### GEOLOGIC SETTING

A detailed discussion of the regional geologic setting of the Nipomo Mesa is provided in previous (Fugro, 2008b; California Department of Water Resources (DWR), 2002, Papadopulos and Associates, 2004). Briefly, the site is located within the Nipomo Mesa which forms a transition area between the Coast Ranges Geomorphic Province to the northeast and the Transverse Ranges Geomorphic Province to the south. The basin originated during the Miocene and is filled with up to 15,000 feet of marine and non-marine sediments overlying Cretaceous-age ultramafic and sedimentary rocks.

The Kaminaka property is located on the Mesa, which consists of Pleistocene-age older dune sand to depths of approximately 200 feet in the vicinity of the site. These wind-blown sediments have been stabilized by vegetation, and are present over most of the Nipomo Mesa. The sediments are typically highly permeable, which precludes appreciable runoff.

Perched zones of saturation may locally exist above the main water table throughout the Nipomo Mesa, within what is generally considered the unsaturated zone, where lower permeability lenses can be of variable thickness (a few feet to over ten feet thick) and occur as interbeds within the dune sand deposits. These discontinuous interbeds of lower permeability materials, or aquitards, can create localized perched water layers. These localized zones of



perched water within the older dune sands are not present continuously on the mesa. The perched groundwater is generally considered to be an undependable, minor source of groundwater to wells (DWR, 2002).

Within the Nipomo Mesa, the older dune sand deposits are generally underlain by Paso Robles and Careaga formation sediments (DWR, 2002). The Paso Robles formation is typically composed of unconsolidated to poorly consolidated sediments. The Careaga Formation is composed of unconsolidated to well consolidated sediments.

## HYDROGEOLOGIC SETTING

The hydrogeology of the Nipomo Mesa has been described in a previous report (Fugro, 2008b). Older dune sand deposits (Qds) of the Nipomo Mesa contain limited amounts of groundwater. The primary aquifer is the underlying Paso Robles Formation (Papadopulos, 2004), which is part of the Santa Maria groundwater basin.

The three on-site wells are included in the County of San Luis Obispo's county-wide semiannual groundwater monitoring program. Two of the wells, the "North Well" (11N/35W-13E2) and the "South Well" (11N/35W-13E3) have been included in the County monitoring program since 1973. The "Kaminaka Well" (11N/35W-13D01) has been included in the County monitoring program since 1997. Hydrographs of the water level data are presented in Appendix D.

Inspection of the hydrographs indicates that the water level at the site is currently 243 to 250 feet bgs, equivalent to water level elevations of 56 to 64 feet above MSL. Generally, Spring water levels are higher than Fall water levels by approximately 10 to 20 feet. During the most recent sampling event in April 2009, the water level in the "Kaminaka Well" was approximately 279 feet bgs (water level elevation of 27 feet MSL).

The three production wells are perforated entirely below 255 feet bgs and as deep as 540 feet bgs. Water level measurements from these wells are considered to reflect the regional deep aquifer water table. Water levels encountered during drilling of the HSA borings (129 to 134 feet bgs) are shallower than the regional water table and are considered to be perched groundwater within the older dune sand deposits. The differences between the water levels are evident on Plates 3, 5 and 6. It is not known whether the perched groundwater condition is laterally continuous across the site or is discontinuous and occurring coincidentally at similar depths in the two boreholes.

## SUBSURFACE CONDITIONS

The subsurface materials encountered at the site consist of dune sand deposits consisting of poorly graded sand (SP), sand with silt (SP-SM), and silty sand (SM). Dune sand deposits were encountered to the maximum depths explored. The materials were medium dense to very dense. Driven ring samples of the dune sand deposits tested in the laboratory



had unit dry weights ranging from 97 to 115 pounds per cubic foot (pcf) and moisture contents ranging from 4 to 20 percent.

Six of the samples were analyzed in the laboratory for permeability determination (vertical direction) in accordance with ASTM method D-5084 (falling head method) or D-2434 (constant head method). The results of these tests are presented on Table 2 along with the soil classification per ASTM D2487 (based on the Unified Soil Classification System), and the fines percentage (percent passing the number 200 sieve).

**Table 2. Laboratory Testing Summary**

| Boring No. | Depth (feet) | Classification                       | Laboratory Determined Permeability           |                     |              | Passing No. 200 Sieve |
|------------|--------------|--------------------------------------|--|---------------------|--------------|-----------------------|
|            |              |                                      | cm/sec                                       | gpd/ft <sup>2</sup> | ft/day       |                       |
| DH-1       | 7            | Poorly-graded SAND (SP)              | $1.3 \times 10^{-3}$                         | 28                  | 3.7          | 3                     |
| DH-1       | 34           | Poorly-graded SAND with silt (SP-SM) | $6.3 \times 10^{-6}$ to $1.3 \times 10^{-5}$ | 0.13 to 0.28        | 0.02 to 0.04 | 10                    |
| DH-1       | 84           | Poorly-graded SAND with silt (SP-SM) | $1.2 \times 10^{-3}$                         | 25                  | 3.3          | 8                     |
| DH-2       | 4            | Silty SAND (SM)                      | $2.7 \times 10^{-4}$                         | 5.7                 | 0.8          | 21                    |
| DH-2       | 24           | Silty SAND (SM)                      | $5.2 \times 10^{-4}$                         | 11                  | 1.5          | 13                    |
| DH-2       | 74           | Poorly-graded SAND with silt (SP-SM) | $7.2 \times 10^{-4}$                         | 15                  | 2.0          | 10                    |

The laboratory-determined hydraulic conductivity values determined for the samples are consistent with published values of hydraulic conductivity for silty sands to fine sands. With the exception of the sample collected from DH-1 at 34 feet, the permeability values generally correlate inversely with the percentage of fines. As expected, samples of silty sand (SM) with a higher quantity of fines exhibited lower permeability values, relative to samples of poorly-graded sand with silt (SP-SM). The lower permeability values, as low as 5.7 gallons per day per square foot (gpd/ft<sup>2</sup>), are characteristic of the older dune sand deposits on the Nipomo Mesa subject to some degree of weathering and soil development. The higher permeability values, on the order of 15 to 28 gpd/ft<sup>2</sup>, generally agree with published values of hydraulic conductivity for the poorly-graded sandy materials that occur at those depths.

The laboratory-determined vertical hydraulic conductivity values for the coarser poorly-graded-sand with silt (SP-SM) and the poorly-graded sand (SP) at this site are approximately one order of magnitude lower than similarly described samples at the Pasquini site, which is located approximately three miles to the southeast of the Kaminaka property (Fugro, 2008b). At the Pasquini site, the poorly-graded sand with silt (SP-SM) had a hydraulic conductivity of 200 gpd/ft<sup>2</sup> (compared to 15 to 25 gpd/ft<sup>2</sup> at this site). Furthermore, the hydraulic conductivity values of the poorly-graded sand (SP) materials at the Pasquini site were between 212 and 254 gpd/ft<sup>2</sup> (compared to 28 gpd/ft<sup>2</sup> at the Kaminaka property). The silty sand (SM) samples from both sites



had similar hydraulic conductivity values ranging between 6 and 11 gpd/ft<sup>2</sup>. The laboratory-determined hydraulic tests, performed in accordance with ASTM standard methods, are generally accepted to be accurate to within 1 order of magnitude.

Cross sectional representations of the subsurface conditions, based on the results of the CPT and HSA borings, are shown on Plates 3 through 6. Inspection of the cross-sectional representations, the CPT data, and the laboratory-derived hydraulic conductivity values shows that, in general, the subsurface materials at the site exhibit relatively high permeability values throughout the uppermost 100 to 140 feet. Typically, permeability values tend to be lower at depth due to either fines content or increased density of the dune sand deposits, but that generality does not appear to hold true at this site, as shown by the laboratory-determined values in DH-1 and DH-2, where the highest permeability values are seen in the deepest samples (see Plate 6).

As exhibited in CPT-4, and to a much lesser degree in CPT-5, it appears that the portion of the property with subsurface materials with the highest density occur along the central-western edge of the property. The apparent densities exhibited by CPT-4 and CPT-5 may represent a limiting capability of the property to effectively vertically percolate the treated effluent. Thus, although some of the higher laboratory-determined permeability values are as high as 25 to 28 gpd/ft<sup>2</sup>, the overall effectiveness of the site may be limited by the lower permeability values in the range of 5 to 10 gpd/ft<sup>2</sup>.

The abnormally-low laboratory-determined permeability value of 0.28 gpd/ft<sup>2</sup> in DH-1 at 34 feet bgs is worthy of additional discussion. The reason for the low value is not apparent. The lithologic description of the materials in DH-1 at that interval show a poorly-graded sand with silt, similar to much of the materials encountered in the boreholes and in the CPT soundings. However, the sample was denser than was seen throughout the remainder of the site, and likely represents a dense slightly-cemented horizon, or layer, in the dune sand that would inhibit vertical percolation of effluent. No evidence is seen to suggest that the layer is laterally continuous or that the thin horizon would act as a site-wide inhibiting or retarding layer. It likely represents the type of thin, discontinuous, dense layers that are occasionally seen in the older, dune deposits throughout the Nipomo Mesa, and likely does not affect the overall capability of the site to effectively dispose of treated effluent. The occurrence of this layer illustrates that these layers do occur throughout the subsurface of the Mesa, and further justifies the caution and the need to apply the lower range of observed permeability values to the long-term calculations of site capacity.

## WATER QUALITY OF THE DEEP AQUIFER

Water quality samples of the deep aquifer were obtained to establish a baseline water quality data base for potential future comparative analysis. If a facility is developed on the site, information about the quality of the deep receiving aquifer will be important as the impacts of the facility are evaluated.



Review of the water sample from the Kaminaka Well, located in the northern portion of the site, and the District's Olympic well, located approximately 0.4 miles east of the site, indicate that the receiving aquifer is of calcium bicarbonate chemical character with a total dissolved solids concentration of between 450 and 510 milligrams per liter (mg/l) (Table 3).

**Table 3. Water Quality Data, Receiving Aquifer  
 (units in milligrams per liter, unless otherwise noted)**

| Constituent                               | Kaminaka Well<br>April 2009 | Olympic Well<br>July 2008 |
|---|-----------------------------|---------------------------|
| Total dissolved solids                    | 510                         | 450                       |
| pH (pH units)                             | 7.1                         | 7.6                       |
| Calcium                                   | 80                          | 46                        |
| Magnesium                                 | 33                          | 24                        |
| Sodium                                    | 60                          | 68                        |
| Potassium                                 | 0.25                        | 3                         |
| Alkalinity, Total (as CaCO <sub>3</sub> ) | 200                         | 160                       |
| Chloride                                  | 81                          | 79                        |
| Sulfate                                   | 110                         | 83                        |
| Fluoride                                  | < 0.05                      | 0.3                       |
| Nitrate as NO <sub>3</sub>                | 4.9                         | 5.2                       |
| Hardness (as CaCO <sub>3</sub> )          | 270                         | 214                       |
| Iron                                      | < 0.1                       | <0.05                     |
| Manganese                                 | < 0.011                     | < 0.01                    |
| Arsenic (µg/l)                            | 3.1                         | 5                         |
| Lead (µg/l)                               | < 0.5                       | < 0.2                     |
| Selenium (µg/l)                           | 1.1                         | 8                         |

The water quality from the on-site well (April 15, 2009) and the nearby Olympic well (July 16, 2008) are similar, and are representative of the water quality of the deep aquifer. The water quality laboratory analytical results are presented in Appendix C.

### CONCLUSIONS

The CPT and boring log data, inspection of the borehole cuttings, and the laboratory-determined permeability values of samples obtained from the borings show that the Kaminaka property is generally underlain by sand and silty sand, with permeability values ranging from approximately 5 gallons per day per square foot (gpd/ft<sup>2</sup>) to as high as 28 gpd/ft<sup>2</sup>. Although much of the materials appear to have permeability values in the upper range of those seen in this study, we recommend establishing a conservative, limiting effectiveness of the site based on the presence of sediments with permeability values in the range of 5 to 10 gpd/ft<sup>2</sup>.





The CPT data show that the central-western portion of the property, particularly along the western edge of the site, may be underlain by some thin layers of relatively denser materials than is seen throughout the remainder of the site. These thin layers of denser materials, however, do not appear to be laterally continuous or extend under the remainder of the property.

It is our understanding that the Nipomo CSD has an ultimate need to dispose of up to 1.23 million gallons per day (daily average) of additional treated wastewater. This assumption is based on the ability of the existing Southland WWTF percolation ponds to dispose of about 0.57 MGD and various assumptions of future District build out wastewater flow volumes. The northern half of the Kaminaka parcel is about 20 acres in size. If it is assumed that 80 percent of this area could be developed to a subsurface infiltration system and that the soils (subject to confirmation percolation testing) can percolate approximately 5 to 10 gpd/ft<sup>2</sup>, the property would accommodate approximately 3.5 to 7 MGD of clean water.

The percolation capacity of a site is typically de-rated for disposal of treated effluent versus the calculated capability assumed for clean water. It is our understanding that a typical de-rating factor may be as much as 50%. A 50% de-rating would result in site capacity of 1.75 to 3.5 MGD.

Given the limiting factors outlined in this report, it appears that the Kaminaka site is capable of disposing approximately 1.75 to 3.5 MGD of treated wastewater. Thus, the Kaminaka site would likely be capable of accommodating the District's future WWTF expansion requirements, given the conservative assumptions used in the calculations.

If interest in and consideration of the Kaminaka property is continued by the District, additional detailed field investigations are recommended to support these estimates.

## RECOMMENDATIONS

Based on the findings and conclusions of this report, should the District desire to continue with additional investigation of the Kaminaka parcel for installation of a subsurface infiltration system, we recommend the following field work be performed within the northern half of the property:

- To assess the percolation capacity of surficial soils, a series of conventional percolation tests should be performed in accordance with Uniform Plumbing Code standards or County of San Luis Obispo Health Department accepted methods. Given the varied topography of the area, the percolation tests should be performed at the anticipated grade (elevation) of the base of the subsurface infiltration system. It will be necessary to develop a plan for subsurface infiltration system in the area which will provide a rough estimate of its anticipated elevation. Based on the approximate 20-acre gross area under consideration, we recommend a percolation test for every 2 acres of actual percolation basin area, or about 6 to 8 such tests.



- Construction of a prototype subsurface infiltration test should be considered to allow for larger scale testing of the percolation capacity of the soil. The prototype testing should reflect the testing of a subsurface infiltration system, which is the planned percolation method to be utilized at the site. In the vicinity of the test area, hydro-probe casings should be installed in drilled holes, backfilled with native soils, to allow for monitoring during the test. The hydro-probe is a nuclear device that can be used to estimate the degree of saturation in the soil versus depth. The hydro-probe is particularly useful to evaluate whether or not the siltier soils encountered at various depths will cause any horizontal deflection of the infiltrated water.
- Based on the data obtained from the field work described above, consideration should be given to the development of a numerical groundwater flow model for the area to better predict the fate and transport of wastewater discharged into the infiltration system. The model would be similar to the numerical model developed to assess the percolation capacity of the Southland WWTF basins (Fugro, 2008). The need for and attributes of the numerical model would depend on the data obtained from the previously described field investigation.



## REFERENCES

- California Department of Water Resources (DWR) (2002), *Water Resources of the Arroyo Grande - Nipomo Mesa Area*, <http://www.dpla.water.ca.gov/sd/>.
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- Cooper, William S. (1967), "Coastal Dunes of California", The Geological Society of America, Memoir 104.
- Fugro (2008a), *Supplemental Groundwater Modeling Analysis*, prepared for Nipomo Community Services District, June 30, 2008.
- Fugro (2008b), *Hydrogeologic and Geotechnical Assessment of APN 090-311-001, Nipomo, California*, prepared for Nipomo Community Services District, July 30, 2008.
- Papadopulos and Associates (2004), *Nipomo Mesa Groundwater Resource Capacity Study, San Luis Obispo County, California*, prepared for San Luis Obispo County Public Works Department, dated March 2004.
- United States Geological Survey (1965), *Oceano Quadrangle, San Luis Obispo County, California, 7.5 Minute Series (Topographic)*, Scale 1:24000, revised 1994.







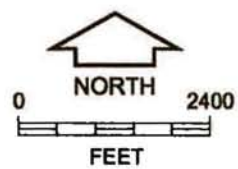
**AREA OF INVESTIGATION**

93444

BASE MAP SOURCE: THOMAS GUIDE 2007, SAN LUIS OBISPO COUNTY  
 (P. 735, 736, 755, & 756)

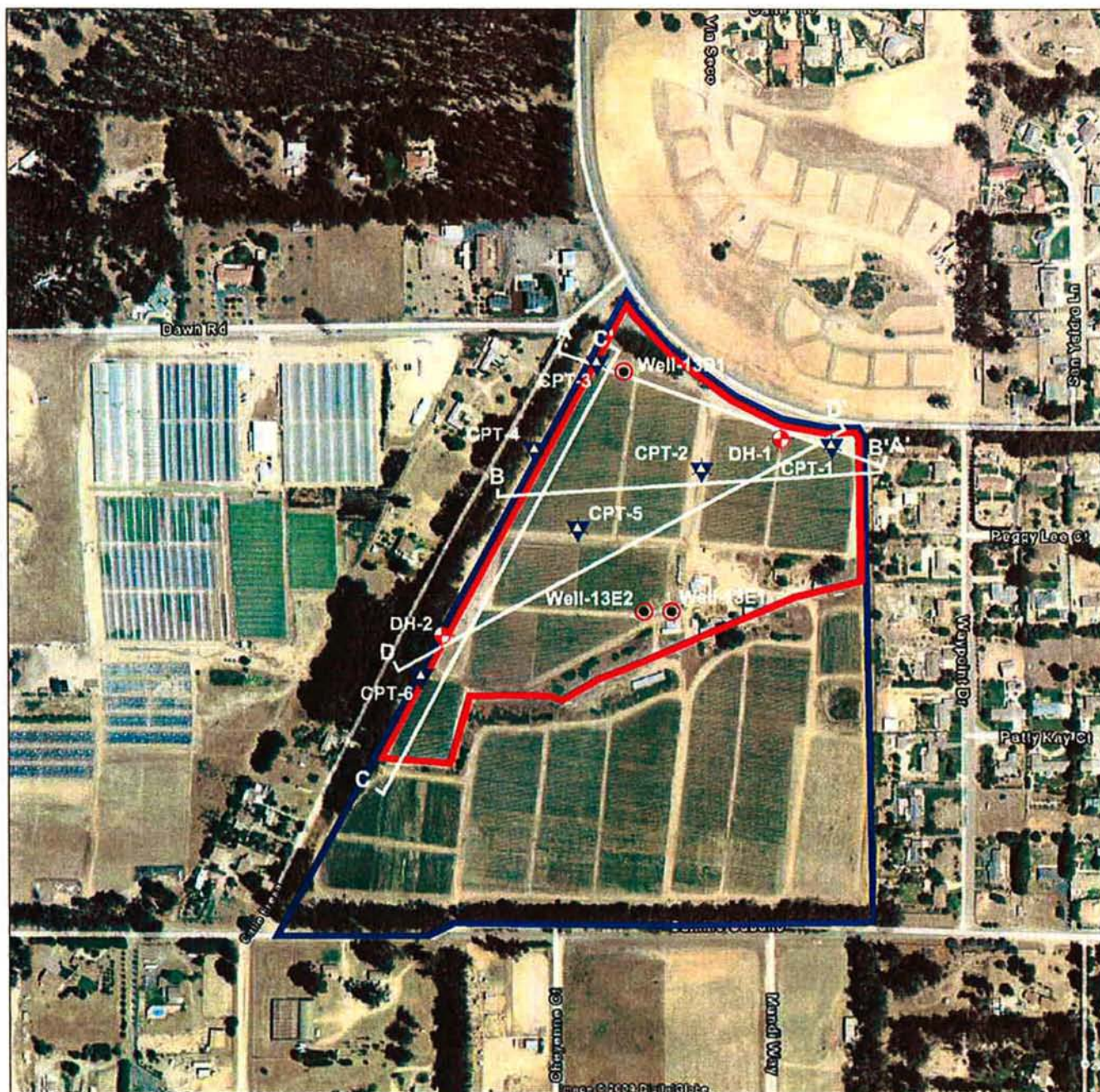
**LEGEND**

-  Kaminaka Property
-  Area of Investigation



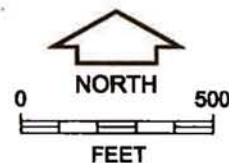
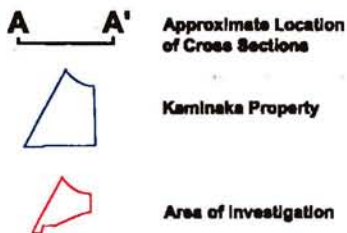
**VICINITY MAP**  
 Kaminaka Site Investigation  
 Nipomo, California

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BASE MAP SOURCE: GOOGLE EARTH PRO

- LEGEND**
- DH-2 Approximate Location of Borings
  - Well-13E2 Approximate Location of Production Wells
  - CPT-5 Approximate Location of CPT Soundings



**SITE MAP AND CROSS SECTION LOCATIONS**  
 Kaminaka Site Investigation  
 Nipomo, California

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TO: COMMITTEE MEMBERS  
FROM: BRUCE BUEL *BSB*  
DATE: JUNE 19, 2009

**AGENDA ITEM**  
**7**  
**JUNE 22, 2009**

SET NEXT COMMITTEE MEETING

**ITEM**

Set next committee meeting [Set Date/Time].

**BACKGROUND**

The Committee would normally meet next on July 20, 2009.

**RECOMMENDATION**

Staff recommends that the Committee set a time and date.

**ATTACHMENT- NONE**

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