Final Environmental Impact Report

City of Healdsburg
Wastewater Treatment Plant Upgrade Project

SCH #2002072083

Prepared by:

EDAW

2022 J Street

Sacramento, CA 95814

June 13, 2005

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Final Environmental Impact Report

City of Healdsburg Wastewater Treatment Plant Upgrade Project

SCH #2002072083

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ACRONYMS AND OTHER ABBREVIATIONS

APCD	Northern Sonoma County Air Pollution Control District
ARM	Aggregate Resources Management
AWT	Advanced Water Treatment
BMP	best management practice
BOD	biochemical oxygen demand, 5-day test
BPTC	best practical treatment or control
Caltrans	California Department of Transportation
C-BOD	carbonaceous biochemical oxygen demand
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
City	City of Healdsburg
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CTR	California Toxics Rule
dBA	A-weighted decibel
DFG	California Department of Fish and Game
DHS	California Department of Health Services
ED	effluent disposal
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
IRWP	Incremental Recycled Water Program
LOS	level of service
LSCE	Luhdorff and Scalmanini Consulting Engineers
LWA	Larry Walker Associates
MBR	membrane bioreactor
MCL	maximum contaminant level
mgd	million gallons per day
mg/L	milligrams per liter
MMRP	mitigation monitoring and reporting plan

NOA	notice of availability
NOP	notice of preparation
NPDES	National Pollutant Discharge Elimination System
PM_{10}	respirable particulate matter
PRMD	Sonoma County Permit and Resource Management Department
RWQCB	Regional Water Quality Control Board
SCWA	Sonoma County Water Agency
SIP	State Implementation Policy
SIR	seasonal irrigation reuse
SWRCB	State Water Resources Control Board
Syar	Syar Industries
TDS	total dissolved solids
USFWS	U.S. Fish and Wildlife Service
WER	water effects ratio
WTPU	wastewater treatment plant upgrade
WWTP	wastewater treatment plant
μg/L	micrograms per liter

1 INTRODUCTION

1.1 OVERVIEW

On February 4, 2005, the City of Healdsburg (City) distributed to public agencies and the general public the draft environmental impact report (draft EIR) for the wastewater treatment plant upgrade project. The draft EIR describes options for wastewater treatment, effluent disposal, and seasonal irrigation reuse (SIR) consistent with the City's strategic planning goals of providing wastewater treatment to the service area. The document addresses the City's existing and proposed wastewater management facilities needed to serve the City.

The environmental analysis in the draft EIR is based on an evaluation of how environmental conditions would be expected to change as a result of implementing a proposed project. The draft EIR addresses the impacts resulting from implementation of any selected set of wastewater treatment upgrade (WTPU), effluent disposal (ED), and seasonal irrigation reuse (SIR) options and includes a cumulative analysis of the project's contribution to the impacts from other projects in the region.

In accordance with California Environmental Quality Act Guidelines (State CEQA Guidelines) Section 15205(d), a 45-day review period was provided on the draft EIR that began on February 4, 2005, and ended on March 21, 2005. During that period, 32 letters were received on the document from the public and from state and local agencies. In addition, and as allowed by Section 15202 of the guidelines, a public hearing was held on February 23, 2005, to receive oral comments on the draft EIR. An organization also submitted a followup comment letter on May 25, 2005, following the close of the public comment period; the City's responses to these followup comments are included in this final EIR.

As specified in Section 15088(b) of the State CEQA Guidelines, the focus of the responses to comments is on the disposition of significant environmental issues. Detailed responses are not required on comments regarding the merits of the proposed project. Comments on the merits of the project will be forwarded to the City of Healdsburg City Council for their consideration before approving or denying the proposed project.

This document presents responses to the written and oral comments received on the draft EIR and has been prepared in accordance with Sections 15089 and 15132 of the State CEQA Guidelines. It is divided into four chapters:

- Chapter 1, "Introduction," presents a summary of the proposed project and alternatives.
- Chapter 2, "Comments and Responses to Comments on the Draft EIR," reproduces public comments received on the draft EIR, including the meeting minutes from the February 23, 2005, public hearing, and presents responses to those comments.
- Chapter 3, "Revisions to the Draft EIR," identifies changes made to the draft EIR in response to the comments.

- Chapter 4, "References," provides information about the sources cited in this document.

This document and the draft EIR together make up the final EIR. The draft EIR is hereby incorporated into this document by reference.

1.2 SUMMARY DESCRIPTION OF THE PROPOSED PROJECT

The draft EIR evaluated the proposed project as summarized below and as described in detail in Chapter 2 of the draft EIR.

A single proposed project or "preferred project" has not been identified for this analysis. Instead, separate options for the wastewater treatment plant (WWTP) upgrade, effluent disposal, and seasonal irrigation reuse with recycled water have been identified. From this collection of options, the City will select the options that would make up the project. The City anticipates identifying a project that comprises one of the WWTP upgrade options, one of the effluent disposal options, and one or more of the seasonal irrigation reuse options.

The upgrades are proposed to improve the quality of the treated effluent and to continue providing service to the ratepayers at a reasonable cost. None of the options would involve increasing the treatment capacity of the WWTP.

Two different WWTP upgrade options are being considered, both of which would provide advanced (tertiary) treatment in accordance with federal and state regulatory requirements:

- Conventional Extended Aeration with Biological Nitrogen Removal and Tertiary Filtration and

- Membrane Bioreactor with Biological Nitrogen Removal.

The City currently discharges secondary treated wastewater to the Basalt Pond, which is located adjacent to the WWTP site. In addition to the WWTP upgrade options, the City is considering new options for tertiary treated effluent disposal because of regulatory uncertainty associated with the Basalt Pond discharge. The effluent disposal options include continuing discharge to Basalt Pond subject to terms and conditions of the current National Pollutant Discharge Elimination System (NPDES) permit issued by the Regional Water Quality Control Board (RWQCB) to the City for the operation of the WWTP. A second effluent disposal option is the discharge to the Phase V Pond that would consist of constructing a new effluent discharge outfall into this pond and operating the discharge in a similar fashion as the proposed Basalt Pond option. The third effluent disposal option is to discharge effluent to up to approximately 60 acres of shallow percolation ponds that would be constructed adjacent to the WWTP. Shallow percolation ponds would be designed to promote disposal through evaporation, or through infiltration of treated effluent into the underlying soil and groundwater. In response to the comment identified in this final EIR as I1-1, an alternative site for the shallow percolation ponds has been added.

The proposed options also include beneficial reuse of recycled water to meet seasonal irrigation demands in urban and agricultural areas. The seasonal irrigation reuse options considered in this EIR would involve irrigating land along several identified routes in the vicinity of the WWTP. A total land area of approximately 1,350 acres has been identified, and the seasonal irrigation reuse options are identified as follows:

- Foreman Lane to Tayman Park recycled water line—agricultural irrigation/urban reuse,
- Foreman Lane/Mill Creek Road recycled water line—agricultural irrigation reuse, and
- Syar property agricultural irrigation reuse.

The seasonal agricultural and urban irrigation reuse options could use substantial volumes of recycled water and the area available within the identified routes may be adequate to use the entire quantity of recycled water that would be produced by the City. It is important to note that the recycled water would be made available on a voluntary basis to willing users who would take recycled water for irrigation as the City extended recycled water lines to these areas.

1.3 PROJECT ALTERNATIVES

The draft EIR evaluated two alternatives to the project as listed below and as described in their entirety in Chapter 5 of the draft EIR:

- No Project Alternative and
- Winter Discharge to the Russian River Option.

1.4 CHANGES SINCE PUBLICATION OF THE DRAFT EIR

On May 10, 2005, the Sonoma County Board of Supervisors approved the application by Syar Industries for construction of the Phase VI Pond mining operation. As a condition of the approval, a provision was placed in the permit that would not allow the Phase V Pond to be used for wastewater effluent disposal. The change in allowable uses of Phase V Pond reflects a policy decision by the County; however, there is no change to the physical environmental setting of the Phase V Pond resulting from the County's decision. Therefore, the potential physical environmental impacts of the City's proposed WWTP upgrade options described in the draft EIR do not change. However, the County's policy decision for the allowable use of Phase V Pond is a potential regulatory constraint to the City's Phase V Pond effluent disposal option because implementing the option would represent a project that is inconsistent with an existing land use policy. As described in Section 1.2.3 of the draft EIR (page 1-3), if the City prefers to implement the Phase V Pond option, the Planning Director may submit the preferred project to the Sonoma County Planning Department for a general plan consistency determination, at which point it would most likely be found inconsistent based on Syar's new approved mining permit for the Phase VI Pond. In this event, and assuming the City found that implementation of the Phase V Pond option was the preferred effluent disposal option, the likely course of action would be for the City to purchase the Phase V Pond property and possibly annex the property within the City limits. Under a City-ownership scenario, the

County's mining permit and reclamation plan provisions for restricting effluent disposal in the Phase V Pond would no longer apply to the property.

2 COMMENTS AND RESPONSES TO COMMENTS ON THE DRAFT EIR

2.1 LIST OF COMMENTERS

Thirty-two letters were received on the draft EIR during the public comment period, and oral comments were received during the February 23, 2005, public hearing on the document. The list of commenters on the draft EIR, along with the topic of each comment, is presented in Table 2-1. Each letter and comment has been assigned a letter/number designation for cross-referencing purposes. The comment letters and meeting minutes from the public hearing and the responses to the substantive environmental issues raised in those letters and in the comments summarized in the meeting minutes are presented in Section 2.2.

Table 2-1
Comments Received on the Draft EIR

Letter/ Hearing	Commenter	Date Received	Comment Number	Comment Topic(s)
LETTER COMMENTS				
State Agencies				
S1	California Department of Transportation, Timothy C. Sable, District Branch Chief	March 14, 2005	S1-1	Encroachment permit
S2	California Regional Water Quality Control Board, North Coast Region, John L. Short for Mona S. Dougherty, Water Resources Control Engineer	March 21, 2005	S2-1	Alternatives
			S2-2	BMPs for stockpiled soil
			S2-3	Section 401 certification
			S2-4	Section 401 certification
			S2-5	Definition of Basalt Pond
			S2-6	Beneficial use of the Basalt Pond
			S2-7	NPDES permit adoption date
			S2-8	Reliance on groundwater data in the Outfall Relocation DEIR
			S2-9	Basalt Pond water quality effects to Russian River
			S2-10	Discharge to Phase V Pond – antidegradation
			S2-11	Construction of shallow percolation ponds
			S2-12	Shallow percolation ponds – water quality
			S2-13	Bridge crossings of recycled water reuse pipelines
			S2-14	Reuse of recycled water
Local Agencies				
L1	County of Sonoma Permit and Resource Management Department,	March 18, 2005	L1-1	Sonoma County Aggregate Resources Management (ARM) Plan policy

Table 2-1 Comments Received on the Draft EIR				
Letter/ Hearing	Commenter	Date Received	Comment Number	Comment Topic(s)
	Angus Latta, Project Planner		L1-2	ARM Plan consistency - environmentally superior alternative
			L1-3	Meeting Regional Water Quality Control Board standards with pond disposal
L2	County of Sonoma Department of Transportation and Public Works, David Knight, Director	March 24, 2005	L2-1	Avoiding impacts on roads
			L2-2	Truck traffic
			L2-3	Central Landfill
			L2-4	Construction timing
			L2-5	Roads
			L2-6	Roads
			L2-7	Right-of-way
			L2-8	Traffic plan; construction management
L3	Sonoma County Water Agency, Anne Crealock, Environmental Specialist	March 28, 2005	L3-1	Use of recycled water
			L3-2	Norton Creek facilities
			L3-3	Future involvement
L4	Town of Windsor, J. Matthew Mullan, Assistant Town Manager	March 21, 2005	L4-1	Project approach; piecemealing
			L4-2	Water quality impacts on Windsor wells
			L4-3	Antidegradation policy
			L4-4	Groundwater quality
			L4-5	Russian River water quality
			L4-6	Groundwater water quality under the SIR options
			L4-7	Combined impacts on groundwater
			L4-8	Levee breaches – water quality effects to Russian River
			L4-9	Cumulative water quality impacts – Basalt Pond discharge and Syar levee weir
			L4-10	Basalt Pond – Basin Plan compliance
			L4-11	Basin Plan discharge prohibitions – effluent discharge options
			L4-12	Basin Plan seasonal discharge prohibition – Basalt Pond or Phase V Pond
			L4-13	Alternatives – water conservation

Table 2-1 Comments Received on the Draft EIR				
Letter/ Hearing	Commenter	Date Received	Comment Number	Comment Topic(s)
			L4-14	Range of alternatives
			L4-15	No-Project Alternative – regulatory noncompliance
			L4-16	Environmentally superior alternative
			L4-17	Introduction of Durbin report
			L4-18	Model summary – discharge effects on groundwater quality – chloride
			L4-19	Chloride as a surrogate for other constituents
			L4-20	Predicted existing discharge effects on river and measured data
			L4-21	Statistical significance of measured Basalt Pond and river samples
			L4-22	No environmental comment
			L4-23	Alternatives – groundwater quality effects summary; chloride mass load
			L4-24	Existing Basalt Pond discharge impacts
			L4-25	Quantitative analysis of alternatives
Organizations				
O1	Community Clean Water Institute, Mike Sandler, Program Coordinator	March 21, 2005	O1-1	Mixing zones
			O1-2	Redwood irrigation
			O1-3	Reuse of reclaimed wastewater
			O1-4	Redwood irrigation
			O1-5	Benefits of using anaerobic treatment processes
O2	Concerned Citizens of the Healdsburg Area, Numerous signatories	March 21, 2005	O2-1	Program EIR
			O2-2	Geysers Pipeline
			O2-3	Effluent disposal
			O2-4	Phase V Pond
			O2-5	Shallow percolation ponds
			O2-6	Alternative percolation sites
			O2-7	Geysers Pipeline
			O2-8	Construction inspection
			O2-9	WWTP upgrade – aesthetics
			O2-10	WWTP upgrade – aesthetics
			O2-11	Socioeconomic impacts

Table 2-1 Comments Received on the Draft EIR				
Letter/ Hearing	Commenter	Date Received	Comment Number	Comment Topic(s)
			O2-12	Traffic
			O2-13	WWTP operations – noise
			O2-14	Soil and water quality testing/reporting
O3	Forensic Management Associates, Franklin J. Agardy, Ph.D.	March 21, 2005	O3-1	Russian River discharge
			O3-2	Groundwater – drinking water standards
			O3-3	Shallow percolation ponds – groundwater quality
			O3-4	Monitoring wells
O4	Russian Riverkeeper, Don McEnhill	March 21, 2005	O4-1	Effluent disposal – regulatory objectives
			O4-2	Methyl-mercury
			O4-3	Nutrient removal
			O4-4	Redwood or riparian forest irrigation
O5	Concerned Citizens of the Healdsburg Area, Numerous signatories	May 25, 2005	O5-1	Information inaccuracies.
			O5-2	Same as comment O2-2
			O5-3	Adequate studies for RWQCB
			O5-4	Expert opinions
			O5-5	Same as comment O2-4
			O5-6	Shallow percolation ponds
			O5-7	Same as comment O2-6
			O5-8	Same as comment O2-11
			O5-9	Same as comment O2-8
			O5-10	Same as comment O2-9
			O5-11	Same as comment O2-10
			O5-12	Same as comment O2-11
			O5-13	Same as comment O2-12
			O5-14	Same as comment O2-13
			O5-15	Same as comment O2-14
Individuals				
I1	Phyllis A. Baldenhofer	March 18, 2005	I1-1	Shallow percolation ponds
			I1-2	Screening with redwoods
			I1-3	Phase V Pond
			I1-4	Impact on quality of life
I2	Marc Bommersbach	March 18, 2005	I2-1	Phase V Pond and shallow percolation ponds – soil
			I2-2	Shallow percolation ponds
			I2-3	Ponds – flooding
			I2-4	Phase V Pond and shallow percolation ponds – groundwater quality

Table 2-1 Comments Received on the Draft EIR				
Letter/ Hearing	Commenter	Date Received	Comment Number	Comment Topic(s)
			I2-5	Phase V Pond and shallow percolation ponds – Basin Plan compliance
			I2-6	Phase V Pond and shallow percolation ponds – groundwater quality
			I2-7	Discharge overflows – visual impacts
			I2-8	Basalt Pond and Phase V Pond – groundwater quality
			I2-9	Basalt Pond and Phase V Pond – water quality differences
			I2-10	Phase V Pond and shallow percolation ponds – antidegradation
			I2-11	Compensation for water quality impact
			I2-12	Shallow percolation ponds – siting
			I2-13	Phase V Pond and shallow percolation ponds – lining
			I2-14	Shallow percolation ponds – depth to groundwater
			I2-15	Shallow percolation ponds – soils
			I2-16	Phase V Pond and shallow percolation ponds – residence time
			I2-17	Phase V Pond and shallow percolation ponds – depth to groundwater
			I2-18	Alternatives
			I2-19	Soil
			I2-20	Soil
			I2-21	Depth to groundwater
			I2-22	Groundwater antidegradation
			I2-23	Water quality objectives; antidegradation
			I2-24	NPDES permit compliance
			I2-25	Phase V Pond – Syar agreement
			I2-26	Phase V Pond – Syar agreement

Table 2-1 Comments Received on the Draft EIR				
Letter/ Hearing	Commenter	Date Received	Comment Number	Comment Topic(s)
			I2-27	Phase V Pond and shallow percolation ponds – Title 22 compliance
			I2-28	Phase V Pond and shallow percolation ponds – water quality
			I2-29	Noise
			I2-30	Visual impact
			I2-31	Visual impact
			I2-32	Visual impact
			I2-33	Visual impact
			I2-34	Visual impact
			I2-35	Visual impact
			I2-36	Phase V Pond and shallow percolation ponds – groundwater
			I2-37	Cost
			I2-38	Geysers Pipeline
			I2-39	Redwood irrigation
			I2-40	Redwood irrigation
			I2-41	Civil engineers involved with analysis
			I2-42	Alternatives
			I2-43	Visual impact
I3	Brendan Collins	March 21, 2005	I3-1	Impact on nearby residents
			I3-2	Scope of draft EIR
			I3-3	Air quality
			I3-4	Division of established community
			I3-5	Farmland
			I3-6	Farmland
			I3-7	Construction – contaminated soil, air quality
			I3-8	Shallow percolation ponds – groundwater
			I3-9	Construction – hazardous substances
			I3-10	Construction – health and safety
			I3-11	Construction plans and management
			I3-12	Flooding
			I3-13	Release of viruses

Table 2-1 Comments Received on the Draft EIR				
Letter/ Hearing	Commenter	Date Received	Comment Number	Comment Topic(s)
			I3-14	Geysers Pipeline
I4	Chris De Benedetti	March 21, 2005	I4-1	WWTP upgrade options
			I4-2	Visual impact of WWTP
			I4-3	Lighting
			I4-4	Odors
			I4-5	Noise
			I4-6	Phase V Pond – groundwater
			I4-7	Construction – air quality
			I4-8	Relocation of WWTP
			I4-9	Lawsuit decision
			I4-10	Agricultural impact
			I4-11	Effluent disposal – environmentally superior
			I4-12	Agricultural irrigation reuse
			I4-13	Types of treatment
			I4-14	Basalt Pond
			I4-15	Expected completion
			I4-16	CEQA EIR process
			I4-17	Alternative locations
			I4-18	Cost
			I4-19	Shallow percolation ponds
			I4-20	Shallow percolation ponds – groundwater
			I4-21	Shallow percolation ponds – water supply
			I4-22	Shallow percolation ponds – agricultural conversion
			I4-23	Shallow percolation ponds – Measure I consistency
			I4-24	Division of established community
			I4-25	Impact on nearby residents
			I4-26	Economic impacts
			I4-27	Cost
			I4-28	Cost
			I4-29	Commercial wastewater rates
			I4-30	Shallow percolation ponds – Syar Industries
			I4-31	Geysers Pipeline
			I4-32	Wildlife
			I4-33	Syar Industries levee weir status
			I4-34	Syar Industries consultation

Table 2-1 Comments Received on the Draft EIR				
Letter/ Hearing	Commenter	Date Received	Comment Number	Comment Topic(s)
			I4-35	Program EIR
			I4-36	Geysers Pipeline
			I4-37	Effluent disposal
			I4-38	Phase V Pond
			I4-39	Shallow percolation ponds
			I4-40	WWTP upgrade – aesthetics
			I4-41	WWTP upgrade – aesthetics
			I4-42	Socioeconomic impacts
			I4-43	WWTP operations – traffic
			I4-44	WWTP operations – noise
			I4-45	Soil and water quality testing/reporting
I5	Marisa De Benedetti	March 21, 2005	I5-1	Same as comment I4-1
			I5-2	Same as comment I4-2
			I5-3	Same as comment I4-3
			I5-4	Same as comment I4-4
			I5-5	Same as comment O2-1
			I5-6	Same as comment I4-6
			I5-7	Same as comment I4-7
			I5-8	Same as comment I4-8
			I5-9	Same as comment I4-9
			I5-10	Same as comment I4-10
			I5-11	Same as comment I4-31
			I5-12	Same as comment I4-12
			I5-13	Same as comment I4-13
			I5-14	Same as comment I4-14
			I5-15	Same as comment I4-15
			I5-16	Same as comment I4-16
			I5-17	Same as comment I4-17
			I5-18	Same as comment I4-18
			I5-19	Same as comment I4-19
			I5-20	Same as comment I4-20
			I5-21	Same as comment I4-21
			I5-22	Same as comment I4-22
			I5-23	Same as comment I4-23
			I5-24	Same as comment I4-24
			I5-25	Same as comment I4-25
			I5-26	Same as comment I4-26
			I5-27	Same as comment I4-27
			I5-28	Same as comment I4-28
			I5-29	Same as comment I4-29
			I5-30	Same as comment I4-30
			I5-31	Same as comment I4-31

Table 2-1
Comments Received on the Draft EIR

Letter/ Hearing	Commenter	Date Received	Comment Number	Comment Topic(s)
I6	Michaela De Benedetti	March 21, 2005	I6-1	Impacts on nearby residents
			I6-2	Eminent domain
			I6-3	Same as comment I4-28
			I6-4	Eminent domain
			I6-5	Impacts on nearby businesses and residents
			I6-6	Location of WWTP
			I6-7	Visual and odor impacts
			I6-8	Alternative sites
I7	Michele De Benedetti	March 21, 2005	I7-1	Geysers Pipeline
			I7-2	Syar Industries
			I7-3	Options
			I7-4	Same as comment I4-30
			I7-5	Same as comment I4-10
			I7-6	Impact on nearby residents
			I7-7	WWTP
			I7-8	Eminent domain
			I7-9	Notification
			I7-10	Project process
			I7-11	Eminent domain
I8	Rosanne De Benedetti	March 21, 2005	I8-1	Same as comment I4-6
			I8-2	Same as comment I4-7
			I8-3	Same as comment I4-10
			I8-4	Same as comment I4-11
			I8-5	Same as comment I4-13
			I8-6	Same as comment I4-14
			I8-7	Same as comment I4-17
			I8-8	Same as comment I4-19
			I8-9	Same as comment I4-20
			I8-10	Same as comment I4-24
			I8-11	Same as comment I4-27
			I8-12	Same as comment I4-29
			I8-13	Same as comment I4-31
			I8-14	Same as comment I4-32
			I8-15	Same as comment O2-2
			I8-16	Same as comment O2-3
			I8-17	Shallow percolation ponds
			I8-18	Same as comment O2-11
			I8-19	Family history
I9	Stephan De Benedetti	March 21, 2005	I9-1	Groundwater
			I9-2	Groundwater
			I9-3	Geysers Pipeline
			I9-4	Types of treatment

Table 2-1 Comments Received on the Draft EIR				
Letter/ Hearing	Commenter	Date Received	Comment Number	Comment Topic(s)
I10	JoAnn Borri, on behalf of the Borri family	March 21, 2005	I10-1	Notification
			I10-2	Review period
			I10-3	Rejected options
			I10-4	WWTP options
			I10-5	Water quality standards
			I10-6	Effluent disposal feasibility
			I10-7	Need for ponds
			I10-8	Redwood irrigation
			I10-9	Groundwater quality
			I10-10	Economic impact
			I10-11	Socioeconomic impacts
			I10-12	Project process
I11	Richard Burg	March 21, 2005	I11-1	Division of established community
			I11-2	Alternatives considered
			I11-3	Shallow percolation ponds – alternative locations
I12	Donna Gregor	March 2, 2005	I12-1	Shallow percolation ponds – economic impacts
			I12-2	Costs
			I12-3	Alternative locations
I13	Donna Gregor	March 21, 2005	I13-1	Alternative locations
			I13-2	Phase V Pond
			I13-3	Upgrade option preference
I14	Dennis Hill	March 21, 2005	I14-1	Basalt Pond preference
			I14-2	Shallow percolation ponds – alternative location
			I14-3	Syar Industries levee weir status; agricultural and economic impact
			I14-4	WWTP – alternative location
			I14-5	WWTP upgrades aesthetics
			I14-6	Public input
I15	Peggy F. Love	March 14, 2005	I15-1	Options considered
			I15-2	Shallow percolation ponds and Phase V Pond – opposition
			I15-3	Shallow percolation ponds and Phase V Pond – opposition
			I15-4	Basalt Pond and redwood irrigation
I16	James T. Love	March 11, 2005	I16-1	Groundwater; socioeconomic impacts

Table 2-1 Comments Received on the Draft EIR				
Letter/ Hearing	Commenter	Date Received	Comment Number	Comment Topic(s)
			I16-2	Basalt Pond and Geysers Pipeline
			I16-3	Socioeconomic impacts
			I16-4	Shallow percolation ponds – alternative location
I17	Peter Maier, Ph.D., P.E.	March 18, 2005	I17-1	General – treatment design
I18	Judith Olney	March 18, 2005	I18-1	Reference to enclosures
			I18-2	Groundwater
			I18-3	EIR approach – program vs. project level
			I18-4	Phase V Pond
			I18-5	Phase V and VI pits – baseline
			I18-6	Groundwater
			I18-7	WWTP upgrade preferences and questions
			I18-8	Water conservation
			I18-9	Geysers Pipeline
			I18-10	Basalt Pond preference
			I18-11	Basalt Pond superior to Phase V Pond
			I18-12	Phase V Pond regulation
			I18-13	Groundwater modeling
			I18-14	Water quality standards
			I18-15	Phase V Pond – ARM Plan
			I18-16	Antidegradation
			I18-17	Legal fees
			I18-18	Drinking water standards – synthetic organic constituents
			I18-19	Aluminum – groundwater
			I18-20	Effect of metals on grape production
			I18-21	Effect of groundwater levels on grape production
			I18-22	Shallow percolation ponds – groundwater
			I18-23	Shallow percolation ponds – floodplains
			I18-24	Shallow percolation ponds and Phase V Pond – depth to groundwater
			I18-25	Groundwater wells
			I18-26	Metals in groundwater

Table 2-1 Comments Received on the Draft EIR				
Letter/ Hearing	Commenter	Date Received	Comment Number	Comment Topic(s)
			I18-27	Rapid infiltration
			I18-28	Groundwater impacts mitigation
			I18-29	Biological resources
			I18-30	Air quality – diesel
			I18-31	Basalt Pond effluent violations
I19	Eugene and Darlene Ricci	March 21, 2005	I19-1	Shallow percolation ponds – socioeconomic impacts on nearby residents
			I19-2	Basalt Pond preference
			I19-3	Shallow percolation ponds – costs, impacts, opposition
			I19-4	Basalt Pond preference
			I19-5	WWTP upgrades – aesthetics
I20	Patrick Shea	March 21, 2005	I20-1	Impacts on nearby residents
			I20-2	Impacts on nearby residents
			I20-3	Options
I21	Mariah S. Silveira	March 21, 2005	I21-1	Impacts on nearby residents
I22	Dan Wickham	March 21, 2005	I22-1	Introduction – alternative treatment
			I22-2	Irrigation – treatment and recycled water use
			I22-3	Irrigation – Mill Creek Road
			I22-4	Alternatives – advantages
COMMENTS MADE AT FEBRUARY 23, 2005, PUBLIC HEARING				
PH	Planning commission minutes	February 23, 2005	PH-1	Redwood irrigation
			PH-2	Phase V Pond regulation; responsible agencies
			PH-3	Data source – Wastewater Outfall Relocation Project
			PH-4	Water quality standards
			PH-5	Comparison with City of Santa Rosa data
			PH-6	Effluent flows – copper and groundwater mounding
			PH-7	Adequacy of draft EIR
			PH-8	Phase V Pond – groundwater
			PH-9	Shallow percolation ponds – irrigation alternatives
			PH-10	Tertiary treatment preference
			PH-11	Redwood irrigation
			PH-12	Alternatives

Table 2-1 Comments Received on the Draft EIR				
Letter/ Hearing	Commenter	Date Received	Comment Number	Comment Topic(s)
			PH-13	Mitigation measures
			PH-14	Ponds: treatment vs. effluent disposal
			PH-15	Comment letters
			PH-16	Effluent disposal alternatives
			PH-17	WWTP aesthetics; visual impacts
			PH-18	Approach – irrigation options
			PH-19	Public education
			PH-20	Written comments

2.2 WRITTEN AND ORAL COMMENTS AND RESPONSES ON THE DRAFT EIR

The written and oral comments received on the draft EIR and the responses to those comments are provided in this section. Each comment letter is reproduced in its entirety and is followed by responses to comments on substantive environmental issues. The oral comments from the public hearing are summarized in meeting minutes and also are followed by responses to comments on substantive environmental issue

S1

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER Governor

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5505
FAX (510) 286-5513
TTY (800) 735-2929

Flex your power!
Be energy efficient!

March 10, 2005

SON101915
SON–101–34.55
SCH # 2002072083

Mr. Richard Spitler
City of Healdsburg
401 Grove Street
Healdsburg, CA 95448

Dear Mr. Spitler:

City of Healdsburg Wastewater Treatment Plant: Draft Environmental Impact Report (DEIR)

Thank you for including the California Department of Transportation (Department) in the environmental review for the above–referenced project. We have reviewed the DEIR and offer the following comment:

Any work or traffic control within the State right–of–way (ROW) will require an encroachment permit from the Department. To apply for an encroachment permit, submit a completed encroachment permit application, environmental documentation and five (5) sets of plans (in metric units) that clearly indicate State ROW to the following address: S1-1

Mr. Sean Nozzari, District Office Chief
Office of Permits
California Department of Transportation, District 4
P. O. Box 23660
Oakland, CA 94623–0660

Should you have any questions about this letter or require further information, please call Maija Cottle at (510) 286–5737.

Sincerely,

Timothy C. Sable

TIMOTHY C. SABLE
District Branch Chief
IGR/CEQA

c. State Clearinghouse

"Caltrans improves mobility across California"

LETTER S1 RESPONSE

California Department of Transportation
Timothy C. Sable, District Branch Chief
Received on March 14, 2005

S1-1 The need for an encroachment permit from the California Department of Transportation (Caltrans) is noted in Section 2.6, “Regulatory Requirements, Permits, and Approvals,” of the draft EIR. All subsequent Caltrans permitting requirements would be followed for project activities taking place within the Caltrans right-of-way.

California Regional Water Quality Control Board
North Coast Region
Beverly Wasson, Chairperson

Alan C. Lloyd, Ph.D.
Agency Secretary

http://www.waterboards.ca.gov/
5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403
Phone: 1 (877) 721-9203 (toll free) • Office: (707) 576-2220 • FAX: (707) 523-0135

Arnold Schwarzenegger
Governor

March 21, 2005

Mr. Jim Flugum
Senior Civil Engineer
City of Healdsburg
401 Grove Street
Healdsburg, CA 95448

Dear Mr. Flugum:

Subject: Draft Environmental Impact Report, City of Healdsburg Wastewater Treatment Plant Upgrade Project

File: City of Healdsburg Wastewater Treatment Facility, WDID No. 1B82046OSON, NPDES Permit No. CA0025135

Thank you for the opportunity to comment on the above referenced project. The North Coast Regional Water Quality Control Board (Regional Water Board) is a responsible agency for this project, as defined by the California Environmental Quality Act (CEQA). It is our understanding that the City of Healdsburg (City) has prepared the Draft Environmental Impact Report (DEIR) to examine the environmental impacts of two advanced wastewater treatment alternatives and several disposal alternatives including discharge to the Basalt Pond, Discharge to the Phase V Pond, discharge to shallow percolation ponds, discharge to the Russian River, and three seasonal irrigation reuse alternatives.

General Comments:

1. Regional Water Board staff (Staff) supports the City's efforts in examining these alternatives, but notes that several options were not examined such as dry weather reuse via the Geysers pipeline and other reuse options outside of the Healdsburg area. Advanced treated effluent may be used for a variety of beneficial reuse projects in lieu of increasingly scarce domestic water. S2-1

2. The erosion control and Best Management Practices (BMPs) discussion was thorough, and Regional Water Board staff supports measures to keep soil disturbance to a minimum during the rainy season. However, Staff could not locate information on proposed BMPs to protect stockpiled soil. S2-2

3. The DEIR discusses stream crossings that may need to be constructed. These crossings may require a Clean Water Act Section 401 certification (401 certification)/ waste discharge requirements from the Regional Water Board. Such permits are required for any dredge/fill activities within waters of the state. In applying for 401 certification/ waste discharge requirements, Staff recommends bio-engineering techniques for bank stabilization as opposed to rip-rap. Also, full revegetation of the site will be required. S2-3

4. The DEIR discusses disposing of excavated soil into the Basalt Pond to strengthen the levee between the Pond and the Russian River. A 401 certification will be needed before any soil disposal takes place. In general, we do not support the placement of fill material within the floodplain or riparian corridor. Such filling activity may affect water quality due to changes in river geomorphology, as well as limiting normal floodplain deposition of sediments. S2-4

5. The DEIR states that the City currently discharges to a percolation pond like the City of Cloverdale. The Basalt Pond is not a percolation pond. A percolation pond, such as the one built by the City of Cloverdale, is a component of a wastewater treatment system consisting of a shallow depression separated from groundwater by a soil layer, which allows wastewater to "percolate" through the soil before reaching groundwater. The Basalt Pond, was not built as a component of the City's wastewater treatment system. Instead, the pond is essentially the hole created by the extraction of gravel during previous aggregate mining operations. It has been determined, both by the United States District Court for the Northern District of California and the Regional Water Board, to be a Water of the United States. The pond also provides no soil separation from waters of the state; because it extends below the groundwater table, the pond is filled with water. Accordingly, it was not designed to treat wastewater. S2-5

6. The DEIR includes a table of the existing beneficial uses of the Russian River and Basalt Pond. The table does not include REC-1 as an existing beneficial use of the Basalt Pond. This conflicts with the City's National Pollutant Discharge Elimination System (NPDES) Permit, because the Regional Water Board found, in adopting the permit, that REC-1 is an existing beneficial use of the pond. That designation is supported by evidence from several sources that fishing occurs at the Basalt Pond. Additionally, Regional Water Board staff found several pieces of fishing line on the shore of the Basalt Pond during a recent water quality evaluation. Fishing is considered water contact recreation covered by the REC-1 beneficial use. S2-6

7. The DEIR states that the Regional Water Board issued the City's NPDES permit in September 2004; actually it was adopted on October 6, 2004. S2-7

Specific Comments Related to Groundwater Studies:

8. The groundwater quality analysis relies primarily on the studies completed previously and included in the Draft Environmental Impact Report for the Wastewater Outfall Relocation Project (Outfall Relocation DEIR) circulated in May 2001. On August 12, 2002, S2-8

GeoTrans, consultants for the Regional Water Board, submitted their comments subsequent to their review of the documents included in and supporting the Outfall Relocation DEIR. In their comments GeoTrans states:

"Documentation reviewed by GeoTrans contains insufficient water quality data to support the assertion that the discharge of wastewater effluent to the Phase V pond presents no significant potential water quality impacts. In addition, the studies conducted clearly illustrate that a direct connection exists between the Basalt Pond and the Russian River. The results further show that this hydraulic connection would continue to exist if the outfall was relocated to the Phase V pond." S2-8 Cont'd

Regional Water Board staff and their consultants did not find that the groundwater studies included in the Outfall Relocation DEIR supported the conclusions made in that document. As the current DEIR relies upon the same groundwater studies, Regional Water Board staff find the same flaws in the conclusions drawn in this DEIR.

9. The DEIR draws a conclusion from a study performed by Larry Walker and Associates. This study relies on four sampling events and then attempts a statistical analysis of the data to conclude that the City's discharge has no statistically significant impact on the Russian River. This and other "conclusions" reached by consultants hired by the City of Healdsburg assumes a complete mixing of effluent with flows in the Russian River. The studies do not determine whether localized water quality impacts can occur prior to this complete mixing. Please be aware that water quality objectives for the Russian River must be met at locations where subsurface effluent flows enter the surface flow of the Russian River. Regional Water Board staff find that study and statistical analysis deeply flawed in its small sample size and cannot concur with its conclusion. S2-9

10. Staff does not support the conclusion that the impact of discharge to the Phase V Pond on water quality has been adequately examined using the groundwater studies included in the DEIR. As noted above, Staff has concluded that these studies are inadequate. For a discharge of wastewater to the Phase V Pond to be seriously considered, the City would need to comply with applicable antidegradation policies and demonstrate that the discharge would not unreasonably affect beneficial uses of water in, beneath, and downgradient from, the Phase V Pond. This showing would need to be made via studies prepared incorporating methodologies acceptable to Regional Water Board staff. Until that information is provided, Regional Water Board staff cannot agree that the DEIR supports the conclusion that discharge to the Phase V Pond has equal standing regarding impacts to water quality as the current discharge to the Basalt Pond. S2-10

Specific Comments Related to the Construction of Shallow Percolation Ponds:

11. The DEIR states that the shallow percolation pond alternative would include construction of percolation ponds to a depth of 20 feet below existing grade. The DEIR also states that the existing groundwater elevation is 15 feet to 35 feet below existing grade. The design of a percolation pond must include a separation consisting of an unsaturated soil substrate S2-11

California Environmental Protection Agency

between the bottom of the pond and the highest elevation of groundwater suitable to provide additional treatment of wastewater discharges. The DEIR contains no information regarding the soil present at the bottom of these percolation ponds nor does the analysis present any proposed application rates. As described, this alternative appears to be a groundwater injection discharge. While such a project may be feasible, additional analysis to ensure protection of ground water quality (including compliance with the state and federal non-degradation policies) would be required prior to permitting. S2-11 Cont'd

12. The shallow percolation pond alternative examined the impacts of locating the ponds on important farmland located adjacent to the City's treatment plant site. The DEIR fails to explain why those pond sites were chosen for analysis. The DEIR should be revised to evaluate a full range of alternative sites for ponds, particularly sites not located on important farmland. The methodology used for choosing candidate pond sites should be disclosed and the reason for rejecting other potential sites explained. S2-12

Specific Comments Related to the Seasonal Reuse Irrigation System:

13. The DEIR references bridge crossings for recycled water reuse lines. Some bridges have been retrofitted for earthquake protection to allow extra movement in case of a seismic event. The DEIR should discuss whether bridge crossings would be designed to accommodate earthquake retrofit projects, if applicable. S2-13

14. Staff strongly supports the statewide policy to encourage the use of recycled water in place of potable water where feasible. Staff urges the City to aggressively seek opportunities to reuse recycled wastewater. We encourage the City to utilize off-site storage and reuse similar to the programs implemented by other municipal wastewater dischargers in the watershed. S2-14

15. As the Tayman Park reservoirs are already constructed and ready to provide recycled water storage for reuse, and given the benefits of recycled reuse for the people of California, Regional Water Board staff recommend that these alternatives receive special consideration in the determination of the preferred alternative.

We thank the City for considering these comments. If you have any questions regarding this matter, please contact me at (707) 570-3761.

Sincerely,

for ~~Mona S. Dougherty~~

Mona S. Dougherty
Water Resources Control Engineer

MSD:tab/032105_msd_HealdsburgEIRcomments.doc

California Environmental Protection Agency

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California Environmental Protection Agency

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LETTER S2 RESPONSE

California Regional Water Quality Control Board, North Coast Region
John L. Short for Mona S. Dougherty, Water Resources Control Engineer
Received on March 21, 2005

S2-1 The disposal option of conveying treated wastewater to the Geysers Pipeline was identified in Section 5.6.3, on page 5-13 of the draft EIR. As described, the City of Santa Rosa, the owner of the Geysers Pipeline, is considering additional use of the capacity in the pipeline as part of the Santa Rosa Incremental Recycled Water Project (IRWP). The IRWP or other growth-related wastewater generated by users of the pipeline may use its available capacity in the future. In addition, the Sonoma County Water Agency is considering the proposed North Sonoma County Agricultural Reuse project. Both the IRWP and North Sonoma County Agricultural Reuse project would involve the use and expansion of the existing Geysers Pipeline.

As noted in Section 5.6.3 of the draft EIR in a referenced Town of Windsor/City Council staff report, several entities other than the City of Healdsburg have engaged in negotiations over available pipeline capacity. Prior City of Healdsburg/City of Santa Rosa discussions over use of availability of the pipeline to the City of Healdsburg have confirmed that the City of Santa Rosa is uncertain as to whether any capacity would be available to Healdsburg or to other entities not part of the Santa Rosa subregional system. The City of Healdsburg contacted both Santa Rosa and Sonoma County Water Agency following the release of the draft EIR to confirm the current status of available capacity in the Geysers Pipeline. According to these recent communications, studies evaluating the IRWP and agricultural reuse alternatives are not expected to be completed until 2007, and the City of Santa Rosa is unable to commit to sharing capacity in the Geysers Pipeline at this time (Smith and Jeane, pers. comm., 2005). Because capacity in the Geysers Pipeline is unavailable to Healdsburg at this time, and for the other reasons identified in Section 5.6.3 of the draft EIR, this option is considered infeasible by the City at this time.

Regarding other reuse options outside of the Healdsburg area, the draft EIR identifies three options for reasonable and feasible seasonal irrigation reuse (SIR) that could be implemented to beneficially reuse all the treated wastewater during the nondischarge season for application on both urban and agricultural parcels. Because the comment does not identify any specific recommendation for additional reuse options and does not identify environmental impacts that could be reduced by such options, no further response can be provided.

S2-2 Disturbance minimization best management practices (BMPs) for soil stockpiles were identified on page 2-41 of the draft EIR, in the first bullet paragraph. Erosion was identified as a potentially significant impact on pages 3.2-29 through 3.2-32 of the draft EIR, and mitigation was identified to reduce this impact to a less-than-significant level. To provide additional assurance that the BMP would be used to protect stockpiled soil, a specific reference to protecting stockpiled soil has been incorporated into Mitigation Measure 3.2-1 as described below and as noted in Chapter 4 of this final EIR. The revision does not change the significance conclusions in the draft EIR and does not result in additional significant impacts. The following text is added to the second bullet item in Mitigation Measure 3.2-1 on page 3.2-32, as follows:

- Erosion Control: BMPs will be included to stabilize exposed soils<u>, including stockpiled soil</u>; minimize offsite runoff; remove sediment from onsite runoff before it leaves the site; slow runoff rates across construction sites; and, identify post-construction soil stabilization BMPs. Appropriate temporary and long-term seeding, mulching, and other erosion control measures will be identified.

S2-3 Table 2-2 (page 2-26) identifies the Section 401 requirement for constructed stream crossings. The first paragraph on page 2-40 states that riprap would be considered for use at crossings with existing rock armoring that do not support woody riparian vegetation before construction. Regarding revegetation or other mitigation measures, Mitigation Measure 3.4-5 identifies several potential measures that would be required, including revegetation of riparian habitat. Please see pages 3.4-42 through 3.4-44 of the draft EIR.

S2-4 The soil placement in the Basalt and/or the Phase I/II Ponds would support and reinforce the inland side of an existing levee and would not result in raising the levee elevation. The elevation of the levee crest is the single most important factor that governs the potential for floodwater overtopping and inundation of the inland floodplain. Because the levee crest elevation would not change, the fill would not appreciably alter floodplain function, such as the frequency with which the specific levee location would be subject to overtopping, geomorphology of the Russian River channel, and the associated deposition of sediment on the inland floodplain areas. Nevertheless, the City has committed to seek appropriate permits, including Section 401 certifications as noted in the comment, which could result in modifications to fill placement.

S2-5 The use of the term "percolation" had no bearing on the impact analysis and significance conclusions in the draft EIR because no specific contaminant removal processes were attributed to the percolation of contaminants as they pass from terrace ponds through aquifer materials into groundwater or the Russian River. Potential water quality impacts were evaluated in the draft EIR based on existing measured undiluted effluent, measured receiving water quality data, and the projected effluent quality following implementation of proposed tertiary treatment upgrades. The analysis of undiluted values represents a conservative "end-of-pipe" evaluation of potential water quality effects, and the water quality analysis shows that implementation of effluent disposal with the tertiary treatment upgrades is expected to comply with all applicable water quality objectives and regulations. However, in response to the comment, the following modification has been incorporated into the EIR to reflect the correct definition of percolation pond as described below and as noted in Chapter 4 of this final EIR. The last sentence of the third paragraph on page 3.2-2 is hereby revised as follows:

> Other communities, including Cloverdale and Ukiah, as well as a number of smaller private systems, ~~and Healdsburg~~ discharge~~s~~ treated wastewater to a constructed percolation pond~~s~~ adjacent to the Russian River, and Healdsburg discharges to a historic terrace mining pond adjacent to the Russian River.

S2-6 In response to comment S2-6, Table 3.2-1 of the EIR is hereby revised as indicated below and as noted in Chapter 4 of this final EIR to include REC-1 as an existing beneficial use of the Basalt Pond. This modification does not change the significance conclusions in the draft EIR and does not result in additional significant impacts because the quality of tertiary treated wastewater would comply with the applicable Title 22 regulatory objectives for contact recreation as identified in Table 3.2-5 of the draft EIR.

Table 3.2-1
Beneficial Uses of the Russian River and Apparent Beneficial Uses of ~~Syar Ponds~~ the Basalt Pond

Hydrologic Subarea	Designated Beneficial Uses in Basin Plan																		
	MUN	AGR	IND	PRO	GWR	FRSH	NAV	POW	REC 1	REC 2	COMM	WARM	COLD	BSA	WILD	RARE	MIGR	SPWN	AQUA
Russian River, Middle, Warm Springs subarea	E	E	E	P	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
~~Syar~~ Basalt Pond~~s~~ *			E		E				E	E		E			E				
Groundwater	E	E	E	P															

* Potential beneficial uses supported in ~~Syar ponds~~ the Basalt Pond. Basin Plan does not include formally designated uses for ~~these water bodies~~ the Basalt Pond.
E = =existing use; P = potential use
MUN-Municipal and Domestic Supply; AGR-Agricultural Supply; IND-Industrial Service Supply; PRO-Industrial Process Supply; GWR-Groundwater Recharge; FRSH-Freshwater replenishment; NAV-Navigation; POW-Hydropower Generation; REC 1-Water contact recreation; REC 2-Non-contact water recreation; COMM-Commercial and sport fishing; WARM-Warm freshwater habitat; COLD-Cold freshwater habitat; BSA-Biologically Significant Areas; WILD-Wildlife habitat; RARE-Rare, threatened, or endangered species; MIGR-Migration of aquatic organisms; SPWN-Spawning, reproduction, and/or early development; AQUA-Aquaculture.

S2-7 The correct date of Regional Water Quality Control Board (RWQCB) approval of the City's National Pollutant Discharge Elimination System (NPDES) permit is noted. No further response is necessary because no environmental issues were raised.

S2-8 The water quality impact analyses presented in the draft EIR were based on a variety of data, including additional substantial information not included in the City's May 2001 Wastewater Outfall Relocation Project Draft EIR, as well as data from that document. As described above in the response to comment S2-5, water quality impacts were evaluated in a conservative manner with the City's existing measured sample data and projected effluent quality following implementation of tertiary treatment upgrades. The proposed project evaluated in the Wastewater Outfall Relocation Project Draft EIR consisted of continued treatment with the existing secondary wastewater treatment process units. Consequently, the current proposed upgrade to tertiary treatment represents a considerable improvement in processes and resulting effluent water quality characteristics. Because the City is not increasing treatment capacity with the proposed project, the information and modeling results presented in the Wastewater Outfall Relocation Project Draft EIR were used in the City's draft EIR as a basis for significance conclusions only for groundwater hydrologic effects, and additionally in the support of the receiving water quality impact assessment that related to the fate and transport of constituents of concern.

With respect to GeoTrans's review of the groundwater modeling performed by Luhdorff and Scalmanini Consulting Engineers (LSCE) for the Wastewater Outfall Relocation Project Draft EIR, the City believes that the validity and accuracy of the groundwater modeling have been successfully demonstrated through exhaustive review and confirmation by both LSCE and the independent consulting firm S.S. Papadopulos & Associates. In particular and in addition to the comment's reference to GeoTrans's August 12, 2002, technical memorandum that addressed the Wastewater Outfall Relocation Project Draft EIR and groundwater modeling, the RWQCB also submitted to the City for review and response the GeoTrans January 21, 2003, technical report, "Wastewater Outfall Relocation Project, Groundwater Modeling Review." Subsequently, the City instructed LSCE to review and respond to all the comments raised in the latter GeoTrans report. LSCE prepared a technical memorandum, "Evaluation of GeoTrans Draft Report Wastewater Outfall Relocation Project," which the City submitted to the RWQCB on September 23, 2003. In short, LSCE stated that the purported modeling errors described in the GeoTrans report were unfounded, with the sole exception of one error in the model construction, which had an insignificant effect on the model results. In addition, S.S. Papadopulos & Associates provided expert testimony consisting of numerical analysis and groundwater modeling with a variation of the same numerical model used by LSCE that supported the validity of the LSCE modeling performed for the Wastewater Outfall Relocation Project Draft EIR (Expert Report of John Lambie, July 2003 in the matter of *Northern California River Watch vs. City of Healdsburg,* United States District Court, Northern District of California, Case No. C01 4686).

Moreover, the comment identifies only the first paragraph of the "Main Conclusion" in GeoTrans's August 12, 2002, memorandum, which pertained to the assessment of the City's continued production and disposal of secondary treated wastewater. The comment omits GeoTrans's assessment of tertiary treated wastewater disposal in Phase V Pond that was addressed in the second and third paragraphs of the passage as follows:

> In general, GeoTrans does not view the outfall relocation and treatment plant upgrades as "separate and independent" projects. Conversely, discharge of secondary treated effluent to the Phase V Pond is viewed as only as an interim measure until the upgrades are completed to achieve tertiary treatment levels. Thus, it is GeoTrans opinion that the proposed outfall relocation may be approved, if a definitive schedule for completing the upgrades also is submitted and approved.
>
> As such, GeoTrans views the potential outfall relocation as a potentially viable interim solution that would require commitment from the City to complete tertiary treatment upgrades within an acceptable time frame. A proposed schedule for implementing Advanced Water Treatment (AWT) should be prepared by the City and included herein for review by the RWQCB.

The City's proposed project would implement the specific tertiary upgrades reflected in the GeoTrans comments.

State CEQA Guidelines Section 15151, "Standards for Adequacy of an EIR," states the following:

> An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts.

With respect to the modeling performed for the City's Wastewater Outfall Relocation Project Draft EIR and subsequent and independent reviews of information by GeoTrans, LSCE, and S.S. Papadopulos & Associates, the City does not believe that there is any specific substantive disagreement among experts to disclose. In light of LSCE's assessment of GeoTrans's comments and associated reevaluation and confirmation of its model, and expert testimony provided by S.S. Papadopulos, the City believes that the LSCE modeling results accurately reflect project-related effects and use of best available investigative methods. In addition, given that GeoTrans's August 12, 2002, memorandum independently asserts that disposal of tertiary treated wastewater would be acceptable, the City feels the draft EIR contains a sufficient degree of analysis for decision makers to take action on the project and account for hydrologic and water quality impacts.

S2-9 The water quality samples taken in preparation of the EIR showed that there was no substantive difference between water quality upstream of the Basalt Pond and the point at which maximum influence of underflow from the Basalt Pond to the river would occur. The City agrees that not enough samples were taken to draw robust *statistical* conclusions, but a statistical analysis is not necessary to draw a conclusion from the sample results. In fact, a statistical analysis would be needed if varying sample conclusions were found (i.e., if some samples found elevated levels of pollutants and others did not). In the case here, the Basalt Pond discharge has been in place for more than 30 years and has been continuous, and it is entirely reasonable to expect that any elevated pollutant levels, if present, would be detectable. Because the analysis was highly conservative and because elevated levels of pollutants were not found during a period of critical low-flow conditions in the Russian River, a statistical analysis is not needed to draw conclusions.

The study prepared by Larry Walker Associates (LWA) represents the best available information collected to date to document the potential effects of Basalt Pond discharge to the Russian River via groundwater percolation. In addition, the study reflects a conservative set of environmental conditions (i.e., secondary rather than tertiary treatment, low flow in the Russian River, normal operating flows for the City's effluent disposal, typical concentrations of constituents in the Basalt Pond relative to the background Russian River conditions, and sample locations selected to represent the zone of maximum potential influence). Under these conservative conditions, flow from the Basalt Pond would have the greatest potential to affect water quality in the Russian River, and this approach provides a conservative means by which to document and characterize the potential water quality effects of groundwater flow from the Basalt Pond to the Russian River. In particular, the Russian River sample locations selected for the LWA study were specifically selected based on a review of topographic maps, the LSCE groundwater modeling results, and best professional judgment with respect to the site-specific river gradient conditions to represent the maximum zone of potential effluent water quality effect in the Russian River (Grovhaug, pers. comm., 2005).

As projected by available groundwater modeling and known hydrogeologic principles of groundwater behavior, water contained in the Basalt Pond is expected to diffuse radially into the surrounding groundwater aquifer, and the small portion of discharge that could potentially enter the surface flow of the Russian River would occur over a considerable distance along the river. The downstream sample location selected for the LWA study was specifically targeted to the area of predicted maximum influence. Therefore, the measured data independently support the conclusion that the incremental water quality impact of discharge of wastewater effluent into the Basalt Pond is not detectable in the Russian River.

The City believes that the RWQCB's comment that the studies "do not determine whether localized water quality impacts can occur prior to mixing" does not alter the conclusions of the environmental impact analysis presented in the draft EIR. As described above in the responses to comments S2-5 and S2-8, the potential operations water quality impacts were evaluated primarily on existing measured data and projected future effluent quality. The water quality impact analysis was not based on, and conclusions on projected environmental effects presented in the draft EIR did not rely on, an assumption that dilution and mixing were necessary to comply with water quality objectives. In essence, the analysis presumed a point discharge into the river, which, as described above, is not the way the effluent enters the river. In fact, the combination of existing measured data (i.e., effluent and the Basalt Pond), expected effluent quality improvements with tertiary treatment processes, and the LWA study findings that the existing discharge is not detectable in the Russian River provided the substantial evidence used to support the water quality impact conclusions. Only two potential toxic constituents, aluminum and copper, were elevated in the existing measured data for the City's undiluted wastewater effluent, and the response to comment O1-1, presented below, provides specific information with respect to this constituent.

Importantly, the comment provides no information that would suggest that the conclusions in the draft EIR are wrong. Rather, the comment suggests that not enough information was gathered to draw the EIR conclusions, and the information included in this response directly addresses this concern.

In response to comment S2-9, the following modification has been incorporated into the draft EIR to reflect the significance of the measured results as described below and as noted in Chapter 4 of this final EIR. The second paragraph on page 3.2-15 is hereby revised as follows:

> ~~Following the sampling, the results of the laboratory analyses were subjected to a statistical analysis (i.e., parametric t-test) that compares two sets of data for their statistical similarity. A statistical difference between the upstream and downstream data sets (increase of a parameter from upstream to downstream site) would indicate a potential influence by the Basalt Pond.~~ The upstream Russian River and Dry Creek data were combined to create a flow-weighted composite load that was compared to the calculated mass load for the downstream site. The sampling results indicate that, for many constituents, concentrations were higher in the Basalt Pond than in the river. The analytical results ~~of the t-test showed no significant~~ indicate that there was no appreciable difference ~~existed between~~ in constituent concentrations measured in samples collected in the Russian River upstream and downstream ~~(~~of the Basalt Pond~~)~~ ~~for the parameters analyzed at the 95% confidence level (p < 0.05)~~. The laboratory analytical results ~~and subsequent statistical analysis~~ indicate~~s~~ that discharges of City's treated wastewater into Basalt Pond appear to not be detectable in the Russian River.

S2-10 The comment suggests that the Phase V Pond effluent disposal option cannot be supported based on the information presented in the draft EIR relating to (a) purported LSCE groundwater modeling inadequacies, (b) whether the Phase V has equal standing to the existing Basalt Pond discharge with respect to water quality effects, and (c) lack of supporting information that the project would meet state antidegradation policy requirements under SWRCB Resolution 68-16. Other comments directly or indirectly suggest that an analysis of consistency with the antidegradation policy should have been conducted.

As noted in the response to comment S2-8 above, the City believes that the adequacy and validity of the LSCE models that were used for the Wastewater Outfall Relocation Project Draft EIR to evaluate proposed effluent discharge to Phase V pond have been satisfactorily demonstrated; no information is provided in the comment to suggest that the LSCE models were not adequate and valid. In addition, the City believes that the purported groundwater modeling errors are unfounded and thus that the comment is not supported by substantial evidence. See the response to comment S2-8. In addition, the response to comment S2-5 states that effluent and receiving water quality data and projected future effluent quality with tertiary treatment processes indicate conclusively that all the proposed effluent disposal options would meet applicable water quality objectives and not degrade beneficial uses. In addition, because of the reasons cited above, the relative differences in the specific project-related water quality effects among the proposed effluent disposal options (i.e., Phase V pond, Basalt Pond, and shallow percolation ponds) are accurately reflected in the draft EIR.

With respect to supporting information for determining consistency with the state antidegradation policy, the antidegradation policy involves the assessment and balancing of environmental impacts and socioeconomic impacts by the RWQCB, in consultation with the City. The City, as lead agency for the EIR, cannot render a final determination on a policy matter that is the responsibility of another agency; thus, consistency with the antidegradation policy was not explicitly stated in the draft EIR. However, the information provided in the EIR supports a finding that the project is not inconsistent with the antidegradation policy. This is explained further below.

As required by CEQA, the draft EIR focuses on whether the project would have a significant effect on the environment as defined by “a substantial change in the physical conditions which exist in the area affected by the proposed project” (State CEQA Guidelines Section 15002[g]). The antidegradation policy requires conclusions that are based on both socioeconomic *and* environmental factors; however, socioeconomic issues are not evaluated in the draft EIR. CEQA allows the presentation of social and economic information in a draft EIR but expressly states that “[e]conomic or social effects of a project shall not be treated as significant effects on the environment” (State CEQA Guidelines Section 15131[a]).

In making its conclusions regarding the significant effects of the project on the environment, the City did not consider any economic or social issues; rather, it relied solely on whether the change in the physical environmental conditions would be substantial, which is the requirement of CEQA. Analysis of social and economic issues would not have shed any light on whether environmental impacts would be significant.

Consequently, the City believes the draft EIR provides substantial evidence to characterize the potential water quality impacts, which were determined to be less than significant.

Given the evidence presented in the draft EIR, the City believes that a demonstration of consistency with the state's antidegradation policy and procedures will be achieved via the RWQCB's permit authorization phase after the ultimate set of preferred project options is selected. The state antidegradation policy establishes a two-part test for determining when increases in pollutant loadings or other adverse changes in surface water quality may be permitted as follows:

> (1) "…existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use"; and
>
> (2) "…discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."

The City anticipates that sufficient and adequate information is currently available to support a finding of consistency with the antidegradation policy. Much of the supporting information has been presented via the Wastewater Outfall Relocation Draft EIR and this draft EIR. The main substantive findings are as follows:

- The draft EIR demonstrates that the operations-related water quality effects following implementation of the treatment upgrades and under all the proposed effluent disposal options would be in compliance with applicable water quality objectives. Therefore, the quality of groundwater and Russian River flows potentially affected by the discharge would continue to fully provide designated beneficial uses and not result in "pollution" or "nuisance" conditions.

- Because the project would not increase the permitted capacity of the wastewater treatment plant and would improve effluent water quality through the implementation of tertiary treatment processes, the project would be fully consistent with the antidegradation policy because receiving water quality would not be lowered.

- Although the shallow percolation ponds have not been modeled, the LSCE modeling of the Phase V Pond discharge indicates that effluent discharge would affect the same receiving water (i.e., surrounding groundwater aquifer and Russian River) in a similar or lesser manner compared with the existing Basalt Pond. The small distance between these two options and the existing Basalt Pond discharge, in combination with the hydrogeologic properties and groundwater flow in the underlying aquifer, reflects a negligible change in discharge location and largely equivalent zone of ultimate influence downgradient from the discharge. Consequently, the City believes there may be considerable merit for a finding that the proposed tertiary upgrades and all the effluent disposal options result in similar receiving water quality improvements and would be fully consistent with the antidegradation policy.

- As described on page 3.2-13 of the draft EIR, and is supported by other extensive evidence that is part of the administrative record for the City's previous Wastewater Outfall Relocation Project EIR, the results of existing groundwater monitoring conducted by the City and Syar Industries indicate that groundwater quality near the wastewater treatment plant (WWTP) is similar to background levels and only occasionally are values of some soluble constituents found at higher levels in wells located downgradient of the Basalt Pond. However, water quality conditions in groundwater samples potentially influenced by the City's wastewater disposal are consistently lower than applicable water quality objectives. Conversely, the results of water quality monitoring of some off-site wells (i.e., wells that are not influenced by the City's wastewater discharges to the Basalt Pond) in the project area indicate that some wells have elevated concentrations of some regulated drinking water constituents. Thus, any potential changes in groundwater quality are anticipated to fully meet water quality objectives.

- The City believes that the proposed tertiary treatment technology constitutes best practical treatment or control (BPTC) technology consistent with the antidegradation policy. Tertiary treatment provides effluent quality that would not result in pollution or a nuisance, and it would not produce a detectable effect on the existing quality of the Russian River. Because additional treatment beyond tertiary is not necessary to achieve the prevention of either nuisance or pollution, and tertiary treatment will maintain water quality that is consistent with "maximum benefit to the people of the state," the City believes it is reasonable to conclude that tertiary treatment and disposal as described in the draft EIR represent BPTC.

S2-11 The City agrees that the terms "percolation ponds" could apply to the proposed shallow percolation ponds effluent disposal option. "Groundwater injection," however, refers to a process whereby water or wastewater is pumped and forced into a well directly to the deep aquifer, which clearly does not apply to any of the pond discharge options. The shallow percolation ponds would be constructed on the floodplain where seasonal groundwater levels can occasionally rise to the soil surface. The percolation ponds would be constructed to maintain a separation distance to groundwater over most of the year. The City's intended purpose for the shallow percolation ponds option is to provide additional and redundant contaminant removal as water percolates through soil. However, because the proposed project would include tertiary treatment processes and the existing and projected effluent quality would meet applicable water quality objectives, the additional soil-aquifer treatment is not considered necessary to meet water quality objectives. As described fully in the response to comment S2-10, the City anticipates coordinating with the RWQCB during the permit process regarding state antidegradation policy consistency. The City would provide additional information as needed to allow for permitting.

S2-12 The location of the set of proposed shallow percolation ponds was selected primarily to achieve project objectives, in light of the range of engineering feasibility, costs, and environmental effects. Because of the alluvium present in the Russian River valley, the valley represents an ideal location for percolation pond facilities; however, the experiences of shallow pond dischargers in the Russian River basin demonstrate that infiltration capacity of alluvial soils varies depending on the soil permeability and depth of water in the pond. The critical factor in sizing percolation ponds is the infiltration capacity, usually measured in gallons per square foot per day. Infiltration in shallow ponds generally declines with time in service as algae and other biological growth develops on the bottom of the pond and clogs the soil pores. Percolation ponds must be rotated out of service for maintenance to restore percolation capacity of the bottom substrate. Consequently, percolation ponds are oversized by a factor of 2 so that adequate capacity is available when other ponds in the system are taken out of service. Infiltration rates at two percolation/evaporation ponds at the Sonoma County Water Agency Geyserville Sanitation Zone ranged from approximately 2.5 to 5.5 gallons per square foot per day (Sonoma County Water Agency 1999, 2000). Percolation rates at the City of Cloverdale Treatment Plant ponds ranged from 2.6 to more than 30 gallons per square foot per day. Based on measurements at these two treatment plants, the City's percolation/evaporation pond alternative would be based on a design rate of 5.0 gallons per square foot per day at maximum wet-weather flows of 4.5 million gallons per day (mgd). After including the reserve capacity necessary for cleaning as described above, and the areas occupied by separator levees and access roads, the percolation/evaporation system would require up to approximately 60 acres. These key engineering, soil, terrain, and hydrogeologic factors are all relatively uniform within the immediate vicinity of the WWTP site. The existing land uses, including important farmland classifications, and general environmental conditions are also very similar within the project area where these suitable percolation conditions exist.

The only other nonprime farmland locations for construction of percolation facilities would be located in the surrounding foothills. However, the surrounding foothills are not underlain by similar permeable alluvium, and the consolidated bedrock conditions would preclude the construction of feasible alternative locations for the percolation facility. A foothill location would likely involve primarily an effluent storage facility with little or no percolation function and thus would provide recycled water for SIR options, or for use with any other acceptable winter discharge options. However, construction of an offsite foothill reservoir would clearly be a large undertaking of similar magnitude to shallow percolation ponds, and potentially have significant impacts on a variety of environmental resources. Because the Basalt Pond option, Phase V Pond option, and the Russian River alternative identified in the draft EIR are all existing and available options for disposal during the discharge season, with minimal construction impacts on become fully implemented, it was unnecessary for the City to evaluate options such as off-site storage, which would involve considerably greater construction-related and operations-related environmental impacts. For the reasons stated, there were no other suitable alluvial valley sites or offsite locations for shallow percolation ponds available that would result in substantially less impacts than the options evaluated in the draft EIR. However, an alternative site for the shallow percolation ponds, also on Important Farmland, is addressed in the response to comment I1-1.

S2-13 In response to this comment, the following modification has been incorporated into the draft EIR to reflect the need for seismic consideration in the design of bridge attachments for stream crossings of the recycled water pipeline. The recommended design consideration does not change the significance conclusions in the draft EIR and does not result in additional significant impacts. As described below, and as noted in Chapter 4 of this final EIR, the second paragraph on page 2-35 is hereby revised as follows:

> For the bridge crossings of Mill Creek and Foss Creek, pipeline would be attached to either the upstream or downstream vertical edges of bridge decks using engineered brackets. The attachments would be designed so that the pipeline does not intrude into the flowing creeks. <u>Pipeline attachments would be designed in accordance with standard engineering practice procedures for seismic safety standards and not be implemented in a manner that would preclude future seismic retrofit of bridges.</u>

S2-14 The comment encourages the use of recycled wastewater in place of potable water, where feasible, and recommends special consideration for the Foreman Lane to Tayman Park option, which would use existing Tayman Park water storage facilities. The comment is noted and will be considered by the City as it determines, and takes action to approve, the set of treatment, effluent disposal, and seasonal irrigation reuse options that will ultimately form the project and policies for the City's wastewater management.

L1

COUNTY OF SONOMA

PERMIT AND RESOURCE MANAGEMENT DEPARTMENT

2550 Ventura Avenue, Santa Rosa, CA 95403-2829
(707) 565-1900 FAX (707) 565-1103

March 21, 2005

Mr. Jim Flugum, Senior Civil Engineer
City of Healdsburg Community Development Center
401 Grove Street
Healdsburg, Ca. 95448-4723

Re: Draft Environmental Impact Report (DEIR) on City of Healdsburg Wastewater Treatment Plan Upgrade Project.

Dear Mr. Flugum,

Thank you for the opportunity to review and comment on the DEIR for the above project. In August of 2002, the County provided comments on the Notice of Preparation for this project, requesting that the EIR address the project's consistency with the County's Aggregate Resources Management Plan (ARM) policy regarding future use of the Syar mining ponds for the discharge of treated effluent. Chapter 7 of the ARM Plan, page 7-42 states:

> "Wastewater storage: Several cities near the Russian River place treated sewage effluent in ponds for evaporation, filtering by the surrounding sand and gravel deposits, and further treatment by biological processes. The only site where this is done in the Middle Reach terrace mining area is the old Basalt pit used by the City of Healdsburg for many years. Monitoring thus far has not found any significant water impacts connected with this use. Any reclamation plan for this pit shall serve to protect and maintain the City of Healdsburg's ability to continue to use the pond for wastewater storage in accordance with applicable water quality standards. The processing sediments which have been piped into this pit may be removed to enlarge effluent storage capacity and provide fill for agricultural reclamation of other mined areas as long as the transfer of sediments meet the standards for imported fill stated above. No other terrace mining site may be used for storage or disposal of effluent from Public sewage treatment systems unless the Board of Supervisors finds that the proposal is the environmentally superior alternative being considered, will meet applicable water quality standards enforced by the Regional Water Quality Control Board, and will avoid significant impacts on nearby groundwater and surface water" (ARM Plan, p.7-42) L1-1

As a responsible agency for this project under CEQA, the County anticipates relying on the City's Final EIR in its review of any of the project options that involve mining pond disposal. Unfortunately, the DEIR is presently deficient in addressing the project's consistency with this policy as follows:

- The DEIR sections under "Land Use Consistency and Agriculture" do not mention the ARM Plan and do not provide the applicable policy language or analysis of consistency. Reference to the ARM Plan should be included in the section entitled "Local Plans, Policies, Regulations, and Ordinances" on page 3.1-5 of the DEIR. L1-1 Cont'd

- The above ARM policy provides three criteria applicable to the County's consideration of mining pond disposal. While the DEIR does address these criteria, it is lacking in two areas. First, the DEIR concludes that discharge into either of two mining ponds is the environmentally superior alternative. However, this conclusion is not supported by a detailed impact-by-impact comparison of the alternatives that would provide the County with a basis for its decision. L1-2
Second, the DEIR fails to clearly state whether or not mining pond disposal would meet the applicable standards of the Regional Water Quality Control Board (RWQCB). While the RWQCB would ultimately make this determination, the EIR should provide a clear assessment of the likelihood of meeting these standards in the event that the County is requested to render its decision prior to the RWQCB consideration. L1-3

We request that these additional analyses be included in the Final EIR.

It should be noted the County Board of Supervisors is presently reviewing and considering a permit application for the Syar Phase VI mining operation that may affect future wastewater disposal options in this area.

Thank you in advance for your cooperation regarding this project. Should you have any questions, please contact Angus Latta at 565-8340 or Greg Carr at 565-7381.

Sincerely,

Angus Latta

Angus Latta, Project Planner

cc: Mona Dougherty, RWQCB
Jennifer Barrett, Deputy Director, PRMD
Greg Carr, Comprehensive Planning Manager, PRMD
Greg Dion, Sonoma County Counsel's Office

LETTER L1 RESPONSE

County of Sonoma Permit and Resource Management Department
Angus Latta, Project Planner
Received on March 18, 2005

L1-1 In response to comment L1-1, the following additional land use policy contained in the Sonoma County Aggregate Resources Management (ARM) Plan is added to Section 3.1, "Land Use Consistency and Agriculture," as a new paragraph following the second paragraph on page 3.1-5. The following text is also added to Section 3.2, "Hydrology and Water Quality," as a new paragraph following the first partial paragraph on page 3.2-26. The text to be added follows:

> A specific policy included in the Sonoma County Aggregate Resources Management (ARM) Plan applies to the use of existing terrace mining ponds for disposal of domestic wastewater as follows:
>
> > Wastewater storage: Several cities near the Russian River place treated sewage effluent in ponds for evaporation, filtering by the surrounding sand and gravel deposits, and further treatment by biological processes. The only site where this is done in the Middle Reach terrace mining area is the old Basalt pit use by the City of Healdsburg for many years. Monitoring thus far has not found any significant water impacts connected with this use. Any reclamation plan for this pit shall serve to protect and maintain the City of Healdsburg's ability to continue to use the pond for wastewater storage in accordance with applicable water quality standards. The processing sediments which have been piped into this pit may be removed to enlarge effluent storage capacity and provide fill for agricultural reclamation of other mined areas as long as the transfer of sediments meets the standards for imported fill stated above. No other terrace mining site may be used for storage or disposal of effluent from Public sewage treatment systems unless the Board of Supervisors finds that the proposal is the environmentally superior alternative being considered, will meet applicable water quality standards enforced by the Regional Water Quality Control Board, and will avoid significant impacts on nearby groundwater and surface water. (ARM Plan, p. 7-42)

This modification does not change the significance conclusions in the draft EIR and does not result in additional significant impacts.

L1-2 Overall, the City's proposed effluent disposal options of continued Basalt Pond discharge and Phase V Pond discharge have identical environmental impacts, which was the primary reason why the draft EIR found that the two options have equal standing as environmentally superior effluent disposal options. The minor amount of additional construction required for initiating a new discharge location in the Phase V Pond is not a substantial factor in the relative superiority of these two options. Therefore, the City believes the impact conclusions in the draft EIR are sufficient for the Sonoma County Permit and Resource Management Department to confirm consistency of either option with the ARM Plan.

L1-3 The operations-related water quality impacts that are evaluated in the discussion of Impact 3.2-3 sufficiently demonstrate and state (in the second full paragraph of page 3.2-36) that all the proposed WWTP upgrade options could be implemented in full compliance with applicable water quality objectives.

L2

COUNTY OF SONOMA
DEPARTMENT OF TRANSPORTATION
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2300 COUNTY CENTER DRIVE, SUITE B-100
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David D. Knight, Director

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March 8, 2005

Mr. Jim Flugum
City of Healdsburg
Community Development Center
401 Grove Street
Healdsburg, CA 95448-4723

Re: Foreman Lane (Rd. No.99004)
Westside Road (Rd. No.8001)

Re: Sonoma County Transportation and Public Works Department (TPWD) Comments to the Draft EIR for the Waste Water Treatment Plant (WWTP) Upgrade Project

Dear Mr. Flugum:

The following comments relate to the construction impacts to maintained county roads described in the DEIR for the city of Healdsburg (City):

Table ES-1 SIR: Foreman Lane/Mill Creek Road Option

Mitigation Measure 3.1-3a) states that construction periods shall be restricted to periods outside the growing season. This could mean that construction within county roads related to pipeline construction and construction off-haul traffic would be conducted during the winter and spring. This would result in excavation and heavy truck during the time of the year when the ground is most saturated. This could lead and has led in the past on similar county roads to significant road structural section damage. The optimum time to construct within the county roads and to place heavy truck off-haul traffic over the roads to minimize damage is during the growing season. Therefore, date restrictions may be placed in encroachment permit conditions to minimize damage to county roads. L2-1

Mitigation Measure 3.5-3 should also address potential instability caused to county roads by construction of the pipeline. This would include Westside Road, also.

1 Introduction

1.3.2 Transportation

200 (15-20 per hour) heavy truck trips per day is not a low level of use on county roads. Multiple routes are not available for transporting materials. Encroachment permit conditions will limit truck traffic routes to prescribed haul routes which minimize traffic impacts and road structural L2-2

damage. No truck traffic will be allowed on Westside Road south of Foreman Lane due to load limits at the Wohler Bridge and turning movement restrictions at the intersection of Westside Road and River Road.

Appropriate traffic controls will be required for truck traffic utilizing county roads. Foreman Lane is not intended for heavy hauling and two-way truck traffic. An estimation of the total truck traffic should be made to determine truck trips generated by the project which should include off-hauled excavated spoils and imported materials incorporated into the project. L2-2 Cont'd

Specific haul routes to county landfill sites will be required to minimize traffic impacts and road structural section damage.

Coordination with county staff at the Central Landfill will be necessary for soil testing purposes, truck hauling/cubic yards per hour estimates, and operational control at the landfill dumping operation. It may be necessary for the contractor to provide spreading and compacting equipment to meet the needs of county landfill operations. L2-3

Construction Overview

2.7.1 Construction Methods

It is stated that "Construction would generally occur between 7:30 p.m. and 6:00 p.m." Daylight working hours may be impacted by the restriction of conducting construction "outside of the growing season." Working hours are further limited on county roads during weekends. L2-4 It is stated that ". . . local roads, which are paved, all-weather, and suitable for the anticipated loads." County roads, particularly Foreman Lane, are not suitable for the anticipated loads, particularly during the wet season. L2-5

County Landfill Disposal Scenario

It is stated that, "The environmental impacts of excavating and transporting the soil to one or more of these facilities are addressed in this EIR." The hauling of materials over the county road system has not been discussed with TPWD and the issues have not been addressed. L2-6

General Comments

Rights-of-way within county roads may be limited to roadway purposes only and not available for other uses. This occurred along many of the roads of the city of Santa Rosa's used for its Geysers Pipeline Project. Rights-of-way has to be acquired for pipeline installations. L2-7

Mr. Jim Flugum
March 8, 2005
Page Three

A complete truck traffic operation plan will be required.

Anticipate base section repair and asphalt concrete paving of roads completely after the pipeline is completed and widening roads to two lanes for construction truck traffic on Foreman Lane.

Agreements will be necessary regarding future maintenance responsibilities of the pipeline in relation to the road and provisions for relocation at City expense for future underground conflicts related to road improvements.

TPWD expects the City to take the lead in dealing with local property owner access, complaints, traffic safety, etc., related to the road right-of-way.

TPWD expects the City to take the lead in environmental issues related to NPDES, SUSMP, SWPPPs, SWMPs, BMPs, NOIs, and any other acronym not listed, related to the road right-of-way. L2-8

A signed final engineer's report will be provided to TPWD for construction quality assurance issues (materials testing, compaction testing results, etc.) related to pipeline work and road repairs performed within the county right-of-way prior to sign-off of the encroachment permit.

A cash deposit for TPWD forces' performed emergency road repair work will be required.

TPWD fully understands the need for the project and will work with the City to address TPWD's concerns. Our experience with the Geysers Pipeline construction has led us to many of the concerns related above. Please contact John Maitland at 565-2528 to discuss these issues in further detail.

Sincerely,

David D. Knight, Director
Department of Transportation and Public Works

DDK:mjt:i:\letters\05Knight\healdsburgDEIR.wpd

cc: John Maitland

LETTER L2 RESPONSE

County of Sonoma Department of Transportation and Public Works
David Knight, Director
Received on March 24, 2005

L2-1 The comment refers to the specific text of Mitigation Measure 3.1-3 contained in Table ES-1 of the Executive Summary (page ES-4) of the draft EIR. Table ES-4, which summarizes the mitigation measures contained in the "Impacts and Mitigation Measures" portion of each individual resource section, contains an error in the text of Mitigation Measure 3.1-3. The error in Table ES-1, which this comment specifically references, restricts project construction activity to the months outside of the agricultural growing and harvesting season. The text of Mitigation Measure 3.1-3 located on pages 3.1-13 and 3.1-14 in Section 3.1, "Land Use Consistency and Agriculture," is correct and does not include this requirement.

With respect to the comment requesting modification of Mitigation Measure 3.5-3, this mitigation measure refers to the exposure of project-related activities to natural geologic hazards and risk of project activities to cause or contribute to those hazards. The City considers the risks to road stability and other constructed features from project construction or traffic activity to be physical effects that are not necessarily attributable to natural hazards. The City believes the potential adverse impacts on the County's roadways can best be avoided and minimized through project commitments, such as those identified in Section 2.8.4 for traffic control and Section 2.8.7 that commit the construction contractor to correct any project-related road surface damage.

In addition, in response to this comment, the "Local Agencies" section of Table 2-2 is hereby modified to identify the Sonoma County Department of Transportation and Public Works encroachment permit requirement suggested in the comment:

Table 2-2
Potential Permit or Consultation Requirements

Permit/Agreement	Agency	Jurisdiction/Purpose
Local Agencies		
<u>Encroachment permit</u>	<u>Sonoma County Department of Transportation and Public Works</u>	<u>Authorizes construction within County-owned land or rights-of-way</u>

L2-2 The comment does not provide information that contradicts the statement on page 1-8 of the draft EIR that 200 truck trips per day is a "relatively low level of [roadway] use," so a specific response cannot be provided. Although 200 truck trips per day, as a gross number, may seem high, they would be spread out throughout the day rather than in rapid succession during peak hours. At 15–20 trips per hour (average of one trip each 3–4 minutes), roadway congestion would not result from the project. The response to comment L2-1 references the traffic control plan requirements identified in the draft EIR. The City would coordinate with the County regarding truck traffic routes, traffic controls, and the number of truck trips and would comply with the conditions of a County encroachment permit.

L2-3 The City would coordinate with County staff members regarding the delivery of soil to the Central Landfill and would comply with County requirements to meet the needs of landfill operations.

L2-4 As noted in the response to comment L2-1, the restriction of construction to "outside the growing season" in Table ES-1, Mitigation Measure 3.1-3, was an error and is not applicable to the project.

L2-5 The comment states that county roads, particularly Foreman Lane, would not be suitable for the truck loads anticipated in the draft EIR, particularly during the wet season, but it does not specify what changes in hauling would be required to accommodate the limitations of the roadways, so a specific response cannot be provided. The City would comply with the conditions of the County encroachment permits, including those relating to seasonal use of the roadways by truck traffic, alternative routes as available, and repairs caused by any project-related damage as needed.

L2-6 Please see the responses to comments L2-1 through L2-5. Also, please see pages 3.6-18 through 3.6-23, concerning air quality. The City would consult with the Sonoma County Department of Transportation and Public Works to identify conditions of the County's encroachment permits.

L2-7 The comment states that rights-of-way within County roads may be limited to roadway purposes but does not specify whether this applies to any County roads affected by this project. If right-of-way within county roads is unavailable for pipeline installation, the City would acquire the needed right-of-way rights from the property owners of record.

L2-8 The comment identifies a variety of County requirements, agreements, and expectations regarding the proposed project, including preparation of a truck traffic operation plan, submittal of a signed final engineer's report related to construction quality assurance issues, and deposit of funds with Sonoma County Department of Transportation and Public Works to cover the cost of related road repair work. As described in the response to comment L2-1, the City would meet all requirements developed in the encroachment permit.

L3

SONOMA COUNTY WATER AGENCY

FILE:FDR/TENT/CITY OF HEALDSBURG WASTEWATER TREATMENT PLANT UPGRADE PROJECT

March 25, 2005

Mr. Jim Flugum, Senior Civil Engineer
City of Healdsburg
Community Development Center
401 Grove Street
Healdsburg, CA 95448-4723

RE: CITY OF HEALDSBURG WASTEWATER TREATMENT PLANT UPGRADE PROJECT

Dear Mr. Flugum:

The Sonoma County Water Agency (Agency) has reviewed the City of Healdsburg's (City) Draft Environmental Impact Report (DEIR) for the above mentioned project. In response, the Agency submits the following comments.

1. The Agency is interested in coordinating and collaborating with the City to bring recycled water to the Russian River Valley, Alexander Valley, and Dry Creek Valley areas (North County) for agricultural reuse. The Agency is currently conducting a study to determine the feasibility of developing a recycled water project within the North County to reduce existing agricultural use of the Russian River, its tributaries, and adjacent groundwater. L3-1

2. The Agency is concerned with any activity that may affect the operation and maintenance of our facilities located at Norton Creek. Please provide design plans for Agency review which show detail of the development in or adjacent to the Agency's facilities. L3-2

3. Table 2-2 of the Project Description (Page 2-26 and 2-27) does not include a Revocable License from the Agency. A Revocable License will be required for access or construction work within the Agency's property located along Norton Creek. For questions on obtaining a Revocable License, please contact Mike Tovani (707) 547-1070.

4. The Agency requests the opportunity to review future environmental documents and civil design plans for the subject project when they become available. L3-3

Thank you for the opportunity to comment. For any other questions regarding Agency comments, I can be contacted at 547-1948 or emailed at annec@scwa.ca.gov.

Sincerely,

Anne Crealock

Anne Crealock
Environmental Specialist

c Ken Goddard

rs3/u/cl/rw/erpad/crealockhealdsburg WWTP Upgrade DEIR.doc

P.O. Box 11628 - Santa Rosa, CA 95406 - 404 Aviation Boulevard - Santa Rosa, CA 95403 - (707) 526-5370 - Fax (707) 544-6123

LETTER L3 RESPONSE

Sonoma County Water Agency
Anne Crealock, Environmental Specialist
Received on March 28, 2005

L3-1 This comment is noted. No further response is necessary because no environmental issues were raised. The City appreciates the offer and opportunity to develop additional seasonal reuse opportunities with the Sonoma County Water Agency (SCWA) for irrigated agricultural operations with recycled water.

L3-2 The City is aware of the hydraulic maintenance easements for parcels along Norton Slough stream channel (identified in the draft EIR as Foss Creek) that permit vegetation-clearing activities for the purpose of maintaining hydraulic (flood) capacity in the channel. The City's existing 12-inch recycled water pipeline is located east of the same channel reach from Magnolia Drive south to the City's Magnolia Pump Station. Temporary construction activity for installation of the proposed recycled water pipeline for the City's proposed Foreman Lane/Tayman Park SCWA route option for SIR would occur within the SCWA easement areas. The pipeline would be attached to an existing bridge to cross the channel near the Magnolia Pump Station; it likely also would cross a small portion of an SCWA-owned parcel (088-200-010) for the crossing under U.S. Highway 101. However, the pipeline design and construction would not interfere with SCWA's channel maintenance activities. If selected as an element of the preferred project, the City would consult with SCWA on the need for a revocable license and submittal of pipeline plans and specifications for review by SCWA. No further response is necessary because no environmental issues were raised.

L3-3 This comment is noted. No further response is necessary because no environmental issues were raised.

L4

TOWN OF WINDSOR

Town of Windsor
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Windsor, CA 95492-0100
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Mayor
Steve Allen

Mayor Pro Tempore
Sam Salmon

Council Members
Lynn Morehouse
Debora Fudge
Warin Parker

March 21, 2005 **Hand Delivered**

Mr. Jim Flugum
Senior Civil Engineer
City of Healdsburg
Community Development Center
401 Grove Street
Healdsburg, CA 95448-4723

Re: Comments on City of Healdsburg's
Wastewater Treatment Plant Upgrade Project
SCH #2002072083

Dear Mr. Flugum:

The Town of Windsor appreciates the opportunity to comment on the City of Healdsburg's Wastewater Treatment Plant Upgrade Project Draft Environmental Impact Report ("DEIR").

As you know, since 1999 the Town of Windsor ("Town") has been expressing its concerns regarding potential environmental impacts to its Russian River wells resulting from proposed modifications to the City of Healdsburg's ("Healdsburg") wastewater system. The Town urges Healdsburg to design and construct a project that respects the Russian River, its neighbors and the environment. To this end, the Town submits the following comments and questions on the DEIR:

<u>Project Description</u>

The DEIR does not identify one proposed project, but identifies several project elements that may be adopted in various combinations. The environmental analysis, however, does not fully consider the impacts of the various combinations of project elements. CEQA requires consideration of all aspects of a project, and does not permit piece-mealing of project components. (See *Citizens Association for Sensible Development of Bishop Area v. County of Inyo* (1985) 172 Cal.App.3d 151, 165-166; *City of Antioch v. City Council* (1986) 187 Cal.App.3d 1325, 1333-1336.) By dividing the Project into Wastewater Treatment Plant upgrade ("WTPU") options, effluent disposal ("ED") options, and seasonal irrigation reuse ("SIR") options, and evaluating each of these options separately under each impact analysis, the DEIR fails to fully consider the environmental impacts of the Project as a whole. (See *San Joaquin* L4-1

Raptor/Wildlife Rescue Center v. County of Stanislaus (1994) 27 Cal.App.4th 713, 729-730.) It is a certainty that the Project, once adopted, will include some combination of the WTPU, ED and SIR options and there are multiple possible combinations. The DEIR, however, does not analyze each of the possible combinations, or even the probable combinations. This results in piece-mealing of the Project and is inappropriate under CEQA. L4-1 Cont'd

Hydrology and Water Quality

Page 3.2-4 of the DEIR under the heading Groundwater acknowledges the presence of the Town of Windsor's municipal wells approximately 6,600 feet south (downstream / down-gradient) of the proposed point of discharge and/or groundwater recharge of tertiary recycled water, or in the case of the No Project alternative of secondary treated wastewater. However, potential water quality impacts to the Town of Windsor's wells are not addressed in the DEIR. As the Town's wells are an essential element of a public utility/service, such potential impacts should be addressed in Section 3.2 (Hydrology and Water Quality) and/or Section 3.10 (Public Utilities/Services) of the DEIR. L4-2

Standards of Significance: Section 3.2.3 identifies the standards of significance for determining whether a water quality impact is significant. The DEIR notes that an impact is considered significant if the project would violate any water quality standards. (DEIR at p. 3.2-26.) The DEIR also acknowledges the State's Anti-degradation Policy (SWRCB Resolution No. 68-16), which is an element of the State's water quality policy. (DEIR at pp. 3.2-22 – 3.2-24.) The DEIR, however, fails to provide an analysis of whether the proposed Project complies with the Anti-degradation Policy and is consistent with the maximum benefit to the people of the state. The DEIR should consider whether the Project is consistent with the Anti-degradation policy for purposes of determining whether the Project may result in a significant impact on water quality. L4-3

The Impact Analysis presented in Section 3.2 of the DEIR beginning on (DEIR at p. 3.2-29) addresses only water quality of receiving (surface) waters. Further, only groundwater water quantity (not quality) is addressed. The Impact Analysis should also address potential groundwater quality impacts, including potential impacts to down-gradient wells. L4-4

Impact 3.2-3: Impact 3.2-3 addresses water quality effects to receiving waters. (DEIR at pp. 3.2-34 – 3.2-37.) This section discusses impacts on water quality that will result from operation of the Project. Section 3.2-3 concludes that there will be no impacts on water quality from the WTPU and concludes that the L4-5 impacts from the ED options would be less than significant. With respect to the evaluation of water quality impacts from the percolation pond option, however, the DEIR analyzes groundwater impacts only and fails to consider whether the discharge to the percolation ponds could affect water quality in the Russian River. Because of the hydrologic connection between surface water and groundwater, the DEIR should consider whether discharge to the percolation ponds would impact surface water quality. L4-5 Cont'd

The DEIR then considers the water quality impacts from the SIR options. The DEIR discusses only impacts from incidental offsite runoff and discharge to adjacent drainages. This section inexplicably fails to evaluate water quality impacts to groundwater that could result from seasonal irrigation reuse of treated effluent. L4-6

In addition, because the Project has been piece-mealed, this section fails to consider the combined groundwater effects of the ED and SIR options. The Project Description acknowledges that the disposal/reuse approach selected by the City will likely include "one of the three effluent disposal options and one or more of the seasonal irrigation reuse options." (DEIR at p. 2-15.) Yet, the analysis fails to evaluate the combined water quality impacts of implementing one of the ED options and one or more of the SIR options. While the separate components of the project may result in less than significant impacts, the analysis must consider whether the whole of the project will result in significant impacts. (See *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 192-193.) The combined impacts of the Project must be evaluated and it is not sufficient to evaluate such Project impacts in the cumulative impacts discussion. L4-7

Disposal to Basalt Pond: The DEIR identified one of the ED options as continued discharge to the Basalt Pond. The DEIR acknowledges the past problems with discharge to the Basalt Pond, specifically, breaches in the levees that caused impermissible releases of treated wastewater to the Russian River. (DEIR at p. 2-5.) The DEIR fails, however, to discuss the potential impacts of future breaches in the levees and fails to identify measures that will prevent or mitigate such breaches. Future breaches of the Basalt Pond levee have the potential to cause significant water quality impacts that must be addressed. L4-8

The cumulative water quality impacts of continued discharge to the Basalt Pond and the Syar weir modifications described in the DEIR should be addressed, as the latter may result in increased transfer of water between the Basalt Pond and Russian River even without "breach" of the levees. L4-9

3

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In addition, as previously commented by the Town and as identified in the DEIR, the Basalt Pond is hydrologically connected to the Russian River. (DEIR at pp. 2-5, 2-16.) As a result, the prohibitions in the Basin Plan that apply to discharge to the Russian River also apply to discharge to the Basalt Pond. The DEIR must specify how discharge to the Basalt Pond will be controlled to ensure compliance with the Basin Plan requirements. L4-10

Disposal to Phase V Pond: The DEIR identifies two of the ED options as discharge to the Basalt Pond and discharge to the Phase V Pond. While the DEIR acknowledges that the Basin Plan restricts discharge to the Basalt Pond (DEIR at pp. 2-5, 2-16), it fails to consider that the Phase V Pond may be subject to the same limitations. As the Town has commented previously, the Phase V Pond is hydrologically connected to the Russian River and, therefore, discharges to the Phase V Pond are subject to the federal Clean Water Act (33 U.S.C. § 1251 et seq.) and to the Basin Plan restrictions on discharge to the Russian River. Specifically, the Basin Plan restricts the discharge of wastewater to the Russian River to an amount not exceed 1% of the receiving water flow and prohibits discharge from May 15 through September 30. The DEIR should acknowledge that if the City elects to discharge to the Phase V Pond, it must also select alternative disposal options to address the restrictions in the Basin Plan. Similar considerations apply to the ED option of discharge to percolation ponds. The DEIR should evaluate whether such discharge would result in a discharge to the Russian River. L4-11

Discharge to Basalt Pond or Phase V Pond: While the DEIR recognizes that discharges to the Russian River are prohibited from May 15 through September 30, the DEIR proposes to permit discharge to either the Basalt Pond or the Phase V Pond at least during the period that discharge is permitted to the Russian River. The DEIR fails to consider, however, that even if the City halts discharge on May 14, as required by the Basin Plan, treated wastewater will continue to exist in the ponds and will continue to discharge to the Russian River, in violation of the Basin Plan. The DEIR must address how discharge to either the Basalt Pond or the Phase V Pond will be controlled to ensure that treated wastewater is not discharged to the Russian River during the period May 15 through September 30. L4-12

Alternatives

As noted in comments from the Town and the Regional Board on the City's Notice of Preparation of the DEIR, conservation is a critical element of wastewater treatment and disposal in this area. (Letter to J. Flugum from J. Matthew Mullan re Comments on City of Healdsburg's Wastewater Treatment Plant Upgrade Project (July 29, 2002); Letter to J. Flugum from M. Neely re Comments on "Notice of Preparation of Draft EIR" for Wastewater Treatment Plant Upgrade (August 15, 2002).) The DEIR fails to identify water conservation efforts that can help minimize environmental impacts of the proposed Project. Reasonable conservation measures should be considered as part of the Project and/or as an alternative to Project components. L4-13

Further, the alternatives discussion fails to consider an adequate range of alternatives and, specifically, should consider alternatives that would provide for off-river storage with beneficial reuse of treated wastewater. The off-river storage should be completely protective of surface water and groundwater quality. The proposed project would provide for effluent disposal to the Basalt Pond, Phase V Pond and/or percolation ponds, all of which result in discharge to surface water and/or groundwater. The only alternative evaluated is direct discharge to the Russian River. The DEIR should consider an alternative that would provide for storage and reuse of treated wastewater, rather than discharge to surface or groundwater. L4-14

Section 5.4 – No Project Alternative: Under the discussion of "Public Utilities/Services" relating to the No Project Alternative, the potential impacts of the No Project Alternative upon the public utilities/services of the City of Healdsburg resulting from regulatory noncompliance with the Orders of the North Coast Regional Water Quality Control Board should be addressed. L4-15

Environmentally Superior Alternative: This discussion is unclear and fails to comply with CEQA's requirement to identify an environmentally superior alternative. (14 Cal. Code Regs., § 15126.6(e)(2).) Specifically, the discussion in the DEIR focuses on which of the ED options is superior, but fails to consider those options as compared to the alternatives. In addition, the discussion fails to consider the environmentally superior WTPU and SIR options. Finally, and significantly, the DEIR fails to consider alternatives in light of the project as a whole and does not identify an environmentally superior alternative for the entire project (i.e., WTPU, ED and SIR components combined). Based on the DEIR, there is no way to determine which complete project is environmentally superior. L4-16

In addition to the above comments, please receive as an attachment to this letter and on behalf of the Town, correspondence from the Town's consulting Hydrologist Timothy J. Durbin, Inc. dated March 18, 2005 with additional comments regarding the DEIR. L4-17

The Town continues to look forward to your responses to all of the comments regarding the DEIR and welcomes the opportunity to work collaboratively with Healdsburg on a long-term solution for its wastewater treatment, storage and disposal needs.

Very truly yours,

J. Matthew Mullan

J. Matthew Mullan
Assistant Town Manager

Enclosure
cc: Windsor Town Council
P. Berlant, Town Manager
R. Burtt, Public Works Director
P. Simmons, Somach Simmons & Dunn
C. Kuhlman, NCRWQCB

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IMPACTS OF PROPOSED HEALDSBURG WASTEWATER DISCHARGES ON THE RUSSIAN RIVER

March 18, 2005

Prepared for
Town of Windsor
P. O. Box 100
Windsor, CA 95492

Prepared by
Timothy J. Durbin, Inc.
5330 Primrose Drive, Suite 228
Fair Oaks, CA 95628

TIMOTHY J. DURBIN, INC.
CONSULTING HYDROLOGISTS

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IMPACTS OF PROPOSED HEALDSBURG WASTEWATER DISCHARGES ON THE RUSSIAN RIVER

1.0 INTRODUCTION

1.1 Description of Wastewater-Disposal Alternatives

The Town of Windsor is located near the Russian River within Sonoma County, California (Figure 1.1). The town derives most of its water supply from wells located along the Russian River (Figure 1.2). The quality of the groundwater supply is generally good. However, the Town of Windsor is concerned about possible adverse impacts on the groundwater supply of wastewater discharge by the City of Healdsburg.

The City of Healdsburg is located along the Russian River upstream from the Town of Windsor. The City discharges about 1,400 acre-ft/yr of wastewater from the municipal wastewater-treatment plant to Basalt Pond, which is located adjacent to the Russian River (Figure 1.2). The wastewater dissolved solids are about 280 mg/L, and the dissolved-solids load is about 520 tons/yr. The City is considering a number of alternatives for wastewater disposal. Those alternatives include discharge to Basalt Pond, Phase V Pond, percolation ponds, and irrigation reuse. These alternatives are described in a Draft Environmental Impact Report titled "City of Healdsburg Wastewater Treatment Plant Upgrade Project" (Healdsburg, 2005). The wastewater-disposal alternatives for the Upgrade Project are summarized as follows:

Existing Basalt Pond is located immediately south of the wastewater treatment plant (Figure 1.2). The mining of gravel created the pond. It has an area of about 60 acres and has a water depth of about 60 ft. Basalt Pond has no surface-water outlet, and inflows to the pond move into the surrounding groundwater system. The depth to the groundwater table is about 27 ft near the pond. The water-surface elevation in the pond is about the same as the groundwater-table elevation near the pond. Wastewater would be discharged to the pond year-round or during only the October-May season. With seasonal-only discharge to this pond, wastewater might be reused for irrigation during the June-September season or might be stored during the June-September season for discharge to Basalt Pond during the October-May season.

Existing Phase V Pond (Figure 1.2) is located immediately west of Basalt Pond. The mining of gravel also created this pond. It has an area of about 14 acres and has a water depth of about 60 ft. Phase V Pond has no surface-water outlet, and inflows to the pond move into the surrounding groundwater system. The depth to the groundwater table is about 28 ft near the pond. The water-surface elevation in the pond is about the same as the groundwater-table elevation near the pond. Wastewater would be discharged to the pond year-round.

New percolation ponds (Figure 1.2) would be located immediately west of Phase V Pond. The ponds would have a cumulative area of about 60 acres and would be about 20 ft in depth. The depth to the groundwater table is about 30 ft near the proposed percolation ponds site. Wastewater would be discharged to the pond year-round or during only the October-May season. With seasonal-only discharge to the ponds, wastewater would be reused for irrigation during the June-September season.

Wastewater might be reused for irrigation on lands along the Russian River and Dry Creek (Figure 1.3). The lands are located north, west, and south of the wastewater-treatment plant. About 1,400 acres are proposed for possible irrigation reuse. The depth to the groundwater table ranges from about 15 to 40 ft within the area for possible reuse.

1.2 Description of Hydrologic Setting

The water-related environment within the vicinity of the Upgrade Project includes the groundwater system, the Russian River, and Dry Creek. The groundwater system and streams are connected hydraulically so as to form a stream-aquifer hydrologic system.

The groundwater system occurs within the valley-floor areas along the Russian River and Dry Creek (Figure 1.4) south and northwest of Healdsburg. The groundwater system extends along the Russian River from the Highway 101 bridge at Healdsburg to where the valley floor narrows about 6 miles downstream. The groundwater system extends along Dry Creek from its confluence with the Russian River to about 11 miles upstream, and comprises about 24 mi^2. The groundwater system within this area is referred to as the Healdsburg Subbasin of the Santa Rosa Valley Groundwater Basin (California Department of Water Resources, 2003)

The principal hydrogeologic unit within the Healdsburg Subbasin is the alluvium of Holocene age that immediately underlies the valley-floor areas (California Department of Water Resources, 1983). The alluvium consists of coarse-grained alluvial and river-channel deposits that are mostly gravel and sand. However, the alluvium tends to be somewhat less coarse-grained near the margins of the valley-floor area. The permeability generally is high, and the specific capacity of wells pumping from the alluvium ranges from 50 to 200 gal/min per foot of drawdown (California Department of Water Resources, 1983).

The alluvial and river-channel deposits are underlain either by terrace deposits or the Glen Ellen Formation, both of which have a low permeability. The terrace deposits are of Pleistocene age, and were originally formed as alluvial fan, flood plain, and stream-channel deposits. The terrace deposits consist of sand, silt, and clay. The permeability generally is low, and the specific capacity of wells pumping from the terrace deposits ranges from 0.5 to 5 gal/min per foot of drawdown (California Department of

Water Resources, 1983). The Glen Ellen Formation is of Pliocene and Pleistocene ages, with thick units of silty gravel, cemented silty sand, and silty clay occurring commonly within the formation. The permeability generally is low, and the specific capacity of wells pumping from the Glen Ellen Formation typically is about 2 gal/min per foot of drawdown (California Department of Water Resources, 1983).

Stream-aquifer interactions result in exchanges of water between the groundwater system and streams. Along the upstream reaches of the Russian River and Dry Creek, streamflow generally recharges the groundwater system. These are referred to as losing stream reaches. Along the lower reaches, groundwater discharges to the streams. These are referred to as gaining stream reaches. Along both the losing and gaining reaches of the Russian River and Dry Creek, the stream-aquifer exchanges work so as to produce near-channel groundwater levels that essentially equal the elevation of the streamflow within the channel. Correspondingly, the regional groundwater-level gradients (Figure 1.5) follow the channel gradients along the Russian River and Dry Creek (Figures 1.6a-b).

Within the constraints imposed by the stream-aquifer interactions, groundwater levels fluctuate seasonally and inter-annually (Figures 1.7a-c) due to fluctuations in recharge from precipitation, groundwater usage, and streamflow stage. Groundwater levels display seasonal and inter-annual fluctuations, but the groundwater-level data indicate no long-term trend (California Department of Water Resources, 2003). Groundwater levels fluctuate seasonally over a typical annual range of about 5 to10 ft. Nevertheless, the range is larger in some years and smaller in other years. As indicated by hydrographs published by the California Department of Water Resources (1983), these conditions have persisted since at least 1960.

The range in streamflow stage is smaller than the range in groundwater levels. The fluctuations in streamflow stage that follow the seasonal and inter-annual fluctuations are Russian River and Dry Creek streamflow. The monthly average Russian River streamflow near Healdsburg (U. S. Geological Survey, 2005a, gaging station 11464000) ranges from 4,300 ft3/s for February to 182 ft3/s for September. The streamflow stage correspondingly ranges from 4.9 to 1.2 ft, based on the stage-discharge relation for the streamgaging station (Figure 1.8a). The span of the range is 3.7 ft. The monthly average Dry Creek streamflow near the mouth (U. S. Geological Survey, 2005a, gaging station 11465350) ranges from 116 ft3/s for March to 53 ft3/s for October. The streamflow stage correspondingly ranges from 1.0 to 0.7 ft, based on the stage-discharge relation for the streamgaging station (Figure 1.8b). The span of the range is 0.3 ft.

1.3 Scope of Work

The scope of work described in this report is twofold. Firstly, a groundwater model was developed and then used to evaluate the water-quality impacts of the Upgrade Project on groundwater and surface water. Those impacts were evaluated by simulating the transient-state groundwater conditions, including groundwater levels, groundwater dissolved solids, and the stream-aquifer interactions. The stream-aquifer exchanges were translated into the corresponding impacts on streamflow quality. Secondly, the conclusions expressed in a report on Russian River streamflow-quality by the City of Healdsburg (Healdsburg, 2004) are evaluated.

Impacts of the Upgrade Project are described in terms of chloride. The wastewater discharge contains other constituents of concern, such as nutrients, but those constituents are not discussed in this report. However, the chloride impacts are an approximate surrogate or tracer for the impacts that would occur with other constituents of concern. More detailed work needs be done regarding not only chloride but also other constituents. Correspondingly, this report represents only a preliminary evaluation of the Upgrade Project. The purpose of the work is to demonstrate that additional work, beyond the work described in this report, is required to adequately describe the potential impacts of the Upgrade Project. The preliminary work indicates impacts that are not addressed by the Draft Environmental Impact Report on the project (EDAW, 2005). The preliminary work quantifies the unaddressed impacts, and demonstrates an approach that should be used in additional work to revise the Draft Environmental Impact Report.

2.0 DEVELOPMENT OF GROUNDWATER MODEL

2.1 Description of Modeling Approach

A groundwater model of the alluvium within the Healdsburg Subbasin was used to evaluate the impacts of the Upgrade Project. The model consists of a generalized computer program for modeling groundwater systems and input files that describe the characteristics of the Healdsburg Subbasin. Correspondingly, the computer program and system-specific input files constitute the groundwater model. The geographic extent of the groundwater model includes only the southern and middle parts of the subbasin (Figure 1.4). While the Healdsburg Subbasin extends about 11 miles up Dry Creek, the groundwater model extends only 6 miles upstream. The area covered by the Upgrade Project occupies a small region within the middle of the overall geographic extent of the groundwater model.

A three-dimensional model was developed for the Healdsburg groundwater system using the computer program *TRAN3D*, which is an updated version of the computer program *FEMFLOW3D* (Durbin and Bond, 1998). *TRAN3D* includes modules for vertically expanding or shrinking the model grid to follow a fluctuating groundwater table, which is a feature not included with *FEMFLOW3D*. *TRAN3D* also includes a module for simulating groundwater quality, which again is a feature not contained in *FEMFLOW3D*. The theoretical basis of *FEMFLOW3D* is documented by Durbin and Berenbrock (1985), and Durbin and Bond (1998).

The computer program *TRAN3D* represents a groundwater basin with a finite-element mesh. The mesh is used to represent the geographic extent of a groundwater system and the thickness of the geologic units comprising the system. Additionally, the mesh is used to specify the hydraulic properties, pumping, and recharge. The mesh for a groundwater model based on *TRAN3D* is constructed by assembling a wire-frame mesh using wedge-shaped elements. The individual elements are oriented such that the triangular faces of the wedge are parallel (or subparallel) with a horizontal plane. They are oriented, additionally, such that the rectangular (or trapezoidal) faces are parallel with a vertical plane. The results of this orientation are such that an element appears as a triangle when viewed from above and as a rectangle (or trapezoid) when viewed from the side. A wedge-shaped element has six vertices, which in the vernacular of groundwater models, are referred to as nodes. An individual element is located geographically and vertically by specifying the three-dimensional coordinates for each node. A mesh is constructed by creating an assemblage of nodes and by identifying which nodes define which elements (Durbin and Bond, 1998).

The development of the groundwater model using *TRAN3D* involves two steps. Firstly, a finite-element mesh is constructed to represent the geologic units forming the

Healdsburg Subbasin. Secondly, computer files are constructed to specify the hydraulic properties of the groundwater system, the conditions at the boundaries of the groundwater system, and the conditions representing the specific wastewater-disposal alternatives of the Upgrade Project.

2.2 Construction of Finite-Element Mesh for Groundwater Model

The finite-element mesh for the Healdsburg Subbasin is shown on Figures 2.1 and 2.2. Figure 2.1 shows a map view of the mesh, and Figure 2.2 shows an oblique aerial view from the southeast. The mesh represents the alluvium and the ponds within the alluvium near the City of Healdsburg wastewater-treatment plant. The groundwater system is represented by an eight-layer three-dimensional mesh that extends from the groundwater table to the base of the alluvium. The maximum saturated thickness of the groundwater system is about 120 ft, and the corresponding maximum vertical discretization within the mesh is about 15 ft. Where the thickness is smaller, the vertical discretization is smaller. The maximum horizontal discretization within the mesh is about 600 ft, but the horizontal discretization near Basalt Pond and nearby ponds is 300 ft and less. Overall the mesh contains 18,180 nodes and 30,088 elements.

The existing Basalt Pond, Phase I/II Pond, Phase III Pond, Phase V Pond, and an unnamed pond south of the Phase I/II Pond (Figure 1.2) are represented within the finite-element mesh. To facilitate the solute-transport simulation, the excavated volume of the ponds is represented in the mesh as part of the groundwater system. Also represented in the mesh is a rind of low-permeability material on the walls and bottom of the ponds. The rind has developed because of suspended sediments in the pond that plugged the otherwise high-permeability alluvium (Luhdorff & Scalmanini, 1999. The rind is represented by the elements in the mesh that surround and underlie each pond.

2.3 Assignment of Aquifer Properties

The groundwater model requires the assignment of aquifer properties to each element of the finite-element mesh. The aquifer properties include horizontal hydraulic conductivity, vertical hydraulic conductivity, specific storage, and specific yield, porosity, and dispersivity.

The hydraulic conductivity represents the permeability of alluvium within the Healdsburg Subbasin. A hydraulic conductivity of 200 ft/d was assigned to the alluvium, based on the specific capacity for wells pumping from the alluvium. The relation for converting specific capacity into hydraulic conductivity is (Lohman, 1979)

$$K = \frac{Sc \cdot f}{B} \qquad (2.1)$$

where

K	is the hydraulic conductivity (ft/d),
Sc	is the specific capacity for a well (gal/min per foot of drawdown),
B	is the screen length for the well (ft), and
f	is the factor that is based on the theory of well hydraulics ($\text{min} \cdot \text{ft}^3/\text{gal} \cdot \text{d}$).

Lohman (1979) suggests a value of 200 for the factor f, when the hydraulic conductivity is expressed in units of feet per day.

Equation 2.1 was used to translate the specific capacities reported by the California Department of Water Resources (1983) for the Healdsburg Subbasin into the corresponding hydraulic conductivities. The geometric mean of the specific capacities reported for the alluvium is about 200 gal/min per foot of drawdown. The well-screen lengths are unknown, but they were assumed to be 80 ft. The corresponding hydraulic conductivity from Equation 2.1 is 250 ft/day. However, that value was reduced to 200 ft/d to account for the fact that wells tend to be screened selectively within the more-permeable aquifer zones.

Different hydraulic conductivities were assigned to the rind on the ponds and the water-filled volume of the ponds. Based on the work by Luhdorff & Scalmanini (1999), a hydraulic conductivity of 1.5 ft/d was assigned to the rind. That is the hydraulic-conductivity value that produces a simulated 10-foot rise within Phase V Pond with a wastewater discharge of 1,400 acre-ft/yr, which is a result similar to that obtained by Luhdorff & Scalmanini (1999). A hydraulic conductivity of 1,000 ft/d was assigned to the water-filled volume within the pond. That is a hydraulic-conductivity value that produces nearly horizontal water surfaces within the pond areas.

Specific storage and specific yield characterize the ability of a groundwater system to accumulate or release stored water with a change in groundwater level. The specific storage represents storage associated with the compressibility of a groundwater system, while specific yield represents storage associated with the saturation or desaturation of aquifer materials at the groundwater table. Data are not available on the specific storage of the Healdsburg Subbasin, but gravels and sands typically have a specific storage of about 1×10^{-5} 1/ft (Lohman, 1979). Data were compiled on the specific yield of the Healdsburg Subbasin by the California Department of Water Resources (1983), and that work indicates the subbasin has a specific yield of about 15 percent. More recent work by the California Department of Water Resources (2003) reached a similar conclusion.

The porosity represents the water-filled volume within the groundwater system that controls the storage and transport of a solute within the groundwater system. Porosity controls the water-flow velocity within the groundwater system, and it correspondingly controls the rapidity of solute transport through the groundwater system. Data are not available on the porosity of the alluvium. However, the alluvium is known to be comprised of gravel and sand. Freeze and Cherry (1979) indicate the porosity of similar alluvium range from 25 to 45 percent. Given that the alluvium is described as generally poorly packed (California Department of Water Resources, 1983), the porosity for the Healdsburg groundwater system was assumed to be 40 percent.

The dispersivity of a groundwater system is a measure of solute mixing within the groundwater system. Mixing depends on both the tortuosity of the flow paths through the groundwater system and the water-flow velocity along each path. While the porosity of the groundwater system is a control on the water-flow velocity, dispersivity is a measure of tortuosity. Data are not available on the dispersivity of the Healdsburg groundwater system. However, a compilation of dispersivity for similar hydrogeologic settings by Anderson (1984) indicates the appropriate dispersivities for the groundwater system are 500 ft for the longitudinal dispersivity (mixing in the direction of groundwater flow), 170 ft for the horizontal transverse dispersivity (horizontal mixing perpendicular to the direction of groundwater flow), and 20 ft for the vertical transverse dispersivity (vertical mixing perpendicular to the direction of groundwater flow).

2.4 Assignment of Boundary Conditions

The assignment of boundary conditions to the groundwater model specifies how the groundwater system relates to conditions outside the groundwater system. This involves specifying conditions on the lateral boundaries and bottom of the groundwater system. It also involves specifying the relation of the groundwater system to the Russian River and Dry Creek. The lateral and bottom surfaces of the alluvium are represented in the groundwater model as no-flow boundaries. This means the groundwater system within the alluvium is completely separate from the groundwater within adjacent and underlying low-permeability formations such as the terrace deposits and the Glen Ellen Formation. The Russian River and Dry Creek are represented in the groundwater model as constant-head boundaries. This means that the groundwater-table elevations along the stream channels are fixed within the groundwater model at the local elevation of the streamflow profile (Figure 1.6).

2.5 Specification of Wastewater Alternatives

The groundwater model was used to simulate five scenarios representing wastewater-disposal alternatives for the Upgrade Project. These include year-round discharge to Basalt Pond, seasonal discharge to Basalt Pond with off-season irrigation reuse, seasonal discharge to Basalt Pond with off-season storage, year-round discharge to Phase V Pond, and year-round discharge to percolation ponds. The groundwater model was used to compute groundwater levels and chloride for these scenarios. A 20-year period was simulated using 2-month time steps. For each scenario, the initial conditions are the groundwater levels and chloride distribution representing the historical wastewater discharges to Basalt Pond.

The Basalt Pond scenarios represent the year-round and seasonal wastewater discharge to the pond. Three scenarios were simulated. Those are year-round discharge, October-May seasonal discharge with June-September irrigation reuse and October-May seasonal discharge with June-September storage. The year-round discharge from the wastewater-treatment plant is 1,400 acre-ft/yr. The seasonal discharges to Basalt Pond would be 930 acre-ft/yr (1.9 ft^3/s during the 8-month season) for the reuse option and 1,400 acre-ft/yr (2.9 ft^3/s during the 8-month season) for the storage option. These discharges to Basalt Pond are not reduced for evaporation from the pond surface because the evaporation exists with or without the discharge.

The Basalt Pond simulations were constructed by assigning a discharge to the respective pond. This is represented in the groundwater model by a "groundwater recharge" within the pond area. A chloride concentration of 50 mg/L was assigned to the discharge (EDAW, 2005). A chloride concentration of 5 mg/L was assigned to represent ambient groundwater conditions, based on groundwater sampling immediately upgradient from the City of Healdsburg wastewater-treatment (Healdsburg, 2001) and regionally within the Healdsburg Subbasin (California Department of Water Resources, 1983). Parenthetically, the ambient groundwater chloride is similar to the characteristic chloride within Russian River and Dry Creek streamflow (California Department of Water Resources, 1983), because the Russian River and Dry Creek are important sources of groundwater recharge.

The Phase V Pond scenario represents the year-round discharge to the pond. The discharge to the pond would be 1,400 acre-ft/yr (1.9 ft^3/s during the 12-month period). This discharge to Phase V Pond is not reduced for evaporation from the pond surface because the evaporation exists with or without the discharge. The simulations were constructed by assigning a discharge to the respective pond. This is represented in the groundwater model by a groundwater recharge within the pond area. A chloride concentration of 50 mg/L was assigned to the discharge. A chloride concentration of 5 mg/L was assigned to represent ambient groundwater conditions.

The percolation-pond scenario represents the year-round discharge of wastewater to facilities as described in the Draft Environmental Impact Statement. The simulation was represented in the groundwater model by assigning a groundwater recharge of 1,150 acre-ft/yr distributed over the pond area. The recharge rate represents a wastewater discharge of 1,400 acre-ft/yr and pond evaporation of 250 acre-ft/yr, where the pond evaporation is based on a pond area of 60 acres (EDAW, 2005) and an evaporation rate of 4.2 ft/yr (California Department of Water Resources, 2005a) A chloride concentration of 60 mg/L was assigned to the recharge. The assigned value is higher than the wastewater chloride because of the concentrating effect of evaporation from the percolation ponds. A chloride concentration of 5 mg/L was assigned to represent ambient groundwater conditions.

The irrigation-reuse option for the Basalt Pond scenario represents the June-September seasonal reuse of wastewater for irrigation. The simulation presumes the reuse would occur on lands previously irrigated with groundwater. Correspondingly, the option was constructed to represent the differences between prior irrigation with groundwater and proposed irrigation with wastewater. The differences can be identified by considering the net groundwater recharge and net dissolved-solids load for the two cases.

For the case of prior irrigation, the recharge and corresponding dissolved-solids load are given respectively by the expressions

$$N_1 = P_1 - R_1 = -ET_1 \qquad (2.2)$$

and

$$L_1 = 0 \qquad (2.3)$$

where
- N_1 is the net groundwater recharge per unit area (ft/yr),
- P_1 is the groundwater pumping per unit area (ft/yr),
- R_1 is the recharge of irrigation water per unit area (ft/yr),
- ET_1 is the consumption of the irrigation water per unit area (ft/yr), and
- L_1 is the net dissolved-solids load per unit area (ft/yr · mg/L).

The net dissolved-load equals zero because the removal of dissolved solids from the groundwater system by pumping is balanced by the addition of dissolved soils by recharge, which represents the dissolved-solids recycling associated with groundwater irrigation.

For the case of irrigation with wastewater, the recharge and dissolved-solids load are given by the expressions

$$N_2 = W_2 - ET_2 \qquad (2.4)$$

and

$$L_2 = W_2 C_2 \qquad (2.5)$$

where
- N_2 is the net groundwater recharge per unit area (ft/yr),
- W_2 is the groundwater pumping per unit area (ft/yr),
- ET_2 is the consumption of the irrigation water per unit area (ft/yr),
- L_2 is the net dissolved-solids load per unit area (ft/yr · mg/L), and
- C_2 is the wastewater-dissolved solids (mg/L).

Assuming the consumptive use is the same for both cases ($ET_1 = ET_2$) and wastewater is used one-for-one to replace groundwater pumping ($P_1 = W_2$), the differences in the net recharge and net dissolved-solids load are given by the expressions

$$\Delta N = W_2$$

and

$$\Delta L = W_2 C_2 \tag{2.6}$$

where

ΔN is the difference in the net recharge per unit area (ft/yr), and
ΔL is the difference in the net dissolved-solids load per unit area (ft/yr · mg/L).

These relations indicate the irrigation-reuse option should be simulated by assigning a recharge to the irrigated area equal to the wastewater discharge and by assigning a dissolved-solids value to the recharge equal to the wastewater dissolved solids. Correspondingly, the irrigation-reuse option was constructed by distributing a recharge of 470 acre-ft/yr over the lands indicated on Figure 1.3. The recharge occurs during a June-September irrigation season. A dissolved-solids value of 50 mg/L was assigned to the recharge. During the October-May season a direct discharge to the Russian River was assumed.

3.0 SIMULATION OF WASTEWATER-DISPOSAL ALTERNATIVES

3.1 Description of Analysis Approach

The groundwater model was used to simulate the five scenarios described in Chapter 2. These include year-round discharge to Basalt Pond, seasonal discharge to Basalt Pond with off-season irrigation reuse, seasonal discharge to Basalt Pond with off-season storage, year-round discharge to Phase V Pond, and year-round discharge to percolation ponds. The model outputs for these scenarios include the computed groundwater levels, groundwater chloride, water exchanges between the groundwater system and the streams, and chloride exchanges between the groundwater system and the streams. The stream-aquifer exchanges of water and chloride were used in turn to calculate the Russian River streamflow quality opposite the Town of Windsor wells.

The Russian River streamflow quality was calculated based on the mixing of streamflow and groundwater upstream from the Town of Windsor wells. That mixing involves both streamflow and the chloride load transported by the streamflow. The Russian River streamflow at the Town of Windsor wells equals the sum of the Dry Creek streamflow at the upstream model boundary, the net stream-aquifer exchange along Dry Creek downstream to the confluence with the Russian River, the Russian River streamflow at the upstream model boundary, and the net stream-aquifer exchanges along the Russian River downstream to the Town of Windsor wells. Likewise, the chloride load equals the sum of the loads contributed by the boundary streamflows and the net gains and losses along the streams. The summations apply when no runoff is occurring within the model area, otherwise the summations would include terms representing local tributary streamflow.

3.2 Description of Simulation Results

The simulation results are show on Figures 3.1 through 3.3. Figures 3.1a through 3.1e show the geographic distribution of groundwater chloride at the groundwater table after 20 years. Figures 3.1a through 3.1e respectively show results for Basalt Pond with year-round operation, Basalt Pond with seasonal irrigation reuse, Basalt Pond with seasonal storage, Phase V Pond, and percolation ponds. Likewise, Figures 3.2a through 3.2e respectively show graphs of the groundwater chloride within the Town of Windsor wells for each of the simulations. Figures 3.3a through 3.3e respectively show graphs of the streamflow chloride in the Russian River at the Town of Windsor wells. All of the graphs express the chloride concentration in terms of the percentage increased from a baseline groundwater and streamflow concentrations of 5 mg/L.

Figures 3.1a through 3.1e indicate the discharges to each of Basalt Pond, Phase V Pond, and percolation ponds have similar impacts on groundwater chloride. Each of the simulations produces a chloride plume that extends southward from the point of discharge to the furthest extent of the Healdsburg Subbasin. The simulation of a seasonal discharge to Basalt Pond with off-season reuse additionally produces a plume that extends southeastward from the irrigated area. Nevertheless, each of the simulations produces at maximum chloride concentration at the point of discharge. The maximum value is somewhat similar among the simulations. For a year-round discharge to Basalt Pond, the maximum concentration is 42 mg/L or eight times the ambient condition. For a seasonal discharge to Basalt Pond with off-season irrigation-reuse, the maximum concentration is 43 mg/L. For a seasonal discharge to Basalt Pond with off-season storage, the maximum concentration is 44 mg/L. For a year-round discharge to Phase V Pond, the maximum concentration is 46 mg/L. For a year-round discharge to percolation ponds, the maximum concentration is 54 mg/L or eleven times the ambient condition.

Figures 3.2a through 3.2e indicate discharges to Basalt Pond and Phase V Pond have a similar impact on groundwater chloride at the Town of Windsor wells, but a discharge to percolation ponds has a much larger impact. The various simulations involving Basalt Pond and Phase V Pond produce groundwater chlorides in the Town of Windsor wells that are about 70 to 100 percent higher than the ambient groundwater chloride. The simulation involving percolation ponds produces groundwater chlorides that are about 350 percent higher than the ambient groundwater chloride. L4-18

Figures 3.3a through 3.3e indicate discharges to Basalt Pond and Phase V Pond have similar impacts on streamflow chloride in the Russian River adjacent to the Town of Windsor wells. On one hand, the various simulations involving Basalt Pond and Phase V Pond produce streamflow chlorides that are generally less than 2 percent higher than the ambient streamflow conditions. On the other hand, the simulation involving percolation ponds produces streamflow chlorides that are as much as 60 percent higher than the ambient streamflow conditions. The difference in the magnitude of streamflow impacts is related in part to the geographic distribution of impacts along the Russian River. For the simulations involving the ponds, impacts are distributed over a reach that extends downstream well beyond the Town of Windsor wells. For the simulation involving percolation ponds, most of the impacts along the Russian River occur upstream of the Town of Windsor wells. Correspondingly, discharges to percolation ponds create larger streamflow impacts than discharges to Basalt Pond or Phase V Pond.

The simulation results indicate all the alternatives being considered by the City of Healdsburg will have significant water-quality impacts on the Town of Windsor wells. The groundwater model and subsequent calculations are based on groundwater and streamflow chloride. However, the simulations are an approximate surrogate for other constituents of concerns, such as nutrients and metals. The simulations based on chloride demonstrate a need to address other constituents. The Draft Environmental Impact Report addresses neither chloride nor any other constituent, and the impacts of the Upgrade Project cannot be assessed until a more detailed analysis of the type described here is completed. L4-19

4.0 EVALUATION OF STREAMFLOW-QUALITY DATA

The City of Healdsburg prepared an analysis of streamflow-quality data (Healdsburg, 2004). Based on the analysis, the author concluded that the historical use of Basalt Pond for wastewater disposal has had no identifiable impact on the Russian River. The approach in that analysis was to compare streamflow quality upstream and downstream from Basalt Pond. The approach involved collecting streamflow samples at four locations (Figure 1.2) during the fall of 2003. The first sampling site was located on the Russian River immediately above the confluence of Dry Creek. The second site was located on Dry Creek near its mouth. The third site was located on the Russian River about 1,000 ft from the south side of Basalt Pond. The last site was within Basalt Pond.

The scope of work included data collection and analysis. Four samples were collected at each site during October and November 2003. Samples were analyzed for a suite of inorganic and other constituents. Additionally, discharge data were compiled from the U. S. Geological Survey for the streamgaging stations on the Russian River near Healdsburg and on Dry Creek near its mouth. Various graphs were constructed using the water-quality data. Finally, statistical comparisons were made between the upstream and downstream mean values of selected constituents. The authors concluded from the graphs and statistical analysis that historical wastewater discharges to Basalt Pond had no impact on the Russian River. L4-20

To evaluate these results, consideration must be given to the expected difference in a constituent concentration mixed within the Russian River streamflow. The upstream streamflow mixes with wastewater seepage into the river channel. The mixing relation is given by the relation

$$C_{dn} = \frac{Q_{up}C_{up} + Q_{ww}C_{ww}}{Q_{up} + Q_{ww}} \tag{4.1}$$

where

C_{dn} is the constituent concentration at the downstream site (mg/L),
Q_{up} is the combined upstream Russian River and Dry Creek streamflow (ft^3/s),
C_{up} is the constituent concentration for the upstream streamflow (mg/L),
Q_{ww} is the wastewater discharge that seeps into the Russian River above the downstream monitoring site (ft3/s), and
C_{ww} is the constituent concentration within the wastewater discharge (mg/L).

This equation is based on the water and constituent mass balance for the mixing of the upstream streamflow and the proportion of the wastewater discharge that seeps into the Russian River above the downstream monitoring site.

Equation 4.1 can be restated in terms of the percentage increase in the constituent from upstream to downstream. The resulting expression is

$$\Delta C_{dn} = \frac{C_{dn} - C_{up}}{C_{up}} \times 100 \qquad (4.2)$$

or by substituting Equation 4.1 for C_{dn}

$$\Delta C_{dn} = \frac{\left(\dfrac{Q_{up}C_{up} + Q_{ww}C_{ww}}{Q_{up} + Q_{ww}}\right) - C_{up}}{C_{up}} \times 100 \qquad (4.3)$$

where ΔC_{dn} is the percentage change in the downstream constituent concentration and the other quantities are defined as for Equation 4.1.

The percentage increase in a constituent concentration from upstream to downstream can be evaluated by substituting values into the variables within Equation 4.3. Consider first the discharge and streamflow values: The wastewater discharge could be 1,400 acre-ft/yr or 1.9 ft^3/s, which assumes all of the wastewater discharge seeps to the Russian River above the downstream monitoring site. The average September upstream combined streamflow for the Russian River and Dry Creek is about 250 ft^3/s (Table 1.1). Consider next concentrations for arsenic, chloride, dissolved solids, fluoride, and nitrate as tabulated by the City of Healdsburg (Healdsburg, 2004) For arsenic, the upstream concentration is 0.4 µg/L, and the wastewater concentration is 4.6 µg/L. For chloride, the upstream concentration is 4.5 mg/L, and the wastewater concentration is 50 mg/L. For dissolved solids, the upstream concentration is 130 mg/L, and the wastewater concentration is 280 mg/L. For fluoride, the upstream concentration is 0.1 mg/L, and the wastewater concentration is 0.5 mg/L. For nitrate as nitrogen, the upstream concentration is 2 mg/L, and the wastewater concentration is 5 mg/L. Based on these values, Equation 4.3 predicts an 8-percent increase in arsenic, an 8-percent increase in chloride, a 1-percent increase in dissolved solids, a 3-percent increase in fluoride, and a 1-percent increase in nitrate. L4-20 Cont'd

The analysis by the City of Healdsburg did not detect the changes predicted by Equation 4.3, and the reason is twofold. Firstly, the above application of Equation 4.3 assumed all of the wastewater discharge seeps to the Russian River above the downstream monitoring site. The simulations with the groundwater model described in this report indicate most of the seepage to the Russian River is downstream from the downstream monitoring site. Similarly, simulations with a groundwater model developed by Luhdorff & Scalmanini (1999 and 2001) indicated that most of the seepage is downstream from the monitoring site. If substantially smaller wastewater seepage were to be used in Equation 4.3, to reflect that most seepage occurs downstream from the monitoring site, the percentages predicted by Equation 4.3 would be substantially smaller. Concomitantly, if most of the seepage occurs downstream from the current monitoring site, the expected result of the sampling and analysis by the City of Healdsburg would be to not detect an impact. L4-20 Cont'd

The analysis by the City of Healdsburg has another shortcoming, which relates to the statistical analysis. The analysis was based on the *t*-test for comparing the means of two samples, where the objective is to determine if means of the upstream concentrations is statistically the same as the downstream concentrations. The ability of the *t*-test to reject the hypothesis that the means are equal depends very much on the sampling size and the variability of the sample data (Harnett and Soni, 1991). For the application by the City of Healdsburg, the sample size is small and the variability among the samples is large. Both of these factors make it difficult to detect impacts of the historical wastewater discharges to Basalt Pond. Correspondingly, the sampling and subsequent data analysis not unexpectedly produced the conclusion that the upstream and downstream samples are not statistically different. The analysis should have been based on a much larger sample size in order to overcome the masking-effect of the high sample variability. L4-21

Therefore, the sampling and analysis is not useful for two reasons. Firstly, the downstream monitoring site was not located sufficiently downstream to detect the full impacts of the historical discharges to Basalt Pond. Secondly, the sample size was much too small to conduct a meaningful statistical analysis.

5.0 CONCLUSIONS

The City of Healdsburg is considering alternatives for the disposal of treated wastewater. These include discharge to Basalt Pond, Phase V Pond, percolation ponds, and irrigation reuse. The discharge to Basalt Pond would occur only seasonally during about June-September. During the remainder of the year wastewater would be discharged for irrigation reuse or stored for later discharge. Likewise, irrigation reuse would occur only seasonally during about June-September.

The City of Healdsburg and its wastewater-treatment and disposal facilities overlie the Healdsburg groundwater system, which covers an area of about 24 mi^2 within the vicinity of Healdsburg. The groundwater system is connected hydraulically to the Russian River and Dry Creek. These streams are principal sources of groundwater recharge. Recharge occurs generally along these streams within the northern part of the groundwater system. Groundwater discharge to the streams occurs generally within the southern part of the groundwater system. The groundwater system also is connected hydraulically to Basalt Pond and Phase V Pond. Because of these hydraulic connections, wastewater to Basalt Pond, Phase V Pond, percolation ponds, or irrigation reuse eventually reaches the Russian River. L4-22

This report described an evaluation of the Upgrade Project regarding the water-quality impacts on the groundwater system and Russian River near the Town of Windsor wells. Those impacts were quantified using a groundwater model of the Healdsburg Subbasin. The model was used to simulate the groundwater-quality impacts of the wastewater-disposal alternatives proposed for the Upgrade Project. Those impacts were characterized using chloride as a surrogate for a range of constituents. The groundwater-quality impact on the Town of Windsor wells is to approximately double the chloride relative to the ambient groundwater conditions. All of the alternatives have about the same impact as year-round discharge to Basalt Pond, except for the higher impacts associated with percolation ponds.

Based on the chloride and stream-aquifer exchanges simulated with the groundwater model, the groundwater-quality impacts were translated into streamflow impacts within the Russian River. The translation of groundwater impacts into streamflow impacts indicates each of the wastewater-disposal alternatives have similar impacts on the Russian River. The chloride load represented by the wastewater discharge is about 93 tons/yr. With each of the wastewater-disposal alternatives, the chloride load to the Russian River is 93 tons/yr. Additionally, the impacts on the chloride concentration within the Russian River are quite similar among the alternatives, except for the higher impacts of percolation ponds. All of the alternatives have about the same impact as year-round discharge to Basalt Pond, except for the higher impacts associated with percolation ponds. L4-23

The City of Healdsburg prepared an analysis of streamflow-quality data that concluded the historical use of Basalt Pond for wastewater disposal has had no impact on the Russian River. The approach in that analysis was to compare streamflow quality upstream and downstream from Basalt Pond. However, the conclusion is incorrect for several reasons. Firstly, the downstream sampling site is not sufficiently downstream to monitor all the impacts. Secondly, the sample size is very small. Thirdly, consideration was not given to the dilution effects within the river. Because Basalt Pond is connected hydraulically to the groundwater system and the groundwater system is connected to the Russian River, the wastewater load of a conservative constituent entirely becomes a load to the Russian River. Concomitantly, wastewater discharges to Basalt Pond cannot not have a downstream impact on the river. The analysis by the City of Healdsburg did not identify an impact because of the shortcoming of the study. L4-24

The Draft Environmental Impact Report does not evaluate quantitatively the water-quality impacts of each alternative on the Russian River. The environmental assessment is substantially incomplete without an adequate quantitative analysis. An adequate analysis would be based on the construction of a groundwater model. This report described a preliminary model, but a more detailed model needs to be constructed. Such a model would be used to simulate the groundwater and corresponding streamflow impacts associated with each of the wastewater-disposal alternatives within the Upgrade Project. The groundwater model needs to simulate not only chloride but also the other water-quality constituents of concern. The groundwater system is the "pipeline" between a proposed wastewater-disposal facility and the Russian River. The impacts of a wastewater-disposal alternative cannot be evaluated without understanding and evaluating the groundwater system. The Draft Environmental Impact Report is inadequate in this respect. L4-25

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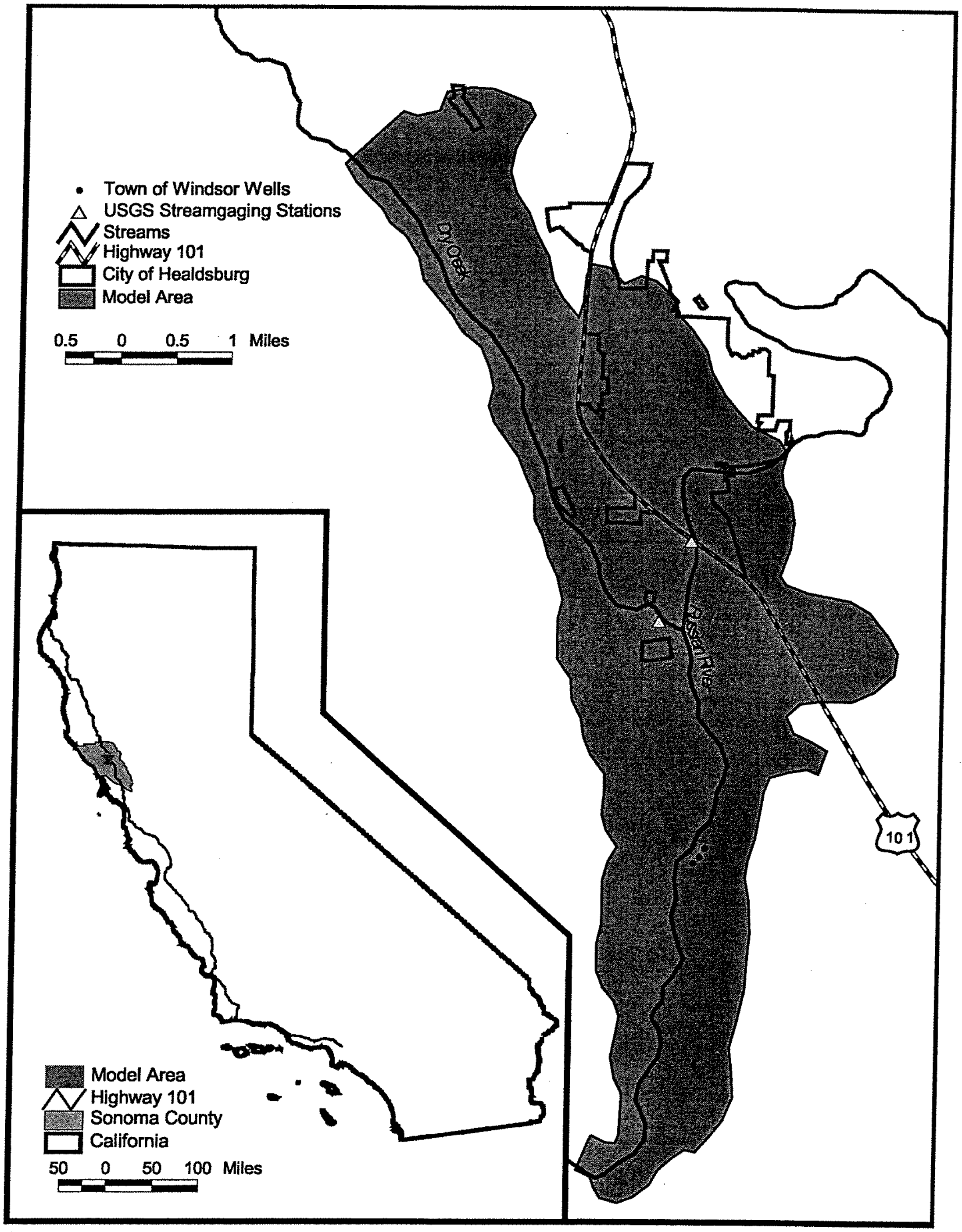

Figure 1.1 Location of Healdsburg Area

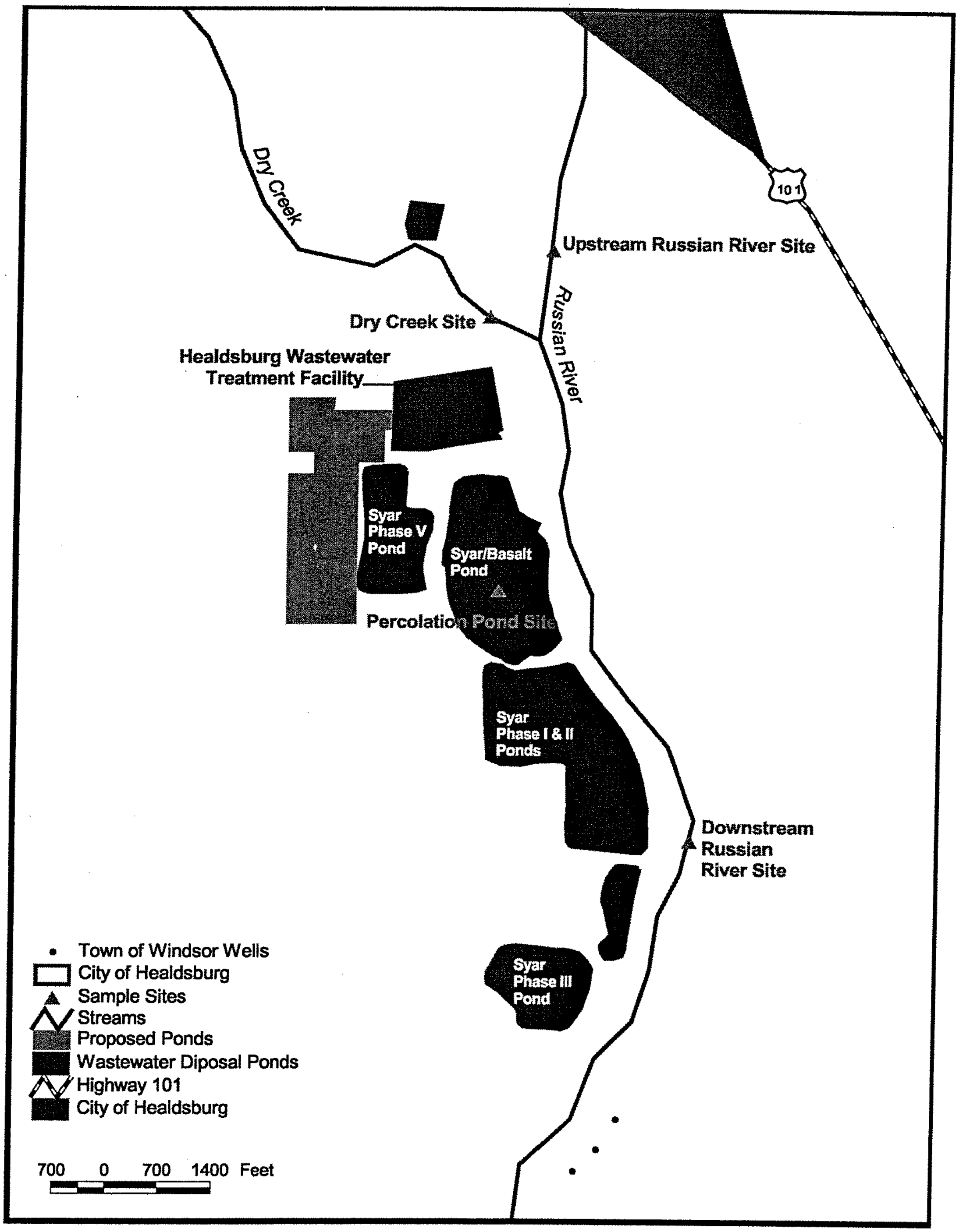

Figure 1.2 Location of Windsor Wells and Healdsburg Wastewater-Disposal Facilities

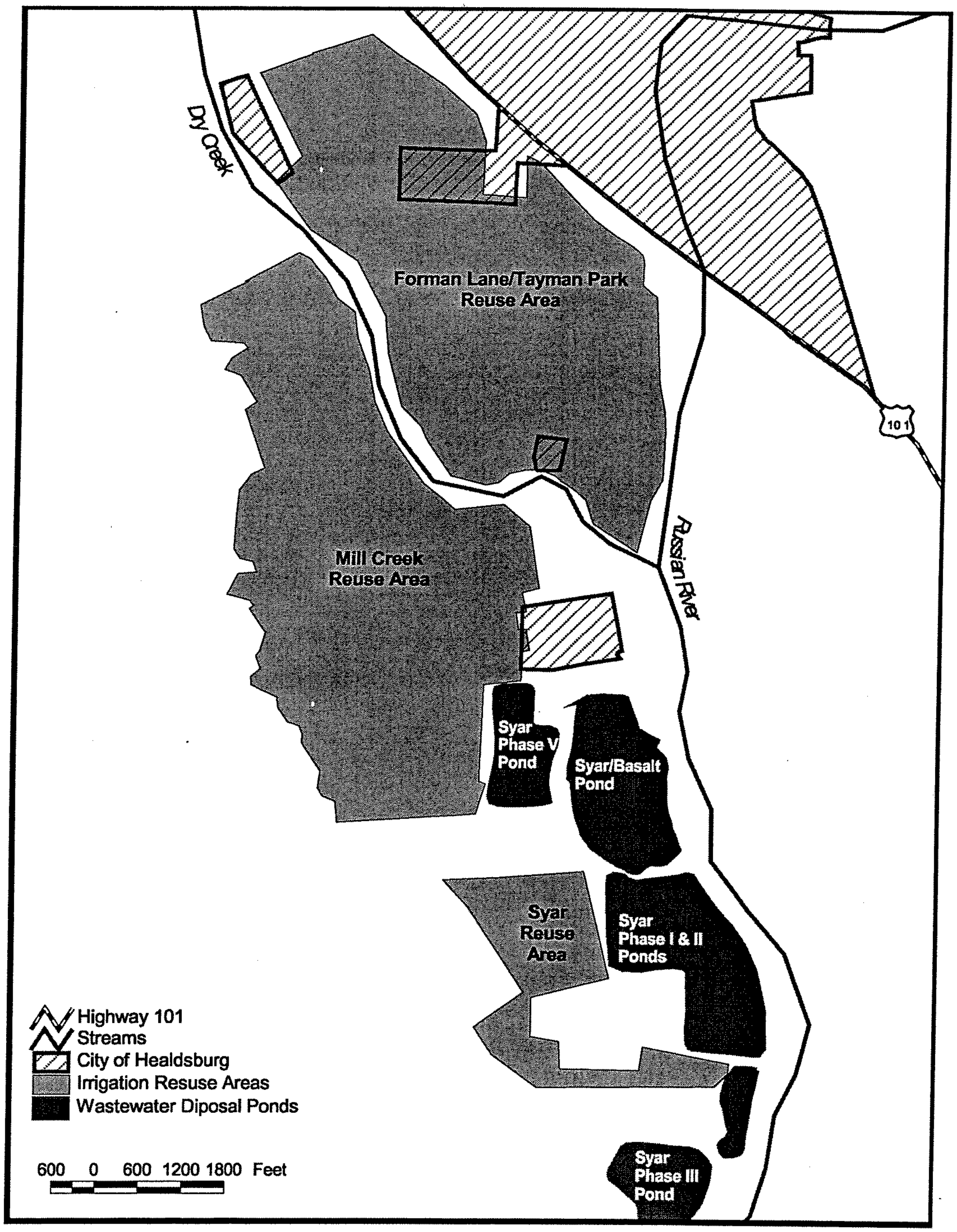

Figure 1.3 Location of Near-River Lands for Wastewater Irrigation Reuse

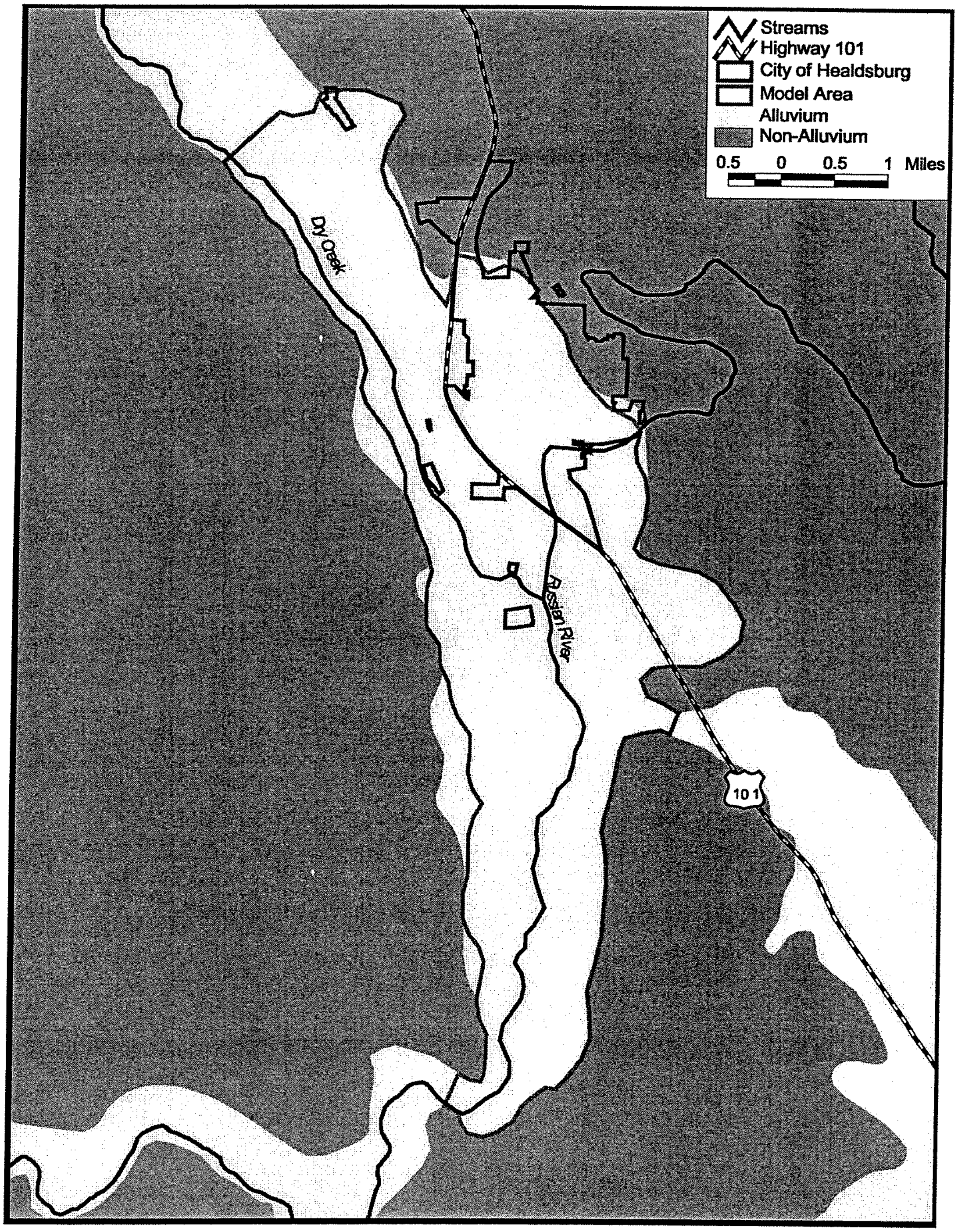

Figure 1.4 Hydrogeology of Healdsburg Area

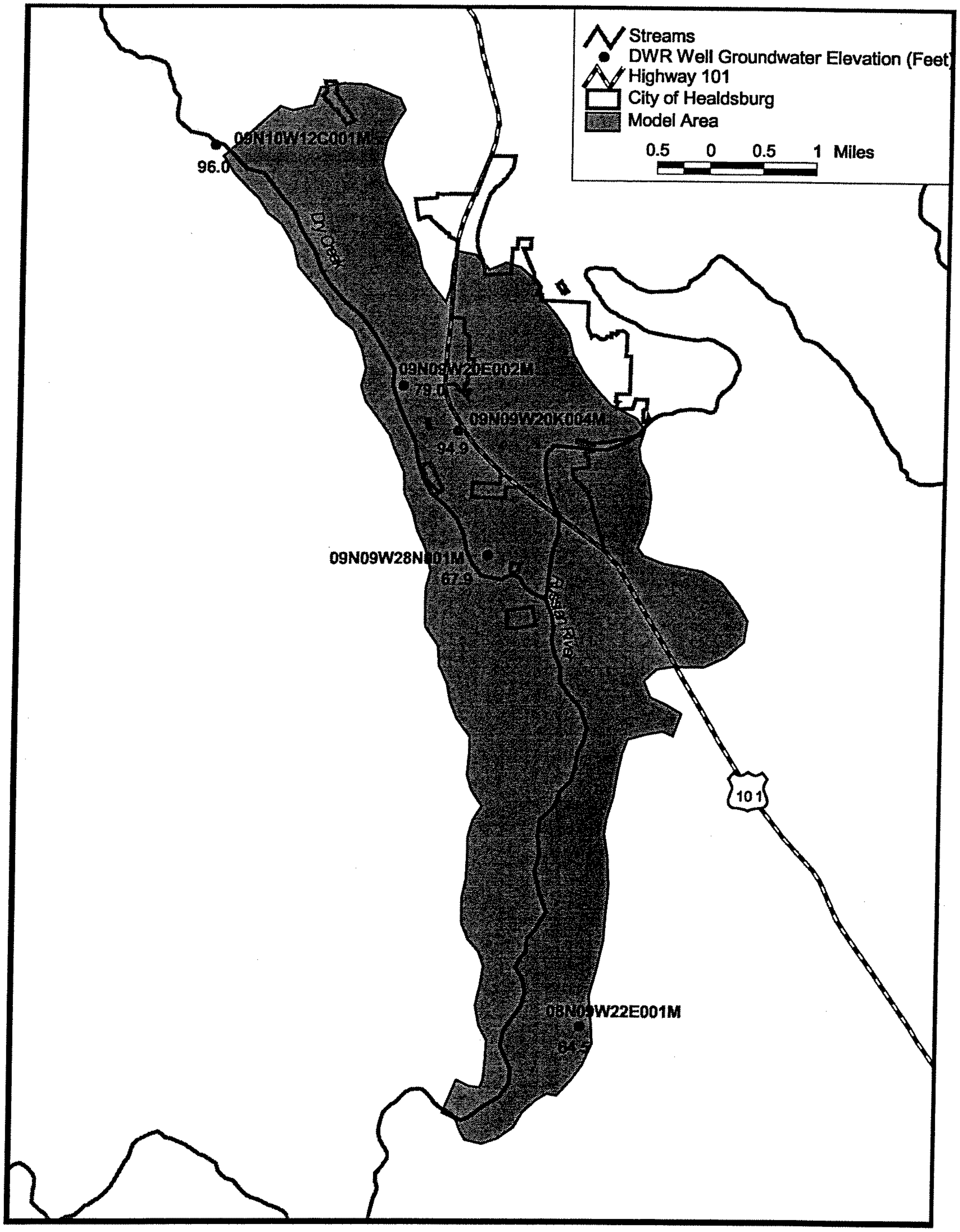

Figure 1.5 Average 2004 Groudwater Elevations within Healdsburg Area

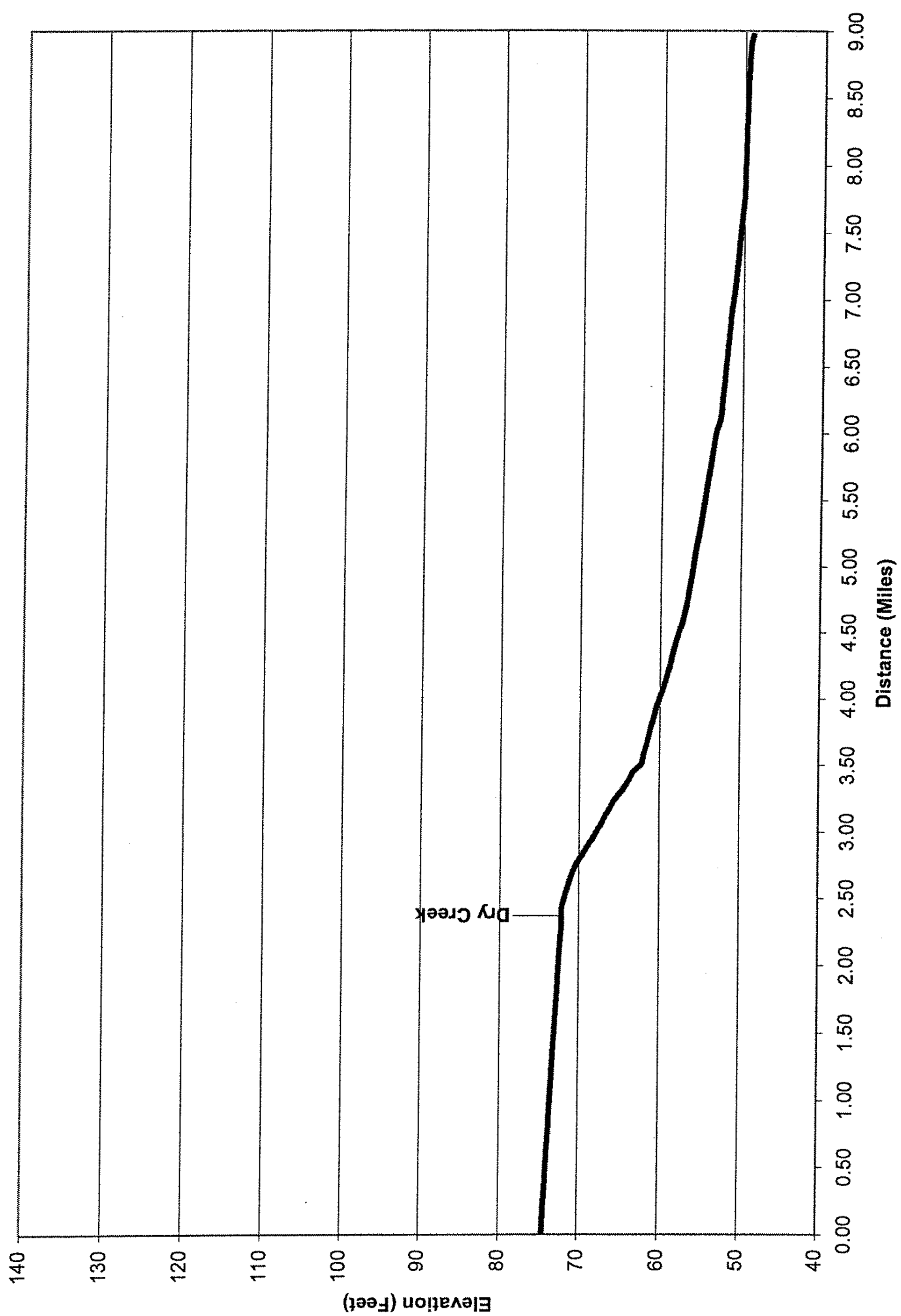

Figure 1.6a Stream Channel Profile for Russian River

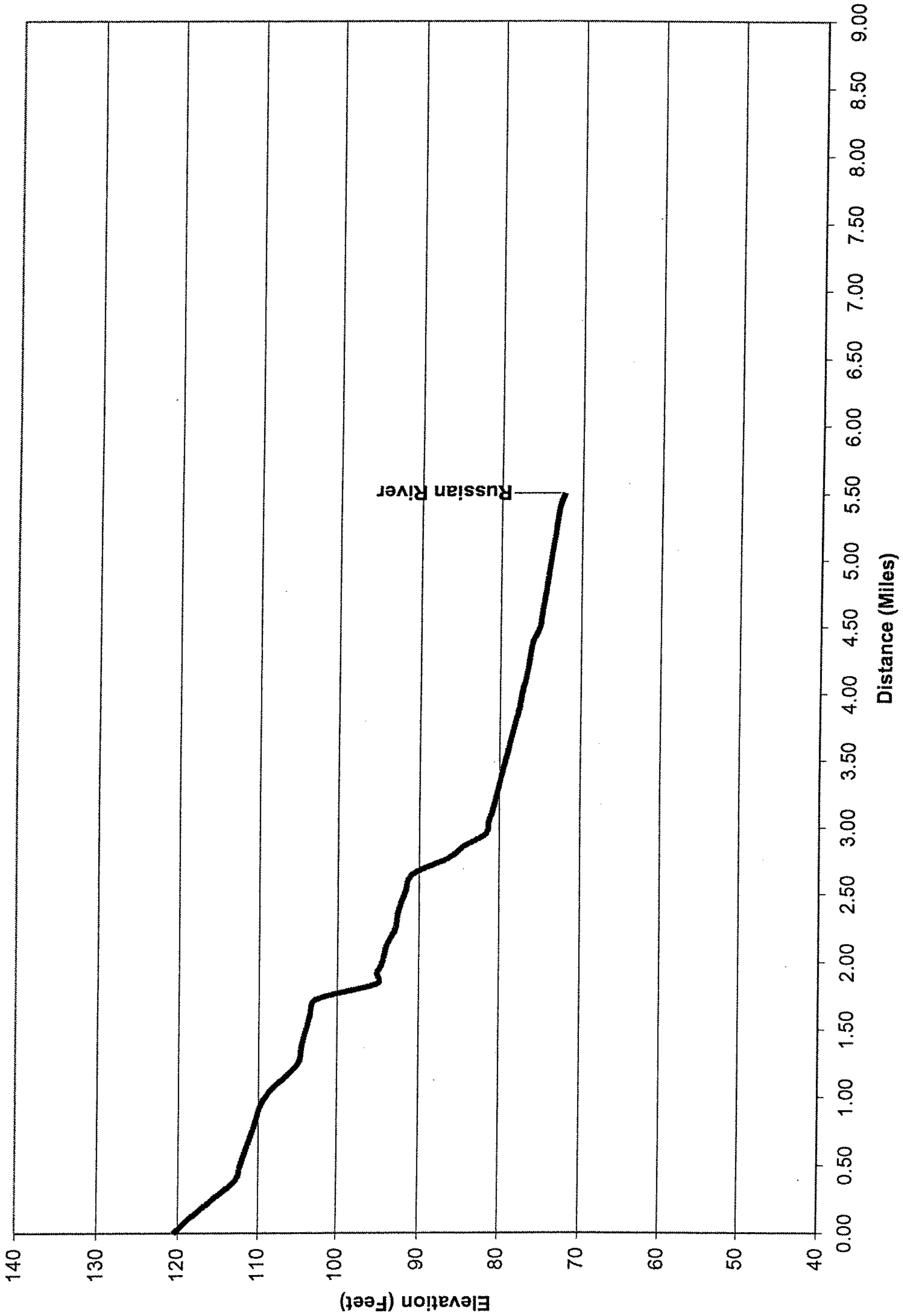

Figure 1.6b Stream Channel Profile for Dry Creek

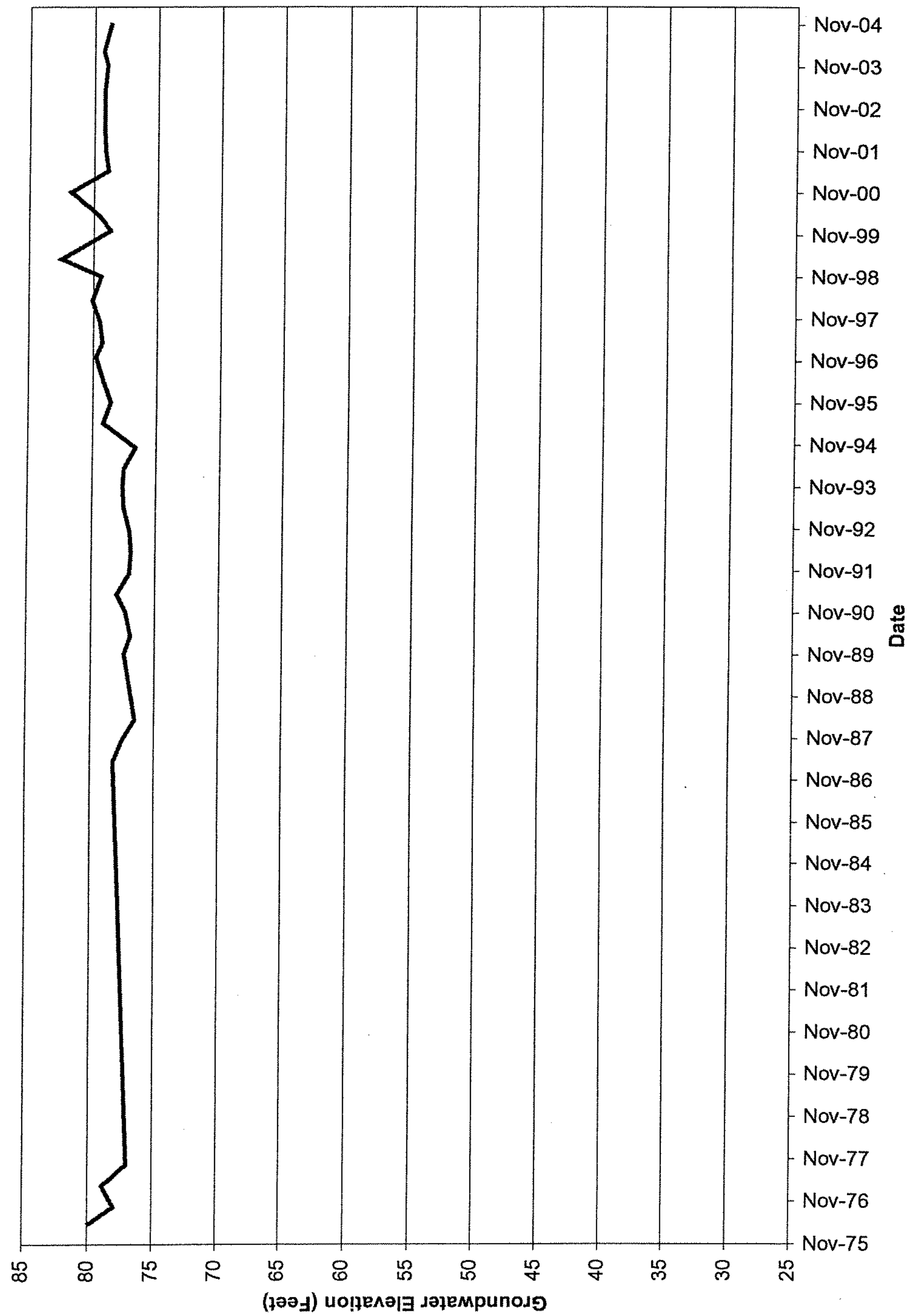

Figure 1.7a Groundwater Levels in Well 09N09W20E002M

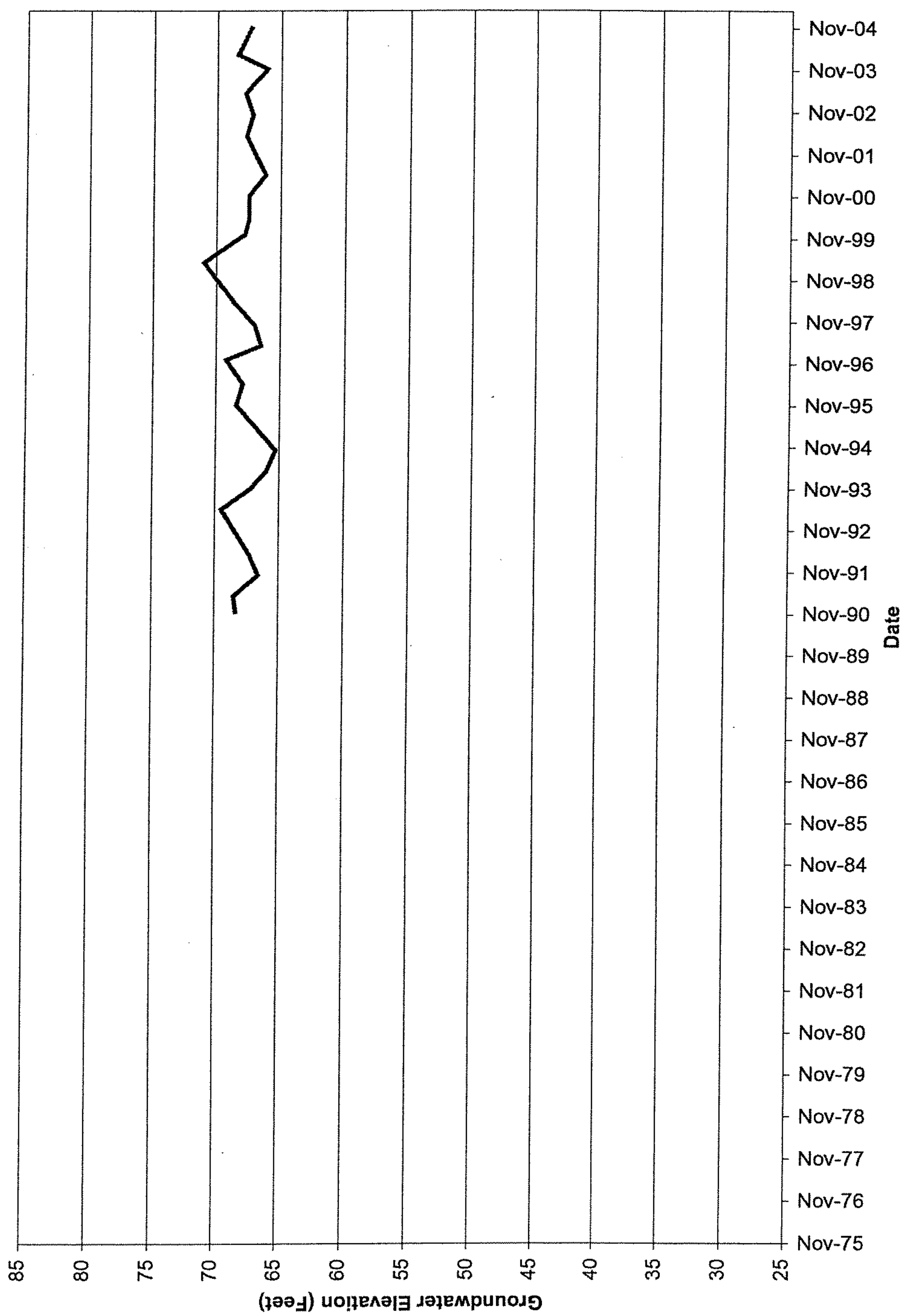

Figure 1.7b Groundwater Levels in Well 09N09W28N001M

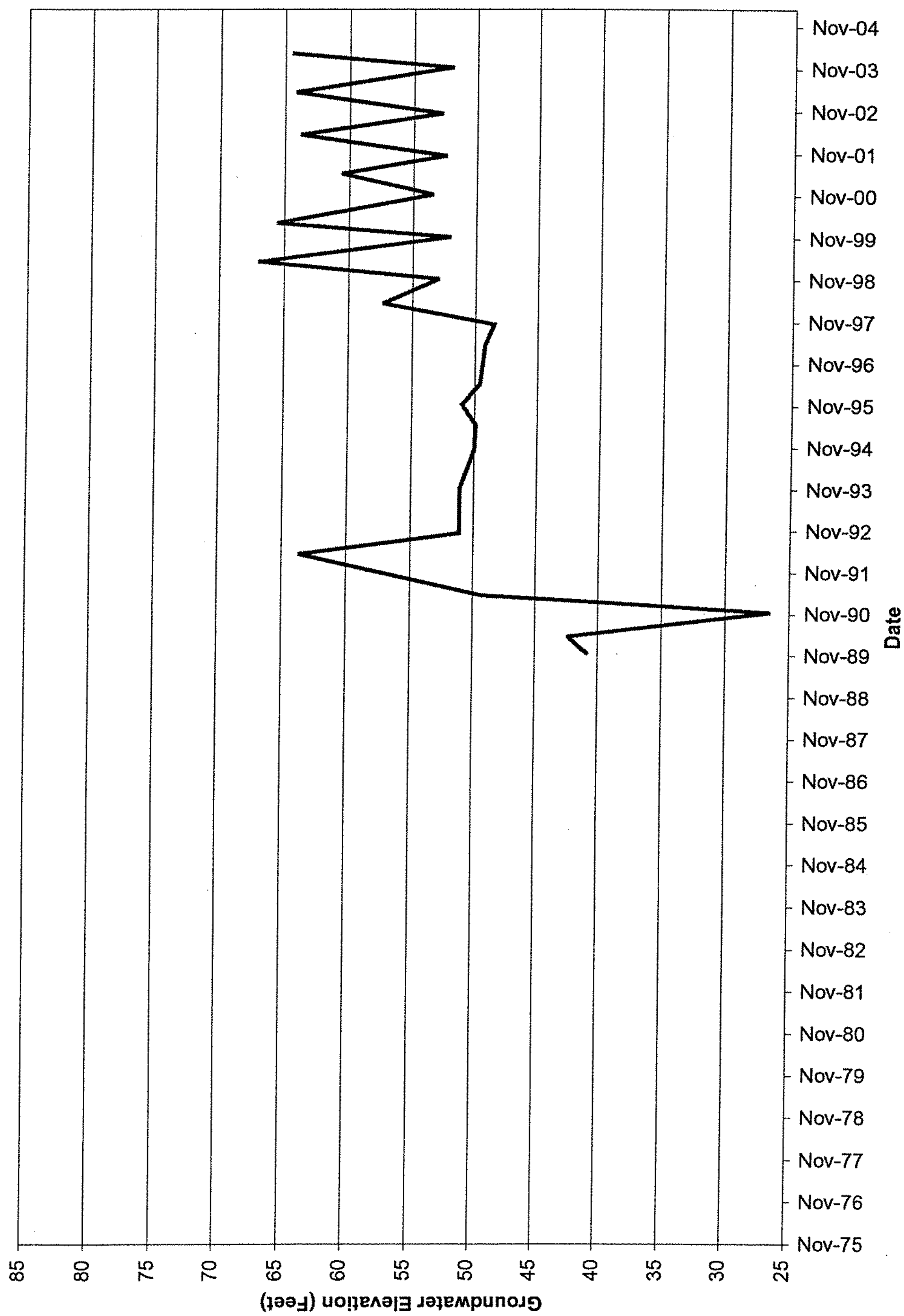

Figure 1.7c Groundwater Levels in Well 08N09W22E001M

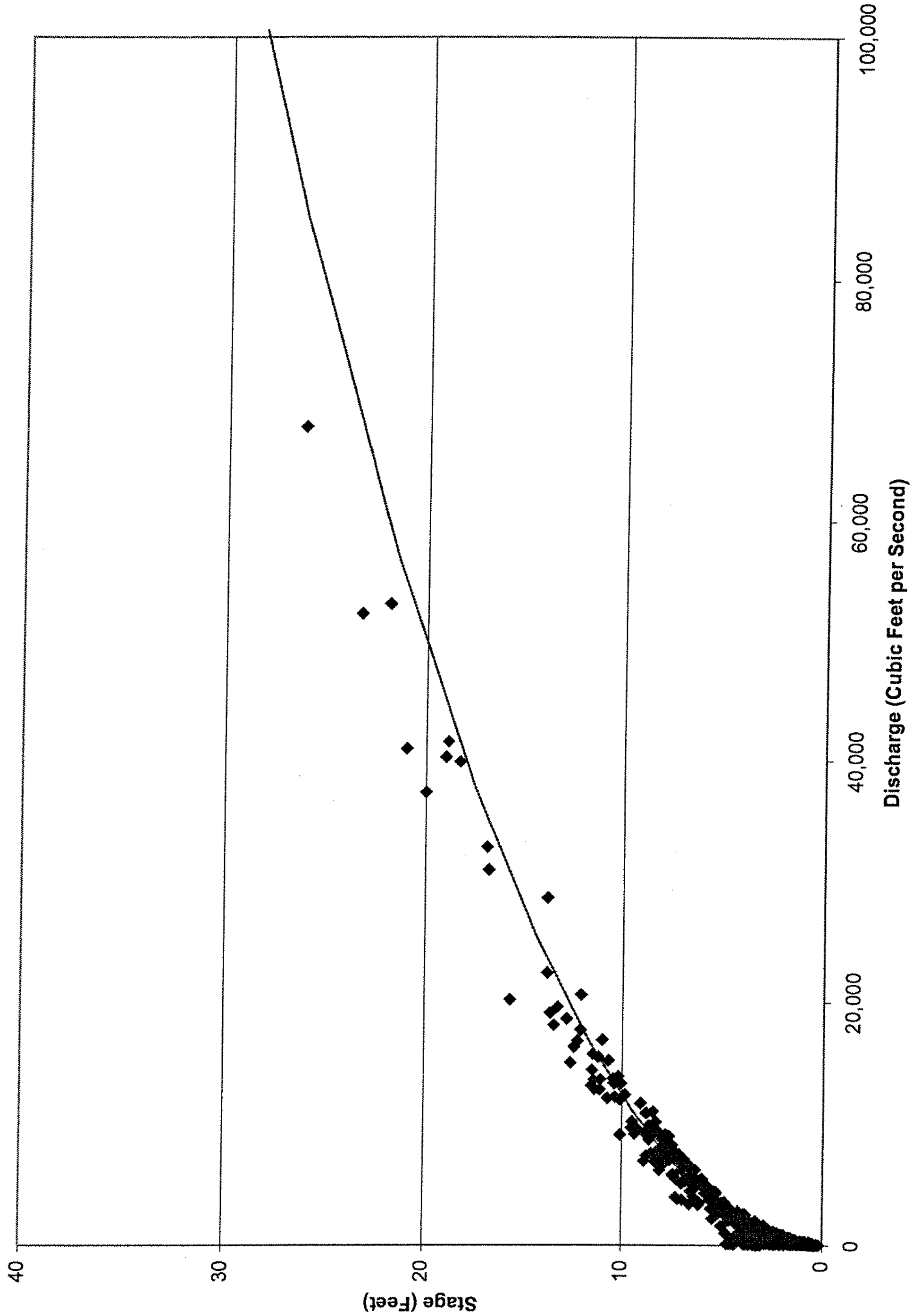

Figure 1.8a Stage-Discharge Relation for Russian River near Healdsburg

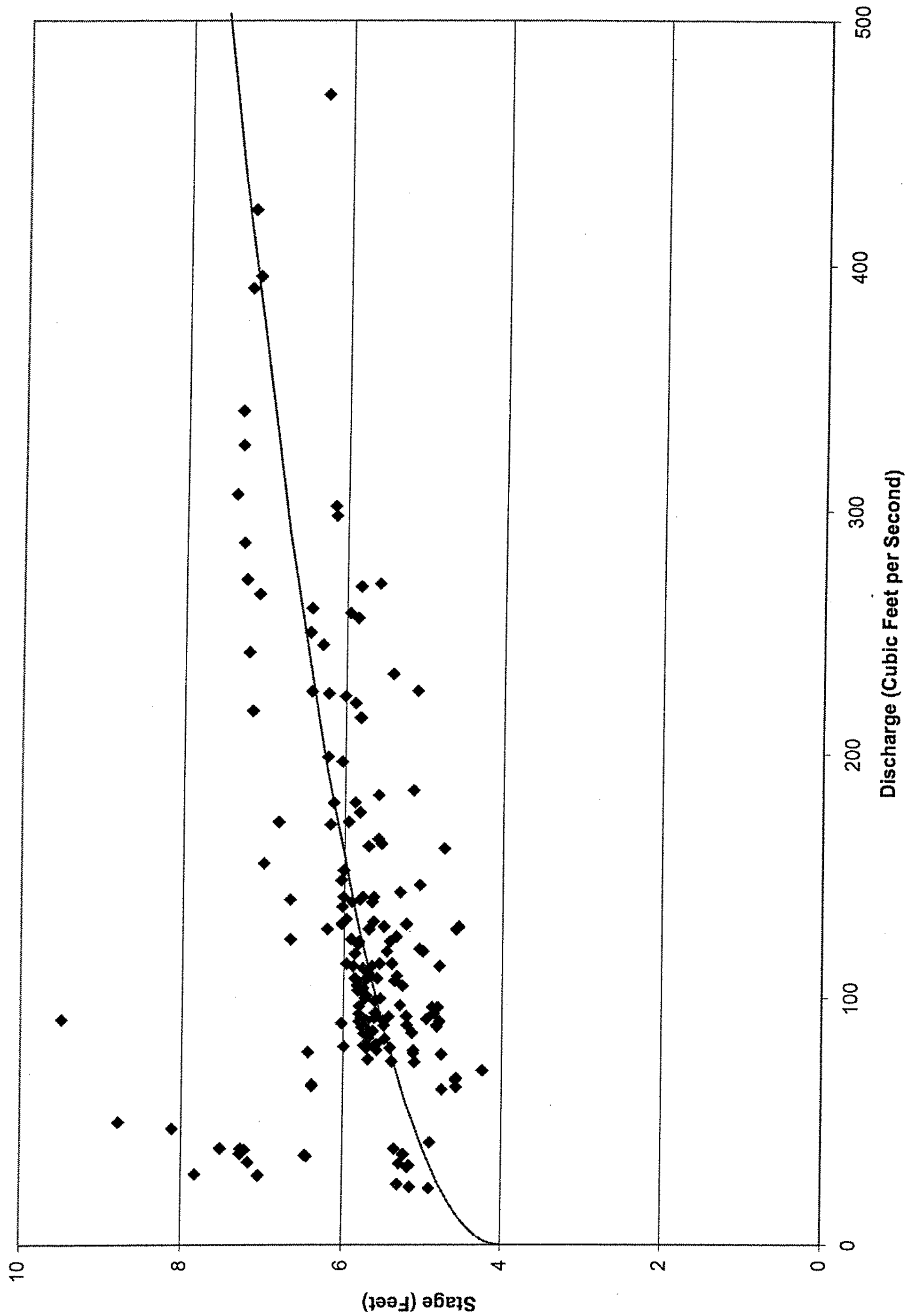

Figure 1.8b Stage-Discharge Relation for Dry Creek near Mouth

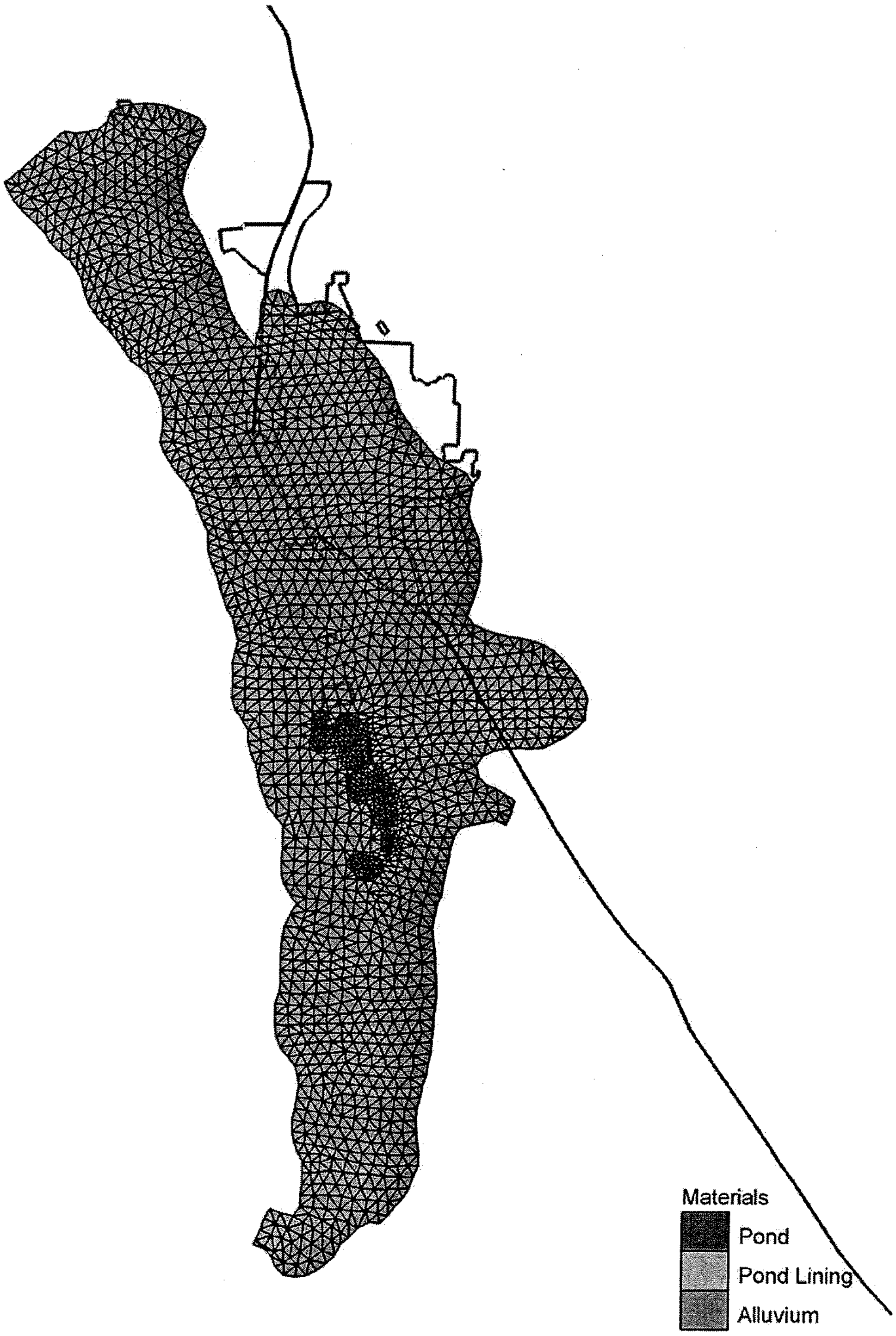

Figure 2.1 Finite-Element Mesh for Groundwater Model

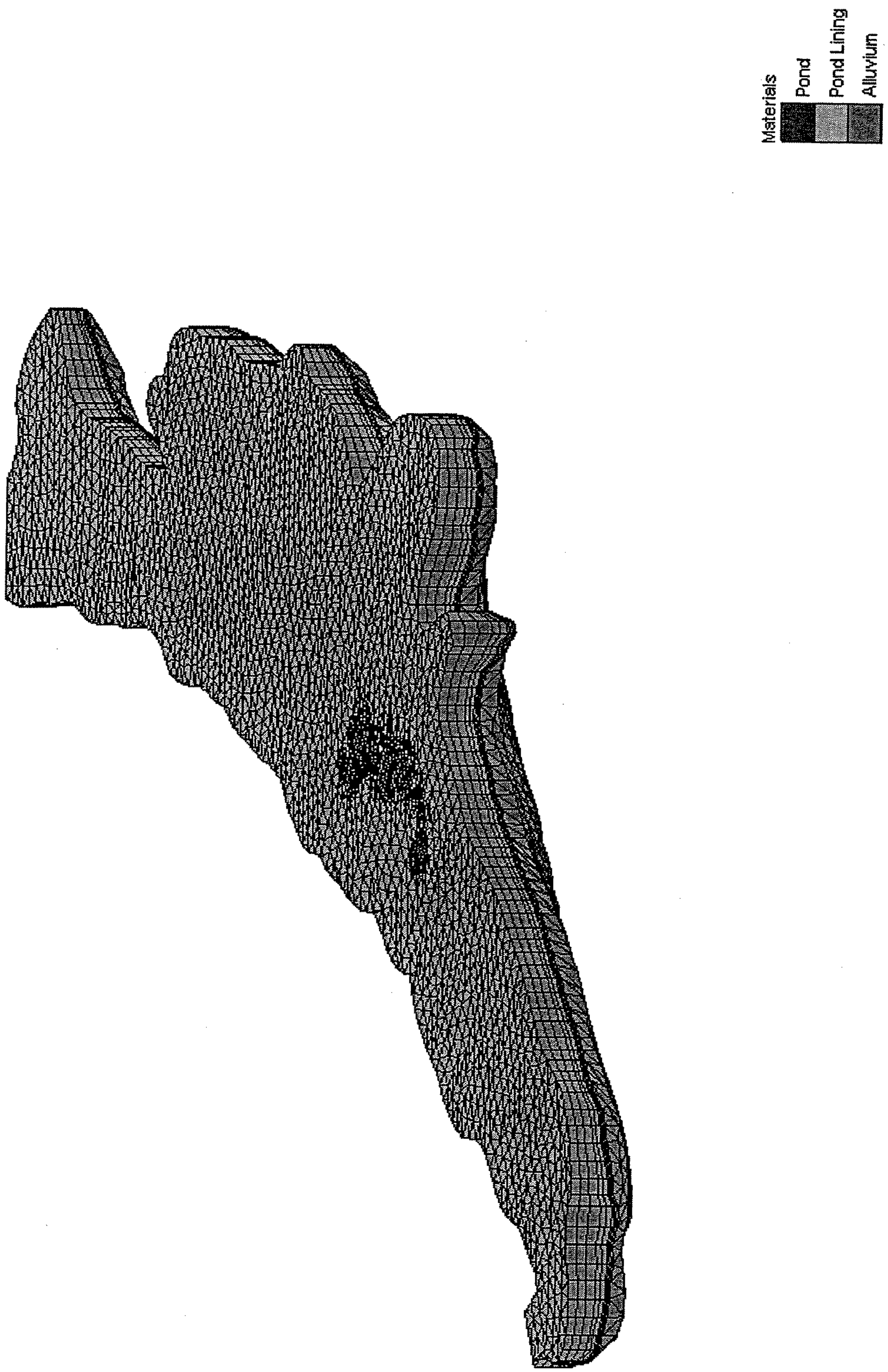

Figure 2.2 Oblique View of Finite-Element Mesh for Groundwater Model

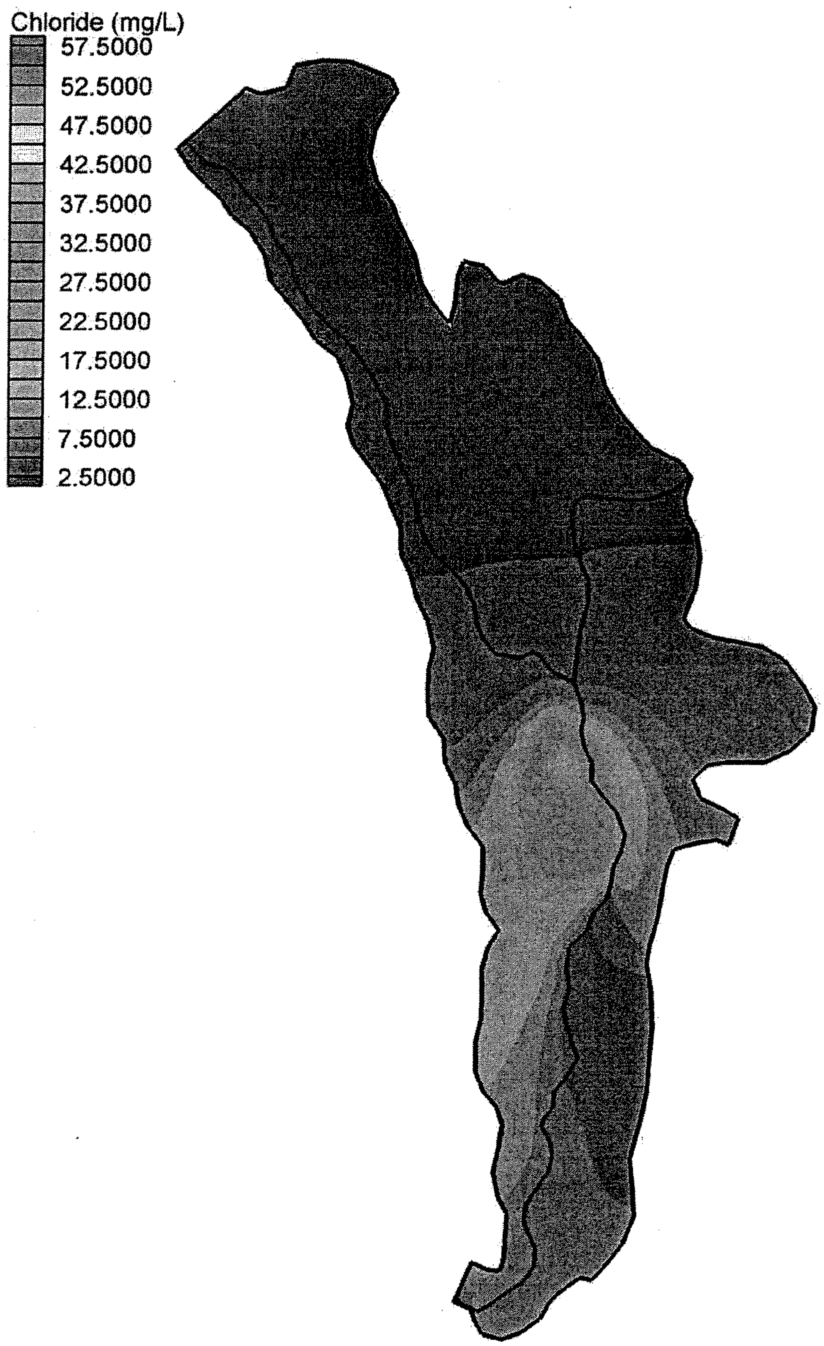

Figure 3.1a Computed Groundwater Chloride after 20 Years
Basalt Pond with Year-Round Discharge

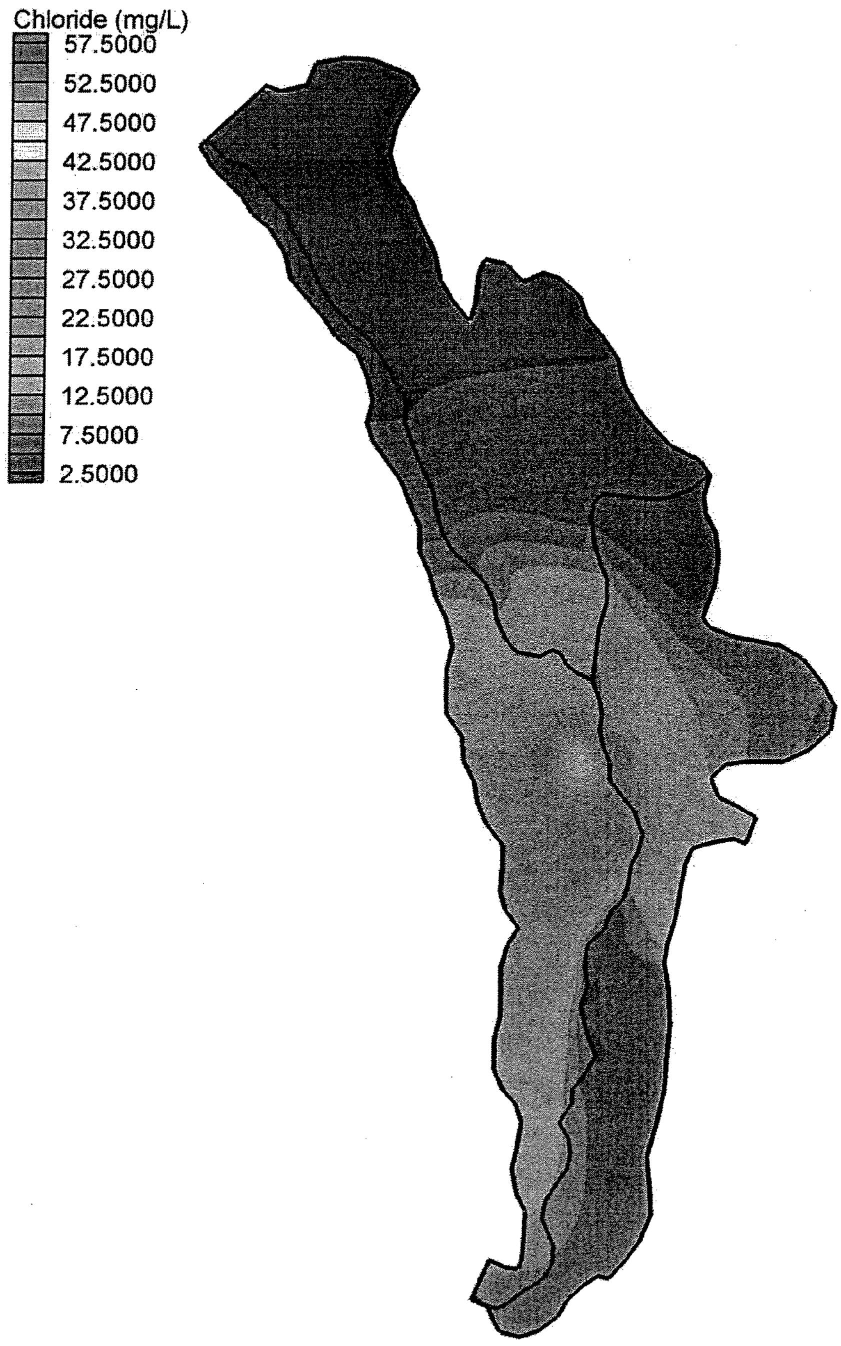

Figure 3.1b Computed Groundwater Chloride after 20 Years
Basalt Pond with Seasonal Discharge and Irrigation Reuse

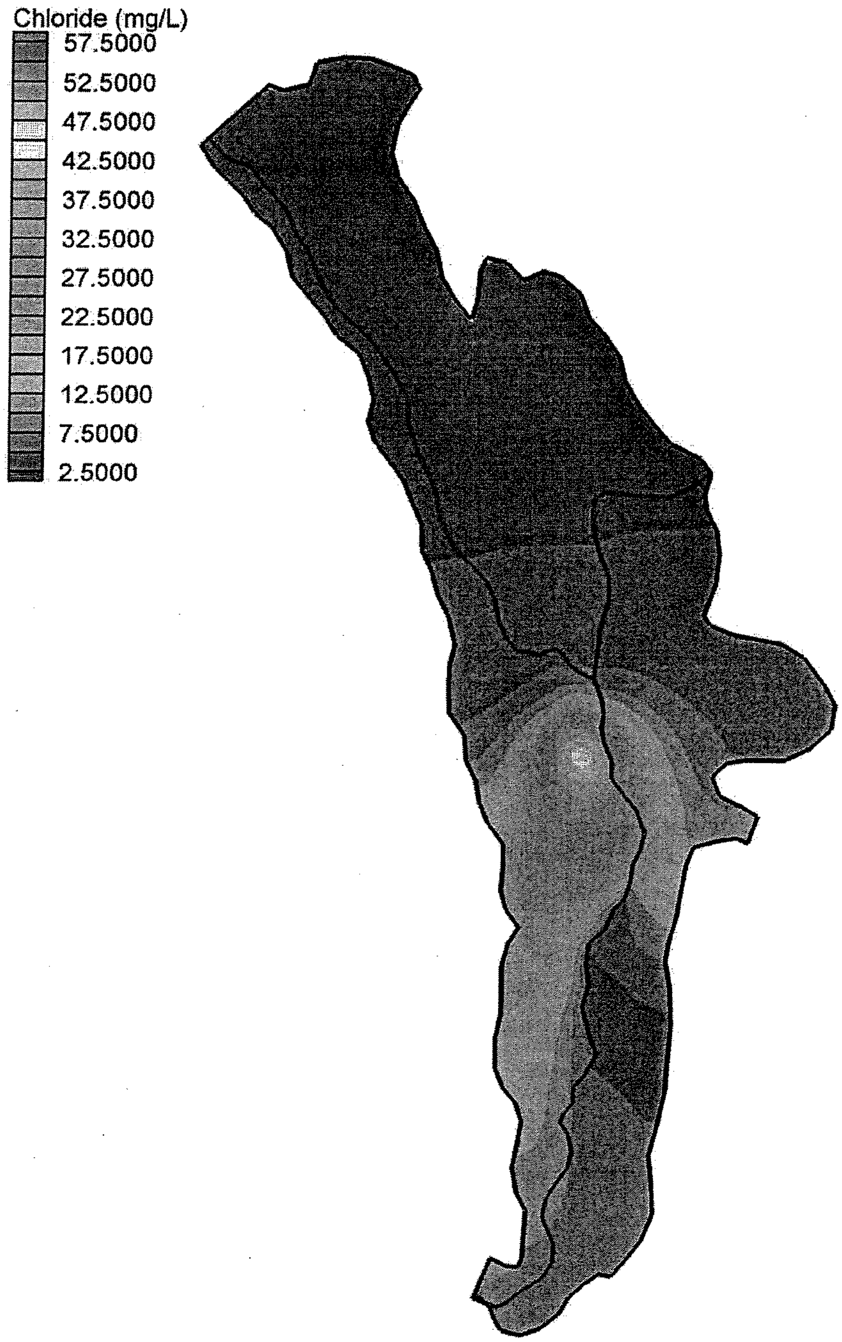

Figure 3.1c Computed Groundwater Chloride after 20 Years
Basalt Pond with Seasonal Discharge and Storage

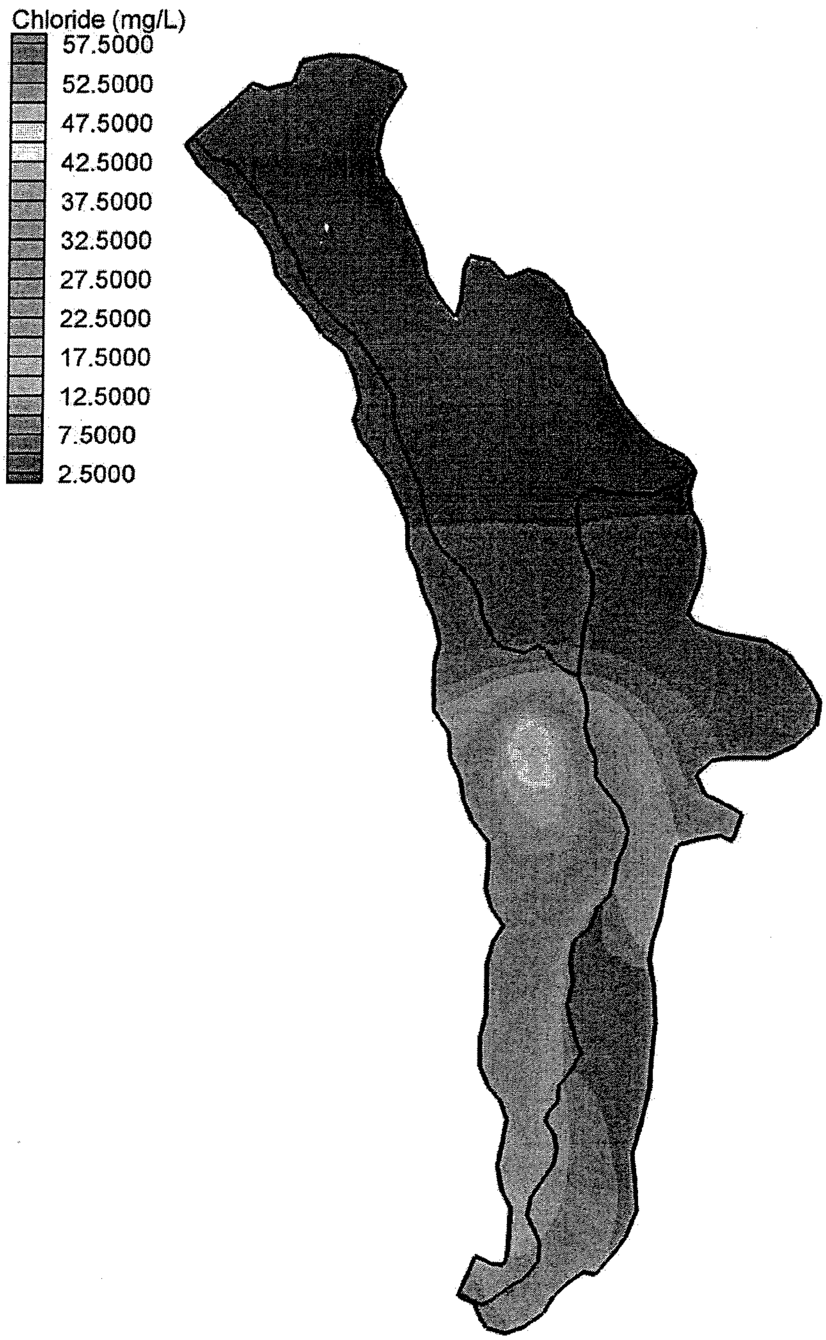

Figure 3.1d Computed Groundwater Chloride after 20 Years
Phase V Pond with Year-Round Discharge

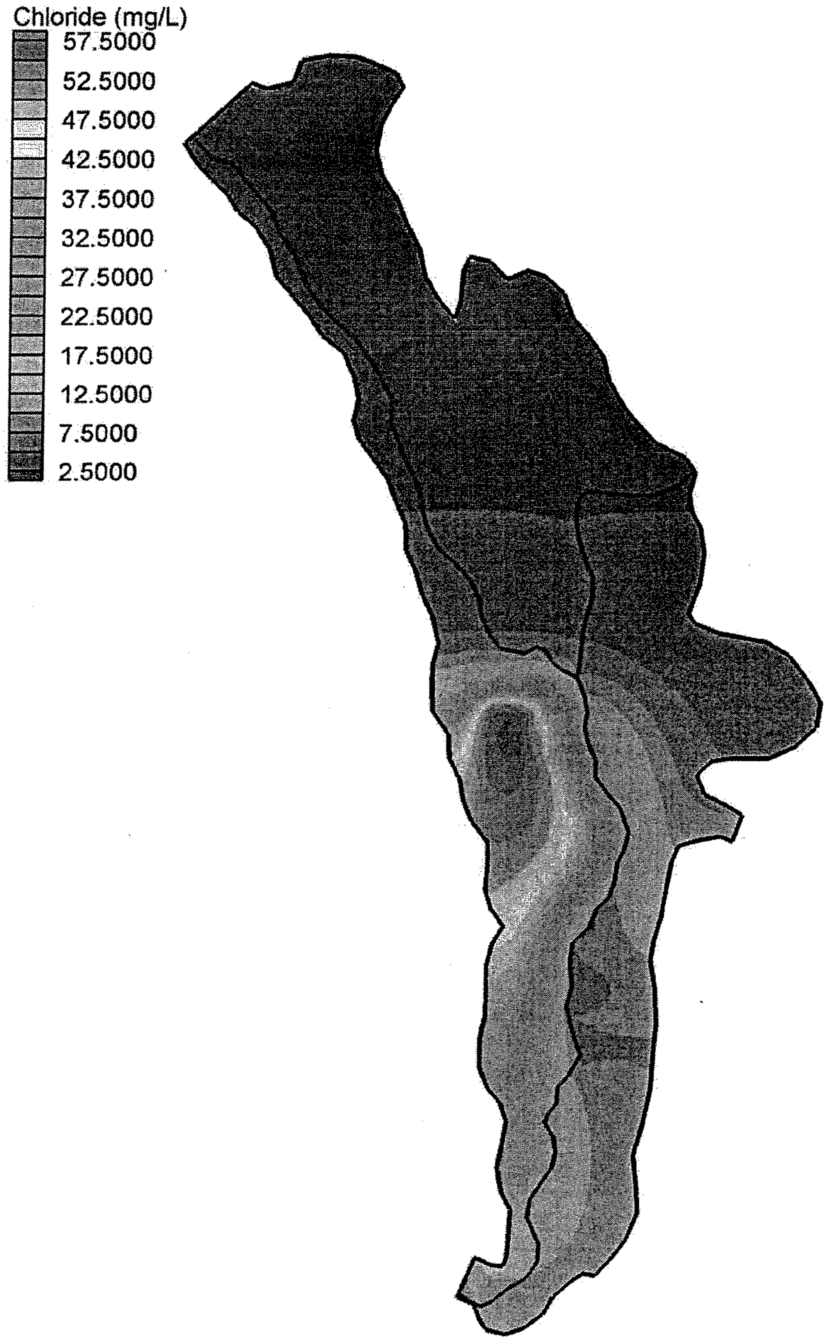

Figure 3.1e Computed Groundwater Chloride after 20 Years
Percolation Ponds with Year-Round Discharge

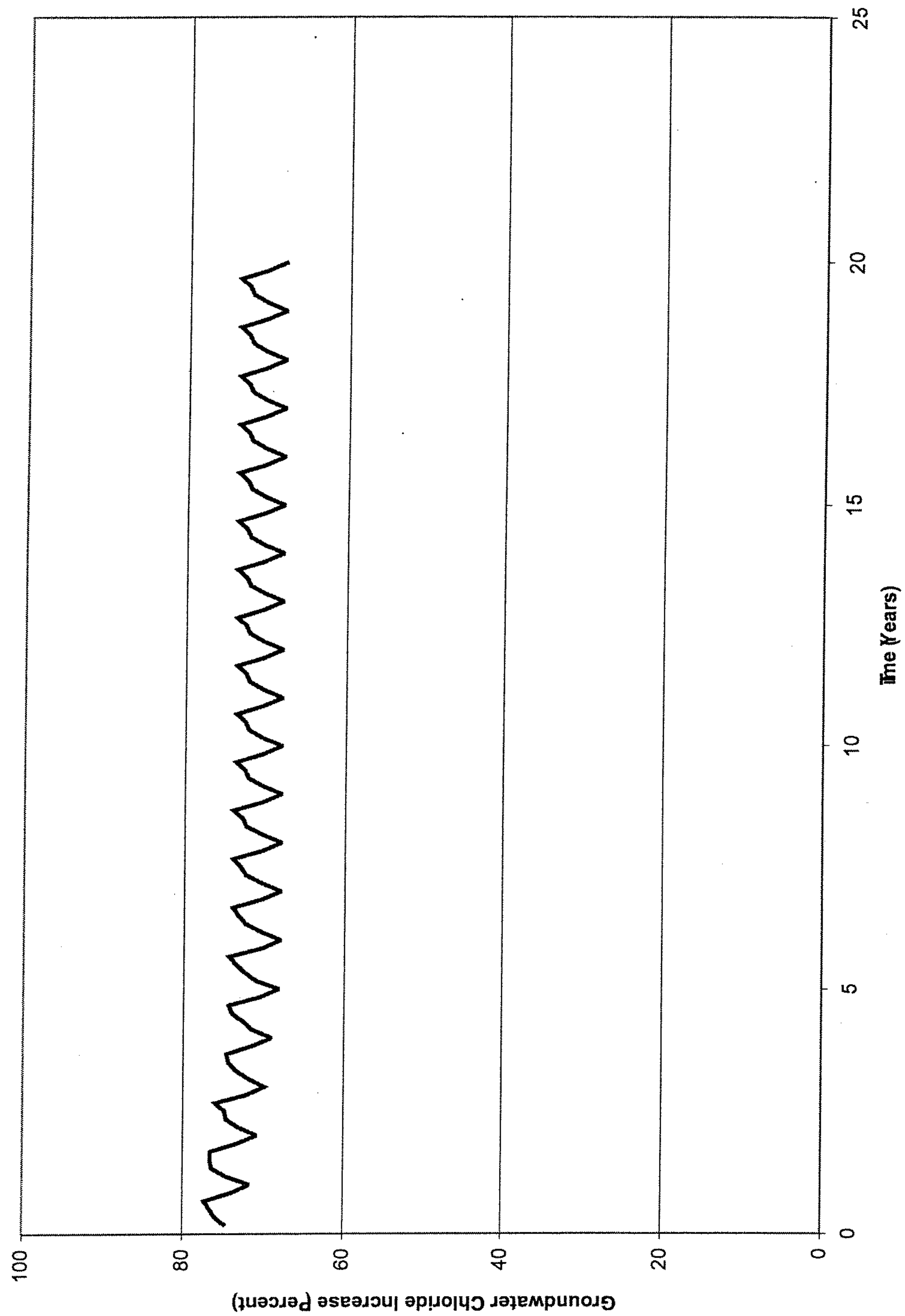

Figure 3.2a Computed Groundwater Chloride at Windsor Wells Basalt Pond with Year-Round Discharge

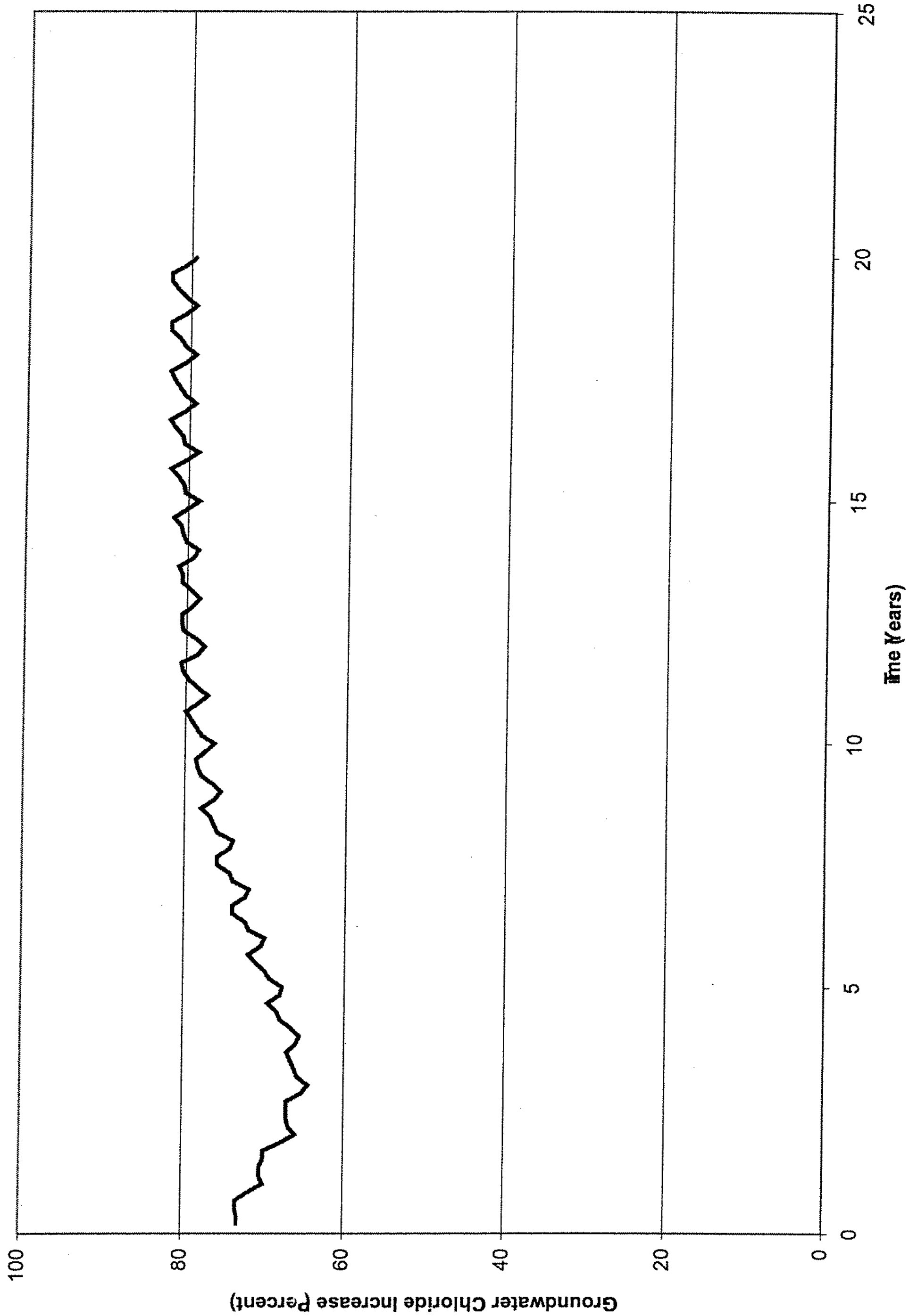

Figure 3.2b Computed Groundwater Chloride at Windsor Wells Basalt Pond with Seasonal Discharge and Irrigation Reuse

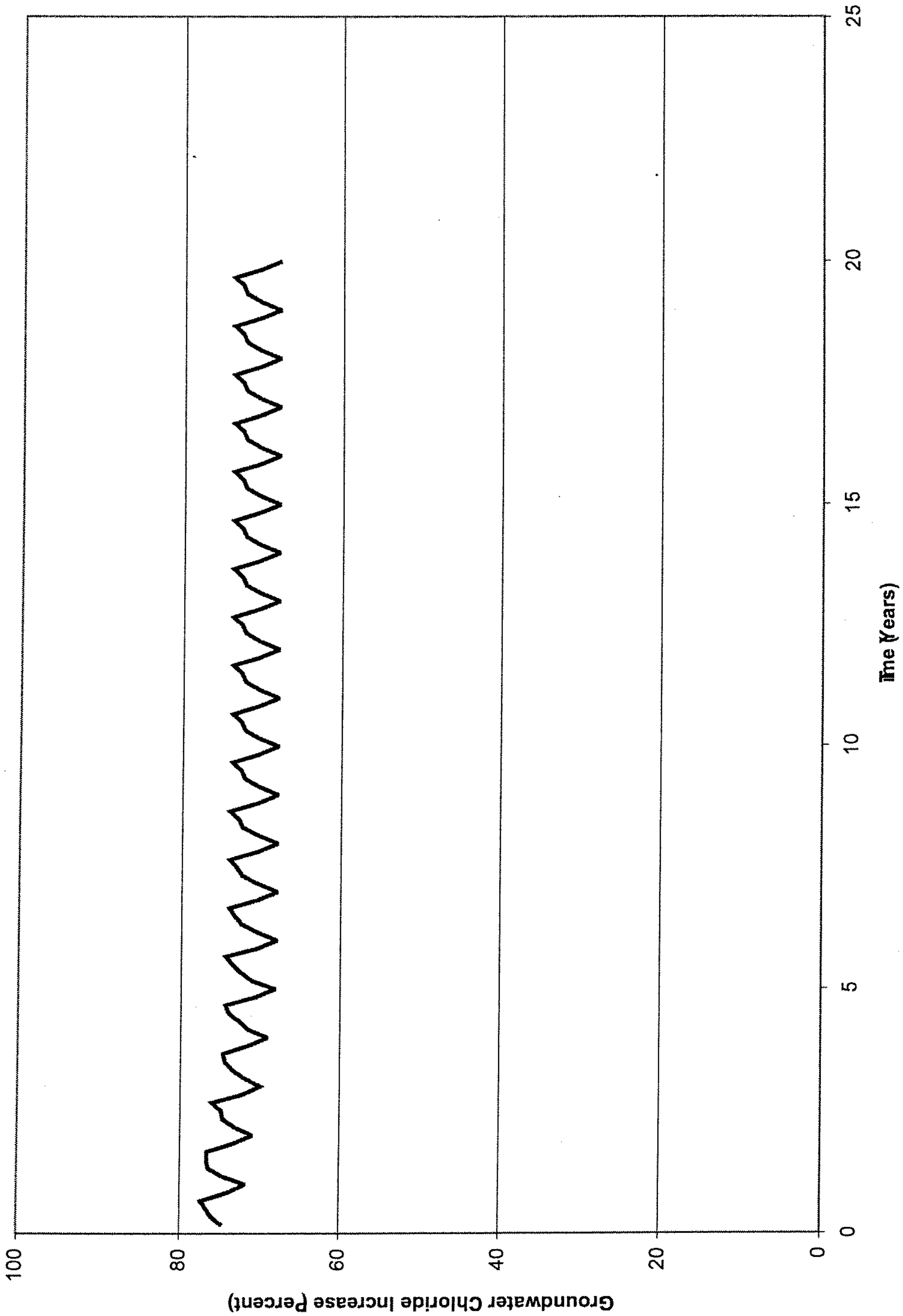

Figure 3.2c Computed Groundwater Chloride at Windsor Wells Basalt Pond with Seasonal Discharge and Storage

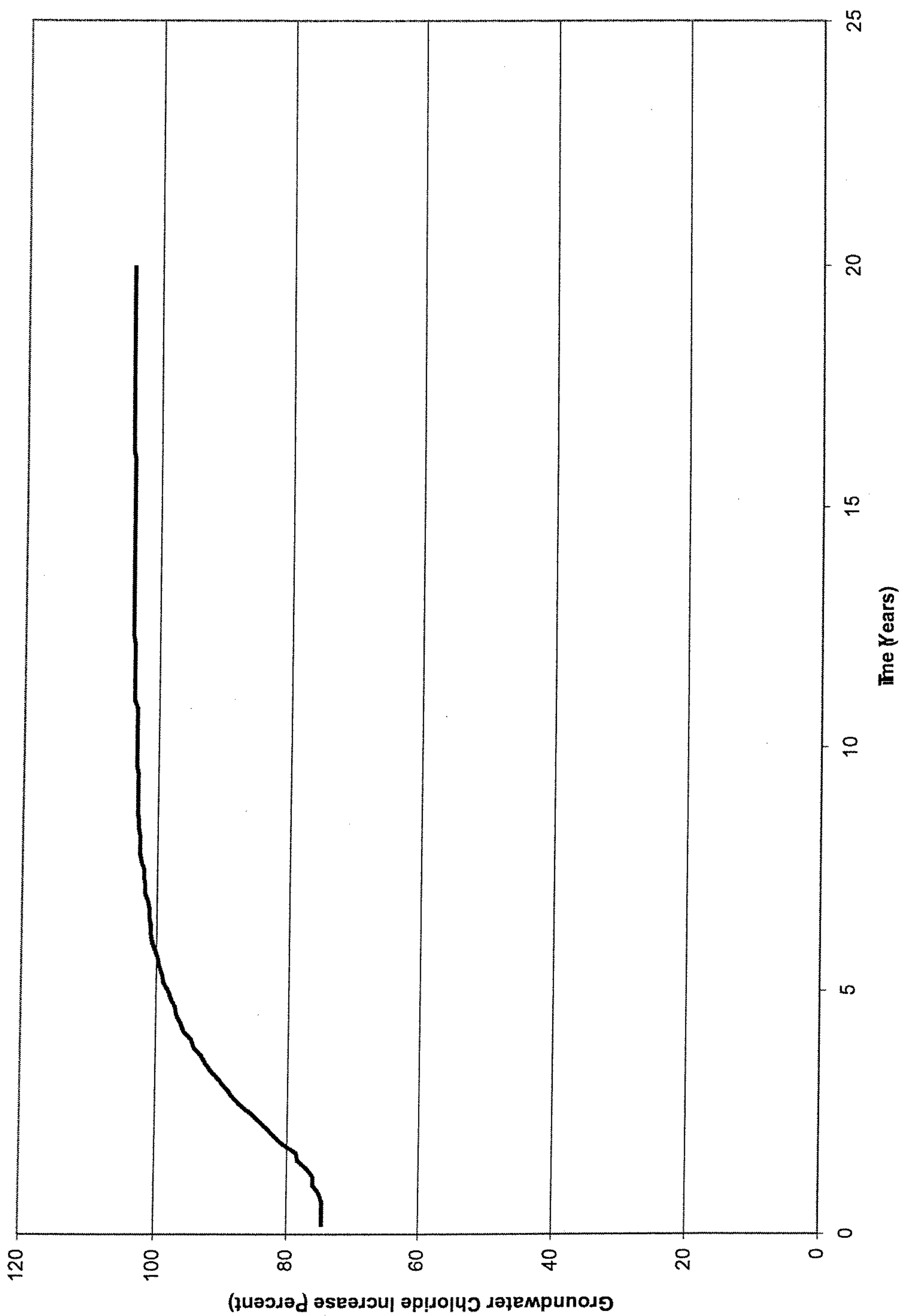

Figure 3.2d Computed Groundwater Chloride at Windsor Wells Phase V Pond with Year-Round Discharge

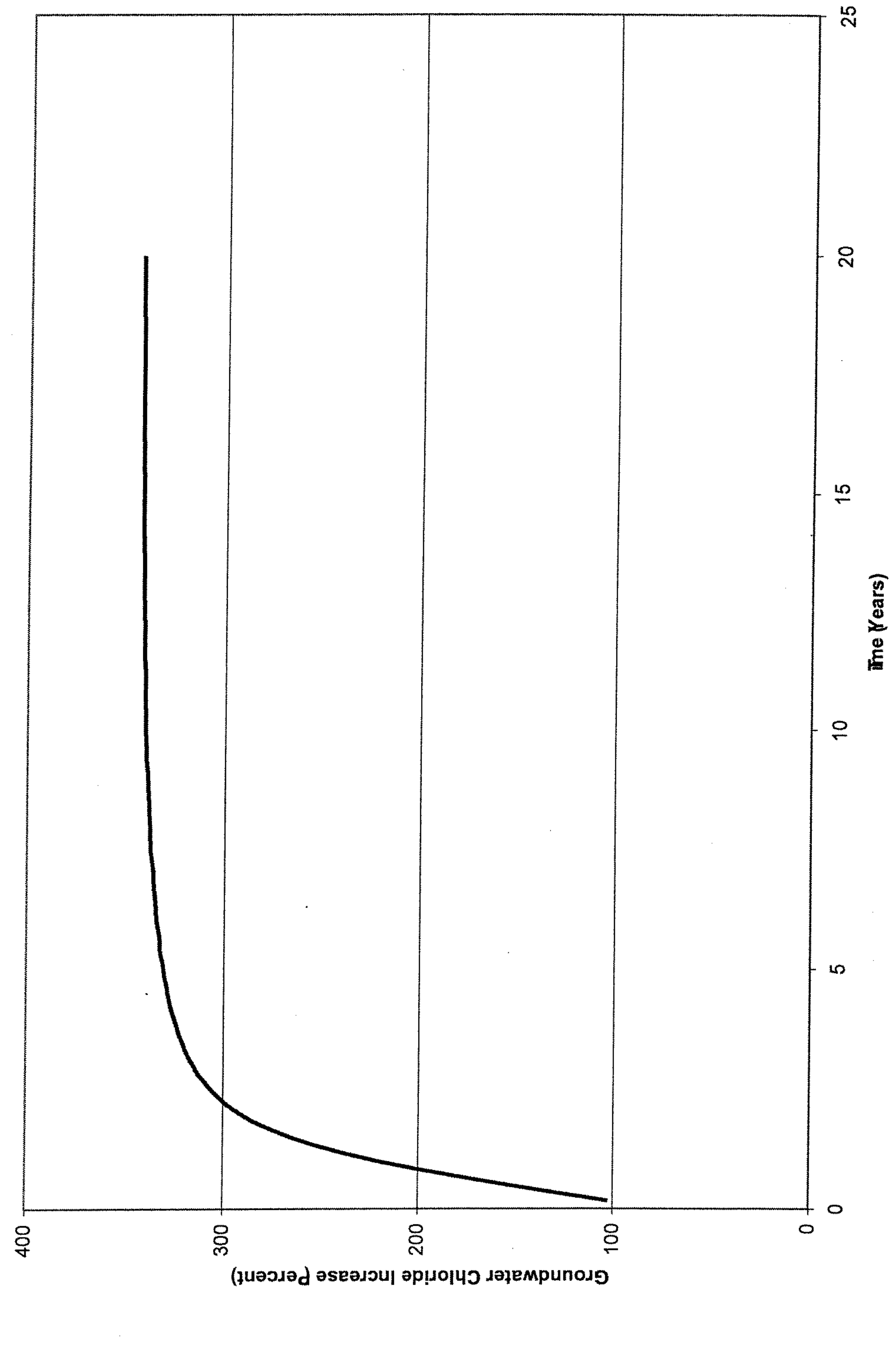

Figure 3.2e Computed Groundwater Chloride at Windsor Wells Percolation Ponds with Year-Round Discharge

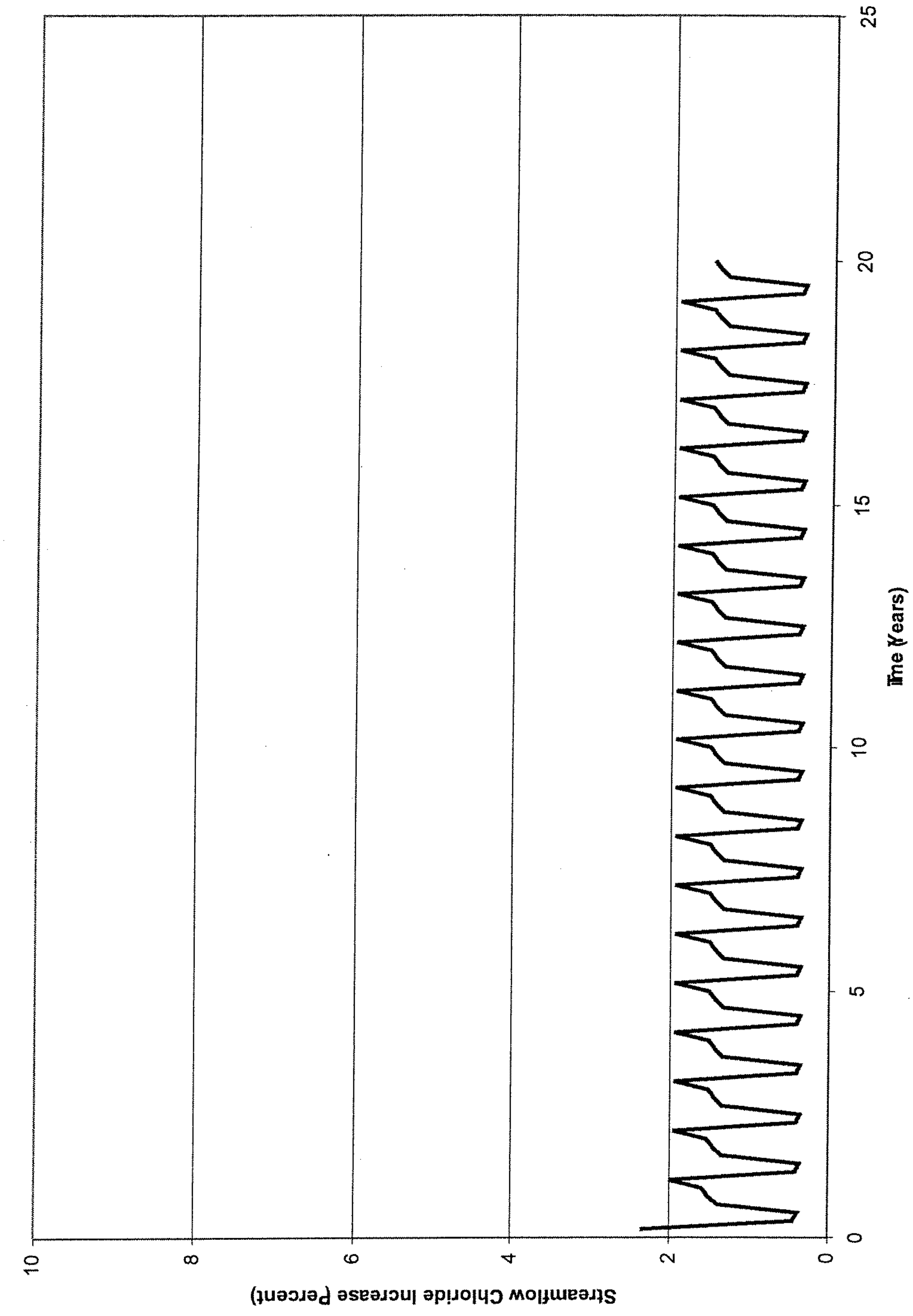

Figure 3.3a Computed Russian River Chloride at Windsor Wells Basalt Pond with Year-Round Discharge

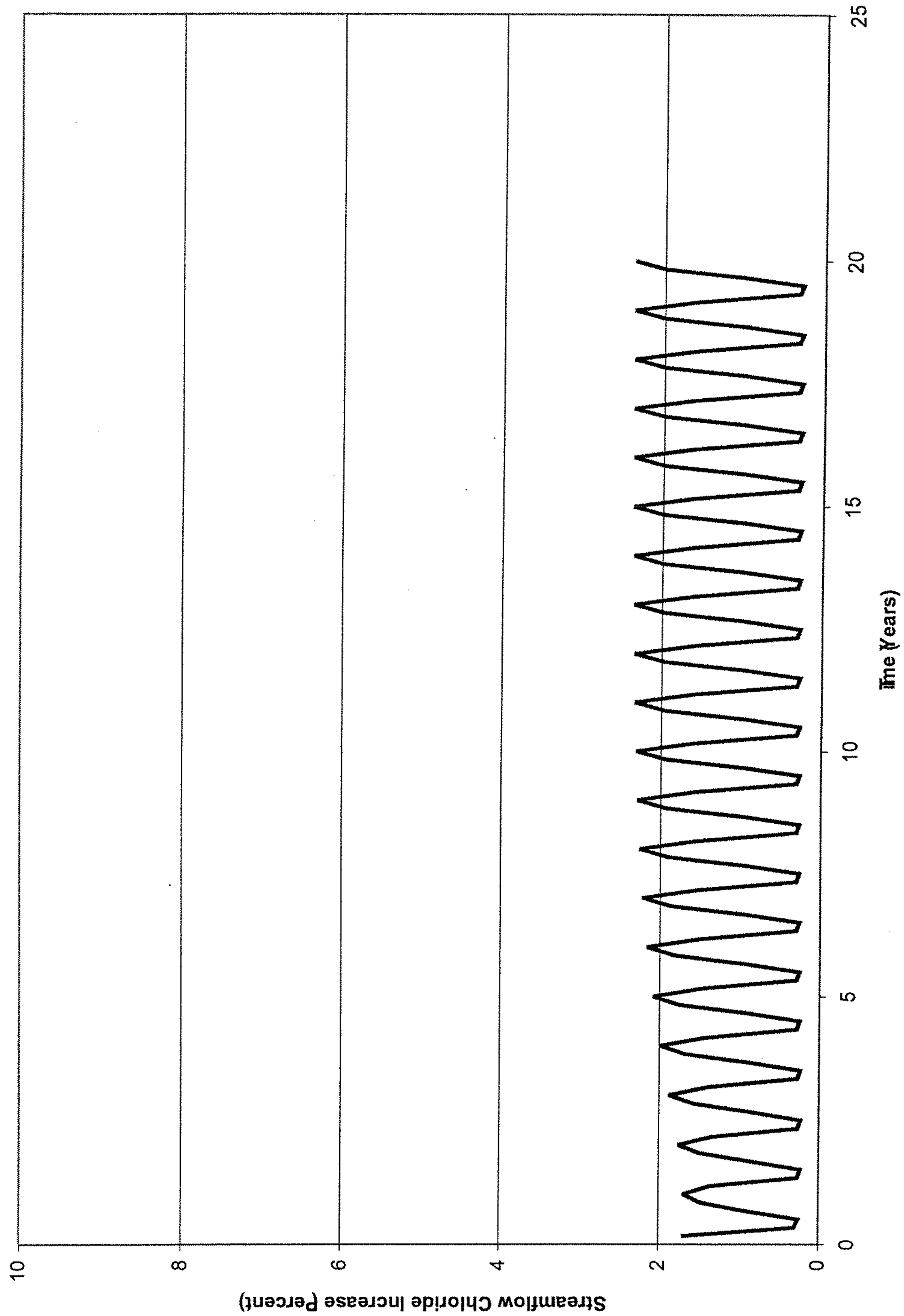

Figure 3.3b Computed Russian River Chloride at Windsor Wells Basalt Pond with Seasonal Discharge and Irrigation Reuse

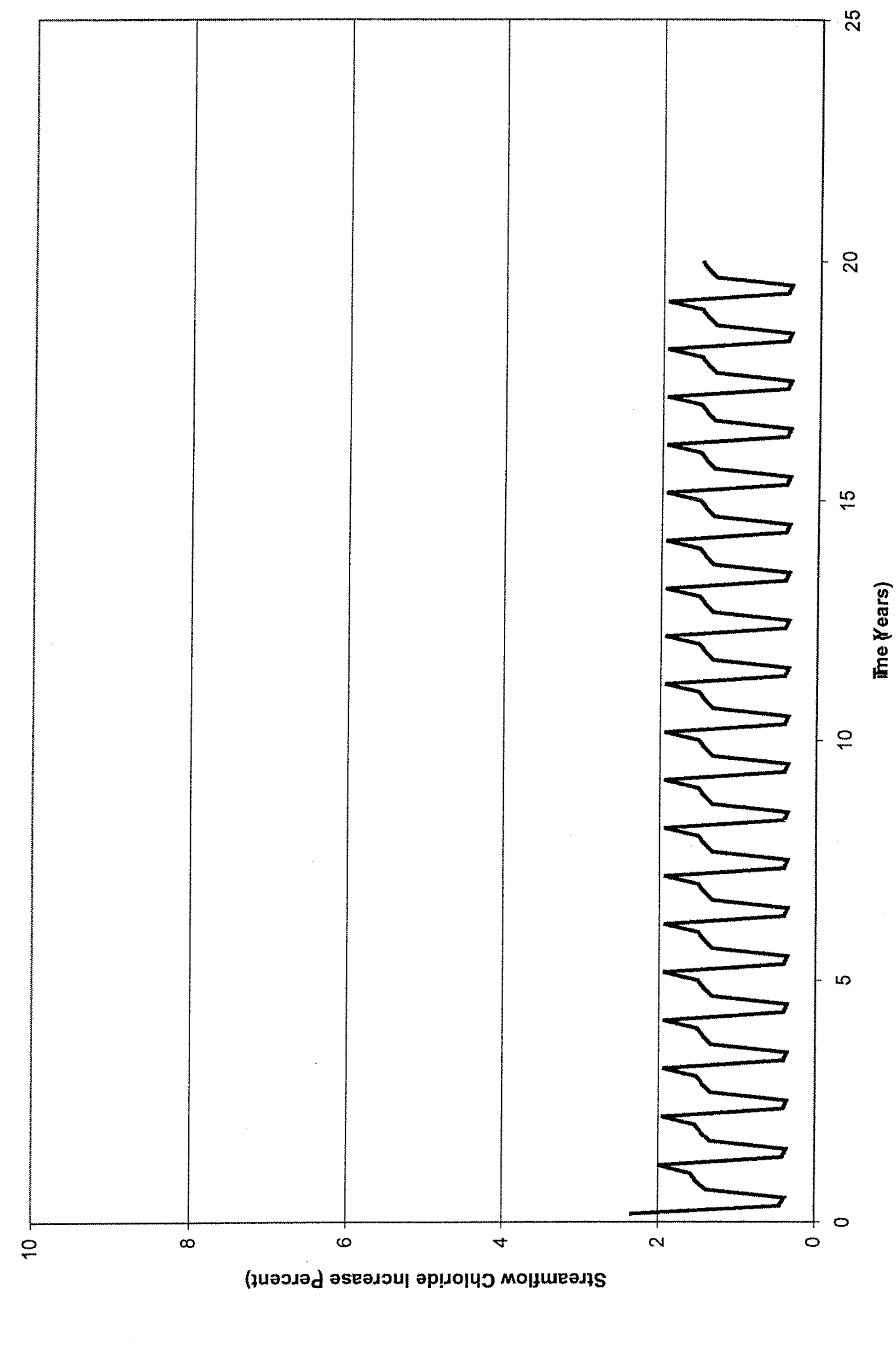

Figure 3.3c Computed Russian River Chloride at Windsor With Basalt Pond with Seasonal Discharge and Storage

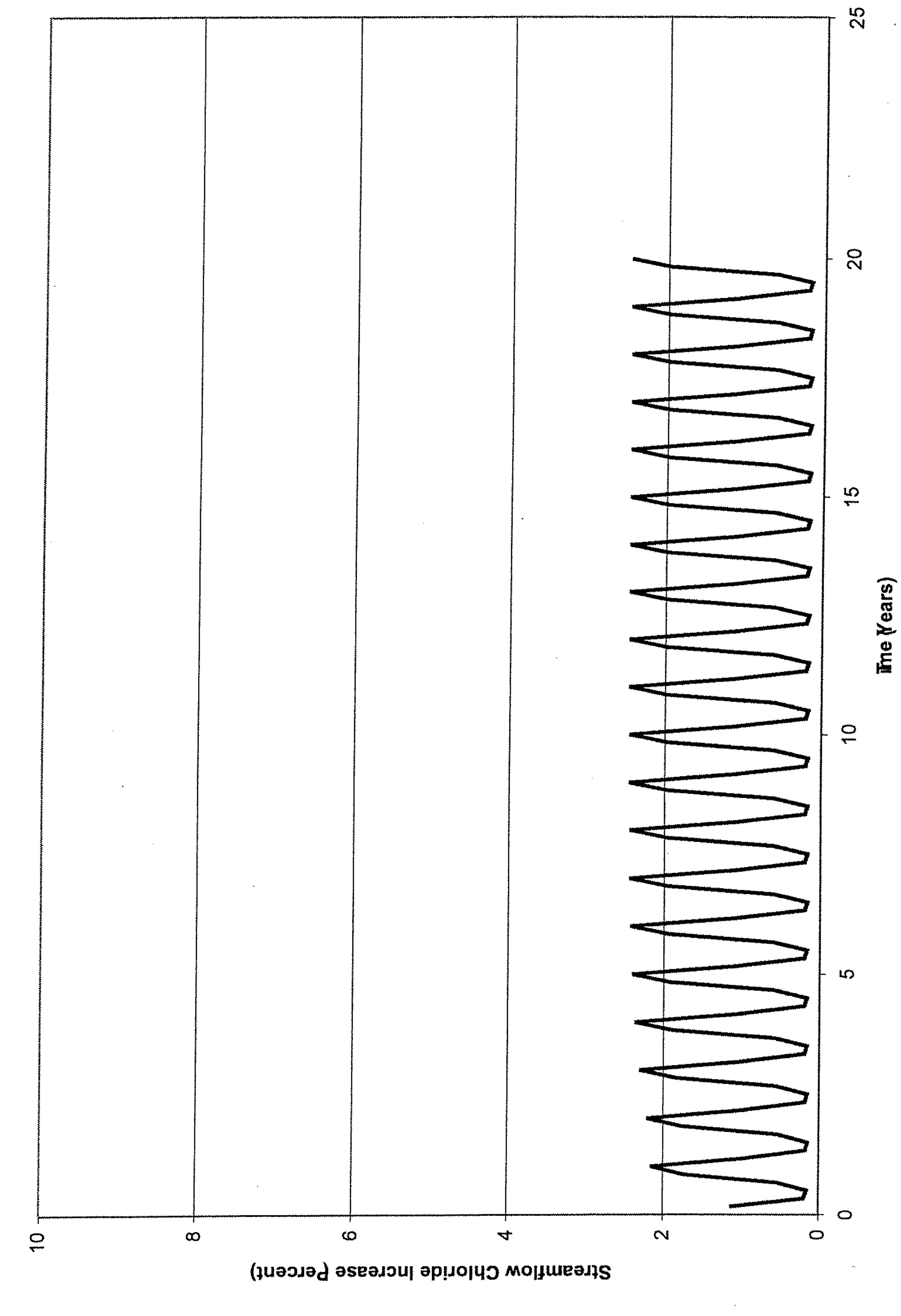

Figure 3.3d Computed Russian River Chloride at Windsor Wells Phase V Pond with Year-Round Discharge

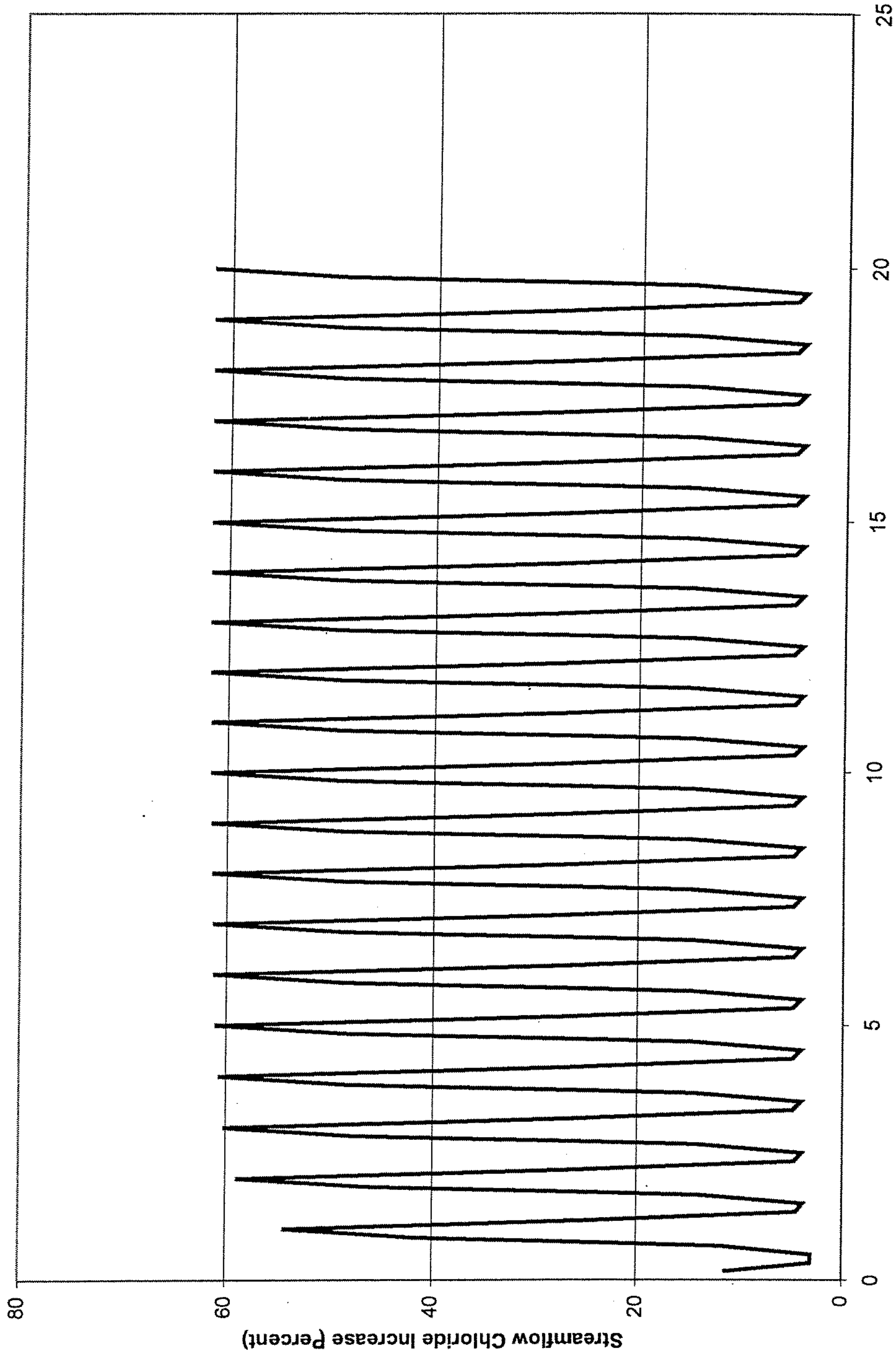

Figure 3.3e Computed Russian River Chloride at Windsor with Percolation Ponds with Year-Round Discharge

LETTER L4 RESPONSE

Town of Windsor
J. Matthew Mullan, Assistant Town Manager
Received March 21, 2005

L4-1 The proposed project would include three components: upgrading the wastewater treatment plant to tertiary treatment ("WTPU" in the EIR) to produce Title 22 water, the highest level of treatment short of the prohibitively expensive process of reverse osmosis; seasonal effluent disposal ("ED" in the EIR) (wet season) to the Basalt Pond (current method), the Phase V Pond, or a new shallow percolation pond system; and seasonal irrigation reuse ("SIR" in the EIR) to potentially several locations in Healdsburg. Each of these options has certain environmental tradeoffs with respect to a variety of resources, but not to water quality. None of the options considered would produce water that would result in adverse impacts on drinking water or to any other designated beneficial use, as discussed in Section 3.2 of the draft EIR. In all cases, wastewater produced and disposed of or reused would be of higher quality than wastewater under current conditions.

The comment states that the draft EIR provided a piecemeal analysis of impacts but provides no examples to support this statement. To the contrary, the draft EIR fully addressed and disclosed the potential environmental impacts and necessary mitigation measures for any specific combination of WTPU, ED, and SIR options that may be selected for implementation. Thus, there is no piecemealing of project-related effects in the draft EIR as suggested by the comment. Section 1.2, "CEQA and the Environmental Review Process," and introductory material on page 3-2 clearly identify the methods and assumptions that formed the basis for assessing potential environmental impacts. The environmental impacts on each resource issue under each of the WTPU, ED, and SIR options were evaluated to identify the environmental significance of any potential combination of options that may be selected by the City for ultimate approval and implementation. For example, the analytical method of assessing construction-related air quality contaminant emissions (page 3.6-18) is based on a summation of the emissions that could occur on a peak day of activity involving construction of multiple potential options. Likewise, potential construction-related impacts to biological resources are evaluated with appropriate analysis of site-specific habitats and species likely to be encountered with each option under consideration. Thus, both the potential additive and site-specific environmental impacts of any potential combination of options are evaluated.

The case citation to *San Joaquin Raptor*, a case wherein infrastructure necessary to support a project was not evaluated in an EIR, suggests that elements of the project were not considered, but no examples are provided.

Because the comment does not provide any examples to support its contention that the EIR inappropriately piecemealed or did not include specific analysis of project components, no further response can be provided.

L4-2 The potential operations-related water quality impacts identified in Section 3.2 of the draft EIR are based primarily on an "end-of-pipe" basis with current existing measured effluent and receiving water quality data and the projected effluent quality following implementation of tertiary treatment upgrades. The draft EIR demonstrates that the water quality effects under all the proposed effluent disposal options would comply with applicable water quality objectives. As described on pages 3.2-36 and 3.2-37, the project would not substantially affect water quality beneath shallow percolation ponds, the closest point to the discharge location; drinking water quality standards would still be met. Because the draft EIR demonstrates that the proposed project would comply with applicable drinking water quality objectives in the project area, analysis of water quality effects to receptors located more than a mile from the project area, such as Windsor's groundwater wells, was not warranted.

L4-3 The response to comment S2-10 describes the treatment of the state's antidegradation policy in the draft EIR. Please see the response therein. As described, the City believes that satisfactory demonstration of consistency with the state's antidegradation policy and procedures can be achieved via the RWQCB's permit authorization phase.

L4-4 The potential groundwater quality impacts are described in the discussion of Impact 3.2-3, starting on page 3.2-35. As described above (response to comment L4-2), the draft EIR demonstrates that the water quality effects under all the proposed effluent disposal options would comply with applicable water quality objectives and would not significantly affect water quality.

L4-5 The analysis of existing measured water quality data collected in the Russian River and presented in Section 3.2 and Appendix D of the draft EIR demonstrates that existing WWTP operations have no detectable influence on water quality parameters in the Russian River. Also, the analysis presented for Impact 3.2-3 in the draft EIR concludes that operations-related water quality impacts would comply with applicable surface water and groundwater quality objectives that are intended to protect the beneficial uses of that water. Because it is expected that the effluent quality would meet applicable water quality objectives, groundwater modeling was not conducted to identify whether or not any percolation from the shallow percolation ponds would reach the Russian River and thereby affect Russian River water quality. However, based on the understanding of the generally slow, southeasterly groundwater flow in the project area, the potential surface water quality effects of the shallow percolation ponds, if any, would be similar to or less than those described for the Basalt Pond and Phase V Pond options because the potential groundwater flow path to the Russian River from the percolation ponds would be longer. Further, unlike flows from Basalt Pond, whose water quality affects were sampled and found to not significantly affect the Russian River, flows from the percolation ponds would receive additional filtration.

Section 15126.2 of the State CEQA Guidelines requires EIRs to focus on the significant effects of a project. Because the analysis of water quality effects to the Russian River from the more immediate Basalt Pond were found to be less-than-significant, it was evident that an analysis of the percolation ponds would not result in determination of any significant effects to the River.

L4-6 In a similar manner to the response to comment L4-5 above, the analysis presented for Impact 3.2-3 in the draft EIR demonstrates that operations-related water quality impacts would comply with applicable surface and groundwater quality objectives. Because the use of recycled water for SIR options reduces the quantity of water that infiltrates the soil and reaches groundwater compared to the ED options, and because agricultural and urban irrigation reuse results in beneficial uptake of nutrients and additional contaminant reduction via soil-aquifer interaction, the SIR options would also comply with applicable water quality objectives. However, in response to comment L4-6, the following modification has been incorporated into the draft EIR to for clarification as described below and as noted in Chapter 4 of this Final EIR. The clarifying addition to the EIR does not change the impact significance conclusions and does not result in additional significant impacts. The first paragraph (page 3.2-37) is hereby revised as follows:

> Uses of tertiary treated recycled water for irrigation of urban landscapes and agricultural operations under the SIR options have the potential to create or contribute to incidental offsite runoff and discharge to adjacent drainages. Therefore, discharges of irrigation runoff could reach natural surface waters and potentially cause incidental changes in water quality conditions. The potential for such occurrences of offsite runoff from irrigated areas is considered low because the City must develop a detailed engineering report under the applicable Title 22 regulations described above that identifies the operational controls and environmental protection measures that will be implemented with the system. In addition, the projected effluent quality described in Table 3.2-5 indicates that the anticipated constituent concentrations would be low and the small quantity of incidental runoff events would not be expected to substantially impair receiving waters. <u>Also, agricultural and urban irrigation reuse would be fully protective of groundwater quality objectives, as demonstrated in Table 3.2-5, and recycled water irrigation would result in beneficial uptake of nutrients and additional contaminant reduction via soil-aquifer interaction</u>. This impact would be less than significant.

L4-7 The response to comment L4-1 describes the impact analysis methods used in the draft EIR to fully disclose and evaluate potential environmental impacts and thus avoid “piecemealing,” as suggested by the comment. Further, as additionally described in the response to comments L4-2 through L4-6, none of the options would result in impacts on water quality because the treated effluent will be “clean” (i.e., it would meet RWQCB standards required for the protection of beneficial uses). The combined effects of “clean” water are the same as the effects from each component. Therefore, the analysis does consider the project as a whole and concludes that impacts would be less than significant. This comment does not provide any information to support an alternative conclusion.

L4-8 The potential for flooding inundation of Basalt Pond is an existing condition, and as described in the response to comment L4-2, the draft EIR (Section 3.2) demonstrates that the proposed tertiary treatment process upgrades would result in water quality that complies with applicable water quality objectives and all standards necessary to protect beneficial uses, including those of the Russian River. Consequently, if the Basalt Pond option were selected by the City as the preferred effluent disposal option, any future inundation of the Basalt Pond would not be expected to result in adverse water quality effects because the pond water quality would reflect an improvement compared to existing conditions, and would be of a quality that would not affect receiving water quality. In addition, flooding conditions with the potential to overtop the Russian River levees also pose low environmental risk to the project area because (a) high streamflow rate flood events have a low frequency of recurrence, (b) flooding occurs only during the RWQCB's allowable seasonal discharge period of October 1 to May 15 in the Russian River, and (c) flooding conditions represent substantial dilution capacity for any incidental pickup of the City's wastewater and pond water. Finally, the proposed excavation of soil for new pond improvements at the treatment plant site and associated placement in Basalt Pond is intended to reinforce the inland side of the adjacent Russian River to reduce the risk of potential catastrophic flooding and pit capture relative to existing conditions.

L4-9 The levee modifications, weir control facilities, and associated operations as originally envisioned by Syar in response to the various mining permit approval and regulatory oversight processes are described in the draft EIR (pages 2-29 through 2-32). The proposed facilities have not been constructed and Syar does not have any immediate planning timeframe established for the project. The comment points out that the facilities were not identified in the list of cumulative projects as a related project that could result in cumulative water quality effects. The proposed project would improve water quality in the Basalt Pond by treating wastewater to a higher level than current conditions and by producing high-quality water as described above. Because continued discharge of effluent to the Basalt Pond would not result in adverse water quality impacts, the project would not contribute considerably to any cumulative water quality impacts related to operation of the weir.

L4-10 The draft EIR identifies approximately 1,350 acres of suitable agricultural and urban lands that could be irrigated for complete reuse of the wastewater generated during the seasonal discharge prohibition season (page 2-20) and use of up to 40 million gallons of pond capacity at the treatment plant site for effluent storage (pages 2-9 and 2-11) to provide for flexibility during the irrigation operations. The City could also construct a set of percolation ponds to accommodate effluent discharge during summer. Although no specific evaluation has been prepared for this scenario, a seasonal discharge option to shallow percolation ponds would require less than 30 acres of percolation pond area because considerably less than 50% of the wastewater inflow occurs during the May 15 to October 1 period. However, the analysis in the draft EIR suggests that even if treated effluent were discharged to the Basalt Pond in the dry season (May 15-September 30), contrary to current Basin Plan criteria, no adverse impacts on water quality would result. Compliance with the Basin Plan is administered by the RWQCB, and the City of Healdsburg will be required to comply with or apply for exemptions to specific Basin Plan requirements through the NPDES permit process. The City's NPDES permit includes a prohibition that limits wastewater discharges to 1% of the background flow in the Basalt Pond, and the permit identifies the process for application to the RWQCB for an exception to the requirement. An exception to the dilution requirement is obtained by submitting a technical study that demonstrates there is sufficient assimilative capacity in the pond to accommodate a higher percentage of wastewater flow and remain fully protective of beneficial uses. If the Basalt Pond effluent disposal option is selected as the preferred option, the City would prepare the aforementioned technical study for application of an exception to the dilution requirement. As described in the responses to comments S2-5, S2-8, S2-9, and S2-10, the water quality analysis presented in the draft EIR shows that implementation of effluent disposal with the tertiary treatment upgrades is expected to comply with all applicable water quality objectives and regulations. Consequently, the City believes that the Basalt Pond effluent disposal option could be implemented with the continued discharge rate in full compliance with the NPDES permit.

L4-11 The comment speculates on a particular regulatory application to the Phase V Pond discharge. In fact, the specific regulatory requirements that may be issued for the future effluent disposal operations under the Phase V Pond option are far from certain. However, the City's intent to develop agricultural and/or urban recycled water reuse facilities for the purpose of providing regulatory flexibility, conserving potable water supplies, and minimizing effluent discharges is clear as specified in the project objectives (pages 2-6 and 2-7) that include "comply with foreseeable future discharge permit requirements" and "maximize the beneficial use of recycled water." The project description (Section 2.5.2, page 2-15 of the draft EIR) also clearly identifies that the City's intended effluent disposal/seasonal irrigation reuse approach would consist of one of the three effluent disposal options and one or more of the seasonal irrigation reuse options. However, resolution of regulatory uncertainty facing the City is also a key factor for the ultimate selection of the preferred project as described on pages 2-16 and 2-17 of the draft EIR. It is not certain whether Syar's Phase V Pond is a water of the United States subject to the Clean Water Act, as it was applied to the City's discharge of wastewater to the Basalt Pond in the January 23, 2004, U.S. District Court case brought by Northern California River Watch. The City is currently appealing the U.S. District Court decision to the Ninth Circuit Court of Appeals. Regardless of the new regulations and policies that become applicable to the project, the set of WWTP upgrade options evaluated in the draft EIR provides sufficient flexibility to successfully operate the WWTP and comply with permit requirements issued by the RWQCB.

L4-12 The comment's suggestion that additional conditions should be applied to the Basalt Pond effluent disposal option to reflect the seasonal discharge prohibition of the Basin Plan fails to acknowledge the existing terms and conditions imposed by the RWQCB in the City's NPDES permit that was adopted on October 6, 2004. As described in the draft EIR (page 2-16), Discharge Prohibition A7 of the permit prohibits discharge to the Basalt Pond during the period May 15 through September 30 each year. Thus, as a tributary to the Russian River, Basalt Pond is now regulated like other tributaries and is subject to the same seasonal discharge prohibition period. Moreover, the situation is not unlike the one that applies to other wastewater surface dischargers in the Russian River watershed, such as Windsor, because these discharges persist in the river after discharges cease on May 14.

Further, as described in the draft EIR, water quality samples taken during the dry season, when influence of effluent flowing from the Basalt Pond to the Russian River would be greatest (because of lower dilution potential in the river) showed that the current *secondary* wastewater treatment system does not affect Russian River water quality. The project would improve water quality through construction of a tertiary treatment system.

L4-13 The comment's suggestion that water conservation measures should be considered does not reflect any acknowledgement that the SIR options result in considerable water conservation. The quantity of water utilized for irrigation under the SIR options would replace an equivalent amount of freshwater supply that would otherwise be used to irrigate agricultural properties (presumed to be conserved primarily via reduced groundwater withdrawals from the local aquifers) and/or urban landscape within the City limits derived from the City's existing well fields. The City estimates that irrigation of the urban areas identified in the Foreman Lane/Tayman Park SIR option would have the potential to offset from 5% to 10% of the City's annual potable water use. The City and surrounding agricultural areas proposed for SIR rely almost entirely on groundwater contained within the unconfined alluvial aquifer of the Russian River valley. Any reduction in use of groundwater results in a direct hydrologic benefit because it increases the amount remaining in storage that would have otherwise occurred. This benefits water quality by potentially retaining a greater ability to assimilate and provide dilution for other discharges that ultimately enter the groundwater aquifer, such as stormwater runoff, domestic wastewater, and agricultural fertilizers. Consequently, the proposed SIR options represent considerable water conservation benefits of the ultimate preferred project that is selected for implementation.

With respect to minimizing wastewater flows, the City already encourage water conservation through its service charges and connection fees, which are based on actual wastewater discharge volumes and incorporate significant disincentives for high flows. For wineries, current rates result in a service charge of $33.50 for each 750 gallons of discharge. The City's largest winery discharger currently pays monthly service charges as high as $31,000. From a business perspective, this obviously provides a significant incentive for reuse. As a result, this discharger has preliminary plans to install pretreatment by June 2006 that may allow all of it process wastewater to be used for on-site landscape irrigation.

In any event, the purposes of the WWTP upgrade project do not include any expansion in capacity. Any additional water conservation measures, while they may be prudent water demand management measures that the City should eventually adopt, do not meet or contribute to the goals or purposes of the project.

L4-14 The draft EIR considers several alternatives at an equal level of detail: two wastewater treatment alternatives, three effluent disposal alternatives, and four seasonal irrigation reuse alternatives. The draft EIR also considered the No Project Alternative, winter discharge to the Russian River, and, as infeasible alternatives, alternative locations of the treatment plant, use of reverse osmosis treatment technology, use of the Geysers wastewater conveyance line, and an additional seasonal irrigation reuse alternative. Section 15126.6(c) of the State CEQA Guidelines requires that an EIR consider a range of alternatives that "feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects of the project." Except for the infeasible alternatives listed above, the alternatives considered in the EIR do this. Further, it cannot be reasonably argued that consideration of 15 alternatives, even if some are alternatives to components rather than the whole project, is not a reasonable range. Moreover, none of the feasible alternatives considered would result in adverse impacts to ground water or surface water, so consideration of additional alternatives aimed at avoiding these kinds of impacts would not result in substantially improved water quality conditions in comparison to the alternatives already under consideration. Finally, construction of an offsite upland reservoir of sufficient wastewater storage capacity would involve considerable construction activity that is not required for either the proposed Basalt Pond or Phase V Pond, and such activity could result in significant additional impacts, depending on location.

L4-15 The comment appears to refer to the first question ("a") of Section 16, "Utilities and Services Systems," of the CEQA checklist contained in Appendix G of the State CEQA Guidelines that inquires whether a project would "exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board." Analysis of the No Project Alternative with respect to regulatory compliance with the RWQCB is an issue that is primarily associated with water quality compliance and was therefore addressed under the discussion of "Hydrology and Water Quality" on page 5-5 of the draft EIR rather than the "Public Utilities/Services" section of page 5-6 as suggested in the comment.

L4-16 The combination of discussions regarding the Environmentally Superior Alternative presented in the draft EIR include the Executive Summary on page ES-3, and under Section 5.7 on page 5-15. A typographical error resulted in the description of the relative superiority of WTPU and SIR options presented in the Executive Summary being omitted from the discussion in Section 5.7. The Executive Summary provides a succinct description of the relevant comparison of merits among all of the WTPU, ED, and SIR options described in detail. Because the WTPU and SIR options result in similar potential environmental impacts, and the effluent disposal to either Basalt Pond or Phase V Pond have equal standing, the superiority of any combination of options involving these options is similar. Any of the combinations would be superior to any project that includes shallow percolation ponds for effluent disposal or the No Project Alternative for wastewater treatment.

Regarding CEQA requirements for identification of an environmentally superior alternative, Section 15126.6(e)(2) specifically states, "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." In the case of this EIR, the No Project Alternative is inferior to several project alternatives, so the suggestion to identify one superior alternative is likely an overly narrow interpretation of CEQA and is not required.

L4-17 The comment refers to the technical report prepared for the Town of Windsor by Timothy J. Durbin, Inc. (hereafter referred to as the "Town's technical report") that consisted of an independent numerical groundwater modeling analysis of the City's proposed WWTP upgrade options and comments on the use of measured data presented in the draft EIR. The responses to comments L4-18 through L4-26 refer to numbered comments identified in the Town's technical report. The first 12 pages of the Town's technical report describe the numerical groundwater modeling analysis that was conducted for the report and contain no specific comments regarding the City's draft EIR. The numbered comments in the Town's technical report that specifically relate to the draft EIR begin on page 13. Because of the technical and computational complexity associated with numerical groundwater models, and the professional credentials that are required to review and critique their construction and application, the City engaged the services of Mr. John Lambie, P.E., with S.S. Papadopulos & Associates to provide expert review and comment on the Town's technical report.

Mr. Lambie is a groundwater hydrologist with more than 20 years of experience. His credentials include a BS in earth and planetary sciences, and an MS in sediment mechanics, both from the Massachusetts Institute of Technology, MIT. Mr. Lambie has subsequently completed several groundwater modeling courses, and holds registrations in California as a Professional Civil Engineer, a Certified Engineering Geologist, and a Registered Geologist. Mr. Lambie previously developed a refined groundwater model to evaluate changes in groundwater/surface water interaction associated with the Basalt Pond and Russian River as past of expert testimony in the River Watch v City of Healdsburg case. Thus, Mr. Lambie has both the technical qualifications and local experience to apply expert opinion to the analysis. He prepared a technical memorandum and it is included as Appendix A of this final EIR (hereafter referred to as Appendix A). In order to preserve the integrity of Mr. Lambie's professional interpretations, the responses below only summarize the content of Mr. Lambie's technical memorandum and direct the reader to the specific sections of the technical memorandum where necessary, or provide direct quotes of relevant findings. Mr. Lambie's review was based on existing information in the EIR, the references used to prepare the EIR, and the analysis prepared by the Town of Windsor.

L4-18 The comment identifies the location of graphs and predicted maximum chloride levels that would occur in groundwater under several scenarios designed to represent the City's proposed WWTP upgrade options. The City believes, based on its independent review, which the comments in the Town's technical report do not accurately reflect the information and conclusions presented in the draft EIR and thereby lead to erroneous assumptions and analyses. In addition, as discussed in Appendix A and in reliance on the analysis in Appendix A, the City believes that the majority of the comments and conclusions presented in the Town's technical report do not accurately represent the anticipated hydrologic and water quality impacts that would occur following implementation of the City's proposed WWTP upgrade options. As described in Appendix A, the Town of Windsor's numerical groundwater modeling was based on serious technical flaws in the model assumptions, mathematical construction, processing, and interpretive presentation of modeling results. The Town's technical report is based on a flawed analysis of the groundwater and surface water interaction in the area, reliance on an undocumented and apparently uncalibrated numerical model, and on inaccurate analytical methods to evaluate groundwater and surface water impacts of chloride. As described in Appendix A, it is the opinion of the City's technical expert that the Town's technical report does not provide an accurate or credible evaluation of current or prospective future water quality impacts to the Russian River or the Town of Windsor's wells. The key findings of inaccuracies in the numerical modeling described in the Town's technical report appear on pages 2 through 4 of Appendix A.

Based on the above, the focus of the following responses is focused primarily on addressing comments in the Town's technical report that specifically related to the adequacy and evaluation of impacts presented in the draft EIR. Of primary importance is the misrepresentation by this comment's assertion that the percentage increases in chloride concentrations within the Russian River, project area groundwater, and the Town of Windsor's municipal groundwater wells would constitute significant impacts.

As described in Section 3.2 of the draft EIR, and elaborated in the response to comment L4-2, all of the City's WTPU and ED options could be implemented in full compliance with applicable water quality objectives. Specifically, several factors are relevant to the interpretation of potential project-related effects on the analysis of chloride concentrations presented in the Town's technical report. The applicable state and federal secondary drinking water quality Maximum Contaminant Level (MCL) for chloride is a concentration-based standard set at 250 mg/L. This is the strictest standard available for the regulation of chloride, and is intended to address, primarily, drinking water taste. Fish are not affected by chloride at this level (250 mg/L). According to the U.S. Department of Agriculture, strawberries are in the category of the most chloride-sensitive crops, and are generally tolerant to chloride levels of 350 mg/L (George E. Brown Jr. Salinity Library 1990). The North Coast Region of the RWQCB has not adopted additional numeric water quality objectives for chlorides; the most stringent numeric objectives of any of the RWQCBs appear to be for the Los Angeles Region, which has an adopted objective for chlorides of 100 mg/L.(State of California Regional Water Quality Control Board, Los Angeles Region Tentative Resolution No. 03-xx, November 6, 2003, Amendment to the *Water Quality Control Plan for the Los Angeles Region* to Update the Chloride Objective for Reach 3 at Santa Paula in the Lower Santa Clara River) (We note that the North Coast Region has a total dissolved solids, TDS, objective that is as low as 150 mg/L for the Russian River; it can thus be inferred that chlorides, a component of TDS, above this level would not meet North Coast Region water quality objectives.)

This backdrop is important for understanding the nature of the comments and the contention that the project would have "significant water-quality impacts on the Town of Windsor wells" (sic) with respect to chloride or any other constituents[1], *even if the Town's technical report were accepted as accurate*, which it cannot be due to its flaws identified in Appendix A.

The percentage change in concentrations is not a determinant of environmental impact, even if the percent change was accurately reflected. The water quality impact analysis is based on concentration-based standards; exceedance of these standards would reflect a probable environmental impact. Existing measured chloride concentrations presented in the draft EIR indicate that the Healdsburg WWTP effluent averages 42 mg/L, water in the Basalt Pond is slightly less at 38 mg/L, and the Russian River flows average about 5 mg/L. In addition, data presented in the City's Wastewater Outfall Relocation Project Draft EIR indicated that chloride concentrations measured in monitoring wells located downgradient from Basalt Pond were less than levels in the Basalt Pond and several of the wells had low levels near background concentrations indicative of substantial dispersion and dilution. Consequently, the information presented in the draft EIR conclusively demonstrates (and the Town's technical report supports) that existing chloride concentrations are substantially lower than the applicable water quality standard—and any known numeric water quality objectives—and support the conclusion for Impact 3.2-3 that operations-related water quality impacts would be less-than-significant. Simply stated, if 100% of the effluent were injected directly in to Windsor wells, obviously an extreme example that would not occur, the 42 mg/L concentration of chlorides would not substantially affect water quality of Windsor's wells. The wells would operate well within any published

[1] With respect to chlorides, as well as a number of other constituents, it should be noted that the impact on Windsor's Russian River wells is not a matter of speculation or projection because the current secondary-treated discharge to the Basalt Pond has been in place for more than 30 years. A review of water quality data submitted to the California Department of Health Services by the Town of Windsor between 1988 and 2003 indicates that chloride levels in its Russian River wells have averaged 7.7 mg/L, with a maximum concentration of 15 mg/L.

standards or objectives pertaining to chloride. Put another way, if a roadway can accommodate 100 vehicles and operate acceptably and the roadway currently has 10 vehicles on it, it is not "significant" to add 10 more vehicles to the roadway (20 total), even though the number of vehicles has increased by 100%.

Further, as described in the response to comment S2-8, State CEQA Guidelines Section 15151 addresses disagreement among experts. The regulations state in part, "Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts." The foundation of the guideline is that an instance may occur where two experts, using valid criteria, reach different conclusions. Thus, even if the Town's conclusions were well founded, they would not require change to the EIR findings if the EIR findings were also well founded. However, herein the disagreements between the EIR and the Town revolve around errors in the Town's analysis. Several of these issues are reflected below in the responses to comments L4-19 through L4-26). In light of Mr. Lambie's expert assessment of the methods used and results presented in the Town's technical report, the City believes that the LSCE modeling results more accurately reflect the actual hydrogeologic and water quality conditions that exist within the project area, and that the draft EIR reached the correct conclusions in reliance on sound information. The existing set of measured effluent and receiving water quality data, anticipated effluent quality following implementation of tertiary treatment process upgrades, and the LSCE modeling that was conducted previously to define existing conditions and project-related hydrologic effects of a Phase V Pond discharge option reflect the best available data and support the CEQA impact analyses and significance conclusions presented in the draft EIR.

L4-19 The comment's suggestion that additional water quality impact analyses are necessary in the draft EIR based on the predicted project-related effects on chloride concentrations presented, and that chloride is a suitable surrogate constituent for representing likely effects of other constituents, is not accurate. Also, the comment's assertion that the draft EIR did not address chloride or any other constituents cannot be substantiated given the extensive analysis of existing data presented in the draft EIR including measured effluent quality for a full monitored suite of physical, conventional inorganic, trace metals, and organic parameters (Table 3.2-2), physical, conventional inorganic, and trace metals in Basalt Pond and Russian River (Table 3.2-3), projected effluent quality evaluation based on measured City of Santa Rosa data, and comparison discussion of groundwater quality data including Exhibit 3.2-2. As described in the response to comment L4-18, the water quality impact analysis presented in the draft EIR demonstrates that water quality objectives for all regulated chemical constituents could be met under implementation of any of the project options. In addition, chloride is not a suitable surrogate for most, if not all, other potential chemical constituents of concern typically present in domestic wastewater. In fact, chloride ions in water generally behave in a highly mass-conservative manner and concentrations are largely not affected by physical, chemical, or biotic interactions. However, other constituents typically interact through a variety of physiochemical or biotic uptake interactions in the aquatic environment. Appendix A elaborates on this point as follows: "Other trace constituents that are found in the wastewater at levels above background, such as fluoride, metals, and nitrate, are retarded and/or degraded in the groundwater aquifer, significantly attenuating any conceivable impact to surface waters such as the other ponds or to groundwater."

L4-20 Section 4.0 of the Town's technical report presents an evaluation of the potential water quality effects of the City's wastewater discharges on constituent concentrations in the Russian River. The Town's technical report goes on to suggest that the results of the draft EIR study of measured Basalt Pond and Russian River water quality that is presented in Appendix D of the draft EIR do not accurately represent existing conditions. The review of this portion of the Town's technical report (presented on page 4 of Appendix A) indicates that the analysis "…uses an appropriate general methodology but makes numerous errors with respect to bounding assumptions that lead to erroneous results. As would be expected those erroneous predicted concentrations therefore do not match the *actual* field data collected by the City of Healdsburg in the Russian River." The analysis in Appendix A identified three key errors of the method used in the Town's technical report.

1. The Town's technical report's assumption that all wastewater from Basalt Pond would discharge to the Russian River is shown to be false based on previous modeling performed by LSCE for the City's Wastewater Outfall Relocation Project Draft EIR and Mr. Lambie's own modeling conducted for the Northern California River Watch court case (which show that only between 17% and 26% of the Basalt Pond flow reaches the Russian River). It has been shown in these models that a majority of the groundwater that receives wastewater discharge from Basalt Pond flows out the bottom of the basin along the axis of the valley, not to the Russian River, and this assumption alone leads to a highly inaccurate analysis in the Town's technical report.

2. The Town's technical report's use of maximum constituent concentrations measured in Basalt Pond "is incorrect and leads to a simple exaggeration of the potential impacts."

3. The Town's technical report asserts that the modeling it used and modeling conducted by LSCE for the City's Wastewater Outfall Relocation Draft EIR would suggest that the sample station used current draft EIR was located too far upstream to reflect the area of maximum effect of existing discharges from Basalt Pond. As described in Appendix A, it is expected that seepage to the Russian River from the current Basalt Pond effluent disposal reaches its maximum potential impact at the downstream toe of Phase I and II ponds, based upon modeling conducted both by Luhdorff & Scalmanini and by Mr. Lambie. The data points selected for the draft EIR are representative of the maximum downstream shift in water quality. The Town's technical report incorrectly concludes that the sample point was not

sufficiently downstream to find their predicted impacts when the error is actually in the application of Equation 4.3 to the data.

Based on this analysis, it can be concluded that this portion of the Town's technical report misrepresents and exaggerates the potential water quality impacts of the existing Basalt Pond discharge to the surrounding groundwater and Russian River. The comment's assertion that the draft EIR technical study does not accurately represent the zone of maximum effect of potential seepage from Basalt Pond into the Russian River is unfounded.

L4-21 Please refer to the response to comment S2-9, which addresses this issue. As described, while use of statistical analysis was not as supportable as it would be if a large number of samples were taken, each sample showed virtually no impact from the WWTP. Therefore, the statistical analysis is not important to the conclusion that the project would not result in a significant effect on water quality. As to the issue of variability in sample results, while there was variability among samples, each sample showed virtually no measurable effects of the existing WWTP, and no significant contributions. Regarding the location of the sample, please see the response to comment L4-20.

L4-22 Section 5.0 of the Town's technical report describes a summary of the modeling used to evaluate groundwater quality effects of the City's proposed WWTP upgrade options. This section does not raise any environmental issues. However, an error occurs with the statement that the City's proposed Basalt Pond effluent disposal option would discharge wastewater to the pond "only seasonally during about June-September." In fact, based on the City's existing NPDES permit and cease-and-desist order, the City will be restricted from discharging to the Basalt Pond between May 15 and October 1 after October 6, 2009. No further response is necessary.

L4-23 The two paragraphs of the Town's technical report include two related errors in the statements that the proposed WWTP upgrade options "would approximately double the chloride relative to the ambient groundwater conditions" and the seepage of chloride mass load into the Russian River would be the same as the mass load discharged to the effluent disposal pond options. As described in Appendix A, the chloride load to the Russian River do not equal the chloride released at the effluent disposal point since not all of that flow enters the river. (This is supported by the draft EIR water quality samples.) The analysis of chloride concentrations in the third and fourth paragraphs of page 17 of the Town's technical report are incorrect as they are based upon flawed assumptions and a flawed application of the methods described. All of the impacts of chloride described by their modeling analysis are exaggerated by these errors and do not match actual data from the field, as reported in the draft EIR.

L4-24 The comment asserts that the draft EIR was incorrect when it concluded, based on the measured data from the draft EIR technical study, that there was no impact on Russian River water quality from the existing Basalt Pond operations. The comment misrepresents the use of the data in the EIR and conclusions presented. The information was included in the draft EIR because it reflects the best available information with which to document the existing effects of the City's wastewater disposal operations. Refer to the response to comment L4-20, which summarizes Appendix A and confirms the validity of the draft EIR study. Therefore, the City finds that the Town's technical report does not include substantiation that would discount the EIR's conclusions.

L4-25 The comment's assertion that the draft EIR did not quantitatively evaluate potential water quality impacts of the WWTP upgrade options, and the suggestion that the draft EIR is incomplete without a groundwater model, misrepresents the findings of the draft EIR. As described in the response to comment L4-2, the draft EIR demonstrates that the water quality effects under all of the proposed effluent disposal options would comply with applicable water quality objectives. As described in Appendix A, analysis and measurements have been provided in the draft EIR to assess the potential significance of effluent disposal options on groundwater and surface-water resources. Both the quantity and quality effects have been considered and they do not rise to the level of significance required for the more detailed studies recommended by the Town. Moreover the water flow system between surface water disposal points, groundwater, and subsequent surface water entry points does not behave as a direct conduit, as the Town's technical report contends. Therefore, the City finds that the Town's technical report does not include substantiation that would discount the EIR's conclusions.

O1

Community Clean Water Institute
6741 Sebastopol Ave. Ste. 140 Sebastopol, CA 95472 707 824-4370 www.ccwi.org

March 21, 2005

To: publicworks@ci.headsburg.ca.us

From: Mike Sandler, Program Coordinator, Community Clean Water Institute

Re: Comments for Healdsburg WWTP Upgrade EIR

For the Public Record

The Community Clean Water Institute is a non profit based in Sebastopol California, which assists citizens in becoming advocates for clean water. We appreciate this opportunity to share our views regarding the EIR for the Healdsburg Wastewater Treatment Plan Upgrade. CCWI's comments relate to the following topics: CA Toxics Rule (no Mixing Zones), potential for subsurface irrigation of redwoods as a wastewater disposal alternative, and the importance of considering the impacts to climate change in the upgrade.

I. No Mixing Zone

The California Toxics Rule adds more than 120 chemicals that sewage treatment operators must test for, and in some cases, either drastically reduce or completely remove from treated effluent before discharging wastewater into rivers, tributaries and other surface waters. This is of special concern in and around the Middle Reach of the Russian River, which serves as drinking water aquifer for a half million people. We believe that Mixing Zones are loopholes around the Toxics Rule, and we encourage Healdsburg to plan to meet the Rule without relying on Mixing Zones. One way to do this is to discontinue use of Basalt Pond, and instead irrigate redwood trees. O1-1 O1-2

According to current legal decisions, Basalt Pond is considered a tributary to the Russian River and the City was ordered to Cease and Desist discharging to Basalt Pond by 2009. Upgrading the Treatment Plant to allow reuse of reclaimed wastewater will be environmentally beneficial in many respects. O1-3

II. Subsurface irrigation of Redwoods

Several groups including Friends of the Russian River advocate including subsurface irrigation of redwoods as a method of wastewater disposal. This is an inexpensive alternative, will treat the wastewater to better quality through interaction with soil microbes and has the potential to provide several economic benefits to the city. O1-4

A study sponsored by the City of Santa Rosa and Sonoma State University has found that a single mature redwood tree transpires 500 gal of water in a day, and as few as nine mature redwood trees can consume as much water as 1 acre of grassland. A plantation of redwoods with the easily supportable density of 200 trees/ac have the transpiration potential of 100 000 gal/ac/d, 2000% higher than the top rate achievable by pasture irrigation.

A side benefit of the subsurface irrigation of redwoods option is the possibility for a real revenue stream in the future for the city, or its subcontractor, via sustainably harvesting the redwood trees. Just as the City of Petaluma will enjoy the benefits of recreation and environmental education with their wetland water treatment, Healdsburg could enjoy a redwood park, occasionally thinning the redwood grove and selling the timber.

CCWI strongly recommends the City of Healdsburg consider subsurface irrigation of redwoods as an option for disposing of its wastewater. O1-4 Cont'd

III. Consider Climate Change

Subsurface irrigation of redwoods also benefits air quality and protects the climate. CCWI has enthusiastically supported the City of Healdsburg's endorsement of the Cities for Climate Protection Campaign. The City Council has shown great leadership in pledging to reduce their greenhouse gas emission over the next 10 to 20 years.

CCWI would like to emphasize the importance of considering the impacts to climate change in the wastewater plant upgrade. In many cases, the option with the fewest greenhouse gas emissions will most likely be the most efficient from a cost perspective as well. Subsurface irrigation of redwoods can result in "carbon sequestration," taking CO2 out of the atmosphere, resulting in carbon credits, and taking Healdsburg and the other cities which are also part of the Cities for Climate Protection Campaign closer to their stated goals of reducing their impact on the climate. The energy use at wastewater treatment plants can account for a significant portion of costs of operating the plant. Efficiency measures, when considered early in the design process, can save millions of dollars over the life of the project. Aeration blowers are large energy users. Anaerobic processes, in contrast, use less energy, and create methane, which can be used as co-generation at the plant. Capturing the methane, which is a greenhouse gas, and using it brings a double dividend, and is a best practice in wastewater plant upgrades. O1-5

Thank you for your consideration.

Sincerely,

Mike Sandler
Program Coordinator

LETTER O1 RESPONSE

Community Clean Water Institute
Mike Sandler, Program Coordinator
Received March 21, 2005

O1-1 The mixing zone provision of the State Implementation Plan (SIP) for California Toxics Rule (CTR) compliance is one of several regulatory protocols that the City and RWQCB can consider in the development of a preferred set of treatment plant design and effluent disposal options and the associated discharge permit conditions that will be imposed on the facility. The City cannot commit to eliminating from consideration any of the available avenues for compliance with applicable regulations and policies that govern wastewater discharges as suggested by the comment. In particular, the RWQCB recently initiated development of a new mixing zone policy for inland waters, including the Russian River and its tributaries. The City is a member of a consortium of regional municipal wastewater dischargers that are assisting the RWQCB with development of the policy. Consequently, the RWQCB and discharger consortium view this effort as an important process that needs to be completed to improve the science, environmental protections, and applicable regulatory strategies for regional wastewater discharges.

Regardless of the City's position on the mixing zone policy development, the draft EIR shows that the proposed project is not expected to require a mixing zone to be in compliance with applicable water quality objectives. As described in Section 3.2 of the draft EIR, the potential operations water quality impacts were evaluated primarily on an end-of-pipe basis with current existing measured effluent and receiving water quality data and the projected effluent quality following implementation of tertiary treatment upgrades. Based on the City's existing measured effluent quality data, only the concentrations of total copper have been slightly elevated relative to applicable acute and chronic CTR criteria, and aluminum has been slightly higher than the EPA-recommended chronic criteria. However, additional contaminant removal that is anticipated following implementation of the tertiary treatment process upgrades, including filtration and chemical coagulation (if needed), are expected to decrease the concentrations of these constituents so that they fall within the applicable water quality objectives.

In addition and specifically with respect to copper, the draft EIR did not discuss the potential for site-specific adjustment of the applicable water quality objectives based on a water effects ratio (WER). Aquatic toxicity from copper depends on the receiving water hardness value, and the CTR acute and chronic criteria for copper include adjustments for hardness. In addition, toxicity may also vary depending on the concentration of other constituents (e.g., organic carbon, sulfate, sodium, alkalinity, and pH) known to affect copper's bioavailability. The CTR allows for criteria adjustments with the use of an approved WER that is applied as a direct multiplier of the hardness-based criteria. The WER is a measure of bioavailability and toxicity of a metal in the receiving water divided by the same measure in laboratory waters used to derive the criteria. Based on nationwide studies that have been conducted with a spectrum of municipal wastewaters, and in combination with EPA's streamlined guidance for deriving copper WERs (EPA 2001), the range of WER values in wastewater is approximately 5-20. Therefore, the development of a site-specific WER by the City could be expected to result in applicable copper CTR criteria that are multiplied by the WER. Thus, the City's existing NPDES interim copper permit limit of 11 μg/L could increase to a range 55-220 μg/L using the nationwide WER values. As identified in the draft EIR, the existing maximum total copper value measured in the City's effluent was 30 μg/L. Consequently, the analysis in the draft EIR, in combination with the governing procedures used to establish the protective water quality objectives applied to waste discharges by the RWQCB, provides sufficient evidence that the proposed project could be implemented and fully comply with permit requirements, regardless of any mixing zone provisions that may be applied.

O1-2 Irrigation of trees, agricultural crops, or urban landscape with recycled wastewater within the Mediterranean climate of the project area provides for effective seasonal recycled water use in the warm, dry months of the year such that other means of discharge are not necessary. However, as a result of the cool winter periods and associated dormancy of most vascular plants, the resulting low rate of evapotranspiration, and potential indirect or extraneous influences such as high groundwater or flooding, irrigation reuse is not a feasible mechanism for reuse of all the wastewater produced in accordance with applicable Title 22 reclamation requirements and typical RWQCB waste discharge requirements.

For instance, redwood trees evapotranspire large quantities of water, but nearly all during summer months. According to Becking (1967), as cited in Snyder (1992), 69–90% of evapotranspiration occurs during the summer growing season. The process of evapotranspiration is heavily influenced by heat and water availability; during summer months, when temperatures increase and water availability is low, redwoods transpire water as a cooling mechanism.

The ecology of redwoods and other plants and trees presents two problems associated with year-round winter irrigation in the project area: (1) water use by these species is relatively low in the winter, and (2) winter rainfall saturates soils in all but the driest years. Thus, any wastewater irrigation that occurs would compete with natural rainfall. Further, winter wastewater inflows to the WWTP typically are higher than during the summer season. The result is that a higher proportion of the City's total annual wastewater volume is generated during this low irrigation uptake season. Thus, the combination of physical limitations of wastewater flow and the ecology of redwoods result in the need for other, more reliable means for treated wastewater disposal during the wet season. As shown in the draft EIR, no significant impacts on water quality would result from wet weather irrigation.

Therefore, the suggestion that redwood tree irrigation would fully address the wastewater disposal or recycled water use requirements does not reflect the physical and regulatory constraints that exist for such seasonal irrigation activities.

O1-3 The comment incorrectly states that the City was ordered to "Cease and Desist discharging to the Basalt Pond by 2009." The City has been required to comply with *seasonal* discharge prohibitions by October 6, 2009, not to cease discharge to the Basalt Pond altogether. The comment supporting SIR options as an element of the preferred project is noted and will be considered in City deliberations over the project.

O1-4 The comment will be noted by the City as support for seasonal reuse of recycled water for irrigation of redwoods. The Syar Property SIR option identified in the draft EIR and described on pages 2-25 and 2-26 includes the planting of redwoods. A final EIR must include a response to comments on environmental issues on the draft EIR (State CEQA Guidelines, Sections 15088 and 15132). Recommendations for or against a particular SIR option address the merits of the project and do not necessarily pertain to specific environmental impacts of the project.

It is noted that although the City understands the benefits described in the comment and the desires of the commenter and other commenters who prefer the use of redwoods for treated effluent disposal, this method is not a reliable year-round method for treated wastewater disposal; please see the response to comment O1-2.

The City Council will consider the specific recommendations identified in the comment letter as well as the information presented in the EIR as a basis for its decision regarding selection of an option or combination of options.

O1-5 The comment will be noted by the City as support for consideration of anaerobic treatment processes to be included in the design of the WTPU option that is ultimately selected. No further response is necessary because no environmental issues were raised.

O2

Concerned Citizens of the Healdsburg Area
638 Foreman Lane
Healdsburg, Ca 95448

March 20, 2005

Mr. Jim Flugum
Senior Civil Engineer
City of Healdsburg, Community Development Center
401 Grove Street
Healdsburg, CA 95448-4723

Dear Mr. Flugum,

We wish to submit this response to the Draft EIR of the City of Healdsburg Wastewater Treatment Plant Upgrade Project.

We appreciate the City of Healdsburg's efforts to progress with a plan to treat its waste water to a high level of quality.

In the meetings we have had with various commissioners and city officials we have repeatedly expressed our desire to work together and develop a mutually beneficial solution to the waste water treatment plant issue. It is in that spirit that we wish to continue this dialogue in this letter.

EIR:

As we are in the pre-planning phase of this project, it should be recognized that this is a program EIR. Once a project has been identified and approved, a project EIR should be required. O2-1

Effluent Disposal Options:

The most daunting issue to be reckoned with is the disposal of the effluent. Of the options the EIR has reviewed, there are clearly more desirable ones listed below:

Geysers Recharge Pipeline: We feel that discharging effluent into the pipeline to the Geysers is the best option. In the EIR the cost difference between using the pipeline and the other options has not been adequately addressed. According to discussions with city staff, it is not an option at this time to discharge into the Pipeline. We think that this could and should be pursued further. O2-2

The best solution of the options listed in the EIR plan for effluent disposal is to discharge into the Basalt Pond, assuming that wastewater is treated to tertiary quality, Title 22 standards. Any additional effluent can be disposed of by means of a seasonal irrigation reuse system, assuming that wastewater is treated to tertiary quality, Title 22 standards. Additionally, winter discharge to the Russian River, O2-3

per the RWQCB's basin plan is an acceptable supplement.

Pond 5, because it flows directly to the aquifer, should not be used for discharge. Our understanding is that it would be too costly to seal it. O2-4

Shallow percolation ponds are not an acceptable option. This option is extremely expensive because of the costs of construction, maintenance, property acquisition, and potential condemnation litigation. It would destroy valuable agricultural land. The shallow percolation ponds, as described in the Draft EIR, would be a direct discharge into the aquifer. O2-5

- We are curious why the draft EIR identified smaller, more developed parcels with residences, instead of larger more rural parcels, which would have lower acquisition costs. Please explain this. O2-6
- We are also expecting a better explanation of excluding the option of discharging effluent to the Geysers conveyance pipeline. O2-7

Wastewater Treatment Plant Upgrades:

Construction

A private independent construction inspector should be contracted to inspect and approve compliance of the construction plan. O2-8

Aesthetics (trees, landscaping details)

The Wastewater Treatment Plant should use technology that produces high quality water, minimizes the size of structures and minimizes noise night lighting, traffic, and odors. O2-9

A proposed 25 ft. building, the Solids Handling Building, would be unattractive and incompatible with the area and existing structures. Consider building it partially below grade to minimize visual impact and to keep it in line with current building heights. Additionally, landscaping should be used to screen buildings and to encourage wildlife habitat. Any ponds should be enclosed with earth berms 12 feet above grade to minimize visual and odor issues.

A distance of at least 70 feet should be allowed between the wastewater treatment and storage buildings, tanks, ponds and equipment and any neighboring property. That area should be landscaped in a manner that considers aesthetics and compatibility with the area. Landscaping design should consider its compatibility with local agricultural crops and local wildlife habitat. Additionally a committee of local residents should be formed to review and approve such plans. O2-10

Location of buildings

Treatment structures and equipment (such as Solids Handling Facilities, the Alkalinity Addition Facilities, the Screening, Grit Removal and Flow Diversion Structure, the Solids Thickening and Storage Tank, the Aeration Basins, the Blower Building, Secondary Clarifiers, the Anoxic and Aerobic Zones, Membrane Tanks, the Effluent Disinfection Basin, and the Effluent Pump Station) should be located on property just east of parcel number 110-13-12. This location will have the least amount of impact on any neighbors and mitigate any visual impacts. O2-10 Cont'd

Social Impact:

Construction activities and operations of the plant (noise, machinery, lighting, odors, etc.) should not interfere with the quality of life of the people in the area. Construction and operations should respect and minimize impact on the wildlife and habitat of the environment.

This project should use the human resources of the community to contribute ideas and to create a sense of community pride and ownership.

Economic Impact: O2-11

The location of Healdsburg's proposed wastewater treatment plant is near the gateway to the Russian River Valley. In this area, the vineyards are extremely high quality containing the very best Pinot Noir and Chardonnay grapes in the Western Hemisphere. Productivity of these vineyards is also very high. Loss of this valuable farmland would be a permanent and irreplaceable loss to the economy of this region. The City of Healdsburg has prospered by wine-industry related tourism to city businesses. That economic asset should be respected, and this valuable vineyard land preserved. The city of Healdsburg should not condemn property that is intended to be used for grape-growing, long term.

Plant Operations:

In order to mitigate the traffic impact on Foreman Lane, solids removal, employee access and other transportation should use the Syar levee haul road. O2-12

Plant hours of operation and noise levels should be considerate of residents. O2-13

In areas where seasonal irrigation reuse is conducted, soil composition should be sampled and tested regularly by a private, independent testing company. If testing shows that there is a measurable increase of pollutants, then the water treatment should be increased to a higher level of quality. A committee which includes representatives of the residents in the area should be formed to regularly review and inspect the records of water and soil quality. O2-14

We feel this above proposal best solves the needs of the City of Healdsburg, compliance with relevant agencies, consideration of the immediate environment and respect for the rate-payers of the city of Healdsburg.

We look forward to work with the city to address the details of how this plan would be executed.

Respectfully:

Joe De Benedetti 638 Foreman Ln. Healdsburg ____________________

Ramona De Benedetti 638 Foreman Ln. Healdsburg ____________________

Rosanne De Benedetti 638 Foreman Ln. Healdsburg ____________________

Chris De Benedetti 638 Foreman Ln. Healdsburg ____________________

Stephan De Benedetti 638 Foreman Ln. Healdsburg ____________________

Joe De Benedetti 23 Hop Ranch Ct. Santa Rosa, 95403 ____________________

Dennis Hill 745 White Gates Ave, Healdsburg, ____________________

Melinda Hill 745 White Gates Ave, Healdsburg, ____________________

Ann Hill 725 Grove Street Apt 311 Healdsburg ____________________

Donna Gregor 521 Foreman Lane, Healdsburg ____________________

Michael Gregor 521 Foreman Lane, Healdsburg ____________________

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Maureen Shea 481 Foreman Lane, Healdsburg ____________________

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George Brown 792 Foreman Lane Healdsburg, ____________________

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Sharon Soracco 631 S. Fitch Mtn. Rd. Healdsburg Sharon Soracco

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Geri Borri 452 Foreman Lane Healdsburg Geri Borri

Joanne Borri ____________Healdsburg ______________________________

Naomi Brilliant 581 Foreman Lane Healdsburg ______________________________

Tom Johnson ______________________________

John S. Soracco 7915 Fox Hollow Pl. Windsor John S. Soracco

Dennis De La Montanya

LETTER O2 RESPONSE

Concerned Citizens of the Healdsburg Area
Numerous signatories
Received on March 21, 2005

O2-1 The draft EIR is specifically designed to be a project-level assessment of environmental impacts of the proposed options, or any combination of options, as described in Section 1.2 (page 1-2) and on page 3-2 of Section 3, "Approach to the Environmental Analysis." The City used data and analytical methods in the draft EIR that were adequate, pursuant to CEQA requirements, to fully address and disclose the potential environmental impacts and necessary mitigation measures for any specific combination of WTPU, ED, and SIR options that may be selected for implementation. No new environmental analysis would be needed unless it was determined that a new significant effect not identified in the EIR would occur or if a previously identified significant effect would be more severe than analyzed.

O2-2 The response to comment S2-1 describes the status of the City of Santa Rosa's Geysers Pipeline facility and the reasons why the City considers it not to be a feasible option for effluent disposal at this time. Because the option is not feasible, the costs of the option are not relevant to the City's current process of planning, design, and development of the WWTP upgrade.

O2-3 The comment will be noted by the City as support for the Basalt Pond and winter Russian River discharge as preferred effluent disposal options for the preferred project. As noted in the response to comment O1-4, comments that express support for or opposition against a particular option and do not raise environmental issues require no further response. However, the recommendations provide important input that the City will consider, along with the draft EIR, when selecting the preferred project.

O2-4 The comment will be noted by the City as opposition to the use of the Phase V Pond for effluent disposal in the preferred project. As proposed, the Phase V Pond would not include installation of any sealer to prevent discharge of water.

O2-5 The comment will be noted by the City as opposition to the construction of shallow percolation ponds for effluent disposal in the preferred project.

O2-6 As described in the response to comment S2-12, the conceptual designs, size, and location of the proposed shallow percolation ponds option were developed primarily to achieve project objectives, in light of the range of engineering feasibility, costs, and environmental effects. Because the complexity and sizing of infrastructure required for development of percolation facilities and SIR options are the primary capital and operating cost variables, the location of the facilities with respect to the WWTP is a key factor of the overall costs. The most important physical variables are suitable soils, hydrogeologic conditions, and suitable terrain conditions, which are all relatively equivalent within the immediate vicinity of the WWTP site. Existing land costs and environmental conditions are considered important variables for the lands that met engineering suitability criteria; however, the existing land use and environmental conditions are also very similar in the project area. The City does not own sufficient land in the area to construct shallow percolation ponds, so any potential options would require property acquisition from private landowners; therefore, the status of land ownership was not a factor in the siting decision. Further, there are no known alternative locations for shallow percolation ponds that would not involve similar environmental impacts or that would substantially reduce any of the significant environmental impacts of the selected location.

O2-7 The response to comment S2-1 describes the status of the Geysers Pipeline facility and the reasons why the City considers it not to be a feasible option for effluent disposal at this time.

O2-8 Section 2.7.3, "Construction Management Structure," describes the construction inspection process. No single construction management structure is typical for public entities constructing similar wastewater projects; these entities either may use their own inspections staff or may relay on contracts with outside firms for these services. Outside services typically are used where the public entity does not have its own full-time staff with the expertise and experience necessary to inspect and manage such a project. The City does not currently use private subcontractors to inspect public works construction projects because it has its own staff of experienced construction inspectors and project managers who have the necessary experience and expertise. The comment provides no information to suggest how this arrangement would reduce construction-related project impacts. In fact, the City has found its current arrangement superior because it provides for more direct and effective communication and accountability in the resolution of construction-related issues. Regardless, the draft EIR is based on the assumption that facilities would be constructed according to the approved project plans and specifications. Consequently, the method of construction inspection would not have any bearing on the environmental effects of the project.

O2-9 The proposed WWTP upgrade would be consistent with the recommendations stated in this comment. The WWTP upgrade options would produce tertiary treated wastewater that meets Title 22 water recycling requirements for unrestricted reuse. Constructed facilities for the project are specifically proposed for the east side of the City-owned property at the WWTP to maximize the distance of facility operations from adjacent landowners. In addition, as described in Chapter 2 of the draft EIR, the project-related facilities would be constructed and operated in a manner to minimize adverse noise, traffic, and odors. Lighting would not appreciably change from existing conditions.

O2-10 This comment recommends that the City consider several specific design requirements for the constructed WWTP upgrade facilities, including building height, facility setback distances to adjacent parcels, landscaping objectives, and specific placement of facilities east of parcel 110-13-12. Many of the specific facility construction, design, materials, and appearance are preliminary at this stage and would be finalized along with the facility engineering design phase of the project. Given the site's current use for wastewater treatment and storage, and the fact that the tallest building would be similar to the height of a two-story house, the proposed visual changes resulting from the project are not considered substantial. The comment also states that several project-related environmental effects (e.g., noise, machinery, lighting, odors) should not interfere with quality of life. The draft EIR addresses these effects. Lighting details for the WWTP will be finalized during the engineering design phase; however, it is expected that the facility would not cause adverse light or glare impacts on nearby residences because it would have only normal safety and security lights, not higher mast lights or other lighting structure that would cast glare off the property. Lighting would be designed to be indirect, downcast, or diffused and directed away and/or shielded to minimize spillage onto adjacent properties.

Overall, the wastewater treatment facilities are proposed for placement along the eastern edge of the City-owned property (located generally east of the referenced parcel) and would minimize the disturbance of local residents. The new effluent storage pond would be constructed on the northern portion of the City's WWTP property adjacent to Foreman Lane and would largely block the view of the treatment process upgrade facilities.

The comment also recommends a committee of local residents to review and approve plans and a general suggestion to use human resources of the community to contribute ideas. Pursuant to Articles 9 and 26 of the City's Zoning Ordinance for Public Facilities, the Planning Commission is responsible for conducting design review for the project, and public input regarding the project can be provided to the commission; therefore, an additional review committee is not required. Nevertheless, these recommendations are noted for the record and will be considered by the City and Planning Commission in their deliberations on the project.

O2-11 This comment refers to several social and economic effects of the project. However, as described in the response to comment S2-10, CEQA does not provide for evaluating socioeconomic effects of the project as environmental impacts. As required by CEQA, the draft EIR focuses on whether the project would have a significant effect on the environment as defined by "a substantial change in the physical conditions." Thus, project-related effects on "quality of life" factors that are not related to physical environmental effects, or economic loss of vineyard production, as suggested in the comment, cannot be considered environmental impacts. Because the shallow percolation ponds are the only option that results in permanent conversion of agricultural land, the City will consider that this comment expresses opposition to the construction of shallow percolation ponds.

O2-12 The City believes that the draft EIR is correct in concluding that traffic associated with the WWTP upgrades project would not cause significant impacts. The WWTP upgrades will require only up to eight additional employees and a small increase in the quantity of truck hauling for solids disposal (i.e., about two additional trips per week). The Westside Road/Mill Creek Road intersection operates at a traffic level of service (LOS) rating of A; thus, all smaller roads, including Foreman Lane, also have similar unimpeded traffic conditions. Consequently, the incremental increase of up to eight trips in the peak hours associated with WWTP operations is not substantial and would not cause significant adverse effects on traffic. Pursuant to the State CEQA Guidelines, CCR Section 15126.4(a), mitigation measures are required only to avoid or minimize significant environmental impacts.

O2-13 Operations at the plant would require an increased labor force of approximately 3.5 to 6.5 full-time equivalent employees. However, the additional employees and stationary noise sources associated with WWTP operations are not expected to cause significant changes in existing noise levels and not exceed applicable standards at nearby receptors (see page 3.7-14 and 3.7-15 of the draft EIR), and the WWTP hours of operations are not expected to change.

O2-14 The City would comply with the terms and conditions of recycled water reclamation requirements that would be issued by the RWQCB for the SIR options. Water reclamation requirements typically require frequent water quality sample collection and monitoring of recycled water and shallow groundwater monitoring wells, and the RWQCB has the authority to mandate changes in operations if water quality monitoring indicates exceedence of applicable permit requirements. Whether any requirement for long-term soil tests would be included as a permit requirement is not known at this time. However, soil tests are not typically required in water reclamation requirements because soil particles and microbial activity provide contaminant attenuation and removal, and long-term application of recycled water to soils does not cause harmful buildup of constituents in soil.

Regarding a committee of residents, all testing conducted by the City would be available for review on request.

O3

Forensic Management Associates
60 East Third Avenue
San Mateo, CA 94401

March 21, 2005

TO: Mr. Jim Flugum
Senior Civil Engineer

Comments Regarding:

CITY OF HEALDSBURG
WASTEWATER TREATMENT PLANT UPGRADE PROJECT

At the request of the West Side Association to Save Agriculture, I have reviewed the draft EIR and my comments follow:

I. THE PROJECT ELEMENTS (UPGRADES)

1. WWTP UPGRADES
   A. Extended aeration coupled with biological nitrate removal and tertiary filtration,
      or
   B. Membrane bioreactor with biological nitrogen removal

2. DISCHARGE OPTIONS
   A. Tertiary effluent to the Russian River (October to May)
   B. Tertiary effluent to Phase V pond
   C. Tertiary effluent to 60 acre shallow ponds
   D.
3. ALTERNATE CONSIDERATIONS
   A. Using treated effluent for irrigation purposes

II. COMMENTS

It is apparent that the City of Healdsburg has finally proposed an upgrade of the plant with the addition of a third step - tertiary treatment - a strong suggestion which I made several years ago to the Mayor of Healdsburg.

Addressing the discharge options, the final effluent to be discharged after completion of the plant is certainly suitable for discharge to the Russian River during high flow months. However the primary issue as regards the alternative modes of discharge represent the more critical and pressing issue. O3-1

Alternate mods of discharge, including discharge to pond V and to shallow percolation ponds must also be evaluated as to the effect of these discharges to the local groundwater. In order to safeguard ground water one must also address current drinking water standards.

The Draft EIR does not address this issue. In fact, I could not find any drinking water standards in the draft EIR. O3-2

Why are drinking water standards a key issue in the final decision(s) as to where to discharge plant effluents? One must understand that whereas Russian River water receives treatment prior to is use and distribution downstream, no such treatment presently exists for those residing in unincorporated areas - where drinking water as well as irrigation needs are met my pumping groundwater. Clearly this is a major flaw in the draft EIR.

In reviewing disposal alternatives, there seems to be a bias to the use of shallow percolation ponds. It should be understood that this is a common treated effluent disposal practice, however, there is no current data presented in the EIR as to what effect this practice will (or will not) have on the quality of well water.

Shallow pecolation ponds derive their treatment efficiency by further biological degradation of biodegradable matter and by adsorption and absorption of remaining pollutants. O3-3
The greater the thickness of the soil mantel (particularly the bioactive soils) the greater is the possibility removing residual pollutants.

The issue here is not that shallow ponds do not work, but just how they will work when the ponds are located over an apparently pristine groundwater.

III. RECOMMENDATIONS

In my professional opinion there is a reasonable solution by which to address this concern. The City of Healdsburg should locate a series of monitoring wells in the vicinity of the proposed shallow percolation ponds and test the wells for four consecutive quarters so as to establish the groundwater quality background. Having accomplished this step, several options are then open:

1. If the tested wells exhibit the presence of trace pollutants currently on the drinking water list, then we will have established the factual " purity" of the drinking water (groundwater) by documenting it's current quality. One then can estimate O3-4
the potential effect from the discharge (from percolation ponds) when co-mingling with the groundwater.

2. If the test wells meet all current drinking water standards, but after implementation of the shallow percolation ponds, the water is found to be degraded (to be determined by periodic testing) , the City will be in the position of having to rectify the contamination problem. Two alternatives are suggested should this degradation come about:

A. Since at this point the combined system would be in and operational, the city could supply treated (city) water to the affected properties.

O3-4 Cont'd

A. The city should pay for the installation of point of entry treatment systems on the affected properties so that the groundwater then meets drinking water standards.

IV. SUMMARY

I am a supporter of both tertiary treatment as well as the use of shallow percolation ponds for disposal of treated effluents, HOWEVER, anticipatory knowledge hopefully precludes subsequent remedial action. It has been demonstrated time and again that an ounce of prevention is worth a pound of cure. As an engineer I would hesitate designing and building an updated facility without knowing all of the facts and ramifications. To operate "in the dark" could ultimately bring about litigation, by the damaged parties, against the City.

Respectfully,

Franklin J. Agardy, Ph.D.

LETTER O3 RESPONSE

Forensic Management Associates
Numerous signatories
Received on March 21, 2005

O3-1 The comment will be noted by the City as support for seasonal effluent disposal via the winter discharge to the Russian River option evaluated in Section 5.5 of the draft EIR.

O3-2 The water quality analysis presented in the draft EIR did consider primary and secondary drinking water quality standards, where applicable. Table 3.2-4 identifies applicable regulatory water quality objectives, including drinking water standards, and drinking water quality standards are specifically described on page 3.2-24. The potential water quality impacts were specifically evaluated with respect to applicable drinking water quality standards as described on page 3.2-28 of the draft EIR. As described in the responses to comments S2-5, S2-8, and S2-9, the water quality analysis presented in the draft EIR shows that all the proposed effluent disposal options would meet applicable water quality objectives and not degrade beneficial uses, including for drinking water.

O3-3 The comment's assertions that the draft EIR is biased in favor of shallow percolation ponds for effluent disposal and that the draft EIR does not evaluate groundwater quality impacts of shallow percolation ponds are not correct. The potential environmental impacts of all WTPU, ED, and SIR options were evaluated at an equal level of detail. The shallow percolation ponds option was not identified as the environmentally superior effluent disposal option in the draft EIR, and the City has expressed no preference for its implementation. The potential impacts on groundwater quality are addressed in the discussion of Impact 3.2-3, starting on page 3.2-24.

O3-4 The comment recommends baseline groundwater monitoring in the vicinity of the proposed shallow percolation ponds to characterize existing water quality conditions in order to support the evaluation of potential impacts of the proposed effluent disposal option, and additionally recommends corrective measures for potential future changes in groundwater quality. As described in the responses to comments S2-5, S2-8, and S2-9, the analysis of existing and projected effluent quality data shows that the proposed effluent disposal options would meet applicable water quality objectives and not degrade beneficial uses. The draft EIR was based on an extensive database of existing WWTP effluent and groundwater quality data. Therefore, the analysis of potential water quality impacts and CEQA significance conclusions presented in the draft EIR are supported by substantial evidence, and additional data are not necessary to support the analysis. In addition, because the water quality analysis of effluent disposal operations found that there would be no significant water quality impacts, mitigation measures are not necessary to support the City's approval and implementation of these options.

O4

RUSSIAN RIVERKEEPER
FRIENDS OF THE RUSSIAN RIVER

Mr. Jim Flugum
Senior Civil Engineer
City of Healdsburg
Community Development Center
401 Grove Street
Healdsburg, CA 95448

March 21, 2005

Re: Comments on DEIR - Wastewater Treatment Plant Upgrade Project

Dear Mr. Flugum,

I am submitting comments on behalf of the Friends of the Russian River and our over 1400 members. Although we haven't had adequate time or resources to review every detail in the DEIR, we have noticed a number of errors and inconsistencies between this document and previous studies to warrant further clarification in order to comply with CEQA. In this regard, we support the comments of WASA, Daniel Wickham and Scott Stegman and their testimony in this process.

In our view this project can be viewed with a simple premise, that high quality effluent solves it's own disposal problem. If Healdsburg chooses upgrading to a modern AWT plant the city will be able to comply with current effluent limitations and likely meet more stringent effluent limitations in the future. Healdsburg could also choose a less expensive method whereby soils are used as the final polishing process. Meeting Title 22 Drinking Water Standards and discharging into Phase V or VI pits will not meet current groundwater protection goals or provide long-term regulatory compliance and only increase our net cost over time. O4-1

Any discharge to the Syar Phase V or VI pits would constitute a discharge to groundwater and we believe discharging to a "new" pit would be subject to the same regulations as direct discharge. This increases the need to move to AWT, wherever disposal is located. This fact is made clear by considering the fate of naturally occurring mercury when subject to the high levels of nutrients in the present effluent. Recent data is appears to show that terrace mining gravel pits or open pit mining allows organic matter to settle with naturally occurring mercury in the anoxic depths of the pits. This leads to increased methylation rates and converts a much larger fraction of elemental Mercury to Methyl--Mercury. How will Healdsburg ensure that un-treated nutrients don't increase Methyl-Mercury concentrations in the pits and violate the basin plan objective for toxicity? O4-2

Presently numeric effluent criteria don't exist for nutrients, this will change before we get a new plant built. Any upgrade to our existing plant should factor in future nutrient limits. Looking at Santa Rosa's nutrient removal efficiency I wouldn't use that plant design as SR averages over 2.5mg/L of Phosphate and elevated levels of nitrogen as well. I have been O4-3

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getting information in a Zenon membrane bioreactor system installed in October in Traverse City Michigan with a capacity of 8.5 mgd and 17mgd peak. This plant is exceeding numeric effluent limitations by over 50%. This system was an upgrade to an existing plant and cost roughly $25 million but our capacity needs are much lower. What this price tag buys our city is a plant that will exceed future nutrient criteria, produce higher removal rates for metals and other compounds and be useable in more re-use applications. I strongly urge you to look at this type of plant and it's performance instead of looking at a typical US tertiary plant like Santa Rosa or Windsor. O4-3 Cont'd

Healdsburg has another option available with sub-surface redwood or riparian forest disposal that adds another step to the treatment process via soil microbes. I just received a study on bioretention systems for stormwater control and soils sequester and consume all nutrients, most metals and can break down some pesticides - all due to the microbial activity in soils. A soils based disposal system coupled with a moderate upgrade in treatment efficiency would meet current regulations and possibly future regulations as well. If Healdsburg were to select this option, we would work with the city to address any concerns the Regional Water Board had about groundwater pollution and I believe the neighbors in the plant vicinity would back you as well. O4-4

I look forward to the day when our sewer bill overages actually turn into an upgraded facility that I can be proud of when I flush.

Sincerely,

Don McEnhill

Don McEnhill
Russian Riverkeeper

LETTER O4 RESPONSE

Russian Riverkeeper
Don McEnhill
Received on March 21, 2005

O4-1 The first part of this comment indicates support for the proposed WWTP upgrades to tertiary treatment to serve effluent disposal that would comply with current and potential future effluent limits and receiving water quality objectives. However, the City believes the second part of the comment reflects a misinterpretation of the project description for the three ED options that were evaluated by stating that "meeting Title 22 drinking water quality standards and discharging into Phase V or VI pits will not meet current groundwater protection goals" and "discharging to a new pit would be subject to the same regulations as direct discharge." First, effluent disposal to Syar's proposed Phase VI Pond is not one of the ED options under consideration by the City in the draft EIR. Second, tertiary treatment is explicitly included in the project description because it is the level of treatment required to meet Title 22 regulations for unrestricted use of recycled water, including groundwater recharge. The applicable water quality objectives for groundwater in California that support the municipal and industrial beneficial use category are precisely the Title 22 primary and secondary drinking water standards. Tertiary treatment processes are also generally required to meet other relevant Basin Plan and CTR aquatic life and human health objectives. Therefore, as identified in the draft EIR and described in the responses to comments S2-5 and S2-8, the analysis of existing effluent water quality data and projected effluent quality with tertiary treatment demonstrates that all the proposed effluent disposal options would meet established water quality objectives (i.e., drinking water, Basin Plan, and CTR aquatic life objectives) and would not degrade beneficial uses.

O4-2 The water quality analysis presented in the draft EIR was based on the evaluation of potential project-related operations to exceed established water quality criteria. There are no established numerical criteria for methyl-mercury in the Basin Plan, CTR, or EPA's National Recommended Water Quality Criteria. However, the City's existing data indicate that the secondary effluent does not exceed the established CTR human health criteria for total mercury. The comment refers to unspecified recent data that suggests nutrients in wastewater discharges increases methyl mercury formation; the City can offer no specific response without an understanding of the referenced information. However, the proposed tertiary treatment processes would specifically result in dramatic reductions of biochemical oxygen demand, suspended solids, nitrification and denitrification, and other associated nutrient loadings under any of the ED options compared to existing conditions. Therefore, any existing potential for methyl mercury formation would be reduced considerably compared to existing conditions, and tertiary treatment would beneficially reduce the risks of toxicity associated with methyl mercury.

Finally, it is speculative to consider what actions the City would take to address a hypothetical future promulgation of regulatory criteria for methyl mercury.

O4-3 The City will consider the comment as support for the membrane bioreactor option, which is one of the two WTPU options evaluated in the EIR.

O4-4 The comment indicates support for an alternative that would consist of seasonal irrigation to redwood or riparian forest as an additional treatment step in combination with a “moderate” treatment upgrade. The comment suggests that wastewater treatment can be reliably provided and comply with the applicable regulatory objectives and permit limits by processes not evaluated in the draft EIR. As described in the response to comment O1-2, these alternative irrigation methods do not provide a feasible mechanism for year-round reuse of all the wastewater produced in accordance with Title 22 reclamation requirements and typical RWQCB waste discharge requirements because evapotranspiration rates are low during the period of vegetation dormancy in the winter, and there is potential for indirect or extraneous influences, such as high groundwater or flooding.

O5

Concerned Citizens of the Healdsburg Area
638 Foreman Lane
Healdsburg, Ca 95448

May 23,2005

Mr. Jim Flugum
Senior Civil Engineer
City of Healdsburg, Community Development Center
401 Grove Street
Healdsburg, CA 95448-4723

Dear Mr. Flugum,

Thank you for meeting with us in regard to our responses to the WWTP DEIR. We greatly appreciate your time and your sincerity.

This is to review and summarize our most important issues:

In the meetings we have had with various commissioners and city officials we have repeatedly expressed our desire to work together and develop a solution to the waste water treatment plant issue that has a little negative impact on all parties, as possible. We very much appreciate the time provided to us by city council members, planning commissioners and city staff. The information shared at those meetings has been quite helpful in our ongoing attempts to find a best possible solution. At the same time, some of the information that we have received from some of these sources has been inconsistent, confusing and apparently inaccurate. In contrast, we also met with the RWQCB, at the city's recommending and found their explanations to be clear, sensible and consistent. We need to feel confident in the accuracy of the information that we receive from city officials to continue to proceed in a cooperative manner. O5-1

We would urge all of the planners and councilmen to sit down with RWQCB staff to better understand the issues, and, perhaps more importantly, to better understand the RWQCB's exact point of view on Healdsburg's WWTP effluent disposal options as described in the DEIR.

We appreciate the City of Healdsburg's efforts to progress with a plan to treat its waste water to a high level of quality.

<u>Effluent Disposal Options:</u>

Geysers Recharge Pipeline: We feel that discharging effluent into the pipeline to the Geysers is the best option. In the EIR the cost difference between using the pipeline and the other options has not been adequately addressed. We think that the pipeline option has not been adequately pursued. O5-2

The next best solution of the options listed in the EIR plan for effluent disposal is to discharge into the Basalt Pond, assuming that wastewater is treated to tertiary quality, Title 22 standards. Any additional effluent can be disposed of by means of a seasonal irrigation reuse system, assuming that wastewater is treated to tertiary quality standards. The RWQCB does not object to such discharges into the Basalt Pond. City of Healdsburg has not provided adequate studies to do so.

O5-3

The City of Healdsburg describes the dilemma of keeping discharge levels to 1% of flow into a pond (Basalt Pond) that has no flow. We have learned that: 1) discharges of greater than 1% of flow could be approved; and that 2) it should not be assumed that the Basalt Pond has no flow. The City of Healdsburg needs to provide more acceptable studies for approval by RWQCB.

While the City feels it has done adequate studies regarding potential for pollution into the aquifer, numerous other experts do not. It is imperative that the City provide adequate studies. O5-4

Pond 5, because it is new, flows directly to the aquifer, should not be used for discharge. O5-5

Shallow percolation ponds are not an acceptable option. This option is extremely expensive because of the costs of construction, maintenance, property acquisition, and potential condemnation litigation. It would destroy valuable agricultural land. The shallow percolation ponds, as described in the Draft EIR, would be a direct discharge into the aquifer. That design is not approved by RWQCB. O5-6

In regard to "shallow" perc ponds, we have asked many times and have not received an adequate answer to this question: Why did the draft EIR identified smaller, more developed parcels with residences, instead of larger more rural parcels, which would have lower acquisition costs? O5-7

This region is composed of very valuable and productive vineyard land. Loss of this valuable farmland would be a permanent and irreplaceable loss to the economy of this region. The City of Healdsburg has prospered by wine-industry related tourism to city businesses. That economic asset should be respected, and this valuable vineyard land preserved. The City of Healdsburg should not condemn property that is intended to be used for grape-growing, long term. O5-8

<u>Wastewater Treatment Plant Upgrades</u>:

A private independent construction inspector should be contracted to inspect and approve compliance of the construction plan. O5-9

The Wastewater Treatment Plant should use technology that produces high quality water, minimizes the size of structures and minimizes noise night lighting, traffic, and odors. O5-10

A proposed 25 ft. building, the Solids Handling Building, would be unattractive and incompatible with the area and existing structures. It should be constructed to be partially below grade to minimize visual impact and to keep it in line with current building heights.

A distance of at least 70 feet should be allowed between the wastewater treatment and storage buildings, tanks, ponds and equipment and any neighboring property. That area should be landscaped in a manner that considers aesthetics and compatibility with the area. Landscaping design should consider its compatibility with local agricultural crops and local wildlife habitat.

Landscaping should be used to screen buildings and to be aesthetically compatible with the area. A committee of local residents should be allowed to review and approve such plans. O5-11

Any ponds should be enclosed with earth berms 12 feet above grade to minimize visual and odor issues. Ponds constructed for any purpose should be designed in a manner that is aesthetically and environmentally compatible, with natural-looking contours and encourages appropriate plant and animal habitat.

Wastewater treatment structures and equipment (such as Solids Handling Facilities, the Alkalinity Addition Facilities, the Screening, Grit Removal and Flow Diversion Structure, the Solids Thickening and Storage Tank, the Aeration Basins, the Blower Building, Secondary Clarifiers, the Anoxic and Aerobic Zones, Membrane Tanks, the Effluent Disinfection Basin, and the Effluent Pump Station) should be located on property just east of parcel number 110-13-12. This location will have the least amount of impact on any neighbors and mitigate any visual impacts.

Construction activities and operations of the plant (noise, machinery, lighting, odors, etc.) should not interfere with the quality of life of the people in the area. Construction and operations should respect and minimize impact on the wildlife and habitat of the environment. O5-12

This project should use the human resources of the community to contribute ideas and to create a sense of community pride and ownership.

Plant Operations:

In order to mitigate the traffic impact on Foreman Lane, solids removal, employee access and other transportation should use, what is now, the Syar levee haul road. O5-13

Plant hours of operation and noise levels should be considerate of residents. O5-14

In areas where seasonal irrigation reuse is conducted, soil composition should be sampled and tested regularly by a private, independent testing company. If testing O5-15 shows that there is a measurable increase of pollutants, then the water treatment should be increased to a higher level of quality. O5-15 Cont'd

Conclusions:

We feel this above proposal best solves the needs of the City of Healdsburg, compliance with relevant agencies, consideration of the immediate environment and respect for the rate-payers of the city of Healdsburg. We expect that the City of Healdsburg will incorporate all of these proposals into the WWTP project.

Respectfully:

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LETTER O5 RESPONSE

Concerned Citizens of the Healdsburg Area
Numerous signatories
Received on May 25, 2005

This comment letter was received by the City more than 2 months following the close of the designated public comment period, which ended on March 21, 2005. For this reason, the City is not required to respond to the comments. However, in the interest of addressing all comments on significant environmental issues raised regarding the City's draft EIR and proposed WWTP upgrade project, responses are provided below for any new issues that are raised. The comment also introduces the letter as a summary of the organization's most important issues. Many of the numbered comments were included in a letter submitted by this organization as a comment letter on the draft EIR, on March 20, 2005, and identified in this final EIR as comment letter O2. The responses to the comments that were raised in letter O2 are identical, and cross-references to the City's response are provided below.

O5-1 This comment states that the City has provided some information regarding the project that is inaccurate. However, the comment does not cite any specific inaccuracies. Without specific information regarding this statement, no further response can be provided.

O5-2 Please refer to the response to comment O2-2.

O5-3 The City will note this comment as conditional support for the continued discharge to the Basalt Pond for the effluent disposal option.

The comment suggests that the City has not provided adequate studies for the Basalt Pond option; however, it does not specify the inadequacy. In general, the studies suggested in this comment regarding documenting the treatment systems and compliance with applicable RWQCB regulations are developed at the time of the permit application and consideration, which would follow project approval. The draft EIR is intended to evaluate the impacts of the project. Please refer to the responses to comments S2-5, S2-8, and S2-9, which describe how the draft EIR shows that the water quality effects under all the proposed effluent disposal options would comply with applicable water quality objectives and would not result in adverse impacts on drinking water or on any other designated beneficial use.

O5-4 The comment states that numerous experts believe that the City has not conducted adequate studies regarding the potential groundwater water quality effects of the project. No data have been provided in comments on the EIR or in any other forum that refute the conclusions of the EIR or that offer any form of accurate evidence to suggest that the EIR should have arrived at a different conclusion than it did. The City has addressed all significant environmental issue raised in the comments that were received on the draft EIR regarding the adequacy of data and analytical methods used for the groundwater impact assessments. In particular, please refer to all the responses to comments provided in comment letters S2 and L4.

O5-5 Please refer to the response to comment O2-4.

O5-6 This City will note this comment as opposition to the shallow percolation ponds effluent disposal option. Please refer to the response to comment O2-4, which addresses the first part of this comment. The comment concludes by stating that, because shallow percolation ponds would result in direct discharge to the groundwater, the design would not be approved by the RWQCB. This last statement is not correct, as identified in the RWQCB's comment letter on the draft EIR (refer to comment S2-11 and the response to comment S2-11 regarding this issue). Please also refer to the RWQCB's comment letter on the Notice of Preparation, dated August 15, 2002, which specifically suggested that the City consider a shallow percolation pond discharge alternative. This letter was included in Appendix C of the draft EIR.

O5-7 Please refer to the response to comment O2-6.

O5-8 Please refer to the response to comment O2-11.

O5-9 Please refer to the response to comment O2-8.

O5-10 Please refer to the response to comment O2-9.

O5-11 Please refer to the response to comment O2-10.

O5-12 Please refer to the response to comment O2-11.

O5-13 Please refer to the response to comment O2-12.

O5-14 Please refer to the response to comment O2-13.

O5-15 Please refer to the response to comment O2-14.

I1

BALDENHOFER
417 Greens Drive
Healdsburg, CA 95448
707/433-1660
baldenhofer@earthlink.net

3/18/2005

Mr. Jim Flugum
City of Healdsburg Public Works Department
401 Grove Street
Healdsburg, CA 95448

Dear Jim:

Following are some questions and observations about the Waste Water Draft EIR and some concerns it raises. In particular, it seems that the shallow percolation ponds option has inherent costs that are unacceptable, both because of the people whose homes will be surrounded and the vineyards that will be lost.

1. It seems unacceptable to surround homes with shallow percolation ponds*, even if they were screened by trees or landscaped berms. The ponds, if used, should be moved to the south, leaving a sizable buffer between homes and the ponds. Perhaps the Syar Phase VI pond area could be considered. If we are acquiring property by eminent domain, then all property should be on the table, with the needs of the existing residents taking priority over future gravel exploration. I1-1

2. Redwood trees should be part of any solution, particularly as a screen for the wastewater treatment plant and the percolation ponds. If shallow percolation ponds are the inevitable option, trees should form a wide barrier between houses and roads and also serve as part of a future treatment plan. I1-2

3. If Phase V pond is available as an option, but rejected because it is too deep, could it be filled to the depth of the shallow perc ponds and serve in that capacity? Phase V is away from both houses and the river. Since excavation of the shallow perc ponds will produce an enormous volume of fill, a nearby hole in the ground seems most fortuitous. I1-3

4. If the families who will be losing their vineyards are the same families who will be losing the quality of life they have enjoyed, in some cases for generations, that constitutes a significant impact and should be considered just as impacts to plants and trees are considered. Berming the perc ponds does not adequately mitigate their existence. Acres of redwood trees might help provided the buffer were large enough. I1-4

I hope we will find a solution to our wastewater dilemma that meets the needs of the City and its citizens, particularly the citizens who will be most affected by the decision we make.

Yours truly,

Phyllis A. Baldenhofer

Phyllis A. Baldenhofer

Cc: Richard Spitler, Jason Liles

*Please refer to Exhibit 2-7, page 2-19, of the Draft EIR. Of particular concern is the home of the DeBenedetti family, shown on the left of this exhibit, surrounded on three sides by perc ponds A and C.

LETTER I1 RESPONSE

Phyllis A. Baldenhofer
Received on March 18, 2005

I1-1 The response to comment S2-12 describes why the alluvial substrate of the Russian River floodplain was selected for shallow percolation ponds and why other nearby non-floodplain geologic areas are unsuitable for the facilities. The response to comment O2-6 further describes why other locations for shallow percolation ponds were not identified in the draft EIR.

The comment recommends that the City examine locations for the shallow percolation ponds option other than the area shown in Exhibits 2-6 and 2-7 of the draft EIR, with the specific suggestion that the City consider locating ponds on Syar's property south of the WWTP, shown in Exhibit 1. In response to this comment, the City reviewed the subject property. The approximately 60-acre site is owned by Syar and is used for vineyard production. Although a detailed environmental review of the subject property has not been conducted, review of aerial photographs and other sources suggests that the environmental conditions of this property are similar to those of the shallow percolation ponds site addressed in the draft EIR. In addition to being used for agriculture, the site apparently does not support sensitive biological habitat. It is unknown whether any other sensitive resources are located on this property, but none are apparent. The major difference between this site and the shallow percolation pond site addressed in the draft EIR is that this site does not appear to be proximate to residences, whereas several residences (but fewer than 10) are located adjacent to the site shown in the draft EIR.

Syar's property ownership encompasses the already mined areas in the Basalt Pond, Phase I and II Ponds, Phase IV Pond, and Phase V Pond and will include the Phase VI Pond, shown in Exhibit 2-8. All this mining is considered terrace mining, which is subject to the 1994 Sonoma County Aggregate Resources Management (ARM) Plan. The ARM Plan requires that terrace mining be phased out within a period of 10 years from April 16, 1996; no new terrace mining may occur after April 15, 2006. Discussions with Syar and the Sonoma County Permit and Resources Management Department (PRMD) indicate that unless the provisions in the ARM Plan are modified, the Phase VI area would be the last terrace mine on the Syar property. If no additional mining activity is approved for Syar beyond the Phase VI Pond, then this approximately 60-acre site could be used for percolation ponds.

In general, use of this area for percolation ponds would involve similar types and levels of environmental impacts. The quantity of construction excavation activities would be the same as described for the shallow percolation ponds evaluated in the draft EIR. However, ponds located on the Syar property would require a considerably longer

Source: City of Healdsburg 2004

Alternative Shallow Percolation Ponds

EXHIBIT 1

City of Healdsburg WWTP Upgrade Project
P 1T177.03 06/05

NORTH

EDAW

segment of 24- to 36-inch pipeline to convey effluent approximately 4,700 feet south of the WWTP. The pipeline would extend from the southwest corner of the existing treatment plant property and generally would follow the alignment of the pipeline for the Syar irrigation option shown in Exhibit 2-8.

Impacts associated with dust creation (PM_{10}) during construction would be similar to those evaluated in the draft EIR, but because residents would be further from the construction area, nuisance dust (i.e., dust that would create a film on hard surfaces in a house and that is not considered an environmental impact) would be less. (It is noted that both this site and the site considered in the draft EIR are used for active agriculture; therefore, any nearby residences are already subject to dust creation from farming activities.) Construction noise, which is identified as a significant but mitigable impact in the draft EIR, would be less with this alternative because fewer residents would be close to the construction area. The residual impacts (after mitigation) would be similar for the percolation pond locations considered in the draft EIR and the location suggested here. Visual impacts, although still significant and unavoidable, would be slightly reduced compared with the site analyzed in the draft EIR because the alternative site would not be as close to private residences. However, the visual change would remain substantial, as described in the draft EIR.

Constructing the ponds at this alternative location would not alter the significance of any impacts identified in the draft EIR related to the shallow percolation ponds option. Rather, the same site-specific impacts associated with the location shown in Exhibit 2-7 would occur on the alternative site because it has environmental conditions similar to those at the proposed percolation ponds site. Thus, constructing at this alternative location would not change the conclusions of the draft EIR or the mitigation measures identified for significant environmental impacts. However, because sensitive receptors would be further away from construction activities, impacts from placing percolation ponds at this location, although not substantially different, would be less.

The City has determined that this alternative site could meet the overall objectives of the project if the percolation ponds alternative is selected. Therefore, if the percolation pond alternative is selected for the project, this site would be considered as an alternative site.

I1-2 Please see the response to comment O2-10, regarding how to provide public input to the Planning Commission on recommendations for aesthetic characteristics of the facility designs. The City will note this comment for the record as support for using trees to reduce the visual impacts of the facilities, and it will be considered in the City's deliberations on the project. In response to this comment, the following modification has been incorporated into the EIR to reflect additional requirements for Mitigation Measure 3.9-1, on page 3.9-8, to reduce the aesthetic impacts of the shallow percolation ponds:

Shallow Percolation Ponds option: The berms of the shallow percolation ponds shall be landscaped so they blend into the middle ground viewshed. The City will engage the services of a professional landscape architect or arborist to develop and implement a vegetation planting plan for the berms.

As described in the response to comment O1-4, irrigation of redwoods would not provide a feasible mechanism for year-round reuse of all the wastewater produced in accordance with Title 22 reclamation requirements and typical RWQCB waste discharge requirements.

I1-3 Filling of the Phase V Pond to convert the pond to a shallow percolation pond is not necessary to reduce any identified environmental impacts. Implementation of the Phase V Pond option would involve a negligible amount of construction for the effluent discharge pipeline and outfall, and none of the operations-related environmental impacts would be significant. In addition, it is not feasible to fill the Phase V Pond with material from the excavation of the shallow percolation ponds or any other source of suitable fill material because the existing excavated volume of the Phase V Pond is much larger than any available supplies of source fill. The use of fill from constructed shallow percolation ponds would not be sufficient to create a percolation pond in the Phase V Pond and thus would not reduce either the overall size of the constructed shallow percolation ponds or the construction-related environmental impacts evaluated in the draft EIR.

I1-4 The comment will be noted by the City as opposition to the use of the shallow percolation ponds at the site identified in the draft EIR for effluent disposal in the preferred project.

I2

March 18, 2005

RECEIVED
MAR 18 2005
CITY OF HEALDSBURG

Mr. Jim Flugum, Sr. Civil Engineer
City of Healdsburg
Community Development Center
401 Grove Street
Healdsburg, CA 95448-4723

RE: Healdsburg – DEIR: Wastewater Treatment Plant Upgrade/Disposal Options

I live at 3300 Westside Road, and my property is nearby Pond V and the percolation ponds proposed as disposal options in the Healdsburg DEIR. These two disposal projects alternatives (discharge into Pond V and new percolation ponds) will have significant, unmitigated impacts on my property. I have a number of questions regarding these alternatives and other findings in the DEIR that need to be addressed before these disposal alternatives can be properly considered.

The City proposes as alternatives to Basalt Pond disposal, utilizing Pond V or to construct percolation ponds to dispose of wastewater, even though these two options will not complete the wastewater treatment process. *What soil sample data has been collected that demonstrates that the soils under and around the percolation ponds and Pond V are sufficient quality to be suitable for final treatment of the effluent upon entering the soil and prior to making contact with ground water?* I2-1

What rainfall and evaporation studies has the City performed to determine if the configuration of the percolation ponds being proposed are of the proper size to handle the expected inflows? I2-2

Are the ponds located within the 500 year flood zone? If so, do perc pits within the 500 year flood zone comply with Water Quality Control Board requirements or guidelines? Why hasn't the city considered property outside the 500 year flood zone? I2-3

What testing program does the city propose to ensure that discharge into the percolation ponds and Pond V will not degrade ground water quality pursuant to the Anti-degradation Policy? How ill the results of this on-going testing program be made available to nearby landowners? I2-4

What analysis or plan does the City have for meeting the Porter Cologne Water Quality Act as it relates to the impact of the Pond V and percolation pond discharge alternatives on ground water quality? I2-5

In connection with the design and location of the percolation ponds and Pond Five discharge alternatives, what provisions has the City made for ensuring that concentration of pollutants, conductivity, and any tastes or odors in the groundwater samples collected from hydraulically down gradient wells will not exceed these same background concentrations and characteristics in the hydraulically up gradient wells? I2-6

What provisions does the city have to ensure that no overflow of less than advanced treated water is discharged into the percolation ponds or Pond V? If berms are recommended, how does the City plan to mitigate the visual and hydrologic impacts of these berms? I2-7

On page 3.2 – 36 the EIR states "Therefore the existing WWTP effluent and receiving water quality demonstrate that potential adverse water quality effects of continued effluent discharges of aluminum, copper and nitrates and other potential constituents of concern, under the Basalt and Pond V options would not occur". Also, on Page 3.2-37 the EIR states that "both ponds are adjacent to each other and intercept ground water". Based on these citations, the EIR is stating that with respect to aluminum and copper and other potential constituents, adverse water quality impact to ground water will not occur. *What studies has the City done to substantiate this claim? If Basalt pond removed these potential constituents, why is Healdsburg pursuing alternative disposal sites? Also, what documentation of the quality of ground water in the immediate vicinity of Pond V and the percolation ponds has the City undertaken to support such statements?* I2-8

How do the depths and configuration of Pond V and Basalt differ? What studies have been done of the specific characteristics of Pond V and its similarity or differences from Basalt pond? In what says do these studies show how Pond V will polish the wastewater in the same way that Basalt pond does? I2-9

Since as the EIR states (as cited above) that Pond V intercepts ground water, what design criteria and monitoring program does the City propose that will ensure that the discharge from the Pond V and the percolation ponds will not cause degradation of any beneficial use of surface or ground water? How does the City plan to ensure that there is no degradation of ground water quality as a result of the introduction of effluent into the Pond V or the percolation ponds? I2-10

If such degradation of ground or surface water quality does occur, what compensation does the City propose to those parties whose surface or ground water has been degraded? I2-11

Prior to selecting the percolation pond site proposed in this EIR, did the City conduct a report of hydrogeologic conditions of the area and its surroundings to assess the soil stratigraphy, groundwater flow direction, hydraulic gradient and groundwater velocity to determine if the proposed location of the percolation ponds being proposed was superior to other potential sites? If not, when does the City plan to do the studies that arerequired before a project can be selected? I2-12

What are the specifications for the lining of the percolation ponds and Pond V, such as the type of lining material, depth of lining, maintenance procedures? I2-13

On page 3.2-36 the EIR states that the percolation ponds would be excavated to a depth above the seasonal ground water level. *Which season does this refer to, summer or winter? What is the expected dept of soil between the bottom of the percolation pond and the highest winter ground water levels?* I2-14

Also on page 3.2 – 36 the EIR states "additional contamination removal processes would be expected to occur in the soil including filtration, absorption and biochemical reaction with soil particles." On page 2-17 the EIR states "The four ponds with a total area of approximately 60 acres would be excavated to a depth of approximately 20 feet below the existing grade to reach the more permeable alluvial materials which are suitable for percolation." *If the ponds are to allow for interaction with the soil particles between the bottom of the pond and the ground water as quoted in the paragraph above, what studies has the city conducted to show that the 20 foot depth* ***"to reach the more permeable alluvial materials which are suitable for percolation"*** *are the types of soils that are suitable for "absorption and biochemical reaction with soil particles" cited from page 3.2-36 above? Why weren't organically rich root zone soils studied?* I2-15

What analysis has the City done to assess the retention time of effluent in the percolation pond or Pond V to establish that "absorption and biochemical reaction with soil particles" will be sufficiently long that the final treatment expected from the ponds will occur? I2-16

On Page 3.2-42 the EIR states "The depth to groundwater within the vicinity of the WWTP and ponds ranges from 15 feet below the surface during the winter rainfall season to 35 feet during the dry summer conditions". *If the water table is within 15 feet of the surface during the winter months and the percolation ponds are 20 feet deep and Pond V is over 80 feet deep, please explain how either the percolation ponds or Pond V suppose to provide the "additional contamination removal processes" that the EIR on Page 3.2-42 cites is expected to occur.* I2-17

If the effluent is in direct contact with the ground water the instant it is put in either Pond V and the percolation ponds, how is there interaction with the soil particles? How much "additional contamination removal process" is expected to occur once the effluent comes into contact with the ground water aquifer? Why didn't the City study alternatives that remove contaminants before contact with receiving waters? I2-18

What is the composition of the soil that exists between the bottom of the percolation ponds and the ground water table that is supposed to accomplish such contamination removal? I2-19

What analysis has been done of this soil to determine if it will clean up the effluent to a degree that there will be no degradation of ground water quality? I2-20

Do the engineering studies supporting the proposed alternatives consider the higher level of the winter ground water table and the potential for direct contact of effluent with ground water? If not, why not? I2-21

On page 3.2-36 the EIR states "Consequently, any potential changes in ground water quality are expected to fully meet applicable Basin Plan and drinking water objectives." *Will meeting "Basin Plan and Drinking water objectives" mean the same thing as not degrading the existing water quality of adjacent domestic water well? Is this a lower standard than the Anti-Degradation Policy? If it is, what mitigation does the county propose to ensure the current ground water quality is not degraded?* I2-22

On page 3.2 -37 the EIR states "WWTP effluent can also contain some constituents that may not generally be present in the existing background groundwater conditions such as fluoride, coliform bacteria and other associated potential human pathogens (i.e., disease causing bacteria, viruses, and protozoa), trace metals, and synthetic organic compounds. However, the concentrations in the City's current WWTP effluent, and projected changes to effluent quality (based on Santa Rosa data), are low with respect to applicable regulatory criteria. Consequently, the potential water quality impact to ground water from effluent discharge under this ED option is considered less than significant." *Please explain what regulatory criteria the City is using as the standard referred to in this statement, and what does the "low" mean relative to these standards. Also, please explain whether these concentrations compare to levels specified in the California Toxics Rule and the Anti Degradation Policy with respect to the impacts on ground water quality.* I2-23

On page 3.2-35 the EIR states that regardless of the disposal options, the effluent will comply with the NPDES permit. *If this is the case, what is the advantage of discharge into Pond V or percolation ponds, since the City already has an NPEDS permit for Basalt pond?* I2-24

What agreements, contracts or other arrangements does the City have with Syar Industries regarding the discharge of effluent into Pond V. I2-25

If the City disposes of effluent in Pond V, what responsibility and liability does Syar Industries have for any impacts that such a discharge might have on ground water quality in the surrounding area?

What are the agreements, contracts or arrangements that the City have with Syar Industries with respect to Pond V include any provisions for responsibility or liability regarding the impacts of the effluent on ground water quality or responsibility for any health impacts on people living in the area caused by consumption of drinking water form their domestic well? I2-26

Has the City identified the minimum set-back requirements between Pond V and the percolation ponds, and the adjacent domestic water wells as required by Title 22, Chapter 5 requirements for recharge of ground water? I2-27

Has the City evaluated the trade offs of moving the percolation ponds outside the ground water area vs. designing the percolation ponds and/or reconfiguring Pond V in such a way as to eliminate any possibility of ground water contamination? If not, why not. I2-28

Visual and Noise Impacts

Is the City willing to ensure that long-term stationary noise levels will not increase over current levels by enclosing all motors and noise generating equipment in buildings or sound shielding material? I2-29

What are the City's plans for ensuring the design and monitoring of facilities to ensure that noise levels are not increased over existing levels at the treatment plant?

On page 3.9-1 the EIR states that the current ponds at the treatment plant are surrounded by berms and fencing that screens the view of the ponds. The WWTP is an industrial use within an agricultural, tourist-serving area. *Why does the City consider berms and fencing as visual screening? Why hasn't the City considered trees and other plantings as visual screening instead of fencing and berms?* I2-30

On Page 3.9-1 the EIR states that the WWTP and its facilities are not visually inconsistent with the surrounding area. *As most of the tourist-serving and residences are located on a bluff above the WWTP, on what basis does the EIR come to that conclusion? Has the City evaluate the feasibility of landscaping the WWTP and any associated ponds similar to the landscaping surrounding Basalt pond?* I2-31

On Page 3.9-4 the EIR states "at a distance of 1 mile or more, these facilities are neither prominent nor particularly noticeable in the viewshed (exhibit 3.9-1a) because the surrounding properties are relatively level, nor because low-lying vistas are obscured by expanses of vineyards, housing, and occasional tree canopy cover." *On what basis does the EIR make the finding that the proposed facilities are "neither prominent nor particularly noticeable". What analysis has the City done to determine if the visual impacts of the proposed project can be completely mitigated by screening with trees, shrubs and other plantings?* I2-32

On Page 3.9-4 the EIR states "the WWTP facilities and Syar's mining ponds are only visible at intermittent locations … and the facilities are well in the background of the view shed". These are subjective claims without any validation – the grass berms are an eyesore and the proposed Pit VI will extend over 4000 feet from the River with berms on adjacent property lines. Others might say the impacts of the proposed ponds and treatment facilities are a significant detriment to the vistas in the area that are enjoyed by the many tourists who visit Healdsburg and the surrounding area. I2-33 *What analysis has the City done to determine if the visual impacts of* I2-34 *the proposed project can be completely mitigated by screening with trees, shrubs and other plantings?* I2-34 Cont'd

On Page 3.9-5 the EIR refers to the City of Healdsburg General Plan policy goals regarding viewsheds and the environment. *How are the statements in the EIR stated in the two paragraphs above regarding the visual impacts of the proposed project consistent with the policies articulated in the City of Healdsburg General Plan cited on page 3.9-5?* I2-35

Project Alternatives

On Page 5-2 the EIR lists impacts associated with at least one of the proposed alternatives. *As the WQCB has gone on record relative to groundwater quality concerns, why don't the percolation ponds and Pond V disposal options mention impacts on ground water quality?* I2-36

On page 5-3 one of the project objectives identified is "Continue to provide wastewater treatment service to the ratepayers at a reasonable cost." *What does the City mean by "reasonable cost"? In relation to what other costs are the project costs suppose to be reasonable – no project, an advanced water treatment plant costs?* I2-37

Has Healdsburg calculated the costs of remediation of a polluted groundwater aquifer? If not, how will the ratepayers know the full potential cost of these project alternatives?

On page 5-14 the EIR discusses the infeasibility of utilizing Santa Rosa's Geyser's Pipeline. *What evidence does the City have to offer by way of statements, correspondence or other documentation that Santa Rosa would not consider Healdsburg's request to put treated effluent into the Geyser's Pipeline?* I2-38

On Page 5-15 the EIR states, in reference to the North Healdsburg Redwood Irrigation Reuse Option, "long-term operations effects of irrigation at the proposed property would likely result in more substantial impacts than any of the other options address in Chapter 3." *What studies did the City perform to support this conclusion and will these studies be made available to the public for review. What comparisons of this project to the impacts of the percolation pond alternative were performed to demonstrate the percolation ponds are a superior alternative to the redwood irrigation disposal option? What studies were made of percolation pond sites to determine the potential presence or impacts to endangered species?* I2-39

What analysis did the City perform to evaluate the feasibility of locating the redwood irrigation project where the City proposes to locate the 60 acre percolation pond or elsewhere in the vicinity of the WWTP? I2-40

What are the names of the civil engineers and their California state license numbers, who prepared the recommendations and characteristics relative to percolation ponds? I2-41

What are the names of the civil engineers and their California state license numbers, who prepared and reviewed this EIR and can attest to the accuracy of the statements made in the EIR, any supporting studies on which the statements in this EIR rely regarding the efficacy of the disposal options and their impacts of the proposed percolation ponds and pond V discharge disposal options on ground water quality? I2-41 Cont'd

Conclusions

There are significant design issues and significant unmitigated impacts associated with the alternatives selected for study in this Draft EIR. When these questions are addressed, alternative such as subsurface irrigation/ soil treatment and evapo-transporation by riparian forests redwood trees will look both environmentally superior and cost effective. I2-42

Finally, the percolation ponds and treatment plant must be visually screened because of the proximity to nearby residences and Westside Road which is designated a scenic corridor. In addition the entire area surrounding the proposed facilities is a scenic and recreational resource that brings tourists to the Healdsburg area. If the City can't merely be a good neighbor, Healdsburg must at least consider the impacts of these projects on the aesthetics of the area and the potential impacts to the tourism industry. I2-43

Respectfully,

Marc Bommersbach

Marc Bommersbach
3300 Westside Road
Healdsburg, CA 95448

LETTER I2 RESPONSE

Marc Bommersbach
Received on March 18, 2005

I2-1 As described in the responses to comments S2-5, S2-8, and S2-9, the potential operations-related water quality impacts identified in Section 3.2 of the draft EIR are based primarily on an "end-of-pipe" basis with current existing measured effluent and receiving water quality data and the projected effluent quality following implementation of tertiary treatment upgrades. The comment's assertion that the wastewater treatment process would not be completed following effluent disposal under the shallow percolation ponds or Phase V Pond option is not correct. The draft EIR concludes that the water quality effects under all the proposed effluent disposal options would comply with applicable water quality objectives and would not result in adverse impacts on drinking water or on any other designated beneficial use. In all cases, tertiary treated wastewater produced and disposed of or reused would be of higher quality than wastewater under current conditions.

I2-2 The response to comment S2-12 provides additional detail on the flow and environmental considerations and assumptions that were used to determine the necessary size of the shallow percolation ponds to accommodate anticipated wastewater flows.

I2-3 The basis of the City's proposed siting of the shallow percolation ponds for effluent disposal are reflected in the response to comment S2-12, which describes why the alluvial substrate of the Russian River floodplain was selected for shallow percolation ponds and why other nearby nonfloodplain geologic areas are unsuitable for the facilities. On the basis of a review of the Federal Emergency Management Agency hazard mapping information system, the location of the proposed shallow percolation ponds, WWTP, and project area surrounding Foreman Lane is outside of a designated 500-year floodplain.

I2-4 Similar to the City's existing monitoring requirements issued by the RWQCB, the City anticipates that comprehensive monitoring for groundwater levels and water quality constituents of concern would be required for effluent disposal to shallow percolation ponds. Shallow monitoring wells would likely be required upgradient and downgradient of the ponds, and physical and water quality measurements would be required periodically. The permit requirements would likely require submittal of monthly data and annual summaries of the City's monitoring program data to the RWQCB. The City's monitoring data are public information and are available for review at either the City offices or the RWQCB offices.

I2-5 Refer to the responses to comments S2-5 and S2-8, which describe the water quality impact analysis of effluent disposal for the Phase V Pond and shallow percolation ponds options.

I2-6 The responses to comments S2-5 and S2-8 describe the analysis of the water quality effects of effluent disposal from the shallow percolation ponds and Phase V Pond options. The response to comment S2-10 describes the applicable state antidegradation policy and the RWQCB's role in providing policy oversight for allowable changes to groundwater quality that do not exceed applicable water quality objectives and do not substantially lower existing water quality.

I2-7 On the basis of the existing permeable substrate underlying the Basalt Pond and knowledge of material characteristics of the aggregate removed from Syar's other mining ponds in the project area, it is expected that both the Phase V Pond and the shallow percolation ponds would be underlain by suitable permeable material that would provide reliable effluent disposal and avoid overtopping of pond berms. In addition, the response to comment S2-12 describes the design considerations for the shallow percolation ponds. With respect to hydrologic effects of berms, the shallow percolation ponds and Phase V Pond would be protected from flood inundation. The shallow percolation ponds would be located outside of a designated floodplain and would have no effect on any potential floodflows. With respect to visual resources, please see Mitigation Measure 3.9-1 in the draft EIR.

I2-8 As generally described in the response to comment S2-8, the City's existing effluent and receiving water quality monitoring data presented in the draft EIR (i.e., Tables 3.2-2, 3.2-3, and 3.2-5 and Exhibit 3.2-2) provide substantial evidence that was used in support of the water quality impact analysis for the proposed WTPU, ED, and SIR options. The City's 2001 Wastewater Outfall Relocation EIR also included extensive analysis of groundwater quality monitoring data and numerical groundwater modeling to support the hydrologic and water quality analyses of the previous proposal to relocate the discharge of secondary treated wastewater to the Phase V Pond. As described in Section 2.3 of the draft EIR, the City considered new options for tertiary treated effluent disposal in the draft EIR because of regulatory uncertainty associated with the Basalt Pond disposal option and new regulatory requirements on the discharge.

I2-9 Specific studies to compare depth and configuration differences between the Basalt Pond and the Phase V Pond have not been conducted. Such studies are not required to validate the water quality analyses and impact significance conclusions presented in the draft EIR primarily because of two reasons. First, the proposed WWTP upgrades would produce tertiary treated wastewater that would reflect considerable reductions in concentrations of many constituents, and generally improved water quality, compared to existing conditions. Second, the "polishing" of effluent quality that occurs in the Basalt Pond likely occurs through many interrelated factors, including long hydraulic residence time, sedimentation, and physical and chemical contaminant degradation and attenuation processes. Because effluent discharge to both Basalt Pond and Phase V Pond would provide extended hydraulic residence time of effluent discharges, the pond water volume and loading of constituents would primarily consist of treated wastewater. Therefore, the existing 30-year record of existing discharges to the Basalt Pond provides a comprehensive dataset with which to conservatively gauge the effects that would occur with similar discharge rates of improved effluent quality to the Phase V Pond. Refer also to the response to comment S2-8, which describes the use of previous groundwater modeling results that were conducted for the City's 2001 Wastewater Outfall Relocation Draft EIR.

I2-10 Please refer to the response to comment I2-1.

I2-11 The extensive analysis and documentation of projected water quality effects of the City's effluent disposal options, including analyses presented in the draft EIR and numerical modeling results presented in the 2001 Wastewater Outfall Relocation EIR, demonstrate that effluent disposal under any of the ED options would comply with the applicable regulatory objectives. Consequently, it is speculative to consider what actions the City would take to address hypothetical noncompliance with water quality objectives or permit requirements that are not expected to occur.

I2-12 Geotechnical studies in the project area where shallow percolation ponds are identified in the draft EIR have not been conducted. As described in the draft EIR and the response to comment S2-12, the location of the shallow percolation ponds was selected primarily to achieve project objectives, in light of the range of engineering feasibility, costs, and environmental effects. In addition, the response to comment O2-6 describes why it was not necessary for the City to evaluate other alternative locations for the shallow percolation ponds.

Also please see the response to comment I1-1. Upon approval of a preferred set of WWTP upgrade options and certification of the EIR, the City would consult with the California Department of Health Services and RWQCB regarding requirements for specific documentation to support a report of waste discharge, such as the report of hydrogeologic conditions identified in the comment.

I2-13 Both the Phase V Pond and the shallow percolation ponds options would not include linings of the pond bottoms because both options specifically require percolation of effluent into the permeable alluvium to provide disposal. Pond linings would create closed basins, and the effluent discharge would ultimately overflow the ponds because the evaporation rate would not be sufficient to allow continued discharge to the ponds.

I2-14 The shallow percolation ponds would provide separation distance from the bottom of the pond to the seasonal groundwater table for most of the year under long-term average conditions. During winter, seasonally high groundwater conditions would likely result in saturated soil conditions surrounding the ponds, and there would be no separation distance between the bottom of the ponds and groundwater for short periods during these conditions.

I2-15 The comment's reference to the statement in the draft EIR that additional contaminant removal would be expected to occur with shallow percolation ponds refers to the general improvement of contaminant removal in unsaturated substrates compared to saturated conditions. No specific studies were conducted to evaluate the soil characteristics of the project area. The depth of the ponds was determined based on the maximum depth that would be necessary to reach the layer of more permeable alluvial material. The root zone soils referenced in the comments were not considered because they do not have the high permeability necessary to support the required percolation rates.

I2-16 Hydraulic residence time would be substantially shorter in the shallow percolation ponds than in either the Basalt Pond or the Phase V Pond. However, as reflected in the response to comment S2-5, the residence time and soil-aquifer treatment of effluent that would occur in shallow percolation ponds is not required for the project to comply with applicable water quality objectives.

I2-17 As described in the draft EIR and the response to comment I2-15, the separation distance between the shallow percolation ponds and groundwater would exist all times of the year except during short periods in the winter when groundwater levels are higher. However, as described in the responses to comments S2-5 and S2-8, the analysis of existing and projected effluent quality presented in the draft EIR concludes that all the effluent disposal options are expected to meet regulatory water quality objectives without the need for additional treatment. Additional contaminant removal provided with separation distance and soil-aquifer treatment is not necessary for regulatory compliance.

I2-18 Please refer to the response to comment I2-17. Additional contaminant removal is not needed to maintain beneficial uses of water.

I2-19 Please refer to the responses to comments I2-15 and I2-17.

I2-20 Soil tests were not conducted in the project area where the shallow percolation ponds are identified in the draft EIR. As described in the responses to comments S2-5 and S2-8, the analysis of existing and projected effluent quality presented in the draft EIR demonstrates that all the effluent disposal options are expected to meet regulatory water quality objectives.

I2-21 During periods of temporarily elevated groundwater levels during severe winter storm events, there may be no unsaturated separation distance between the bottom of the percolation ponds and the shallow groundwater. However, as described in the draft EIR and the responses to comments S2-5 and S2-8, the effluent discharges would be expected to meet applicable water quality objectives on a year-round basis, even with direct contact to saturated soils.

I2-22 The term “degrade” refers to causing pollution or nuisance to beneficial uses of a water resource. The project could change the concentrations of constituents of concern in local groundwater wells, but because the discharges would meet applicable regulatory objectives and not cause pollution or nuisance, the City believes that satisfactory demonstration of consistency with the state’s antidegradation policy and procedures can be achieved via the RWQCB’s permit authorization phase after the ultimate set of preferred project options is selected. Domestic well water quality would not be significantly affected by the project; water quality would meet drinking water and other regulatory standards. Refer to the response to comment S2-10 for a detailed discussion of the relationship between anticipated water quality effects and the state antidegradation policy.

I2-23 The lowest applicable regulatory objectives used to evaluate effects of the shallow percolation ponds are identified in Table 3.2-4 of the draft EIR. The term “low” refers to the analysis of existing effluent and receiving water quality data, and projected effluent concentrations following tertiary treatment, that were found to be considerably less than the lowest of the applicable human health-related criteria of the Basin Plan, drinking water quality standards (maximum contaminant levels, or MCLs), and CTR. Refer to the response to comment I2-22 for information on project-related compliance to the state’s antidegradation policy. Note that the antidegradation policy does not contain numeric standards.

I2-24 As described in the response to comment I2-8, the evaluation of multiple ED options was conducted because of regulatory uncertainty of effluent disposal to the Basalt Pond. There is no relation between the reason for evaluating multiple alternatives and the statement in the draft EIR that all the ED options would be expected to comply with NPDES permit limits.

I2-25 Syar and the City have an existing 1983 agreement that contemplated the eventual relocation of the discharge to the Phase V Pond.

I2-26 The City is the applicant for the proposed waste discharge requirements and NPDES permit issued by the RWQCB and is thus the legal entity subject to enforcement and corrective action in the event of a violation of permit conditions.

I2-27 As described in the response to comment I2-12, no specific engineering design has been conducted for the shallow percolation ponds option. As described in the draft EIR and in the responses to comments S2-5 and S2-8, the effluent discharges would be expected to meet applicable water quality objectives on a year-round basis, even before discharge to shallow percolation ponds. The City would prepare detailed designs of the shallow percolation ponds upon approval of a preferred set of WWTP upgrade options and certification of the EIR. Setback distances to wells and other water features would be considered in consultation with the California Department of Health Services at that time.

I2-28 The intent of the comment is not clear. However, in general, alternative locations for shallow percolation ponds or alternative configurations of the Phase V Pond were not evaluated. Because the water quality analysis demonstrated that these options could be implemented and not cause significant water quality impacts, additional alternatives related to these impacts would not result in substantially improved water quality conditions in comparison to the alternatives already under consideration.

I2-29 As described in the discussion of Impact 3.7-3 (page 3.7-15), the City would house all noise-generating stationary equipment required for the project (i.e., for the WWTP upgrade) in buildings with sound insulation sufficient to ensure that exterior sound levels would not exceed 55 dBA at 50 feet. The City would ensure that there is no substantial increase in ambient noise outside the property boundaries of project facilities following upgrade of the WWTP.

I2-30 From most viewpoints in the vicinity of the WWTP, the combination of berms and fencing does provide visual screening of most of the WWTP and associated facilities. In addition to screening views, the berms provide flood protection to the facilities, and the fencing provides safety and security benefits. The description on page 3.9-1 does not reflect the City's opinion on the merits of berms as visual screening compared to other methods of screening; it was simply a statement of fact of existing conditions in the project area for the "Environmental Setting" section. The purpose of a visual impact analysis in an EIR is not to discuss methods to improve existing viewpoints but to identify the need and, if necessary, the mitigation measures to reduce the visual impacts of the proposed project elements under consideration.

I2-31 As with the response to comment I2-30, the description on page 3.9-1 that existing WWTP facilities are consistent with adjacent land uses reflects a statement of fact. The appearance of the WWTP is dominated by the series of treatment ponds, which are adjacent to the much larger set of Syar mining ponds. The relatively low height of the WWTP facilities, the distance from viewpoints, and the more dominant presence of vineyards and trees serve to reduce the visibility of the WWTP and its facilities from viewpoints in the vicinity. The statement in the EIR that the WWTP and facilities are "not visually inconsistent with surrounding areas" reflects the fact that from most viewpoints in the area, the visually dominant features remain the vineyards and trees, not the WWTP and facilities. Again, the purpose of the EIR is not to address concerns with the existing conditions.

I2-32 The City's EIR consultant conducted a visual assessment with staff experienced in the analysis of visual resources, as described on page 3.9-6 of the draft EIR. The consideration of visual impacts is necessarily subjective. Not everyone will agree on what constitutes a prominent and noticeable presence from a particular viewpoint. The City believes, as stated on page 3.9-4 of the draft EIR and as supported by the photographs presented in Exhibit 3.9-1, that the WWTP and facilities are "neither prominent nor particularly noticeable in the viewshed." The comment offers no information to the contrary.

I2-33 The City agrees with the comment that interpretations of visual impacts are subjective; however, it believes that the text and photographs included in the visual analysis support its claims regarding the impacts associated with the proposed project. The City also agrees with the comment that construction of the shallow percolation ponds would have a significant visual impact on vistas in the area. Mitigation has been identified to reduce the impact of the percolation ponds, but because the ponds could occupy up to 60 acres, the City concludes that no mitigation is available to reduce the impact to less than significant.

I2-34 The City has determined that plantings would not be sufficient to mitigate the one significant visual impact identified in the EIR (i.e., the impact associated with the shallow percolation ponds). Although no additional mitigation is available to avoid this significant impact, the City would consider the use of trees, shrubs, and other plantings to provide additional screening for the combination of options selected to meet the objectives of the project. Please refer to the response to comment I1-2, which identifies the City's addition to Mitigation Measure 3.9-1. The addition describes the City's commitment to prepare a vegetation planting plan for the berms to address visual impacts of the shallow percolation ponds.

I2-35 As identified in the discussion of Impact 3.9-1, construction of shallow percolation ponds would represent a significant and unavoidable impact on the viewshed from Westside Road and thus conflicts with the City's General Plan for protection and enhancement of viewsheds of scenic roadways. Because the comment does not indicate what specific policy interpretations are disagreeable, no other response can be provided.

I2-36 The discussion of Impact 3.2-3 refers to the expected changes in groundwater quality that would result from implementation of the ED options. However, as described in previous responses, the anticipated changes would not rise to the level of significance and thus are not identified in the list of significant environmental impacts in Section 5.1 of the draft EIR.

I2-37 The project objective of providing wastewater service to ratepayers at a "reasonable cost" is based on comparison among the set of options with lowest capital and operating costs that are capable of producing legally compliant and reliable wastewater treatment and disposal and/or reuse. Because the draft EIR concludes that the proposed WWTP upgrade options could be implemented and comply with applicable water quality regulations, and the City has operated the current secondary treated wastewater plant for more than 30 years without causing groundwater contamination, the City believes it is unnecessary to consider groundwater contamination and remediation efforts into any cost analysis.

I2-38 Please refer to the response to comment S2-1.

I2-39 Appendix G of the draft EIR contains the environmental consultant's technical report of field survey information and environmental constraints of the North Healdsburg Redwood Irrigation Reuse Option. The shallow percolation ponds for effluent disposal were not directly compared to the seasonal irrigation reuse of recycled water because these options would serve to achieve different objectives. Moreover, shallow percolation ponds were not considered the environmentally superior alternative as suggested by the comment. No specific studies of habitat or endangered species were conducted at the identified shallow percolation pond sites; however, review of aerial photographs, review of similar habitat in the vicinity, and professional experience suggest that cultivated and routinely vineyard areas would not likely support suitable habitats for endangered species.

I2-40 The evaluation of the City's acquiring existing agricultural vineyards and converting them to redwood plantings for seasonal irrigation was considered infeasible. Such an option would cause the same significant and unavoidable impact of conversion of important farmland to nonagricultural use as would the shallow percolation ponds. Because more than 1,350 acres of existing agricultural and urban lands are identified for seasonal recycled water reuse via the three SIR route options evaluated in the draft EIR that would cause no similar significant conversion impacts, it is not necessary to evaluate the redwood irrigation described in the comment.

I2-41 The EIR was inadvertently published without Section 8, "Report Preparers", which listed the names of the persons who helped to prepare the draft EIR. Jim Flugum, the City's Senior Civil Engineer, with assistance from HDR Engineers, prepared the project description of the proposed WTPU, SIR, and ED options. The EIR was prepared by EDAW under the direction of Gary Jakobs, a certified professional planner. However, note that CEQA specifically does not require the use of registered professionals for document preparation; rather, it can rely on information provided by such professionals when necessary (authority: CCR Section 15149).

I2-42 As described in the response to comment O1-2, methods of redwood irrigation do not provide a feasible mechanism for year-round reuse of wastewater. In addition, related subsurface irrigation or soil treatment that rely on evapotranspiration and passage of partially treated wastewater through an unsaturated soil layer, as suggested in this comment, would have the same physical limitations as redwood irrigation systems with respect to compliance with Title 22 recycling regulations and typical RWQCB permit performance and reliability requirements. These options would not eliminate the need for a feasible and reliable effluent disposal option during the winter season, when irrigation is not appropriate.

I2-43 The visual impact analysis of the shallow percolation ponds in the draft EIR is consistent with the judgment expressed in the comment that a significant impact would occur that requires mitigation. The draft EIR includes Mitigation Measure 3.9-1 to reduce the visual impacts of the percolation ponds.

I3

March 19, 2005

Mr. Jim Flugum
Senior Civil Engineer
City Of Healdsburg
401 Grove St.
Healdsburg,
Ca, 95448

Re: Draft E.I.R. Report. Wastewater Treatment Plant upgrade. Comments and Observations.

Dear Sir,

My family and I along with our relatives purchased the property located at 481 Foreman Lane now known as the "Shea Collins Ranch" in June of 2002 and if we had known at that time of purchase, what we now know with respect to this report, we would not have purchased this property.
Our neighbor to the west of us, Donna Gregor at 521 Foreman Lane, is selling her property. Three weeks ago her property was in "escrow". The buyers went to the public meeting at the city hall in Healdsburg, in February of 2005, and after listening to all public comments and reviewing the DEIR report, decided to pull out of the sale.
With this in mind I am sure you can imagine the frustrations that myself and my family are going through.
The following are my comments and observations with respect to this DEIR report. I would like a written reply to all my issues

My first issue and observation, is one of disgust with the complete lack of concern with respect to any issues, that would effect the residents and landowners of Foreman Lane, Felta School, Westside Rd. and the other surrounding areas.
Granted the report states that there would be "no impact or insignificant impact " to the residents of the City Of Healdsburg, this is true, but the residents of the City are miles away from the plant and the proposed site options and of course there would be no impact to any of the cities residents. What is the impact to residents, property owners and their families and children, all who live on and pay tax's near the proposed project sites. I3-1
I can assure you that any of the options especially the "shallow ponds" option and the pipeline from Foreman Lane to Mill Creek Rd. would be a "MAJOR IMPACT" on us.
With this is mind, I respectfully demand that the City Of Healdsburg conduct a study, by an outside agency, on all the issues, with respect to all options, that would have any impact of any kind on the residents and property owners of Foreman Lane, Westside Rd. and the Felta School.

page two,

My second issue is as follows:
I wish to discuss the topic of "Scoping" as per section 1.2.5. in the DEIR report.
State CEQA guidelines Section 15083 authorizes and encourages a "Scoping Process"
The report states (page 1-7 section 1.3.2) that environmental impact on certain resources would not be expected and therefore they do not need to be addressed.
This is "FALSE" and in my opinion they are "Significant" and need to be addressed, in detail, and with further studies.
The report discusses the "Transportation" issue.(See page 1-7)
The report states that "No Significant Impact"would result with respect to transportation related issues, surely this must be a misprint, because it is not true. I3-2
The City may elect to haul excess soil (which would be contaminated and hazardous) during the construction phase to offsite landfills, with a possible 200trips a day at the rate of 15 to 20 per hour,
(see page 1-8), the probable route would be Foreman Lane, this would create gridlock.
What will happen to our right of access to our properties?
What will happen to the children of "Felta School" ?
What will happen to all the "Tourists" who come to visit all the wineries on Westside Rd, MillCreek Rd and Foreman Lane. ?
What about the "Air Quality ", which would result in the excavation of these ponds. ?
I request answers to the above listed issues and also I request further studies on the above issues. I3-3

My third issue is as follows:
With respect to Table E.S-1 in conjunction with Chapters 3 &4
Shallow Perk Ponds:
3.1.1 Division of an establish community:
The report states that there would be "No Impact" with respect to options WTPU and ER and there would be "Less Than Significant Impact" with respect to option SIR. I3-4
My interpretation is, that the residents and property owners of Foreman Lane, Westside Rd, Felta Creek and the children of Felta Creek School, are insignificant, and in the eyes of The City of Healdsburg we must be non existent and are not a community.
Well, let me inform you, that we are a community, we are established, and trust me we are significant in everyway.

page three,

3.1.2. Conversation of Important Farmland to Non Agricultural use.
I am pleased to see that this is considered significant, but I am insulted to see that you regard the situation as "unavoidable" (see page 3.1-11 & 12) I3-5
The excavation of "Existing Important Farmland" by 1.6 million cubic yards at a depth of 20 feet is a major issue.

3.1.3 Indirect conversation of Farmland associated with potential disruption of Existing Agricultural Operations.
This states that "Effluent" disposal to more than 60acres, to "shallow percolation ponds", which are located adjacent to my property, would have "No Impact" and that the construction of new pipelines from Foreman Lane to Mill Creek Rd. also would have "NO Impact"
Let me ask you a very simple question and I want an answer in written format. I3-6
The people who prepared this DEIR report , do they know where Foreman Lane is ?
Have they ever visited the area ?
I sincerely hope that you, Mr. Flugum are aware of the project location, so let me ask you another simple question, how could you authorize publication of this report when it clearly states false facts, as those stated above.
I hereby request a separate study by an outside agency, who can answer all the above.

My fourth issue is Excavation and Construction:

As a General Contractor myself, and a licensed contractor, with 30 years experience in the construction industry.
I would like to discuss the following, and also request further study, and reports on thefollowing issues.
The excavation of these areas as stated in 3.2.1 ES-5 would be of a "Major Impact "
As stated excavation of 200,000 cubic yards of soil, from the existing wastewater treatment ponds will have a major impact on the residents and property owners of Foreman Lane, Westside Rd, Millcreek Rd and Felta School.
This soil is hazardous and it is possible that it contains unknown viruses. I3-7
To realize the "Excavation" process.
Excavation contractors even Syar Ind., use a truck called an "End Dump', which can haul up to 20cubic yards of soil at a time, that would be 100,0000 trips (granted I am sure that more than one End Dump would be used at any given time.
Think for a moment what the hauling of this amount of contaminated effluent soil would do to the "Air Quality" of the surrounding area, and to the dumpsites where you wish to dispose of this contaminated soil, that is if you could find someone to take it.

pagefour,

Also, there is the excavation of 1.6 million cubic yards of soil to be excavated from the 60acres for the "Shallow Ponds Area". To excavate 10,000 cubic yards it would take 1 week, it would take 2 ½ years to excavate and haul 1.6 million cubic yards and that would be working 52 weeks a year, which is not going to be possible due to the mitigated measures as stated in 3.1-3
These "Shallow Ponds" are to be excavated to depth of 20feet below existing grade.
This should be the grade used in calculating the "groundwater contamination"
As stated in 3.1.3 (page 3.1-12) existing groundwater ranges from depts. of 15feet in winter to 35 feet in summer. I3-8
Grape vines typically root approx. 6 to 10 feet.
If one was to do the math, this would destroy the well water in the surrounding areas because the grade that would be used would be that of 20 feet below the existing land grade, not at a grade of zero as the report states.
This is not acceptable, and I request a new study to be done on "Ground Water and Well Water Quality" for the shallow ponds option, and the impacts it will have on the surrounding area and the effects it will have on the surrounding wells.

Furthermore are you aware of the environmental impact the construction equipment as stated in (2.7.1 page 2-28) would generate i.e. diesel, oil, gasoline, antifreeze and grease to name a few, all of these fuels etc. leaking into the ground will have a " Major Impact" on the ground water and well waters.
One only has to visit the Syar Ind. Site, at the bottom of Foreman Lane, to look at the condition of the soil under their machines. I3-9
I wish to see a separate report on the "Impact" these conditions would have, on the soil and groundwater at the level of 20feet below grade, at the "Shallow Ponds" area, because at 20feet below grade is where these machines will be fueled and greased etc.

With respect to the installation of pipelines from Foreman Lane to Mill Creek Rd.
Apart from all the construction equipment mentioned above, and also the vehicles used by all the construction crews, along with the trenching equipment required for this operation, the impact this operation will have on the health and safety, of the residents, and there children, and the safety of the school children of Felta School will be of a "Major Impact". I3-10
I request, that a separate study, be conducted to address the" Safety" and "Health" issues that would impact the children and residents of the area.

page five,

With respect to the chapter on Construction Overview 2.7
The way this section is written, it appears to be written by a lay person, who's only knowledge of construction techniques and practices is from reading "construction 101" in the library.
I request that a detailed report be written, with respect to all the construction issues, that would be associated with this project, including but not limited to the following:
Excavation, Drilling, Hauling of all associated soils and fills both contaminated and hazardous.
All dumpsites that may except the contaminated soil.
The means of transporting this contaminated soil.
All noise levels with respect to all machinery, equipment and all associated drilling equipment that may be used or may possibly be used. I3-11
The safety records of all possible contractors that will be bidding the project.
The employment records of all possible contractors.
References from other municipalities that these bidding contractors have worked for.
Detailed drawings of all the proposed new structures and buildings associated with any of these options.
A detailed report, on the Methods and Means, of all construction practices, associated with all aspects of the various options.

My fifth issue is related to "Flooding"

The "Flooding" scenario does not appear to have been discussed to any significant detail.
I request a detailed study on this "Flooding" issue
With respect to any problems that may occur due to construction accidents, levee breaks and the possibility of severe winter storms that may occur..
Not only would any one of the above cause a severe impact on the area, it is possible that it could impact the existing homes and lands in the Foreman Lane. I3-12
There could also be an impact on Dry Greek and Mill Creek rivers that run at the rear of my property and my neighbor's properties.
If, due to some situation, that may impact the blocking of the low area, where the rivers meet, and join with the Russian River, flooding, of lands and the destruction of vines would be of a "Major Impact"

page six,

With "Flooding" there is also the possibility of the exposure to the residents, property owners and the children of the area, including the Felta School children, to "VIRUS'S". Also "VIRUS'S" could be released with the excavation of the Contaminated Soil and the hauling of this soil. I3-13
I request a detailed study on all possible "VIRUS'S" and there effects on the immediate population, especially but not limited to young children, infants and older people.

My sixth and final issue: Discharge to the Geysers.

At a meeting, on 3/14/2005, attended by the residents of Foreman Lane, Council members Mr. G. Plass, Mr. M. McGuire and Mr. George Hicks.
Mr.Hicks stated, that the option, of a connection to "Santa Rosa Geyser Pipeline", was not now available, because The City of Santa Rosa would not let Healdsburg use this system, he stated, that he received a letter from The City of Santa Rosa, explaining there reasons, he also stated that this letter was public record. I3-14
On 3/14/2005 I requested a copy of this letter from the appropriate agency of The City of Healdsburg and to this date I have not received a copy of this letter. Why ?

In closing I do expect all of the above issues that I have listed to be answered and that the new studies and reports I have asked for be conducted and issued as public record.

I await your comments and requested reports.

Sincerely yours,

Brendan Collins
481 Foreman Lane
Healdsburg, Ca

c.c. Mr. G. Rocca
Attorney at Law

LETTER I3 RESPONSE

Brendan Collins
Received on March 21, 2005

I3-1 The draft EIR states that there could be significant temporary construction-related impacts related to disruption of agricultural activities, water quality, air quality, noise, wildlife, and potential interruption of utility services. However, the City would implement the construction management activities outlined in Section 2.7, environmental commitments identified in Section 2.8, and all the identified impact mitigation and monitoring measures to minimize these adverse effects to the extent feasible. The construction of the shallow percolation ponds would largely be confined to City and Syar property; therefore, offsite effects described above would be minimized with the exception of air quality and noise effects that could extend beyond the construction zone. As identified in Table 2-3 in the draft EIR, the duration of construction for the Foreman Lane/Mill Creek Road SIR pipeline route would be several months; however, the placement would traverse individual properties at a relatively quick pace. The EIR provides complete disclosure of these potential impacts and identifies appropriate mitigation measures where necessary. The City, as the lead agency under CEQA, is required to prepare the CEQA analysis for projects it may approve.

The City will note the comment as opposition to the shallow percolation ponds effluent disposal option and opposition to the Foreman Lane/Mill Creek Road pipeline route.

I3-2 This comment expresses the opinion that 200 truck trips per day would cause a significant roadway impact. Please see the response to comment L2-2. The response to comment L2-2 indicates that truck trips would be spread out throughout the day (average of one trip each 3–4 minutes) and would not be expected to cause roadway congestion or to block access to homes, schools, or businesses.

Because it represents the accumulated deposits of relatively inert organic sewage sludge, the soil excavated from the existing treatment ponds is not likely to be considered hazardous material. In addition, page 2-28 of the draft EIR states that this material would be tested for contaminants and reused onsite to the extent possible, with the remainder hauled off to an approved landfill. The City would coordinate with the County regarding truck traffic routes, traffic controls, and the number of truck trips and would comply with the conditions of a County encroachment permit.

I3-3 The air quality impacts from construction-related activities are evaluated in the draft EIR in Section 3.6.

I3-4 The City believes that the analysis of potential physical division of community impacts from implementation of the proposed options and the conclusions presented in the draft EIR accurately reflect the potential effects. The physical division of a community, within the provisions of CEQA, involves a project that highly restricts or prevents movement between the parts of the community and essentially establishes two separate communities. An example would be construction of a freeway that divides a town and limits movement between the separated parts of the town. The ED and WTPU options are essentially isolated on property adjacent to the existing WWTP site and would not interfere with existing roadways in the vicinity. The construction-related potential for road closures associated with pipeline construction along SIR routes could temporarily interfere with community interactions; however, the effects would not be permanent.

Because of its size and proximity to existing farmsteads, the project option that is perhaps of greatest concern in terms of division of community is the shallow percolation ponds option. Fewer than 10 farmsteads are located in the vicinity of the percolation ponds site. As stated previously, the physical division of communities typically involves much larger areas of development, so it would be debatable whether the small number of farmsteads, however close a community of neighbors, would be considered a community under CEQA. Construction of the ponds would substantially alter the appearance of the vicinity and would be an adverse impact on the residents nearest the ponds, but the number of people affected would not be substantial.

Because the area likely would not be considered a community under CEQA and because access through the area would be largely unaffected following construction of the ponds, the EIR is correct in stating that creation of the ponds would not cause a significant division of an established community. However, this comment and other comments addressing this issue, in particular those relating to the shallow percolation ponds option, have made the Healdsburg City Council and Planning Commission aware of the concerns of the nearby residents. Furthermore, the City would consider the alternative location for shallow percolation ponds described above in the response to comment I1-1, which could potentially address or mitigate this concern.

I3-5 The conversion of farmland is considered significant and unavoidable because, as identified on page 3.1-12 of the draft EIR, there are no feasible methods for mitigating the loss of the farmland if the percolation pond option is selected. Consequently, if the City chooses implementation of shallow percolation ponds for the preferred project, the City will prepare a statement of overriding considerations for significant and unavoidable impacts of farmland conversion that would result from implementation of this option, in compliance with the requirements of CEQA.

I3-6 As described in the discussion of Impact 3.1-3 (pages 3.1-12 and 3.1-13) in the draft EIR, the impact analysis evaluates whether the proposed activities would indirectly cause effects that would lead to conversion of farmland. Staff members from the environmental consulting firm that prepared the EIR have conducted site visits of the project area, and the City believes that the impact analysis accurately reflects the potential effects of the project options. Specifically, the operation of shallow percolation ponds was based on the previous hydrologic modeling, which indicated that the predicted changes in groundwater levels would be minor and thus would not adversely affect agricultural activities on surrounding properties. The comment does not provide information that contradicts the statements contained in the draft EIR that relate to the potential indirect conversion of farmland, so a specific response cannot be provided.

I3-7 Please refer to response I3-2, above, regarding construction traffic and air quality effects from hauling solids that are excavated from the existing WWTP treatment ponds.

I3-8 The comment appears to suggest that information was presented in the draft EIR regarding the relationship between the excavation depth of the shallow percolation ponds and potential, yet unspecified, groundwater hydrology and/or water quality impacts. In general, the draft EIR does not analyze potential water quality effects based on pond depth. As described in the responses to comments S2-5, S2-8, and S2-9, the water quality analysis is based on existing data and projected tertiary treated effluent quality, which would meet applicable water quality objectives and not degrade beneficial uses.

I3-9 Section 2.8.6 of the draft EIR describes the environmental commitment for equipment staging and fueling practices that would be used for all construction activities. In addition, all construction is also subject to Mitigation Measure 3.2-1, which describes the construction best management practices (BMPs) that must be implemented, including hazardous material spill control and response measures.

I3-10 Please refer to the response to comment I3-1, which addresses the comments regarding traffic.

I3-11 The level of detail provided for descriptions included in Section 2.7, "Construction Overview," is general because specific construction methods have not been established. Some facilities, such as the WTPU treatment processes, have been conceptually designed by consulting engineers, whereas other aspects, such as the directional drilling, have been developed at a more general level for the purpose of evaluating the range of potential environmental impacts. The EIR considers the various potential construction methods and evaluates potential related impacts. For instance, Section 3.7 of the draft EIR addresses construction noise and evaluates various types of construction equipment that may be used. The comment does not discuss any of the environmental impacts of the project as addressed in the EIR, so additional response cannot be provided. Further, the relationship between potential (and currently unknown) future contractors is not tied to any environmental issues in the EIR, so additional response of this issue cannot be provided.

I3-12 As described in the response to comment S2-4, none of the proposed WWTP upgrade options would adversely affect flooding or floodplain conditions. The potential placement of excavated soil in the Basalt Pond and/or Phase I and II Ponds would provide reinforcement of the levee from erosive scour but would not alter the levee crest elevation, which is the primary factor that governs flooding on the inland side of the levee.

I3-13 Enhanced removal of pathogens, including viruses, is a primary objective of the City's WWTP upgrades to tertiary treatment processes. Tertiary treatment allows unrestricted public access to areas where irrigation with the recycled water occurs and impoundments where it is stored. Consequently, implementation of tertiary treatment represents a beneficial improvement to effluent quality and associated disposal options through reduced concentrations of pathogens compared to the existing discharge of secondary treated wastewater. With respect to air quality contamination from potential viruses in the solids excavated from the treatment ponds, as described in the response to comment I3-2, this material would be tested for contaminants, reused onsite to the extent possible, or hauled offsite (covered, if needed) to an approved landfill. The draft EIR identifies Mitigation Measure 3.6-1, which includes performance requirements for hauling that are designed to minimize the release of material from trucks.

I3-14 Please refer to the response to comment S2-1, regarding recent information from City of Santa Rosa officials that confirms that Santa Rosa is unable to commit to any sharing of capacity in the Geysers Pipeline at this time. The City has been unable to locate the referenced letter, which in any case has been superceded by the City of Santa Rosa's updated position, described in the response to comment S2-1.

I4

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Questions for City of Healdsburg Public Works Department About the Draft Environmental Impact Report on the Wastewater Treatment Plant Upgrade Project

March 18, 2005

Dear Mr. Flugum:

My name is Chris De Benedetti and I currently live at 638 Foreman Lane in Healdsburg, where my parents, Joe and Ramona De Benedetti have lived since 1963. I will include three sections in this document: 1) An introductory paragraph, 2) a list of questions on the Draft EIR, and 3) a list of preferred options and solutions for the Wastewater Treatment Plant Upgrade project that I and our neighbors would like to emphasize to city staff and officials. My family, my neighbors and I look forward to using opportunities such as the public comments period expiring at 5pm on March 21, 2005, to ask questions and seek answers in order to best offer solutions that are feasible, creative, environmentally friendly and cost-effective. I am confident and optimistic that continued dialogue and a sincere, open cooperation between the many concerned Healdsburg residents and city officials on all aspects of the Wastewater Plant Upgrade Project will result in a viable solution. It is my sincere hope that that solution will be a win-win-win option for Healdsburg citizens and ratepayers, Healdsburg city officials, and the residents of Foreman Lane, Felta Road and Westside Road. Thank you very much for your consideration and your time.

Please find enclosed below my questions and comments for staff members of the City of Healdsburg Public Works regarding the Draft EIR:

1. Which option among the two WWTP upgrade options being considered is viewed by Healdsburg city staff as having the less negative impact on the area's environment: Conventional Extended Aeration or the Membrane Bioreactor? Why? And on what data do you base that opinion? I4-1

2. What steps will the City of Healdsburg take to mitigate the visual impact that the new Wastewater Treatment Plant and its new proposed 25-foot tower, once completed, will have on the ambience and environment of the surrounding neighborhood's homes? What will be done to mitigate the visual impact during construction of the new WWTP? I4-2

3. What steps will the City of Healdsburg take to mitigate the impact that new lights in the new Wastewater Treatment Plant, once completed, may have on the day-to-day life for Foreman Lane residents? What will be done to mitigate the impact to residents from lights used at night during construction of the new WWTP? I4-3

4. What steps will the City of Healdsburg take to mitigate the impact that odors from the I4-4

new Wastewater Treatment Plant, once completed, may have on the day-to-day life for Foreman Lane residents? What will be done to mitigate the impact from during construction of the new WWTP? I4-4 Cont'd

5. What steps will the City of Healdsburg take to mitigate the impact that noises emanating from the new Wastewater Treatment Plant, once completed, may have on the day-to-day life for Foreman Lane residents? What will be done to mitigate the impact from during construction of the new WWTP? I4-5

6. Have there been any studies that have looked at the environmental effects that deep ponds similar to the Phase V pond have had on nearby aquifers or water tables? If yes, what were those studies' conclusions? Please provide the pertinent information about such a study or studies: Information such as the agency or organization that produced the study, the year it was produced and if there were more than one study, please indicate if there was a uniformity to their conclusions. I4-6

7. To what degree will Foreman Lane residents be exposed to levels of toxicity due to the hundreds of thousands – or perhaps millions -- of cubic yards of soil that would be excavated related to construction from the various WWTP and effluent disposal options? How high could those levels of toxicity reach? Are those levels of toxic exposure expected to be low or high? What are the potential short-term and long-term environmental impacts to area residents, farm land and crops that may stem from the high number of trucks transporting this soil away from the excavation site? Is a dangerous level of pollution in the Foreman Lane/Westside Road area expected to occur as a result of the increased exhaust fumes from the many trucks that would be needed to transport? If yes, what are the estimated levels, and on what data do you base your answer? I4-7

8. As the Department of Fish and Game asks in its letter to you dated March 13, 2002, as it appears in the Draft EIR, what are the reasons why the WWTP plant can't be moved out of the Russian River gravel strata and floodway to another Healdsburg-area site, such as the Salvation Army site? If excessive cost is the main reason for this environmentally friendly potential solution, then please provide the cost estimates of such a move in order to adequately answer the question. Are the estimates of such a potential solution more or less expensive than other options provided in the EIR, such as shallow percolation ponds for effluent disposal? I4-8

9. Can the city legally choose to wait until the appeal of the Riverwatch vs. Healdsburg lawsuit decision is decided in court before beginning construction on the WWTP Upgrade project? If yes or no, why? And on what data do you base your answer? Is it possible that an appeal victory for the city make the upgrade plans moot? I4-9

10. The Draft EIR says that the shallow percolation pond option would have no agricultural impact on the Foreman Lane area, even though the best case scenario results in a net loss of at leat 50 acres of Russian River appellation grapes (e.g. 60 acres turned into shallow percolation ponds while 10 nearby acres for Syar Industries would use the area's topsoil for its vines). How did you arrive at the conclusion that 10 acres of grapes would mitigate a loss of 50-60 acres of prime vineyard farmland? How does that scenario I4-10

plausibly qualify as having "no agricultural impact" on the Foreman Lane area? And on what data and source(s) do you base your answer? I4-10 Cont'd

11. Out of all the effluent disposal options mentioned in the Draft EIR – from both the three ones listed as feasible, and the other ones described as infeasible -- please list the ones that are viewed by the City of Healdsburg Public Works Department as being the most environmentally friendly options, in order of most preferable at the top and least preferable at the bottom. Please base your answers solely on the options' expected environmental impacts – and exclude estimated costs or political concerns as the bases for your answers. On what data and source(s) do you base your answers? I4-11

12. Is the agriculture/irrigation reuse option for effluent disposal an environmentally sound option? If yes or no, why? On what data do you base that answer? I4-12

13. Please define the difference between secondary and tertiary treatment water? Which one is more preferable to city staff and why? What is the difference between Title 22 water and CTR-level water? Which is more preferable and why? I4-13

14. If the city uses tertiary water, can it then continue discharging into Basalt Pond? If yes or no, why? On what data do you base that answer? I4-14

15. By when (what year) do you estimate that the new WWTP plant will be ready to process and distribute tertiary water? On what data do you base that answer? I4-15

16. Will there be a follow-up EIR for this WWTP upgrade project? If yes or no, why? I4-16

17. With the Hoskins parcel for sale on Foreman Lane and Syar Industries land available for eminent domain action by the city, why aren't those more rural properties officially considered in the EIR for eminent domain condemnation? I4-17

18. Why did some options in the Draft EIR have cost and price information (i.e., the Reverse Osmosis option for effluent disposal was estimated to cost $20-25 million) while others, such as the shallow percolation ponds option, did not? If the answer is that environmental concerns are the only factors addressed in an EIR, then why are non-environmental concerns cited I4-18

19. What are all of the possible short-term and long-term environmental risks and problems that shallow percolation ponds are known to cause to agricultural areas? Can you list three examples where shallow percolation ponds caused environmental problems to a surrounding agricultural area? Can you list three examples where shallow percolation ponds caused no environmental problems to a surrounding agricultural area? On what data do you base these answers? I4-19

20. Isn't it true that shallow percolation ponds pose a great threat to the water table in the Russian River Valley, especially in and around prime farm land on Foreman Lane, Felta Road and Westside Road? If yes or no, why? And on what data and/or studies and/or precedents do you base your answer? I4-20

21. The creation of the shallow percolation ponds would destroy the privately owned water wells that currently sit on the 60 acres that would be used to create the shallow percolation ponds. This would decrease the area's sustainable fresh water supply. Given that, why does the Draft EIR claim that the shallow percolation ponds would have no impact on an established community? In addition, why does the Draft EIR claim that the shallow percolation ponds would be consistent with Sonoma County's very pro-agriculture land use designations when those 60 acres on Foreman Lane have been designated as Prime Farm Land, which is the State of California's highest agricultural designation of farm acreage? I4-21

In addition, the County of Sonoma General Plan in 1998 identifies the 60 acres of vineyards on Foreman Lane as Land Intensive Agriculture, meaning that the land in question already has the highest level of designated agricultural service land use. Thus, why does the EIR assert that the storage of recycled water for irrigation purposes on this same 60 acres after being converted to shallow percolation ponds would fit Sonoma County's designation of agriculture land use, even though that prime farm land will have been destroyed in order to create this scenario? On what data do you base your answers? I4-22

While it's true that irrigation purposes is a type of agricultural service land use, it is also a lesser type of designation compared to the 60 acres of current thriving vineyards that are part of the Russian River grape appellation. In my opinion, the type of logic asserted in the EIR on this issue is painfully similar to that old and very dubious wartime argument that one has to destroy a village in order to save it.

22. Isn't the shallow percolation ponds effluent disposal option a violation of both the letter and the spirit of Measure I? If yes or no, why? And on what data do you base your answer?

Measure I was passed by Healdsburg voters in 1996, when "citizens expressed a desire to promote city-centered growth to protect agricultural and open space resources in rural Sonoma County," according to the Draft EIR. Given that statement, wouldn't the destruction of 60 or more acres of prime farmland in order to create shallow percolation ponds be an example of how the shallow percolation ponds option violates Measure I? If yes or no, why? And on what data do you base your answer? I4-23

23. On what basis can you reasonably claim that all effluent disposal options and the Wastewater Treatment Plant Upgrade would have no impact to the division of an established community, as according to State CEQA Guidelines Appendix G? On what data do you base your answer? Also, are there any other precedents in California that support this assertion that the WWTP Upgrade would have no impact to the division of an established community? If yes, please list those precedents. What is the source of your answer?

On page 3.1-10 in the Draft EIR's section titled Impact 3.1-1: Potential for Division of an Established Community, the EIR asserts that both the WWTP upgrade and all effluent disposal options would have NO IMPACT to the division of an established community simply because the Foreman Lane area is a "rural area outside the urbanized areas of the city and the county." This seems like it may be a false assertion. Firstly, many residents I4-24 living on Foreman Lane, Felta Road and Westside Road have lived in their current homes for 30-50 years. As a community, you don't get much more established than that. Secondly, it seems inaccurate to claim, as the EIR does, that all effluent disposal options -- which include the creation of shallow percolation ponds that would result in the destruction of at least 60 acres of prime farm land and the forced relocation of longtime Healdsburg residents – would have NO IMPACT to the division of an established community when, in fact, it would destroy ours and that of other Foreman Lane residents.

24. Doesn't the destruction of prime farm land which has produced award-winning grapes and provided livelihoods to hundreds of Healdsburg residents for decades count as some type of impact on a community – established or otherwise? If yes or no, on what data do you base your answer? I4-24 Cont'd

How does the destruction and/or sudden devaluation of 60-100 acres (the acreage count increases when one considers that nearby property that is spared from eminent domain will become impossible and will surely lose value with the shallow percolation ponds option) reasonably be designated as having no impact on that community? On what data do you base your answer?

25. Why are the impacts to residents living on Foreman Lane, Felta Road and Westside Road residents completely ignored in the EIR, whereas Syar's non-environmental interests are represented at times in the EIR?
Specifically, one example in the EIR's section 2.7.1 Construction Methods on page 2-33 reads: "Although the entire construction could potentially be accomplished in one construction season, the construction would likely be phased so that the truck traffic required for the disposal operation would not interfere with Syar's ongoing mining operations. Material excavated from the first of three of the four separate percolation ponds would be stockpiled within the remaining percolation pond property. The stockpiled material would then be transported to the Syar disposal sites during the months when Syar's mining activities are reduced (i.e., November to June) to avoid interfering with its operations." I4-25
Why does that particular paragraph -- which only addresses non-environmental issues relating solely to a private gravel company's day-to-day business operations – appear in a Draft Environmental Impact Report, when that particular section has virtually nothing to do with environmental issues? Why is the efficiency of Syar Industries' mining operations a concern at all in regards to the environmental issues surrounding a potential construction site for the WWTP Upgrade project when the private industry of the wine growers in the same area is not equally addressed, if at all?

(Note: Examples like the one cited directly above show the selective manner in which the EIR addresses only some options' budgetary issues, but not others. Similarly, the EIR addresses the WWTP/discharge project's expected impacts to only certain neighbors (i.e., It addresses Syar's non-environmental concerns, but no to nearby residents' non-environmental concerns). In the spirit of fairness, I similarly expect my questions on the project's budget costs and cost comparisons to other proposed project options to be fully answered by city staff. Similarly, I expect my questions on the various options' potential impacts on nearby residents to be fully answered by city staff, even if they are not I4-26 expressly environmental issues. I have this expectation because the Draft EIR seems to inconsistently mention non-environmental issues only when it seems expedient to do so. Cost is mentioned, for example, as a reason to disregard Reverse Osmosis as an effluent disposal option and an actual price tag of $20-25 million is cited in Section 5.6.2 on page 5-13 of the EIR. In contrast, the similarly expensive and likely exorbitant costs of the shallow percolation ponds option did not disqualify that as an option for effluent disposal. Further, the shallow percolation option is considered a viable option, even though it is as likely to cost taxpayers and ratepayers as much or more money than any option not being considered. Still, the shallow percolation ponds option is given no estimated price tag in the Draft EIR for ratepayers to publicly digest and debate its true feasibility -- based on a comparatively accurate and balanced set of information for each option. I4-26 Cont'd

For these reasons, I expect answers to the questions on issues I raise in this document that relate to the very same non-environmental subjects, facts and rationale that were cited, consistently or inconsistently, in the Draft EIR released to the public by the City of Healdsburg on Feb. 4, 2005.)

26. When will you provide a cost analysis of the other WWTP and effluent disposal options to Healdsburg ratepayers in either a private or public setting? I4-27

27. What is the entire WWTP project's estimated budget and overall projected financial cost, including that for the WWTP upgrade, effluent disposal option and irrigation pipeline construction?

28. Who will likely incur the cost of the WWTP Upgrade project? How will the city pay for it? If the project goes over budget, how does the city plan to create the revenue to pay for such a budget overrun? Will the city revenue come from the General Fund or will the City of Healdsburg Department of Public Works pay for it? I4-28

29. What's the estimated total cost of the eminent domain/shallow percolation ponds option? Are lawsuits and the loss of tax revenue from 60 acres of agricultural land destroyed factored into that estimate? What percentage of the shallow percolation ponds option's estimate represents the construction costs?

30. Private businesses are named (i.e., Capital Lumber and Syar Industries) in the EIR as being most responsible for the future increased commercial effluent discharge, causing the need for an expanded capacity to handle effluent disposal. Given that, have those private businesses been asked to be held accountable for this by giving something in return, i.e., giving up a section of the company's privately owned land for effluent disposal, or paying increased financial payments to the city to help minimize cost to the city for the WWTP expansion? If no, why not? If yes, how much land and/or financial payment has been discussed between the city and Syar Industries? I4-29

31. Taking the topsoil from the 60 acres of prime farmland that would be condemned and redistributing it to Syar for 10 acres of their grapes is one aspect of the shallow percolation pond option. Are you concerned that that detail will lend credence to accusations from some critics that the shallow percolation pond option is merely an I4-30

attempt by Syar to grab private land that currently belongs to longtime Healdsburg vintners? Is it plausible that this shallow percolation pond option is connected to the possibility that Syar Industries may be interested in getting around the ban that prevents them doing future gravel mining beyond 2006? I4-30 Cont'd

32. Why wasn't the Geyser conveyance pipeline included in the Draft EIR as a potential real option for effluent disposal?

33. What would be the environmental benefits to both Healdsburg and Sonoma County using the Geyser conveyance pipeline as an option for effluent disposal? On what data do you base that answer? I4-31

34. What are the issues ostensibly preventing Healdsburg from hooking up with the Geysers conveyance pipeline that Santa Rosa uses? What is the estimated cost of using this option? Would the Geysers Conveyance option be more expensive than buying out 60-70 acres of private property needed for the shallow percolation ponds option? On what data do you base that answer?

35. Are there any indigenous animals or wildlife present in the areas in or around Foreman Lane or Felta or Westside roads? If yes, what date and year were they found? I4-32

36. In section 2.7.1 and page 2-30 of the Draft EIR, it states that in 1997 Syar was officially requested by the City of Healdsburg to create a weir (flood control overflow structure) in the levee between the Russian River and Syar's terrace mining ponds as a mitigation measure to address the issue of levee breaches and pit capture. About eight years later, Syar has only designed the weir but has not installed it. Why has it taken so long for Syar to complete what they were required to do by the County Board of Supervisors? Why has the city not enacted or threatened any legal repercussions for Syar for their failure to get the weir installed in a timely manner? Has their delay in installing the weir contributed to any delays in the planning of the Wastewater Treatment Upgrade project? If yes, in what ways? I4-33

37. Did any Syar Industries owner or employee or any Syar Industries legal representative consult with Healdsburg city officials or staff regarding the creation of the Draft EIR? If yes, what issues/aspects were discussed and why? Did any Syar Industries owner or employee or any Syar Industries legal representative give input to EDAW or the City of Healdsburg Department of Public Works on any issue or aspect of the Draft EIR that made it into the Draft EIR released on Feb. 4, 2005? If yes, what issues/aspects were discussed and why? I4-34

COMMENTS ON OPTIONS AND POSSIBLE SOLUTIONS

We wish to submit this response to the Draft EIR of the City of Healdsburg Wastewater Treatment Plant Upgrade Project.

We appreciate the City of Healdsburg's efforts to move forward with a plan to treat the waste water to a high level of quality.

In the meetings we have had with various commissioners and city officials we have repeatedly expressed our desire to work together and develop a win-win solution to the waste water treatment plant issue. It is in that spirit that we wish to continue this dialogue in this letter.

EIR:

As we are in the pre-planning phase of this project, it should be recognized that this is a program EIR. Once a project has been identified and approved, a project EIR should be required. I4-35

Effluent Disposal Options:

The biggest issue in front of us is the disposal of the effluent. Of the options the EIR has reviewed, there are clearly more desirable ones listed below:

Pipeline : We feel that going into the pipeline to the Geysers is the best option. In the EIR the cost difference between using the pipeline and the other options has not been adequately addressed. According to discussions with City Staff, it is not an option at this time to discharge into the Pipeline. We think that this could and should be pursued further. I4-36

The best solution for effluent disposal is to discharge into the Basalt Pond. assuming that wastewater is treated to tertiary quality, Title 22 standards Any additional effluent can be disposed of by means of a seasonal irrigation reuse system., assuming that wastewater is treated to tertiary quality, Title 22 standards. Additionally, winter discharge to the Russian River is an acceptable supplement. I4-37

Pond 5, because it flows directly to the aquifer, should not be used for discharge, unless the effluent is treated further to higher quality, according to the USEPA National Primary and Secondary Drinking Water Standards. I4-38

Shallow percolation ponds are not an acceptable option. This option is extremely expensive because of the costs of construction , property acquisition, and potential condemnation litigation. It would destroy valuable agricultural land. The shallow percolation ponds, as described in the Draft EIR, would be a direct discharge into the aquifer. I4-39

Wastewater Treatment Plant Upgrades:

Aesthetics (trees, landscaping details)

The Wastewater Treatment Plant should use technology that produces high quality water, minimizes the size of structures and minimizes noise night lighting, traffic, and odors. I4-40

A proposed 25 ft. building, the Solids Handling Building, would be unattractive and incompatible with the area and existing structures. Consider building it partially below grade to minimize visual impact and to keep it in line with current building heights. Additionally, landscaping should be used to screen buildings and to encourage wildlife habitat.

A distance of at least 70 feet should be allowed between buildings and equipment to be kept from neighboring property and that area should be landscaped in keeping with residents' desires and to blend in with the area. Landscaping design should consider its compatibility with local agricultural crops and local wildlife habitat. Additionally a committee of local residents should be formed to review and approve plans. I4-41

Location of buildings

Treatment structures and equipment (such as Solids Handling Facilities, the Alkalinity Addition Facilities, the Screening, Grit Removal and Flow Diversion Structure, the Solids Thickening and Storage Tank, the Aeration Basins, the Blower Building, Secondary Clarifiers, the Anoxic and Aerobic Zones, Membrane Tanks, the Effluent Disinfection Basin, and the Effluent Pump Station) should be located on property just east of parcel number 110-13-12. This location will have the least amount of impact on any neighbors and mitigate any visual impacts.

Social Impact:

Construction activities and operations of the plant (noise, lighting) should not interfere with the quality of life of the people in the area.

Construction and operations should respect and minimize impact on the wildlife and habitat of the environment. I4-42

This project should use the human resources of the community to contribute ideas and to create a sense of community pride and ownership.

Economic Impact:

Wine industry - Second economy in State of California
RRV appellation – one of best in world for Chardonnay and Pinot Noir, Westside Road is the gateway to the Russian River Valley, one of the most renowned viticultural areas in the world.
Award winning vineyards and vineyard designates
Livelihood – loss of revenue

I4-42 Cont'd

Plant Operations:

In order to mitigate the traffic impact on Foreman Lane, solids can be transported using the Syar levee road. I4-43

Plant hours of operation and noise levels should be considerate of residents. I4-44

In areas where seasonal irrigation reuse is conducted, soil composition should be tested regularly. If testing shows that there is a measurable increase of pollutants then the water treatment should be increased to a higher level of quality. A committee which includes representatives of the residents in the area should be formed to regularly review and inspect the records of water and soil quality. I4-45

CONCLUSION

Thank you for taking the time to answer my questions and read our feedback on the best possible options for this project. I recognize it is a long list of questions and comments. But I appreciate your time and consideration in this matter. It bear repeating, I and my neighbors look forward to working with the City of Healdsburg at ever level to ensure that we find a solution to the Wastewater Treatment Plant Upgrade project that truly is a win-win-win for Healdsburg ratepayers, Healdsburg officials and residents on Foreman Lane, Felta Road and Westside Road.

Please note that I am sending this document in two different forms. I have e-mailed it to Jim Flugum at the City of Healdsburg Department of Public Works, and I have also dropped it off to Mr. Flugum at his office at the City of Healdsburg Department of Public Works

Thank you for your time and your consideration.

Sincerely,

Chris DeBenedetti

Chris De Benedetti

LETTER I4 RESPONSE

Chris De Benedetti
Received on March 21, 2005

I4-1 As described in Section 2.5.1, "Wastewater Treatment Plant Upgrade Options," and in Section 2.7.1, "Construction Methods," of the draft EIR, the two WWTP upgrade options have many features in common and would require similar excavation and facility construction activities. The MBR processes would occupy a slightly smaller footprint of developed area; however, either facility would be placed in the same area of the existing WWTP. Thus, the potential temporary construction-related impacts identified in the draft EIR, such as those related to air quality, noise, and traffic, would be essentially the same under both options. Both methods also would produce tertiary treated wastewater with similar effluent quality characteristics. In particular, both treatment processes would be able to provide similar performance and reliability in allowing the complete set of WWTP upgrade processes to meet stringent Title 22 tertiary treatment standards and comply with regulatory objectives and RWQCB permit limits. The fine filtration provided by MBR systems may provide some potential advantages over conventional extended air technology with respect to removal of smaller sized soluble and suspended material or currently unregulated compounds. MBR systems may provide enhanced inorganic and organic constituent removal as a result of the higher efficiency oxidation of mixed liquids and solids. However, the minor differences in design and operations would have no bearing on the resulting environmental impacts. For the purposes of CEQA, the differences in environmental impacts between the two WWTP upgrade options are considered inconsequential. For this reason, the analysis presented in the EIR generally does not distinguish between the two options. Overall, the differences between the two methods are primarily related to variable comparative advantages and disadvantages of long-term operations, maintenance, complexity, labor requirements, and potential capital and operating cost issues.

I4-2 Please refer to the response to comment O2-10, regarding aesthetic characteristics of the facility designs. Many of the specific facility construction, design, materials, and appearance are preliminary at this stage and would be finalized along with the facility engineering design phase of the project. The Planning Commission is responsible for conducting design review for the project, and public input regarding the project can be provided. Regardless, the City will note this comment for the record as a concern for the aesthetics of the WWTP, and it will be considered by the City in its deliberations on the project.

I4-3 Existing City regulations would prevent new lighting associated with the WWTP upgrade from affecting residents in the vicinity of the WWTP. Article 21 of the City's Zoning Ordinance, Environmental Performance Standards, states, "Lighting shall be indirect or diffused and shall be directed away and/or shielded to minimize spillage onto adjacent properties” (Section 2115). Regarding lighting of night-time construction, as described on page 2-28 of the draft EIR, construction generally would occur between 7:30 a.m. and 6:00 p.m. No construction activities are expected to occur after dark; however, security lighting likely would be used in construction areas. The lighting standard identified above also would apply to security lighting.

I4-4 As described in the discussion of Impact 3.6-5, on page 3.6-29 of the draft EIR, the upgrade of the WWTP process units and the location of the facilities further from local residences are expected to reduce the odor impact from construction and operation of the WWTP. However, potentially significant odor impacts would remain, so the City has designed Mitigation Measure 3.6-5 to further reduce the impact. Because the City cannot ensure that the mitigation would entirely prevent unpleasant odors, it considers the impact significant and unavoidable. Nevertheless, odors are expected to be less than under current conditions at the plant.

I4-5 The construction and operation noise impacts of the project options are described on pages 3.7-11 through 3.7-15 of the draft EIR. As described in the discussion, no significant noise impacts would be associated with operation of any of the options. For those impacts identified as potentially significant (i.e., the construction noise impacts of the WWTP upgrade, Phase V Pond, shallow percolation ponds, and seasonal irrigation reuse options), mitigation is described on pages 3.7-13 and 3.7-14 that would reduce these impacts to a less-than-significant level.

I4-6 The draft EIR summarizes the previous comprehensive groundwater studies that were prepared for the City’s 2001 Wastewater Outfall Relocation EIR that evaluated shallow groundwater quality upgradient and downgradient of the Basalt Pond where the City’s discharge of secondary treated and previously undisinfected (until fall 2004) has occurred for more than 30 years. The monitoring well data have demonstrated that the discharge of wastewater to the pond does not cause degradation of groundwater quality downgradient from the discharge. The proposed project would improve the quality of treated effluent.

I4-7 The discussion of Impact 3.6-4, on pages 3.6-27 and 3.6-28 of the draft EIR, addresses the exposure of Foreman Lane residents to toxic air emissions (specifically, diesel particulate matter). As explained in that discussion, the exposure to both short-term construction mobile sources of diesel particulate matter and to stationary sources of the pollutant would be less than significant.

Following the references to toxic air emissions, the comment seems to refer more generally to other air quality emissions associated with truck exhaust. Section 3.6 of the draft EIR presents a thorough analysis of these air quality impacts. Off-hauling of soil would occur only for several specific potential activities that may or may not be necessary for the project, depending on the specific options implemented. The comment’s reference and inquiry regarding the potential excavation activities of “toxic” materials refers to the excavation of accumulated biosolids for the proposed treatment pond improvements. As identified in the draft EIR, this material is expected to account for up to approximately 15,000 cubic yards and may be used onsite if chemical tests indicate it is acceptable for use as construction fill. However, it is not expected that any potential contaminants would be present at hazardous waste levels. Regardless, if it is determined to be unacceptable because of elevated contaminant levels, it will be hauled to an approved landfill using approved hauling and disposal methods.

I4-8 Section 5.6.1 of the draft EIR explains that an alternative location for the WWTP was eliminated from consideration for several reasons. The WWTP is currently located at the terminus of wastewater interceptors that convey sewage from all areas of the city. The costs involved to construct a new WWTP at another location and to reroute all the interceptors to the new location, and possibly to construct and maintain lift stations needed to pump the wastewater to a higher elevation, would be considerable. The City has not estimated what these costs would be. However, costs are only one factor related to the infeasibility of this alternative because it would potentially involve additional significant construction- and operations-related environmental impacts and yet not substantially reduce any of the significant environmental impacts of the alternatives that were evaluated in the draft EIR. In particular, the comment refers to constructing a new WWTP at the Salvation Army property. Use of this property was eliminated from consideration for seasonal irrigation reuse because of biological and regulatory constraints that would likely be associated with avoiding and mitigating for impacts on the extensive wetland and vernal pool habitats that the property contains (refer to Appendix G of the draft EIR). The City's existing sewer system has been constructed over several decades to follow the natural drainage gradient from the north and east to the southwest end of the City. Conveying raw wastewater to the Salvation Army property would require a new force main extending from the south end of the City to the north, which would be extremely costly and carry its own set of new environmental impacts.

I4-9 The City cannot wait for a decision on its appeal to the Ninth Circuit Court of Appeals. The City must take action to implement facility upgrades that will provide for compliance with its existing cease-and-desist order and NPDES permit under purview of the RWQCB. Under the order, the City is required to complete upgrades to its plant by 2008, or it would face the potential for daily penalties for noncompliance. To meet this schedule, the project construction would need to begin in 2006. It is uncertain what the regulatory framework would be regarding the existing discharge to the Basalt Pond if the City obtains a favorable judgment to its appeal. In discussions with the RWQCB's staff, the identified groundwater connection of the Basalt Pond to the Russian River has been identified as a factor that would likely lead to the continued application of regulation of the Basalt Pond discharges as a surface water discharges subject to all relevant Basin Plan water quality objectives and policies, including the seasonal discharge prohibition, Title 22 public health criteria, and CTR and associated State Implementation Plan. In addition to the appeal, the City is one of several agencies working together with the RWQCB on a study of potential "mixing zones" in the Russian River (a mixing zone would allow consideration of effluent quality when mixed with river water, rather than at the end of the discharge pipe). If a mixing zone is ultimately granted to wastewater dischargers, additional operational flexibility may be provided to the City, but there is no means by which the City can predict the outcome and implications of the study at this time. Because the future outcome and applicable regulations are unknown, the City is conducting the project planning and CEQA review process for tertiary treatment upgrades to provide the most flexibility with disposal and recycled water reuse opportunities. Under any circumstances, the City is committed to the tertiary treatment upgrades, which has been an adopted goal of the City Council for several years. Discharge locations and processes, however, are faced with regulatory uncertainty, and this is leading the City to seek flexibility.

I4-10 The comment misstates the conclusion of the EIR. The discussion of Impact 3.1-2 addresses the conversion of Important Farmland to nonagricultural use. As the comment indicates, up to 60 acres of Important Farmland would be lost if the shallow percolation ponds were constructed, and 10 acres of land suitable for vineyard planting would be created using some of excavated topsoil. On page 3.1-12, the draft EIR states that no mitigation measures are available to substantially reduce the impact of conversion of 60 acres of important farmland associated with the shallow percolation ponds option; therefore, the impact would be significant and unavoidable.

I4-11 As described on page 5-15 of the draft EIR, of all the alternatives evaluated in detail, discharge to the Phase V Pond or continued disposal to the Basalt Pond have equal standing as the environmentally superior alternative. The reasons for this selection, explained throughout the analysis in the EIR, relate primarily to the fact that only minimal construction would be required to implement either of these options and that discharges would comply with applicable water quality objectives and policies. The shallow percolation ponds option, which would involve the excavation of up to 60 acres, would have the greatest environmental impact.

I4-12 The seasonal irrigation reuse option is evaluated in the EIR. The option would involve construction activities that would result in environmental impacts, but all but one of these impacts could be reduced to less than significant with implementation of mitigation measures identified in the EIR. The impact that would be significant and unavoidable (Impact 3.6-1: Generation of Temporary Emissions from Construction Activities) also would be significant and unavoidable for the WWTP upgrade, Phase V Pond, and shallow percolation ponds options. Use of the irrigation water would not result in any environmental impacts.

I4-13 Tertiary treated wastewater receives more intensive oxidation and disinfection treatment than secondary treated water. In addition, secondary treated wastewater is oxidized, clarified, and disinfected, whereas tertiary treated wastewater is oxidized, clarified, coagulated, filtered, and disinfected. As described on page 2-6 of the draft EIR, tertiary treated wastewater effluent is essentially pathogen free and considered suitable by the California Department of Health Services (DHS) for irrigation and other uses in unrestricted public access areas, such as for landscaping, parks, golf courses, recreational impoundments, and irrigation of agricultural crops for human consumption. Because tertiary treated wastewater has lower levels of contaminants and pathogens than secondary treated wastewater, it is environmentally preferable.

Title 22 regulations establish the treatment performance and reliability regulations for production of primary, secondary, and advanced (also known as tertiary) wastewater treatment. Numerical and narrative regulatory water quality criteria are established in the California Toxics Rule (CTR), Basin Plan surface water and groundwater quality objectives, and Title 22 primary and secondary drinking water quality objectives and form the objective thresholds that are applied in discharge permits to ensure the protection of designated beneficial uses. The comment includes an inquiry about which criteria, Title 22 or CTR, are preferable, but that is not a preference the City has control over. Both of the proposed WTPU options would produce Title 22 tertiary treated wastewater. The RWQCB would designate the applicable regulatory criteria that would be protective of the beneficial uses of the waters affected by the discharge, which would depend on the specific ED and SIR options selected for implementation. The City would then be required to operate the WWTP in a manner that complies with the applicable permit terms and conditions.

I4-14 The City's proposed upgrades to tertiary treatment are necessary to continue discharging to the Basalt Pond. However, as described on page 2-5 of the draft EIR, the City was issued a new NPDES permit and associated cease and desist order that specifies that continued discharges to the Basalt Pond are subject to the Basin Plan seasonal discharge prohibition that allows wastewater discharges only during the period of October 1 to May 15. In addition, the City must either demonstrate compliance with a 1% dilution requirement or fulfill the requirements to obtain an exception to this requirement.

I4-15 As discussed in Section 2.7.2 of the draft EIR, the City, based on its understanding of the requirements of the project (including the requirements imposed by the RWQCB) and its understanding of the length of time typically required to perform the tasks associated with the project, anticipates project construction to occur in 2006–2007, with the WWTP upgrade option functioning by January 2008.

I4-16 This EIR provides sufficient detail on all phases of the project, including planning, construction, and operation, for the lead agency to determine what the environmental impacts of the project would be. The City does not intend to prepare a second EIR.

I4-17 Please refer to the response to comment I1-1, which describes the City's consideration of Syar property located south of the Phase V Pond as suitable for shallow percolation pond placement (refer to Exhibit 1). However, as described in the responses to comments S2-12, O2-6, and I1-1, there are no alternative locations for shallow percolation ponds that would substantially reduce any of the significant environmental impacts that were identified in the draft EIR for the proposed location. Other properties located further away, such as the Syar property, would involve additional construction-related impacts and add to the complexity of remotely operating the facility. The Hoskin property, located north of the WWTP, is approximately 23 acres and is bordered by Dry Creek on the north. This property offers no advantages to the siting of shallow percolation ponds. If the percolation ponds are selected as the preferred effluent disposal option, the parcel size is insufficient to provide a complete solution for shallow percolation facilities. The parcel is currently a vineyard, and its conversion to ponds would cause the same loss of farmland, air quality, noise, and visual impacts identified in the draft EIR for the proposed shallow percolation ponds. The parcel is also directly bordered by sensitive riparian habitat and an active stream channel. Current regulatory protection policies for these resources would further constrain the use of the parcel with setback buffers. For example, the current policy under the ARM Plan for major floodplain terrace excavations is to require a setback buffer of at least 450 feet from streams. Moreover, the City specifically developed the Phase V Pond and shallow percolation ponds effluent disposal options to respond to agency and public concerns regarding the proximity of existing wastewater discharges to the Russian River via the Basalt Pond. Development of the Hoskins parcel for wastewater disposal facilities would conflict with the planning criteria set forth for the selected options. Because of the multiple use-constraints of this parcel and its small size, its use is considered infeasible by the City. Therefore, the City believes the two options for shallow percolation ponds are sufficient and that it is unnecessary to expand the scope of area where these facilities could be located. The City will note this comment as a suggestion that the City consider relocating the shallow percolation ponds to Syar property.

I4-18 Although it is true that EIRs typically do not include cost information, the lead agency is free to include that information if it believes the information will be useful for the reader. The draft EIR does not focus on or attempt to estimate cost-effectiveness factors of the WTPU, ED, and SIR options because overall cost-effectiveness would depend on the combination of options that are implemented. However, one of the stated objectives of the project is to continue to provide wastewater treatment service to the ratepayers at a reasonable cost. In the case of reverse osmosis for wastewater treatment identified in Section 5.6.2 of the draft EIR, cost was a principal factor determining that this alternative was infeasible. Reverse osmosis would achieve the objectives of providing high-quality treated wastewater; however, it would involve additional significant construction- and operations-related environmental impacts and would not substantially reduce any of the significant environmental impacts of the alternatives that were evaluated in the draft EIR. The cost for implementation of reverse osmosis would be substantially higher than the cost of the other methods of tertiary treatment and thus was a key factor in the finding of infeasibility. In addition, the City anticipated that questions would arise about why reverse osmosis, an extremely effective type of water treatment, was rejected as a project option, so it included the cost information.

I4-19 The EIR presents a thorough analysis of the impacts associated with implementing the shallow percolation ponds option, based on the site-specific characteristics of the project area and the projected wastewater characteristics. Evaluation of other examples is not relevant to the site-specific analysis; therefore, the City believes that to do so would not provide for any more meaningful analysis of the environmental impacts of the project.

I4-20 The EIR presents a thorough analysis of the hydrologic impacts associated with implementing the shallow percolation ponds option (refer to Impact 3.2-5) based on modeling conducted for the Phase V Pond option. As described in the response to comment I4-13, effluent produced from the WTPU will meet drinking water and all other applicable water quality objectives. As described in the EIR and in various responses, it would not adversely affect groundwater quality in the Russian River Valley.

I4-21 The construction of the shallow percolation ponds would not reduce the water supply of the area. The conversion of up to 60 acres of vineyard for the ponds would actually reduce the amount of water used to irrigate these areas. The shallow percolation ponds also would have the direct effect of recharging the groundwater basin with high-quality recycled water.

I4-22 Page 3.1-10 of the draft EIR explains how the Land Intensive Agriculture designation was interpreted to allow for the shallow percolation ponds option because the option supports community service and agricultural service land uses, two uses allowed under the designation. Further, as stated in the EIR, Impact 3.1-2, the project would result in a significant and unavoidable loss of up to 60 acres of Important Farmland. Even though the General Plan may allow for the proposed percolation ponds, the physical conversion would be a significant impact.

It is important to recognize that the shallow percolation ponds option is one of several options for effluent disposal evaluated in the EIR. Other options, such as discharge to the Basalt Pond or the Phase V Pond, would not result in any adverse impacts on agriculture, and the City will consider these options along with the percolation pond option when determining what should be approved.

I4-23 Measure I was specifically established to restrict the spread of urban development beyond the 20-year Urban Growth Boundary in order to protect agricultural and open space resources in Sonoma County. Implementing the shallow percolation ponds option would involve the loss of agricultural land, but it would not represent the spread of residential growth beyond the boundary.

I4-24 Please refer to the response to comment I3-4, which provided for a similar comment on the analysis of "division of community" presented in the draft EIR. The potential project-related effects on the market value of land adjacent to facilities are considered an economic effect that is not considered in the EIR because it is not considered a physical environmental effect. (See the response to comment O2-11 for a discussion of socioeconomic effects.) Although this and other comments have questioned the conclusion in the EIR that the project would not physically divide the community, no information has been provided to suggest that he community would be divided. Notwithstanding that the EIR drew its conclusions, in part, because the area is rural, even considering this fact, it is not reasonable to suggest that a significant physical division to the community would result from the project. Construction of the ponds, under this option, would occur on private land. It would not alter public access in any way between residents. Although the ponds would create a physical barrier by prohibiting access across them, access is already restricted because these properties are privately held and not available for public access.

I4-25 The comment refers to Chapter 2 of the draft EIR, which has the intended purpose of simply describing, to the extent possible, the major elements of the project. The City believes that the discussions of how all construction, excavation, and hauling activities would occur were addressed at a commensurate and appropriate level of detail to evaluate the environmental impacts. The movement of more than 1.6 million cubic yards of soil associated with the shallow percolation ponds and placement along the inboard side of the levee would represent the most substantial construction phase of any of the options associated with the suite of WTPU, ED, or SIR options. However, it should be noted that the City chose to explore soil disposal on the Syar property in part to avoid the impacts associated with hauling this material offsite using Foreman Lane. Construction elements that would cause environmental impacts on local residents were also considered, as evidenced by other elements of Section 2.7 and the numerous environmental commitments identified in Section 2.8 designed to avoid and minimize disturbances to local residences and the environment. Regardless, the analysis and discussion of the environmental impacts addressed and included all the effects of the project. Because the comment does not identify any specific example related to the suggestion that other issues were not addressed with sufficient detail, and because it does not offer any substantiation that would contradict the analysis of environmental impacts in the draft EIR, a more specific response cannot be provided.

I4-26 Refer to the response to comment I4-18, regarding why cost information is provided in the determination for feasibility of an alternative that would not fulfill the stated project objective of providing wastewater treatment at a reasonable cost to taxpayers. Regarding the shallow percolation ponds, the City has preliminarily estimated the construction costs at between $13.5 million and $21.5 million. However, as described in Section 2.5.3 of the draft EIR, the City considered new options for tertiary treated effluent disposal in the draft EIR because of regulatory uncertainty associated with the Basalt Pond disposal option. The shallow percolation ponds option is a feasible alternative with potentially unique attributes not provided by other options, such as providing for year-round disposal capacity that is not subject to the seasonal discharge prohibition. Thus, the City considers it necessary to include the option in the alternatives evaluation to provide flexibility in meeting a key project objective of providing effluent disposal capacity. Thus, the cost of constructing and operating shallow percolation ponds is not specifically relevant to the feasibility of the option.

I4-27 Preliminary engineering design and associated capital and operating costs would be developed after the EIR is certified and after the City Council provides City staff with a recommended approach for the preferred set of WWTP upgrade options. The City anticipates this phase of the planning and design for the WWTP upgrades to require several months and extend through late 2005.

I4-28 No estimated budget for the overall set of WWTP upgrade options that would be implemented can be developed at this point because the combination of these options would not be known until the EIR is certified and the City Council recommends a preferred course of action. The City sewer system is operated as an enterprise fund, and all costs of the WWTP upgrade project would be funded by the city's sewer ratepayers and development impact fees. None of the construction or operating costs would be paid from the City's General Fund. The need for condemnation proceedings is not known—a preferred set of options has not yet been selected—and it is speculative to assume that the City could not enter into mutually agreeable purchase arrangements. Any consideration of possible budget overruns is speculative and beyond the intent of an EIR, so no further response is provided.

I4-29 The project does not involve the expansion of treatment capacity at the WWTP. As described on page 2-5 of the draft EIR, the City expects that the WWTP's permitted capacity of 1.4 million gallons per day will be adequate to accommodate the current anticipated population growth, and development of presently unsewered areas within the city limits. Specific industrial properties are mentioned in the draft EIR only because they are potential users of the existing unused capacity in the future. The City charges connection fees on all new sewer connections to cover the capital cost of providing wastewater treatment and sewer main capacity. The comment's questions about the role of private business in providing land or funding for the project do not relate to an environmental impact, so no specific response is provided.

I4-30 The City would acquire and own the land associated with shallow percolation ponds (if constructed), and the excavated material would be used to reinforce the Russian River levee, as described in the draft EIR. The proper function of the shallow percolation ponds depends on maintaining the commercially valuable permeable sands and gravels below the percolation ponds. There is no relationship between the shallow percolation ponds, the ARM Plan that bans terrace gravel mining in April 2006, and Syar Industries operations. The comment presents questions about Syar Industries that do not relate to an environmental impact, so no specific response is provided.

I4-31 Please refer to the response to comment S2-1.

I4-32 It is presumed from this comment that there is concern that endangered species may be affected by the project. The list of special-status species with potential to occur in the project areas was developed based on U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (DFG) information. DFG's California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) database were reviewed for specific information on documented observations of special-status species in the project area. The DFG and CNPS records typically provide information of observations extending back many years. Baseline field reconnaissance surveys also were conducted to evaluate the existing habitat and to observe the plant and wildlife species (i.e., both native and nonnative, both listed and nonlisted species) on the project site. This information was used to prepare Section 3.4 of the draft EIR, and no other more relevant detailed information for specific sites is available.

I4-33 Syar's weir requirement was a condition of one if its mining applications to the County of Sonoma and was not requested by the City of Healdsburg. One of the key objectives of Syar's requirement to install a weir on the Russian River levee was to reduce the perceived risk that high flows could cause pit capture of the Basalt Pond and lead to wastewater releases to the Russian River. Syar has completed a preliminary design for the weir. Syar has been considering other solutions for the weir issue; however, the subsequent regulatory uncertainty regarding the City's wastewater discharges into the Basalt Pond has been one issue to be addressed before the weir can be completed. In 2001, the City prepared an EIR on the Wastewater Outfall Relocation Project, which would have removed the discharge and potentially lessened the criteria and design requirements for a weir; however, the EIR was challenged and the City subsequently initiated planning for advanced wastewater treatment upgrades. The *Northern California River Watch vs. City of Healdsburg* legal challenge regarding the continued use of the Basalt Pond for wastewater discharge added to the uncertainty. Most recently, Syar is proposing to continue and expand the placement of fill in the Basalt Pond to reinforce the levee, as described in the draft EIR, with material generated from its own gravel washing operations. The present status of the weir project is unknown. However, the City believes that with the new NPDES permit and the tertiary treatment upgrades, much of this uncertainty has been resolved and the weir project could move forward if Syar chooses to pursue it.

I4-34 The City's staff and the EIR consultant's staff discussed and cooperatively developed the project description with Syar representatives. The discussions related to the placement of soil in the Basalt Pond and potentially in the Phase I/II Ponds. The soil would be generated from construction of pond improvements at the WWTP and the shallow percolation ponds (if constructed). The soil placement would be used for the purpose of levee reinforcement. Syar was not involved in any way with the preparation of the draft EIR.

I4-35 Please refer to the response to comment O2-1.

I4-36 Please refer to the response to comment O2-2.

I4-37 Please refer to the response to comment O2-3.

I4-38 As described in the responses to comments S2-5, S2-8, and S2-9, the analysis of existing and projected effluent quality presented in the draft EIR concludes that all the effluent disposal options, including the Phase V Pond option, are expected to meet regulatory water quality objectives.

I4-39 Please refer to the response to comment O2-5.

I4-40 Please refer to the response to comment O2-9.

I4-41 Please refer to the response to comment O2-10.

I4-42 Please refer to the response to comment O2-11.

I4-43 Please refer to the response to comment O2-12.

I4-44 Please refer to the response to comment O2-13.

I4-45 Please refer to the response to comment O2-14.

I5

Caroline Marker

From:	Marisa De Benedetti [curvygirl38@hotmail.com]
Sent:	Monday, March 21, 2005 3:05 PM
To:	Publicworks
Subject:	ATTN: JIM FLUGUM - QUESTIONS RE: Draft Environ Impact Report

Marisa De Benedetti
472 Union St #2
San Francisco, CA 94133
(415)544-0904

ATTN: JIM FLUGUM

Questions for City of Healdsburg Public Works Department About the Draft Environmental Impact Report on the Wastewater Treatment Plant Upgrade Project

March 18, 2005

Dear Mr. Flugum,

My name is Marisa De Benedetti and I currently live San Francisco. I was 18 months old when my parents, Joe and Ramona De Benedetti, moved to Healdsburg in 1963 and have lived ever since. Healdsburg is my home and even though I reside in San Francisco now, I have always known that I would return to live in Healdsburg to be with my family and to continue the legacy of my family.

My family, my neighbors and I look forward to using opportunities such as the public comments period expiring at 5pm on March 21, 2005, to ask questions and seek answers in order to best offer solutions that are feasible, creative, environmentally friendly and cost-effective. I am confident and optimistic that continued dialogue and a sincere, open cooperation between the many concerned Healdsburg residents and city officials on all aspects of the Wastewater Plant Upgrade Project will result in a viable solution. It is my sincere hope that that solution will be a win-win-win option for Healdsburg citizens and ratepayers, Healdsburg city officials, and the residents of Foreman Lane, Felta Road and Westside Road. Thank you for your consideration and your time.

Please find enclosed below my questions and comments for staff members of the City of Healdsburg Public Works regarding the Draft EIR:

1. Which option among the two WWTP upgrade options being considered is viewed by Healdsburg city staff as having the less negative impact on the area's environment: Conventional Extended Aeration or the Membrane Bioreactor? Why? And on what data do you base that opinion? I5-1

2. What steps will the City of Healdsburg take to mitigate the visual impact that the new Wastewater Treatment Plant and its new proposed 25-foot tower, once completed, will have on the ambience and environment of the surrounding neighborhood's homes? I5-2

3. What steps will the City of Healdsburg take to mitigate the impact that new lights in the new Wastewater Treatment Plant, once completed, may have on the day-to-day life for Foreman Lane residents? I5-3

4. What steps will the City of Healdsburg take to mitigate the impact that odors from the new Wastewater Treatment Plant, once completed, may have on the day-to-day life for Foreman Lane residents? I5-4

5. Are there any indigenous animals or wildlife present in the areas in or around Foreman Lane, Felta Road or Westside Road? If yes, how recently (Which date?) were they found? I5-5

6. Have there been any studies that have looked at the environmental effects that deep ponds similar to the Phase V pond have had on nearby aquifers or water tables? If yes, please provide the pertinent information about such a study or studies: Information such as the agency or organization that produced the study, the year it was produced and what its important conclusions were. I5-6

7. To what degree will Foreman Lane residents be exposed to low or high levels of toxicity due to the hundreds of thousands - or perhaps millions -- of cubic yards of soil that would be excavated related to the various WWTP and effluent disposal options? How high could those levels of toxicity reach? What are the potential environmental impacts that may stem from the high number of trucks transporting this soil away from the excavation site? I5-7

8. As the Department of Fish and Game asks in its letter to you dated March 13, 2002, as it appears in the Draft EIR, what are the reasons why the WWTP plant can't be moved out of the Russian River gravel strata and floodway to another Healdsburg-area site, such as the Salvation Army site? If excessive cost is the main reason for this environmentally friendly potential solution, then please provide the cost estimates of such a move in order to adequately answer the question. Are the estimates of such a potential solution more or less expensive than other options provided in the EIR, such as shallow percolation ponds for effluent disposal? I5-8

9. Can the city wait until the appeal of the Riverwatch lawsuit is decided in court? Couldn't an appeal victory for the city make the upgrade plans moot? I5-9

10. The Draft EIR says that the shallow percolation pond option would have no agricultural impact, even though the best case scenario results in a net loss of 50 acres of Russian River appellation grapes (e.g. 60 acres turned into shallow percolation ponds while 10 nearby acres for Syar Industries would use the area's topsoil for vines). How did you arrive at the conclusion 10 acres of grapes would mitigate a loss of 50-60 acres of prime vineyard farmland? How does that scencario plausibly qualify as having "no agricultural impact" on the Foreman Lane area? And on what data do you base this opinion or argument? I5-10

11. What are the environmental benefits to Healdsburg and Sonoma County of using the option of tapping into the Geyser conveyance pipeline for effluent I5-11

discharge? On what data do you base that answer? I5-11 Cont'd

12. Is the agriculture/irrigation reuse option for disposal an environmentally sound option? On what data do you base that answer? I5-12

13. Please define the difference between secondary and tertiary treatment water? Which one is more preferable and why? What is the difference between Title 22 water and CTR-level water? Which is more preferable and why? I5-13

14. If the city uses tertiary water, can it then continue discharging into Basalt Pond? I5-14

15. By when (what year) do you estimate that the WWTP plant will be ready to process and distribute tertiary water? On what data do you base that answer? I5-15

16. Will there be a follow-up EIR for this WWTP upgrade project? I5-16

17. With the Hoskins parcel for sale and Syar land available for eminent domain action by the city, why aren't those more rural properties officially considered in the EIR for eminent domain condemnation? I5-17

18. Why did some options in the Draft EIR have cost and price information (e.g., Reverse Osmosis) while others, such as shallow percolation ponds, did not? How can you explain that inconsistency? I5-18

19. What are all of the possible short-term and long-term environmental risks and problems that shallow percolation ponds are known to cause from other examples? I5-19

20. Isn't it true that shallow percolation ponds pose a great threat to the water table in the Russian River Valley and especially in and around farm land Foreman Lane, Felta Road and Westside Road? If yes or no, why? And on what data and/or studies and/or precedents do you base your answer? I5-20

21. The creation of the shallow percolation ponds would destroy the privately owned water wells that currently sit on the 60 acres that would be used to create the shallow percolation ponds. This would decrease the area's sustainable fresh water supply. Given that, why does the EIR claim that the shallow percolation ponds would have no impact on an established community or would be consistent with Sonoma County's land use designations? I5-21 Given that the County of Sonoma General Plan in 1998 identifies the 60 acres of prime farm land on Foreman Lane as Land Intensive Agriculture, it already has the highest level of designated agricultural service land use. Thus, why does the EIR assert that the storage of recycled water for irrigation purposes on this same 60 acres after being converted to shallow percolation ponds would fit the designation of agriculture land use, even though that prime farm land will have been destroyed in order to create this scenario? Isn't this an erroneous claim? If yes or no, why? On what data do you base that answer? I5-22
Sadly, I believe that that type of logic asserted in the EIR is painfully similar to that old Orwellian and very dubious war-time argument that one has to destroy a village in order to save it.

3

22. Isn't the shallow percolation ponds effluent disposal option a violation of both the letter and the spirit of Measure I? Measure I was passed by Healdsburg voters in 1996, when "citizens expressed a desire to promote city-centered growth to protect agricultural and open space resources in rural Sonoma County," according to the Draft EIR. Given that statement, wouldn't the destruction of 60 or more acres of prime farmland in order to create shallow percolation ponds be a prime example of how the shallow percolation ponds option violates Measure I? I5-23

23. On what basis can you reasonably claim that all effluent disposal options and the Wastewater Treatment Plant Upgrade would have no impact to the division of an established community, as according to State CEQA Guidelines Appendix G? What other precedents, if any, in California were these assertions based?
An example of this can be found on page 3.1-10 in the Draft EIR's section titled Impact 3.1-1: Potential for Division of an Established Community, where the EIR asserts that both the WWTP upgrade and all effluent disposal options would have NO IMPACT to the division of an established community, simply because the Foreman Lane area is a "rural area outside the urbanized areas of the city and the county." This is a completely false assertion.
First of all, many residents living on Foreman Lane, Felta Road and Westisde have lived in their current homes for 30-50 years. As a community, you don't get much more established than that. Secondly, it is a very specious claim to assert that all effluent disposal options -- which include the creation of shallow percolation ponds, which would result in the destruction of at least 60 acres of prime farm land and the forced relocation of longtime Healdsburg residents – would have NO IMPACT to the division of an established community. In fact, it is more than specious. It is very inaccurate. I5-24

24. Doesn't the destruction of prime farm land which has produced award-winning grapes and provided livelihoods to hundreds of Healdsburg residents for decades count as some type of impact on a community – established or otherwise? How does the destruction and/or sudden devaluation of 60-100 acres (the acreage count increases when one considers that nearby property that is spared from eminent domain will become impossible and will surely lose value with the shallow percolation ponds option) reasonably be designated as having no impact on that community? If yes or no, on what data and/or philosophy do you base that answer?

25. Why are the impacts to residents living on Foreman Lane, Felta Road and Westside Road residents largely and perhaps completely ignored in the EIR, whereas Syar's non-environmental interests are represented at times in the EIR?
Specifically, one example in the EIR's section 2.7.1 Construction Methods on page 2-33 reads: "Although the entire construction could potentially be accomplished in one construction season, the construction would likely be phased so that the truck traffic required for the disposal operation would not interfere with Syar's ongoing mining operations. Material excavated from the first of three of the four separate percolation ponds would be stockpiled within the remaining percolation pond property. The stockpiled material would then be transported to the Syar disposal sites during the months when Syar's mining activities are reduced (i.e., November to June) to I5-25

4

avoid interfering with its operations."
Again, what is that particular paragraph -- which only addresses non-environmental issues relating solely to a private gravel company's day-to-day business operations – doing in a draft Environmental Impact Report, when that particular section has virtually nothing to do with environmental issues? Why is the efficiency of Syar Industries' mining operations a concern at all in regards to the environmental issues surrounding a potential construction site when the private industry of the wine growers in the same area is not equally addressed, if at all? I5-25 Cont'd

(Note: Examples like the one cited directly above show the selective manner in which the EIR addresses only some options' budgetary issues and the WWTP/discharge project's impacts to only certain neighbors (i.e. yes to Syar's non-environmental concerns, but no to nearby residents' non-environmental concerns), this Foreman Lane resident thus expects my questions on the project's budget costs and comparisons to other proposed project options and alternatives and my questions on the various options' potential impacts on nearby residents to be fully answered by city staff. Again, I expect all questions appearing in this document on EIR issues to be answered by city staff, even if they are not expressly environmental issues. I have this expectation because the Draft EIR inconsistently and rather selectively mentions non-environmental issues and only when its expedient to do so. Cost is mentioned, for example, as a reason to disregard regarding Reverse Osmosis as an effluent disposal option and an actual price tag of \$20-25 million is cited in Section 5.6.2 on page 5-13 of the EIR. Strangely, the likely exorbitant costs of the shallow percolation ponds option did not disqualify that as an option for effluent disposal. Further, even though that option is considered a viable option and thus more likely to cost taxpayers and ratepayers money than any option not being considered, still the shallow percolation ponds option oddly is given no estimated price tag for ratepayers in the EIR to publicly digest and debate its true feasibility -- based on a comparatively accurate and balanced set of information for each option. I5-26

For these reasons, I fully expect answers to questions on issues I have that relate to the very same non-environmental subjects, facts and rationale that were cited, consistently or inconsistently, in the Draft EIR released to the public by the City of Healdsburg on Feb. 4, 2005, as previously mentioned directly above.)

26. When will you provide a cost analysis of the other WWTP and effluent disposal options to Healdsburg ratepayers in either a private or public setting? I5-27

27. What is the entire project's estimated budget and ultimate financial cost? (WWTP upgrade, effluent disposal option and irrigation pipeline construction in total)

28. Who will likely incur that cost? How will the city pay for it? If the project goes over budget, how does the city plant to create the revenue to pay for such a budget overrun? I5-28

29. What's the estimated cost of the eminent domain/shallow percolation

ponds option? Are lawsuits and the loss of tax revenue from 60 acres of agricultural land destroyed factored into that estimate? I5-28 Cont'd

30. Private businesses are named (i.e., Capital Lumber and Syar Industries) in the EIR as being most responsible for the future increased commercial discharge causing the need for an expanded capacity to handle effluent disposal. So, are those private businesses being asked to be held accountable for this by perhaps offering sections of their privately-owned land and/or increased financial payments to the city to help minimize cost to the city for the WWTP expansion? I5-29
If no, why not? If yes, how much land and/or financial payment has been discussed between the city and Syar Industries?

31. Taking the topsoil from the 60 acres of prime farmland that would be condemned and redistributing it to Syar for 10 acres of their grapes is one aspect of the shallow percolation pond option. Are you concerned that that detail will lend credence to accusations from some critics that the shallow percolation pond option is merely an attempt by Syar to grab private land that currently belongs to longtime Healdsburg vintners? Is it plausible that this shallow percolation pond option is merely an attempt by Syar Industries to get around the ban on them doing future gravel mining beyond 2006? I5-30

32. Why wasn't the Geyser conveyance pipeline included in the Draft EIR as a potential real option for effluent disposal?

33. Is the Geyser conveyance pipeline an environmentally sound option? If yes or no, why? And on what data do you base that answer? I5-31

34. What are the issues ostensibly preventing Healdsburg from hooking up with the Geysers Conveyance pipeline that Santa Rosa uses? What is the estimated cost of using this option? Would the Geysers Conveyance option be more expensive than buying out 60-70 acres of private property needed for the shallow percolation ponds option? On what data do you base that answer?

Thank you for your time and consideration.

Sincerely,
Marisa De Benedetti

6

LETTER I5 RESPONSE

Marisa De Benedetti
Received on March 21, 2005

I5-1 Please refer to the response to comment I4-1.

I5-2 Please refer to the response to comment I4-2.

I5-3 Please refer to the response to comment I4-3.

I5-4 Please refer to the response to comment I4-4.

I5-5 Please refer to the response to comment O2-1.

I5-6 Please refer to the response to comment I4-6.

I5-7 Please refer to the response to comment I4-7.

I5-8 Please refer to the response to comment I4-8.

I5-9 Please refer to the response to comment I4-9.

I5-10 Please refer to the response to comment I4-10.

I5-11 Please refer to the response to comment I4-31.

I5-12 Please refer to the response to comment I4-12.

I5-13 Please refer to the response to comment I4-13.

I5-14 Please refer to the response to comment I4-14.

I5-15 Please refer to the response to comment I4-15.

I5-16 Please refer to the response to comment I4-16.

I5-17 Please refer to the response to comment I4-17.

I5-18 Please refer to the response to comment I4-18.

I5-19 Please refer to the response to comment I4-19.

I5-20 Please refer to the response to comment I4-20.

I5-21 Please refer to the response to comment I4-21.

I5-22 Please refer to the response to comment I4-22.

I5-23 Please refer to the response to comment I4-23.

I5-24 Please refer to the response to comment I4-24.

I5-25 Please refer to the response to comment I4-25.

I5-26 Please refer to the response to comment I4-26.

I5-27 Please refer to the response to comment I4-27.

I5-28 Please refer to the response to comment I4-28.

I5-29 Please refer to the response to comment I4-29.

I5-30 Please refer to the response to comment I4-30.

I5-31 Please refer to the response to comment I4-31.

I6

Michaela De Benedetti
7588 Charmant Drive # 1923
San Diego, CA 92122
(619) 504-6922

Questions for City of Healdsburg Public Works Department about the Draft Environmental Impact Report on the Wastewater Treatment Plant Upgrade Project

March 20, 2005

My name is Michaela De Benedetti. I am the eldest grandchild of Joe and Ramona De Benedetti. My roots and childhood upbringing took place at 638 Foreman Lane. I have good faith to continue the legacy of the De Benedetti resident and vineyards on Foreman Lane. I am using this opportunity during the public comments period to seek answers pertaining to your proposed Wastewater Plant Upgrade Project on Foreman Lane.

It is my deepest hope that Healdsburg officials can create an environmental safe solution that can benefit my grandparents, fellow neighbors of Foreman Lane and the well being of all Healdsburg citizens.

I appreciate your time and consideration.

Enclosed below are my questions for the staff members of the City of Healdsburg Public Works regarding the Draft EIR:

1.) What are the health and environmental impacts of both secondary and tertiary water treatments on the residents of Foreman Lane, agriculturally and in and the drinking water wells? Please support answer with your data/studies.

2.) If the 'eminent domain' proposal of Foreman Lane is approved for the WWTP, how will the surrounding neighbors (e.g. the Johnson's who are not in threat of the eminent domain) be impacted economically and environmentally? Will their water be in threat of contamination both for water wells and agriculture? Please provide data/studies to support your answers. I6-1

3.) If the eminent domain proposal is approved by the city of Healdsburg for the residents of Foreman Lane. Can the city of Healdsburg provide an accurate timeline including each of the following:
   a.) Process of eminent domain
   b.) Construction of the WWTP on Foreman Lane
   c.) Completion of project entirely

I6-2

4.) What is the potential cost of this wastewater treatment on Foreman Lane? Who will sustain these costs? How does the city of Healdsburg plan to budget for this plan? I6-3

5.) Explain the processes/legalities and possible challenges of eminent domain pertaining to the residents of Foreman Lane?

6.) Please explain the process if you were only to condemn part of 638 Foreman Lane utilizing eminent domain? How is compensation determined and is their "severance damages" applicable in this situation? Is the landowner also entitled to "goodwill" compensation as result of the loss of their grapes?

7.) The state of California requires that a property be declared a "blighted area" before being condemned under eminent domain. Please explain the process/argument/reasoning the city of Healdsburg is taking to declare the residents of Foreman Lane a "blight area"? Please provide data/studies to support your answer. I6-4

8.) Residents of Foreman lane have produced award-winning vineyards and supply their local wineries of Sonoma County, which contributes to the economic stability of both Healdsburg and Sonoma County. How does the destruction of such land impact the economy of Healdsburg and does this weigh heavily upon the city of Healdsburg's decision to condemn the land under eminent domain?

9.) For the wineries/residents that overlook Foreman Lane, how will the WWTP impact them environmentally with regard to their water wells? Furthermore, how could this potentially affect Healdsburg economically and environmentally? Please provide data/studies to support your answer. I6-5

10.) Why isn't the Hopkins property and the Syar's land, that do not affect any Healdsburg residents, not being considered for the WWTP? Please provide any data/ studies to support your answer. I6-6

11.) What actions are the city of Healdsburg going to take to conserve the beauty/nature of the countryside for the Foreman Lane and Westside Road residents if the WWTP comes into affect? For example, the visual and odors that could result from the WWTP? Please provide data to support your answer. I6-7

12.) What other rural lands in Healdsburg or Sonoma County have been investigated as possible alternatives for the WWTP? If no others are being reviewed, why not? Please provide data/studies to support answer. I6-8

LETTER I6 RESPONSE

Michaela De Benedetti
Received on March 21, 2005

I6-1 As described in the responses to comments S2-5, S2-8, and S2-9, the water quality analysis is based on existing data and projected tertiary treated effluent quality that would meet applicable water quality objectives and not degrade beneficial uses, including in the area that would be affected by the shallow percolation ponds option.

I6-2 If the City selects the shallow percolation ponds option as the preferred effluent disposal option, the need for condemnation proceedings to acquire the land is not known, and it is speculative to assume that the City could not enter into mutually agreeable purchase arrangements. No homes would be affected. Construction for initial improvements for the tertiary treatment upgrades could begin as early as summer 2006; the timing of full buildout is not known, primarily because buildout involves developing the seasonal irrigation reuse customer base and associated pipeline infrastructure.

I6-3 Please refer to the response to comment I4-28.

I6-4 Please refer to the response to comment I6-2. Also, please note that there are many instances under which eminent domain, should it be needed, is allowable, including for public improvement projects. An area need not be declared as blighted (unless it is in a redevelopment area) to be eligible for eminent domain considerations.

I6-5 Please refer to the response to comment I6-1, regarding a summary of potential groundwater quality impacts identified in the draft EIR. Refer to the response to comment S2-10, which describes why CEQA does not provide for evaluating the socioeconomic effects of the project as environmental impacts.

I6-6 Please refer to the response to comment I1-1, which describes the City's consideration of the Syar property south of the Phase V Pond as suitable for shallow percolation pond placement. Refer also to the responses to comments S2-12, O2-6, and I4-17, which describe why other locations for placement of shallow percolation ponds are limited. The City will note this comment as a suggestion that the City consider locating the shallow percolation ponds, if this option is selected, on Syar property. As described in the response to comment I4-17, the Hoskins property is not large enough for siting the facilities.

I6-7 The draft EIR identifies the measures that the City would implement to mitigate the environmental effects of the project if it is approved. Specifically, the mitigation measures related to visual resource impacts are described in Section 3.9, and those related to odors are described in Section 3.6.

I6-8 Section 5.6.1 (page 5-12) of the draft EIR describes why alternative locations for the WWTP were not evaluated.

I7

March 20, 2005

Jim Flugum
City of Healdsburg Public Works Department
401 Grove Street
Healdsburg CA 95448

I am second generation Italian-American, the second child of Joseph and Ramona De Benedetti who purchased their home and vineyard in 1963. I was 3 years old.

In regards to the proposed plan of expansion of the Water Plant out on Foreman Lane, I have compiled a list of questions to present to you for your response. Please provide hard copy and documented data to support your answers.

1. First and foremost, I ask you this. Did Santa Rosa need your permission to lay the Geyser conveyance pipeline through Healdsburg a few years ago? If yes, why didn't you negotiate to reserve space in the pipeline for Healdsburg for future use? If no, please see question #2.

2. I ask that you please provide the names of city council members that rejected the participation in the Geyser Conveyance Pipeline? Please also provide documents of the proposed costs to Healdsburg regarding buy-in at this date and cost comparisons to alternate plans mentioned in the Environmental Impact Report (EIR). I7-1

3. Can you provide a comprehensive cost and environmental analysis of tapping into the Geyser Conveyance Pipeline?

4. With Syar Industries and Syar Family Vineyards located southeast of the current Water Treatment Plant, why is their land not considered for development of additional water ponds or included in the EIR as part of the proposal? I7-2

5. What are the criteria that caused some options to be put on or off the table? Is there still a city or county law in effect blocking Syar from expanding their mining on Foreman Lane, continuing on Westside? I7-3

6. Giving our soil to Syar for 10 acres of their grapes is part of the shallow percolation pond option. Are you concerned that this detail will lend credence to accusations that this option is a Syar land grab? I7-4

7. The Draft EIR says that the shallow percolation pond option would have no agricultural impact, even though the best case scenario results in a **net loss of 50 acres of Russian River appellation grapes**. Could you please explain to me how losses of 50 acres of chardonnay and pinot noir have "no agricultural impact" on Foreman Lane and the City of Healdsburg? I7-5

8. Why is the residential impact ignored in the EIR, when Syar's non-environmental interests are clearly represented? Or is it that when you refer to the residents of Foreman Lane as "receptors", it's easier to negate their human value? I7-6

9. With the Population of Healdsburg capped at 13,300 by 2020, why the need for an expanded WWTP? Why should Healdsburg citizens pay for the growing disposal of private companies? Doesn't it make sense to use Syar's private land for some of that disposal instead of individuals? I7-7

10. If the WWTP is expanded to accommodate private businesses already turning large profits, how are the shallow percolation ponds the fairest solution when it would displace longtime residents and families of 40 years who rely on that vineyard for income?

11. With the Hoskins parcel for sale and Syar land available, why aren't those more rural properties considered for eminent domain? If not suitable as they currently exist, why not modify the land after appropriation? If no, then please list the reasons why not and please list the regulations, California Code. Wouldn't acquisition of this land satisfy Healdsburg City Council, Foreman Lane residents and the County of Sonoma Water Regional Board and present a win-win-win? I7-8

Finally, please provide an explanation as to why we were not notified of this proposal earlier? When and where were you going to post or publish a Public Notice? As longtime residents; social, economic and agricultural contributors to the City of Healdsburg, why were we not asked to participate or consulted about the WWTP proposals? How many people from the Foreman Lane/Westside Road area have visited you? I7-9 What's the city timeline for this project? When and what are the next steps? What is the deadline or due date to the County of Sonoma with a decision regarding this proposal? Is there a general public comments section in the next planning commission? Is there any chance the Planning Commission would delay their recommendation date? I7-10 How binding is the City Council's decision on a "preferred project? Is it true that the City of Healdsburg would have to use federal funds to pay for eminent domain? What's the estimated cost of the eminent domain/shallow percolation ponds option? Who will likely incur these costs? What is the project's budget and ultimate financial cost estimated to be? I7-11

In closing, I want to express my appreciation for this opportunity and thank you for your time.

Michele C. DeBenedetti

Michele De Benedetti
854 Shady Oak Drive
Santa Rosa CA 95404

LETTER I7 RESPONSE

Michele De Benedetti
Received on March 21, 2005

I7-1 Please refer to the response to comment S2-1, regarding the infeasibility of using the Geysers Pipeline at this time.

During discussions with the City of Santa Rosa on the Geysers Pipeline route, the City of Healdsburg did attempt to negotiate for a dedicated share of the Geysers Pipeline capacity but was unable to secure any commitment from Santa Rosa. Although the City of Healdsburg eventually reached agreement with the City of Santa Rosa regarding certain conditions that were applicable to Santa Rosa's construction of the Geysers Pipeline within Healdsburg's right-of-way, the Geysers Pipeline project did not require formal approval of the City of Healdsburg, and right-of-way could have been secured through a condemnation action by the City of Santa Rosa, if necessary. Had Healdsburg not reached a negotiated agreement with Santa Rosa on this issue, the only remedies available to Healdsburg would have been those remedies available in a condemnation action, which would not have included a right to discharge into the Geysers Pipeline facilities.

I7-2 Please refer to the response to comment I1-1, which describes the City's consideration of the Syar property south of the Phase V Pond as suitable for shallow percolation pond placement. The City will note this comment as a recommendation that the City consider locating the shallow percolation ponds, if this option is selected, on Syar property.

I7-3 Chapter 5 provides a detailed discussion of the alternatives screening that was conducted to select the WWTP upgrade options that were evaluated at an equal level of detail in the draft EIR. The ARM Plan prohibits terrace mining operations along the Russian River floodplain after April 2006.

I7-4 Please refer to the response to comment I4-30.

I7-5 Please refer to the response to comment I4-10.

I7-6 Please refer to the response to comment I4-25. As explained on page 3.6-6 of the draft EIR, the term "sensitive receptor" is used to refer to individuals who would be most severely affected by air quality impacts, such as asthmatics and children. The term is widely used in air quality analyses and is intended to protect those persons most at risk.

I7-7 The WTPU options are being proposed to improve the quality of treated wastewater effluent and address the regulatory uncertainty of the existing effluent discharge to the Basalt Pond. The project does not involve the expansion of treatment capacity at the WWTP. As described on page 2-5 of the draft EIR, the City expects that the WWTP's permitted capacity of 1.4 million gallons per day will be adequate to accommodate residential buildout and is not seeking a capacity increase. The remaining capacity is reserved for projected population growth and presently unsewered areas within the city limits.

I7-8 Please refer to the response to comment I1-1, which describes the City's consideration of Syar property for shallow percolation pond placement. Please refer also to the responses to comments S2-12, O2-6, and I4-17, which describe the reasons why other locations for placement of shallow percolation ponds are limited.

I7-9 The City of Healdsburg has gone to great lengths to notify and involve the public in the environmental review process for this project and has exceeded CEQA requirements. As described in Section 1.2.5 of the draft EIR, "Scoping and Public Review Process," the City provided the public with several opportunities to provide input on the WWTP upgrade project before release of the draft EIR. The City held a public information-gathering meeting on April 25, 2002. The public and regulatory agencies were provided an opportunity to submit oral and written comments at the meeting; written comments were accepted until May 10, 2002. The notice of preparation (NOP) for the EIR was released on July 15, 2002. The NOP included an announcement of the July 29, 2002, public scoping meeting. The scoping meeting provided another opportunity to submit oral and written comments on the project; the closing date for receiving written comments in response to the NOP was August 16, 2002. Notices of these public meetings were published in the Santa Rosa *Press-Democrat* and *Healdsburg Tribune*. A notice of availability (NOA) announcing the completion of the draft EIR and date of the public hearing was published in the *Healdsburg Tribune* on February 4, 2005. The draft EIR was circulated for 45 days for public review and comment, from February 4, 2005, to March 21, 2005. The NOA was also mailed directly to those organizations and individuals that had previously requested such notice in writing.

I7-10 Construction for initial improvements for the tertiary treatment upgrades could begin as early as summer 2006; the timing of full buildout is not known primarily because buildout involves developing the seasonal irrigation reuse customer base and associated pipeline infrastructure. Section 1.2.3 of the draft EIR generally describes the remaining steps for the City's CEQA review process, deliberations on the project, and process for selecting the preferred set of WWTP upgrade options. The Planning Commission's public meeting to review the final EIR is set for June 22, 2005, and it is anticipated that the City Council could deliberate on the certification of the EIR as early as its July 11, 2005, meeting. The remaining review and approval process is summarized as follows:

- The Planning Commission reviews the final EIR and, upon finding that it is "adequate and complete," recommends that the City Council certify the EIR and adopt a Mitigation Monitoring and Reporting Plan (MMRP).

- The Planning Commission also evaluates a staff-recommended preferred project for City General Plan consistency and forwards a determination of consistency to the City Council.

- The City Council then holds a public meeting to certify the final EIR, adopt CEQA findings and the MMRP, and approve the project.

- The staff can then begin work on the project.

I7-11 As described in the response to comment I6-2, the City considers the need for condemnation proceedings for the acquisition of land to be speculative.

I8

Rosanne De Benedetti
638 Foreman Lane
Healdsburg, CA 95448
707.433.4540
707.953.5401

March 20, 2005

Mr. Jim Flugum
Senior Civil Engineer
City of Healdsburg
Community Development Center
401 Grove Street
Healdsburg, CA 95448

Dear Mr. Flugum,

I wish to submit this response to the Draft EIR of the City of Healdsburg Wastewater Treatment Plant Upgrade Project.

I wish to thank you and the planning commissioners as well as the city officials who have taken the time to meet with us and our fellow residents on Foreman Lane. In those meetings my family and I have expressed repeatedly our intention to work together and develop a win-win solution to the wastewater treatment plant issue. I believe this can be accomplished with ongoing dialogue and it is in that spirit that I write this letter.

There will be three sections to my letter. The first section will provide questions; the second will provide comments on options and possible solutions; and the third will provide a conclusion.

<u>Questions:</u>

- Have there been any studies that have looked at the environmental effects that deep ponds similar to the Phase V pond have had on nearby aquifers or water tables? If yes, what were those studies' conclusions? Please provide the pertinent information about such a study or studies: Information such as the agency or organization that produced the study, the year it was produced and if there were more than one study, please indicate if there was a uniformity to their conclusions. I8-1

- To what degree will Foreman Lane residents be exposed to levels of toxicity due to the hundreds of thousands of cubic yards of soil that would be excavated related to construction from the various WWTP and effluent disposal options? How high could those levels of toxicity reach? Are those levels of toxic exposure expected to be low or high? What are the potential short-term and long-term environmental impacts to area residents, farm land and crops that may stem from the high number of trucks transporting this soil away from the excavation site? Is a dangerous level of pollution in the Foreman Lane/Westside Road area expected to occur as a result of the increased I8-2 exhaust fumes from the many trucks that would be needed to transport? If yes, what are the estimated levels, and on what data do you base your answer? I8-2 Cont'd

- The Draft EIR says that the shallow percolation pond option would have no agricultural impact on the Foreman Lane area, even though the best case scenario results in a net loss of at least 50 acres of Russian River appellation grapes (e.g. 60 acres turned into shallow percolation ponds while 10 nearby acres for Syar Industries would use the area's topsoil for its vines). How did you arrive at the conclusion that 10 acres of grapes would mitigate a loss of 50-60 acres of prime vineyard farmland? How does that scenario qualify as having "no agricultural impact" on the Foreman Lane area? And on what data and source(s) do you base your answer? I8-3

- Out of all the effluent disposal options mentioned in the Draft EIR – from the three listed as feasible, and the other ones described as infeasible -- please list the ones that are viewed by the City of Healdsburg Public Works Department as being the most environmentally friendly options, in order of most preferable at the top and least preferable at the bottom. Please base your answers solely on the options' expected environmental impacts – and exclude estimated costs or political concerns as the bases for your answers. On what data and source(s) do you base your answers? I8-4

- Please define the difference between secondary and tertiary treatment water? Which one is more preferable to city staff and why? What is the difference between Title 22 water and CTR-level water? Which is more preferable and why? I8-5

- If the city uses tertiary water, can it then continue discharging into Basalt Pond? If yes or no, why? On what data do you base that answer? I8-6

- With the Hoskins parcel for sale on Foreman Lane and Syar Industries land available for eminent domain action by the city, why aren't those more rural properties officially considered in the EIR for eminent domain condemnation? I8-7

- What are all of the possible short-term and long-term environmental risks and problems that shallow percolation ponds are known to cause to agricultural areas? Can you list three examples where shallow percolation ponds caused environmental problems to a surrounding agricultural area? Can you list three examples where shallow percolation ponds caused no environmental problems to a surrounding agricultural area? On what data do you base these answers? I8-8

- Is it possible that shallow percolation ponds pose a great threat to the water table in the Russian River Valley, especially in and around prime farm land on Foreman Lane, Felta Road and Westside Road? If yes or no, why? And on what data and/or studies and/or precedents do you base your answer? I8-9

- On what basis can you reasonably claim that all effluent disposal options and the Wastewater Treatment Plant Upgrade would have no impact to the division of an established community, as according to State CEQA Guidelines Appendix G? On what data do you base your answer? Also, are there any other precedents in California I8-10 that support this assertion that the WWTP Upgrade would have no impact to the division of an established community? If yes, please list those precedents. What is the source of your answer? On page 3.1-10 in the Draft EIR's section titled Impact 3.1-1: Potential for Division of an Established Community, the EIR asserts that both the WWTP upgrade and all effluent disposal options would have NO IMPACT to the division of an established community simply because the Foreman Lane area is a "rural area outside the urbanized areas of the city and the county." This seems like it may be a false assertion. Firstly, many residents living on Foreman Lane, Felta Road and Westside Road have lived in their current homes for 30-50 years. As a community, that surely qualifies as "established." Secondly, it seems inaccurate to claim, as the EIR does, that all effluent disposal options -- which include the creation of shallow percolation ponds that would result in the destruction of at least 60 acres of prime farm land and the forced relocation of longtime Healdsburg residents – would have NO IMPACT to the division of an established community when, in fact, it would destroy ours and that of other Foreman Lane residents. I8-10 Cont'd

- When will a cost analysis of the other WWTP and effluent disposal options be provided to Healdsburg ratepayers in either a private or public setting? I8-11

- Private businesses are named (i.e., Capital Lumber and Syar Industries) in the EIR as being most responsible for the future increased commercial effluent discharge, causing the need for an expanded capacity to handle effluent disposal. Given that, have those private businesses been asked to be held accountable for this by giving something in return, i.e., giving up a section of the company's privately owned land for effluent disposal, or paying increased financial payments to the city to help minimize cost to the city for the WWTP expansion? If no, why not? If yes, how much land and/or financial payment has been discussed between the city and Syar Industries? I8-12

- What would be the environmental benefits to both Healdsburg and Sonoma County using the Geyser conveyance pipeline as an option for effluent disposal? On what data do you base that answer?

- What are the issues ostensibly preventing Healdsburg from hooking up with the Geysers conveyance pipeline that Santa Rosa uses? What is the estimated cost of using this option? Would the Geysers Conveyance option be more expensive than buying out 60-70 acres of private property needed for the shallow percolation ponds option? On what data do you base that answer? I8-13

- Are there any indigenous animals or wildlife present in the areas in or around Foreman Lane or Felta or Westside roads? If yes, what date and year were they found? I8-14

<u>Comments on Options and Possible Solutions:</u>

Effluent Disposal Options:

The most daunting issue to be reckoned with is the disposal of the effluent. One desirable I8-15 option is the Geyser Recharge Pipeline. In the EIR the cost difference between using the pipeline and the other options has not been addressed adequately. According to discussions with city staff, it is not possible to discharge into the Pipeline. Please revisit this issue and provide data as to the plausibility of this option. I8-15 Cont'd

The best solution for effluent disposal is to discharge into the Basalt Pond, assuming that wastewater is treated to tertiary quality, Title 22 standards. Any additional effluent can be disposed of by means of a seasonal irrigation reuse system, assuming that wastewater is treated to tertiary quality, Title 22 standards. Additionally, winter discharge to the Russian River, per the RWQBC's basin plan is an acceptable supplement. I8-16

Shallow percolation ponds are not an acceptable option. This option is extremely expensive because of the costs of construction, maintenance, property acquisition, and potential condemnation litigation. It would destroy valuable agricultural land. The shallow percolation ponds, as described in the Draft EIR, would be a direct discharge into the aquifer. Please explain why the Draft EIR identified smaller, more developed parcels with residences, instead of larger more rural parcels, which would have lower acquisition costs. I8-17

Economic Impact:

The location of Healdsburg's proposed wastewater treatment plant is in the Russian River Valley appellation. This appellation is internationally recognized as one of the premier wine growing areas for world class Chardonnay and Pinot Noir grapes. On Foreman Lane alone there are award winning vineyards as well as ones which have been utilized as vineyard designate wines. The majority of these vineyards have been and continue to be involved in long term grape growing contracts with wineries. Loss of this valuable farmland would be a permanent and irreplaceable loss to the economy of this region and to the livelihoods of the residents. The City of Healdsburg has prospered by wine-industry related businesses and tourism. That economic asset should be respected, and these valuable vineyards preserved. The City of Healdsburg should not condemn property that is intended for long term wine growing. I8-18

Historical Impact:

While I know that the law does not recognize the emotional impact of this situation. The historical impact of the wastewater treatment plan needs to be acknowledged. The residents of Foreman Lane have contributed to the community of Healdsburg as we know it today. Part of the allure of Healdsburg is its small town feel and its sense of community. I can only speak for my family's contribution and at this time would like to recognize the contributions of my parents, Joe and Ramona De Benedetti. My parents raised six children and between the two of them had three paying jobs to support our family. My mother worked at Healdsburg General Hospital for thirty-seven (37) years as a nursing supervisor. In that role she has welcomed countless citizens of the City of Healdsburg as newborns and comforted those who left our community and their families. She was invited to serve on the Board of Directors for the Healdsburg District Hospital and did so for one (1) year. She continues to contribute to this community in her I8-19 retirement by volunteering at the Senior Center. My father served as co-Chairman of the St. John's Country Fair for eight (8) years and was one of the first to make it a profitable event for St. John's School. He coached CYO basketball for five (5) years, served on the School Board for St. John's School for two (2) years, served on the School Board for Ursuline High School for five (5) years and sang in St. John's Church choir. My parents and our neighbors have served the community of Healdsburg well and continue to be contributing members. I8-19 Cont'd

Conclusion:

Thank you for taking the time to review my questions and comments. I look forward to your responses and continued dialogue on this issue.

Best regards,

Rosanne De Benedetti

Rosanne De Benedetti

LETTER I8 RESPONSE

Rosanne De Benedetti
Received on March 21, 2005

I8-1 Please refer to the response to comment I4-6.

I8-2 Please refer to the response to comment I4-7.

I8-3 Please refer to the response to comment I4-10.

I8-4 Please refer to the response to comment I4-11.

I8-5 Please refer to the response to comment I4-13.

I8-6 Please refer to the response to comment I4-14.

I8-7 Please refer to the response to comment I4-17.

I8-8 Please refer to the response to comment I4-19.

I8-9 Please refer to the response to comment I4-20.

I8-10 Please refer to the response to comment I4-24.

I8-11 Please refer to the response to comment I4-27.

I8-12 Please refer to the response to comment I4-29.

I8-13 Please refer to the response to comment I4-31.

I8-14 Please refer to the response to comment I4-32.

I8-15 Please refer to the response to comment O2-2.

I8-16 Please refer to the response to comment O2-3.

I8-17 The comment will be noted by the City as opposition to the construction of shallow percolation ponds for effluent disposal in the preferred project. The responses to comments O2-6 and I4-17 describe why other locations for shallow percolation ponds were not identified in the draft EIR. Also please refer to the response to comment I1-1, which considers an alternative location for the percolation ponds.

I8-18 Please refer to the response to comment O2-11.

I8-19 The comment refers to the members of the commenter's family and their long-term and admirable involvement in the community. The City recognizes and appreciates these contributions. Although social and economic impacts of the project are not addressed in the EIR, pursuant to the requirements of CEQA, the opposition to the percolation ponds and concerns over other project elements, as expressed in this comment, will be considered by the City in its deliberations over the project.

I9

Stephan De Benedetti
638 Foreman Lane
Healdsburg, CA 95448
(707) 322-4465

Questions for City of Healdsburg Public Works Department about the Draft Environmental Impact Report on the Wastewater Treatment Plant Upgrade Project

March 20, 2005

Jim Flugum
Senior Civil Engineer
City of Healdsburg, Community Development Center
401 Grove Street
Healdsburg, CA. 95448

Dear Mr. Jim Flugum:

My name is Stephan De Benedetti and I am a resident of 638 Foreman Lane. Enclosed below are my questions for the staff members of the City of Healdsburg Public Works regarding the Draft EIR of the city of Healdsburg Wastewater Treatment Plant Upgrade Project.

I appreciate your time and consideration.

1.) If percolation ponds are built, how would they effect the aquifer, water wells and drinking water in Foreman Lane/Westside Road area? And what data do you base your answer on?

2.) If phase V pond is used for wastewater discharge how would that effect the aquifer, water wells and drinking water in the Foreman Lane/Westside Road area? If it doesn't effect the aquifer, water wells and drinking water, what data do you base this on? I9-1

3.) I have heard contradictory answers from city officials regarding Healdsburg's ability to use the Geysers conveyance pipeline to discharge Healdsburg's wastewater. What is the full, accurate and complete answer as to why Healdsburg cannot use the Geyser conveyance pipeline option to dispose of Healdsburg's wastewater? George Hicks said at a recent gathering that there is a letter from the city of Santa Rosa that would explain Healdsburg's situation regarding the Geyser conveyance pipeline. Can I please see a copy of this letter? I9-2

4.) With Healdsburg's new Wastewater Treatment Plant will Healdsburg begin treating their wastewater to tertiary, title 22 standards? Can you please define the difference between secondary and tertiary treatment water? If Healdsburg treats their wastewater to tertiary level can Healdsburg continue to discharge wastewater into the Basalt pond? I9-3

Thank you for your time and consideration.

Sincerely,

Stephan De Benedetti

LETTER I9 RESPONSE

Stephan De Benedetti
Received on March 21, 2005

I9-1 As described in the responses to comments S2-5, S2-8, and S2-9, the water quality analysis is based on existing data and projected tertiary treated effluent quality, which conclusively show that all the proposed effluent disposal options, including the shallow percolation ponds option, would meet applicable water quality objectives and not degrade beneficial uses.

I9-2 Please refer to the response to comment S2-1, regarding the Geysers Pipeline.

I9-3 As described in Section 2.5.1 of the draft EIR, "Wastewater Treatment Plant Upgrade Options," regardless of which WTPU option the City selects, the wastewater would receive tertiary treatment. For an explanation of the difference between secondary and tertiary treatment and for information on discharge to the Basalt Pond, please see the responses to comments I4-13 and I4-14, respectively.

I10

March 17, 2005

Jim Flugum
City of Healdsburg
410 Grove Street
Healdsburg, CA 95448

Mr. Flugum,

The following comments and request for additional information are being submitted in response to the Draft Environmental Impact Report (DEIR) regarding the City of Healdsburg Wastewater Treatment Plant Upgrade Project.

I. Process

As an impacted landowner and resident of Foreman Lane, Mr. J. Borri expected to receive notification of the wastewater treatment plans being contemplated by the City of Healdsburg long before February 2005. The notice regarding the February 23, 2005, public meeting on the DEIR that he finally received was delivered to him by a neighbor. It was misaddressed. Please provide the following information in your response:

- Specific provisions regarding the notifications required by law, including citations; I10-1
- Copies (included as an attachment) of all notices prepared to meet the required notifications, including the date(s) of the notice(s) and the date(s) mailed.
- Documentation of the individuals to whom the notices were mailed (e.g., address lists from database).

We do not believe that the amount of time provided for the public to review the DEIR was sufficient. In addition, given the scope of the project and the number of options under consideration the presentation by the consultants was inadequate. The presentation was limited to a very brief overview and did not include details sufficient to fully disclose the impacts of this project. Therefore, we are requesting that the DEIR be placed on the April agenda of the Planning Commission and that the following individuals receive notification of any City Council and/or Planning Commission meeting whenever this project is on the agenda: I10-2

Mr. and Mrs. J. Borri
452 Foreman Lane
Healdsburg, CA 95448

Mr. and Mrs. S. Borri
1150 Felta Road
Healdsburg, CA 95448

Mrs. B. Borri
1730 Spur Ridge Lane
Healdsburg, CA 95448

During the meeting of the Planning Commission on February 23, 2005, and in a subsequent meeting of impacted Foreman Lane property owners, City of Healdsburg employee George Hicks stated that ***numerous options*** for addressing the waste water needs of the City of Healdsburg have been considered and rejected. Please provide a description of each option that considered by City staff and/or the Planning Commission and/or the City Council and the reason(s) for rejecting each option. I10-3

II. Waste Water Treatment Plan Upgrade Options

Two Waste Water Treatment Plan (WWTP) upgrade options were presented in the DEIR. The DEIR includes an overview and discussion of the common components of both the Conventional Extended Aeration with Biological Nitrogen Removal (BNR) and Tertiary Filtration and Membrane Bioreactor with BNR. However, the DEIR did not include the information necessary to make an educated, informed selection of one option over the other. Providing a discussion of the common components is insufficient. Please provide a comprehensive discussion (including all data sources) of the advantages and disadvantages of each of the options presented in the DEIR. I10-4

Even given the lack of information provided on the options, the DEIR states that one of the objectives of the WWTP is to produce tertiary effluent that meets the requirements of Title 22 of the California Code of Regulations. Please provide an explanation of the difference between the standards set by Title 22 and the standards set by the California Toxic Rule. Also, please discuss why the objective of the WWTP is to meet Title 22 standards and not the California Toxic Rule. I10-5

III. Effluent Disposal Options

The DEIR presented several options for effluent disposal, but not one viable or cost effective solution. I10-6 The DEIR does not provide any evidence that there is any need for additional ponds of any size or depth. In fact, the discussion of Measure M and the estimates on build-out and city population indicate that the effluent could be managed without additional ponds. Please provide a comprehensive explanation as to the value of additional ponds and why the effluent cannot be managed by a comprehensive program of continued discharge to Basalt Pond and I10-7 urban and agricultural re-use. These options could be further supported by planting redwood trees around the WWTP and Basalt Pond providing both effluent management and aesthetic benefits.

IV. Additional Concerns

I10-8

City employee Richard Spitler stated that this project has been on the City Council's agenda for over 10 years – why didn't the city pursue the planting of redwoods 10 years ago when the

City realized that this issue would need to be addressed and the redwood groves where an efficient and cost effective measure? I10-8 Cont'd

The DEIR does not address the potential for damage and/or contamination of private wells in and around the areas designated for pond development or the potential for damage and/or permanent contamination of the ground water and aquifers in this area. Please provide a comprehensive discussion of the potential risks and mitigations that will be undertaken to preserve the quality of the water currently available to Foreman Lane residents. I10-9

During the introduction to the DEIR at the Planning Commission meeting on February 23, 2005 Richard Spitler made it very clear that the DEIR did not address the impact on the residents and landowners of Foreman Lane or the surrounding area. He stated that the purpose of the DEIR was not to evaluate economic impacts. Therefore, it seems odd that one of the stated project objects of the DEIR is to "provide wastewater treatment service to the ratepayers at a reasonable cost". If the economics of the ratepayers are being considered, it seems that some evaluation of the economic impact on the landowners and residents of Foreman Lane should be considered as well. Please provide a discussion of the planned mitigation of the economic impact on residents of Foreman Lane who will be losing their homes and land currently planted to grapes that provide family income. I10-10

Find an option that meets the following criteria and to which you can honestly say yes and you will have a viable solution -

- Is the full burden of the option is placed on the beneficiaries – specifically, the residents and commercial users within the Healdsburg City Limits? Foreman Lane landowners have paid more than their share to support the needs of the City. I10-11
- Am I willing to give up my livelihood for this option? The current options rob land from families who have made life-long investments in their property and depend on the crops for their family income.
- Is this option one that I would put in my backyard? It seems that it is far too easy for the City Council to dump sewage in their neighbors' backyards that they would not put in their own.

Finally, please provide an overview of the next steps for this project and provide the names and contact information for each county and state board that must approve the options selected by the City Council. I10-12

JoAnn Borri

Submitted by JoAnn Borri
On behalf of the Borri Family
452 Foreman Lane
Healdsburg, CA 95448

Submitted electronically on March 17, 2005 to publicworks@ci.healdsburg.ca.us, followed by hardcopy mailed on March 18, 2005.

LETTER I10 RESPONSE

JoAnn Borri, on Behalf of the Borri Family
Received on March 21, 2005

I10-1 The notice of preparation (NOP) for the draft EIR was released on July 15, 2002. The draft EIR was circulated for 45 days for public review and comment, from February 4, 2005, to March 21, 2005. CEQA requires that NOPs be sent to public agencies responsible for approval of elements of the project, as well as individuals who have requested copies of the NOP. Pursuant to the State CEQA Guidelines (Section 15087):

Notice shall be mailed to the last known name and address of all organizations and individuals who have previously requested such notice in writing, and shall also be given by at least one of the following procedures:

1) Publication at least one time by the public agency in a newspaper of general circulation in the area affected by the proposed project. If more than one area is affected, the notice shall be published in the newspaper of largest circulation from among the newspapers of general circulation in those areas.

2) Posting of notice by the public agency on and off the site in the area where the project is to be located.

3) Direct mailing to the owners and occupants of property contiguous to the parcel or parcels on which the project is located. Owners of such property shall be identified as shown on the latest equalized assessment roll.

A notice of availability (NOA) announcing the completion of the draft EIR and date of the public hearing was published in the Santa Rosa *Press Democrat* and the *Healdsburg Tribune* newspapers on the same day that the notice of completion was submitted to the State Clearinghouse. The NOA was also mailed directly to those organizations and individuals that had previously requested such notice in writing, thus satisfying noticing requirements.

State CEQA Guidelines Section 15105 suggests that the public review period should be no less than 30 days and no more than 60 days unless there are unusual circumstances, and Section 15202 does not require the lead agency to conduct a pubic hearing on the draft EIR. The City held a public hearing to receive comments on the draft EIR. Public Resources Code Section 21092.5 requires the lead agency to provide its proposed responses to all public agency written comments on the draft EIR 10 days before the lead agency's certification of the final EIR. The City will provide copies of responses to all commenting public agencies at least 10 days before certification of the EIR.

I10-2 The comment requests additional time to review and comment on the draft EIR, and it states that the draft EIR did not include details sufficient to fully disclose impacts of the project. The 45-day review period is common for EIRs, even on complex projects, and is consistent with the requirements of CEQA. As to information presented at a public hearing, the intent of the hearing was to receive comments on the draft EIR. The presentation of the project at the hearing was intended only to orient the public to the project. It would not have been reasonable to fully discuss all aspects of the project, the environmental analysis, how conclusions for each impact were drawn, and so on. Meaningful comment requires that the contents of the draft EIR be reviewed. With respect to a second hearing, the final EIR will be heard before the Planning Commission and the City Council before certification.

The City will add the three listed addresses to the public hearing notification mailing list.

I10-3 Section 5.6 of the draft EIR describes four alternatives and the accompanying reasons why they were considered infeasible and eliminated from detailed consideration. An alternative location of the WWTP and advanced wastewater treatment with reverse osmosis were considered infeasible because they would be considerably more expensive to implement, potentially would involve additional significant construction- and operations-related environmental impacts, and yet would not substantially reduce any of the significant environmental impacts of the alternatives that were evaluated in the draft EIR. Conveyance to the Geysers was considered infeasible, as explained further in the response to comment S2-1. The North Healdsburg Redwood Seasonal Irrigation Reuse option was eliminated because of biological and regulatory constraints that would likely be associated with environmental impacts on sensitive wetland and vernal pool habitats (refer to Appendix G of the draft EIR).

I10-4 Please refer to the response to comment I4-1 for an explanation of the comparative differences between the proposed conventional extended aeration and membrane bioreactor (MBR) wastewater treatment methods.

I10-5 Please refer to the response to comment I4-13, which describes the differences between Title 22 regulations and associated drinking water quality MCLs and CTR regulatory criteria.

I10-6 All the effluent disposal (ED) options evaluated in the draft EIR, including the alternative to discharge to the Russian River, are considered feasible or viable methods in that they could all provide either seasonal or year-round effluent disposal of effluent in compliance with applicable regulations. The draft EIR does not focus on or attempt to estimate cost-effectiveness factors of these options because overall cost-effectiveness would depend on the combination of treatment, disposal, and reuse options that are implemented. The lead agency is not required to include economic information in an EIR (State CEQA Guidelines Section 15131). Instead, economic factors “shall be considered by public agencies together with technological and environmental factors” before the agencies take action on a project. If economic information is not presented in the EIR, it should be added to the record in some other manner to allow the agency to consider the factors in reaching a decision on the project.

I10-7 As described in the draft EIR, feasible options to the existing Basalt Pond discharge were evaluated primarily because of the regulatory uncertainty of the Basalt Pond discharges. Because the existing data and projections of effluent quality following implementation of the tertiary treatment upgrades indicate that the water discharged from the upgraded WWTP would comply with applicable regulatory objectives, both the Phase V Pond and winter discharge to the Russian River, as well as continued use of the Basalt Pond, could provide effective effluent disposal. Only one of the identified effluent disposal options is required at this time, assuming seasonal recycled water use can be developed to eliminate the need for surface water discharges during the summer seasonal discharge prohibition period.

I10-8 As described in the response to comment O1-2, redwood irrigation methods do not provide a feasible mechanism for year-round reuse of all the wastewater produced by the City. The City considers redwood irrigation a seasonal irrigation reuse like the other SIR route options identified in the draft EIR.

I10-9 As described in the responses to comments S2-5, S2-8, and S2-9, the analysis of existing and projected effluent quality data concludes that the proposed WWTP upgrade options could be implemented and comply with applicable water quality regulations. The City's operation of the future WWTP upgrades in compliance with the requirements of the RWQCB would continue to provide assurance that groundwater resources would not be degraded.

I10-10 Please refer to the response to comment O2-11, which describes the reasons that socioeconomic impacts are not considered environmental impacts. The response to comment I4-18 describes how economic costs are involved in determining the feasibility of alternatives that are not considered in detail. The response to comment I4-26 describes why economic cost factors are not specifically considered with alternatives that were evaluated in detail.

I10-11 The comment suggests several socioeconomic criteria for the City to consider when selecting the preferred set of WWTP upgrade options. The City Council will consider this request, as well as other selection factors, when making a decision on the project. However, they are not applicable to the City's determination of comparative analysis of environmental impacts among the options.

I10-12 Please refer to the response to comment I7-10 for a summary of the next steps that will occur for the CEQA review and City deliberations on the project.

I11

March 21, 2005

To: City of Healdsburg, Public Works Department:
Attn: Jim Fulgum, Senior Civil Engineer
Re: Draft EIR, Wastewater Treatment Plant Upgrade Project

Dear Jim,

I have tried to understand all the detail in the Draft EIR and its implications for the many separate constituencies affected. I must admit difficulty with the formal document, its style and organization. I was unable to make the investment in time to thoroughly understand every element addressed. It did become clear that the City is between a rock and hard place, in the fat and under fire! But one finding jumped out at me and I believe it warrants reexamination and re-evaluation!

I am referring to page 3.1-10, Impact 3.1-1: Potential for Division of an Established Community. For the WTPU portion of the project, the statement is: "*The WPTU upgrade would occur in a rural area outside the urbanized areas of the city and the county, For this reason, no impact related to the division of a community would result.*" Conclusion: "***no impact*** would result." In the next section of Impacts and Mitigation Measures, 3.1-1, labeled "ED,".the language is repeated, "*all the effluent disposal options would be located in rural areas outside urban areas of the city and county...*" " Conclusion: "***no impact*** would result." Feels like repetition makes it so!

The location proposed for the shallow percolation ponds clearly abuts 5 residential/agricultural building clutsters, in an area referenced in Exhibit 2-8 as "1 - existing vineyards." These homes are part of a long standing '**community**' of agricultural families in the area. The ground marked for conversion to shallow percolation ponds, (should that be the selected, or inevitable, option), leaves the residences, but takes their adjacent farmland. This would be a travesty. It is an insult to leave these families the residences but take the adjacent acreage. There should be more options explored for these ponds. I11-1

For example, Exhibit 2-8, the area south of Syar Phase VI, and West of Syar Phase I/II, labeled "Syar, Existing Vineyard." Syar does not live there and this ground is not a part of a similar "agricultural community." It would be less of an impact to the existing community to place the shallow percolation ponds there. How can we believe non-urban areas are not "communities" is beyond me. Perhaps the writers do not live in, or come from, rural communities! Or perhaps there is a legal standard on what this element of an

EIR should address. Regardless, in Healdsburg, we should pay more attention to such consequences of our actions! I11-1 Cont'd

One alternative apparently not considered, but potentially viable given the already steep costs of this project, could be to relocate these farmsteads - move the entire building clusters to new yards! (Even the 50+ year old trees could be moved!) The project proposes to move 1.5 million yards of soil in the project! (One truck every two minutes every workday for a year!) If you can't move the ponds, move the houses! This might be feasible, but I mention it to demonstrate that the range of alternatives considered, as a consequence of a "***no impact***" determination, is too narrow too early on in the project's development. I11-2

It appears that the language and approach of the Draft EIR fails to examine options which put concerns for people ahead of concerns for commerce. The reclamation of the topsoil from these ponds to Syar's benefit, supports this assertion.

How many decades from now will the city offer these families topsoil and reclaimed land for the re-establishment of their farms? Why should Syar be the beneficiary of our largess? Perhaps the ponds should be somewhere else, not adjacent to active and "**Important Farmland.**" I11-3

Sincerely,

Richard Burg
523 Fitch Street
479-9092

LETTER I11 RESPONSE

Richard Burg
Received on March 21, 2005

I11-1 Please refer to the responses to comments I3-4 and I4-24, regarding division of a community. Please refer also to the response to comment I1-1, which describes the City's consideration of the Syar property south of the Phase V Pond as suitable and potentially feasible for shallow percolation pond placement.

Regarding comments on purchasing land but not purchasing the homes on the land, if the shallow percolation pond option is selected and the ponds are located on the site identified in the draft EIR, the City would negotiate with affected landowners on property purchase. If desired by the landowner, the City could consider purchase of the home. It is estimated that up to 60 acres of land would be needed for percolation ponds under this alternative, but the amount of land could be less. It is in the City's interest to purchase only what is needed for the project, which may be less than the 60 acres shown.

I11-2 The comment suggests moving the existing houses that would be located adjacent to the proposed ponds. If the City decides to pursue the percolation pond option on the location shown in the draft EIR, this could be part of the negotiation between homeowners and the City. This is not a mitigation measure under CEQA, because it would not reduce any significant environmental impacts. The proposal to relocate houses would not substantially lessen the significant and unavoidable visual impact of the percolation ponds that is associated with the overall viewshed effects to all residents in the area. Please refer to the response to comment I2-34, which identifies the City's addition to Mitigation Measure 3.9-1. The addition describes the City's commitment to prepare a vegetation planting plan for the berms to address visual impacts of the shallow percolation ponds. Air quality impacts from construction would not be reduced, and mitigation has already been identified in the draft EIR to reduce significant construction noise impacts to a less-than-significant level.

I11-3 This comment expresses general concern regarding the potential adverse economic effects and loss of important farmland associated with the shallow percolation ponds. The response to the comment S2-12 describes the limitation on available alternative locations for percolation ponds. The comment will be noted by the City as opposition to the construction of shallow percolation ponds for effluent disposal in the preferred project.

I12

TO: Mr. Jim Flugum, Senior Civil Engineer, City of Healdsburg

FROM: Donna Gregor, Owner & Operator in Residence of 521 Foreman Lane, Healdsburg, CA

DATED: February 27, 2005

RE: City of Healdsburg Wastewater Treatment Plant

As owner & operator in residence of the "Important Farmland" adjacent to the WWTP I have been adversely effected by the City of Healdsburg WTPU proposed options.

My property had an escrow opened for a pending sale. after attending the February 23, 2005 Public Hearing the buyer immediately canceled the contract. His reason was the uncertainty of what would happen with this upgrade project and how it would affect the property. I am feeling uncertain also.

The shallow pond proposed option seems the most adversely effective to the adjacent residence. I found nothing in your DIER that addressed how this appropriation of property is planned to be handled. Will the City buy out the property owners that are forced out of their homes at a price that is acceptable to them? I12-1

For the property owners on the other side of Foreman Lane with the "substantial adverse effect on the scenic vista" and the odors and co2 and the insects and major reduction in property value (if salable at all). Will the City reimburse these property owners for their loss at a price that is acceptable to them or buy the property?

Properties in this area (before WWTP expansion, and this is an expansion) have a high market value which should be a consideration of your cost analysis which has not been addressed in this DIER.

The pipe up Foreman Lane to Westside and up Mill Creek Rd. also a pricey option. The City of Santa Rosa's pipeline has been very costly. This proposal to turn over to the property owners taking the treated waste water the responsibility of pumps and maintenance does not sound feasible or legal and could be another cost factor. I12-2

All of these proposals could bring expensive and disruptive legal action. A major cost factor.

Instead of expanding this old plant with questionable reliability, a more modern compact plant, located out of the Russian River gravel strata and floodway on deeper upland soils as recommended by the Department of Fish and Game that would accommodate Healdsburg's move into world tourism, would seem more cost effective. I12-3

cc: John Short
Regional Water Quality Control Board

LETTER I12 RESPONSE

Donna Gregor
Received on March 2, 2005

I12-1 The comment identifies several issues associated with the potential economic effects on property values adjacent to proposed percolation pond site, if that option is selected, and related costs to the project for acquisition of property. However, as described in the responses to comments S2-10 and I1-4, CEQA does not provide for evaluating socioeconomic effects of the project as environmental impacts. As required by CEQA, the draft EIR focuses on whether the project would have a significant effect on the environment as defined by "a substantial change in the physical conditions." The comment is correct in stating that the draft EIR does not include any description of how the City would acquire property. The City anticipates that it would purchase any necessary property to obtain fee-title to the property rather than enter into easements or long-term lease arrangements for use of the property for disposal ponds. Please also see the responses to comments I11-1 and I11-2.

I12-2 This comment refers to the potential costs of certain elements of the proposed option; however, it does not raise significant environmental issues pertaining to the draft EIR analysis, so no specific response is provided.

I12-3 Section 5.6.1 (page 5-12) of the draft EIR describes why alternative locations for the WWTP were not evaluated. As described in Section 5.6.1, the City's infrastructure includes a gravity flow collector sewer system that carries wastewater to the existing WWTP. The WWTP upgrade project needs to be developed primarily to accommodate the effluent disposal and/or seasonal irrigation reuse opportunities. Any relocation of the WWTP would involve a considerable undertaking to reroute the City's sewer system and would incur significant environmental impacts that would not occur with expansion of the existing facilities. Please refer to the responses to comments S2-12, O2-6, and I4-17, which collectively describe the reasons why alternative locations for shallow percolation ponds are limited. The response to comment I1-1 describes the City's consideration, in response to comments, of the Syar property south of the Phase V Pond as suitable for shallow percolation pond placement. Because a full range of feasible WWTP upgrade options was evaluated in the draft EIR and there is no relocation proposal known that could substantially lessen the significant environmental impacts identified in the draft EIR, the City believes that relocation of the WWTP is infeasible.

I13

GREGOR VINEYARDS

521 Foreman Lane
Healdsburg, CA 95448
U.S.A.

Home Phone 707 433-8810
Email donnabellzie@aol.com

March 21, 2005

Mr. Jim Flugum
Senior Civil Engineer
City of Healdsburg, CA 95448-4723

Re: Wastewater Treatment Plant Upgrade

Dear Mr. Flugum,

As a resident adjacent to this project and after meeting with other residents and meeting with City of Healdsburg Councilmembers, Planning Dept. Members and Public Works Dept. members, and speaking with RWQCB and Fish and Game, I request your consideration of the following concerns.

Although Fish and Game has clearly recommended eventual relocation of the pond facilities in their written response to the original DIER back in August 13, 2002; the RWQCB in their letter of August 15, 2002 questions the reliability of this facility, this current DIER treats "alternative location" as "infeasible" due to "substantial public investments". This DIER concludes with "no known significant impacts that would be substantially reduced by moving WWTP to another location." We residents adjacent are significantly impacted and concerned about the City of Healdsburg not heeding the recommendations of the agencies protecting our resources. I13-1

In the meeting of the adjacent residents with Mr. Jim Brush, Planning Commission Chairman, on March 15, he said the City of Healdsburg was going to "do it anyway" when he was asked the question "what in your opinion will happen if the Sonoma County Board of Supervisors maintains against discharging to pond V", which he stated as his opinion of the best option. I13-2

The City of Healdsburg management has an obligation to provide a functioning wastewater treatment plant for its citizens. It also has an obligation for the greater good, not to pollute or damage the resources of Sonoma County.

Upgrading the wastewater to tertiary quality Title 22 Standards is without a question necessary. Discharge into the Basalt Pond, seasonal irrigation reuse, winter discharge to the Russian River, per RWQBC's basin plan are acceptable interim solutions, with an eventual relocation of the facilities as the goal. I13-3

Most sincerely,

Donna Gregor

Donna Gregor

cc: RWQCB
DFG
Sonoma County Board of Supervisors

LETTER I13 RESPONSE

Donna Gregor
Received on March 21, 2005

I13-1 Please refer to the response to comment I12-3, which addresses the same concern that is expressed in this comment.

I13-2 This comment refers to the recent decision by Sonoma County, described in Section 1.4 of this final EIR, which establishes a permit condition on Syar Industries' Phase VI Pond mining permit that prohibits the use of the Phase V Pond for disposal of municipal wastewater discharges. As described in Section 1.4, the new permit condition represents a policy decision that has no effect on the existing environmental setting. The City believes that if the Phase V Pond effluent disposal option were selected as the preferred option, the City would need to purchase and annex the property into the City so that the land uses and applicable zoning regulations were compatible. The physical environment has not changed as a result of the decision; thus, the environmental analyses of potential impacts presented in the City's draft EIR are still relevant. As described in the response to comment S2-8 and S2-9, the draft EIR demonstrates that the water quality effects of implementing the proposed Phase V Pond effluent disposal option would comply with applicable water quality objectives and would not result in adverse impacts on drinking water or to any other designated beneficial use.

I13-3 The City will note this comment as support to implement tertiary treatment along with seasonal irrigation reuse and winter discharge to the Basalt Pond or the Russian River.

I14

Dennis Hill
PO Box 1801
745 white Gates Ave.
Healdsburg, Ca 95448

March 20, 2005

Mr. Jim Flugum
Senior Civil Engineer
City of Healdsburg, Community Development Center
401 Grove Street
Healdsburg, CA 95448-4723

Dear Mr. Flugum,

I wish to comment on the Draft EIR of the City of Healdsburg Wastewater Treatment Plant Upgrade Project.

Regarding the effluent disposal options:
The best solution of the options listed in the EIR plan for effluent disposal is to discharge into the Basalt Pond, assuming that wastewater is treated to tertiary quality, Title 22 standards. Any additional effluent can be disposed of by means of a seasonal irrigation reuse system, assuming that wastewater is treated to tertiary quality, Title 22 standards. Additionally, winter discharge to the Russian River, per the RWQCB's basin plan is an acceptable supplement. I14-1

The 60 acres of percolation ponds is a very bad idea. Those perc ponds would be un-sealed and leach the effluent directly into the aquifer. I am very curious about the proposed location of those ponds. The proposed locations are on smaller parcels, parcels with residences that would have much higher value and therefore acquisition costs. Additionally it would require condemnation to acquire those properties. There would be significant legal fees for condemnation and the resulting litigation. Why were the larger, more rural and less valuable parcels not considered? In meetings with your staff and planners, it was suggested that it was a matter of the flood plain. This is all the same flood plain. It was also suggested that the proximity to the existing facilities was the reason. The difference in pumping effluent a little further is insignificant with respect to differences in acquisition costs. I14-2

Syar Industries owns approximately 700 acres of the 1100 acres in the vicinity south of Dry Creek, west of the Russian River, north of Syar's southern boundary/ current greenbelt easement, and west of the foothills bordering the flood plain. That is about two-thirds of this entire acreage. None of Syar's property is included in potential condemnation.

As you know, Syar Industries has an obligation to repair and reinforce the levee between Basalt Pond and the Russian River and Ponds I/II and the Russian River. They have dug some 100 acres (flood plain elevation) over the last 10 years. Where has all of that topsoil gone? Why haven't they repaired the levee? I14-3

Your proposal of building 60 acres of percolation ponds condemns existing, productive vineyards from small landowners, removes that topsoil, transports it to rebuild the levee for Syar Industries, and allows them to plant vineyard on that very soil.

Syar Industries has profited dearly from their mining activities in this area. They have destroyed valuable agricultural land and left worthless water pits. Any contributions to the city that Syar makes are short-term and unsustainable.

In this area the vineyards are extremely high quality containing some of the Pinot Noir and Chardonnay grapes in the world. Productivity of these vineyards is also very high. Loss of this valuable farmland would be a permanent and irreplaceable loss to the economy of this region. The City of Healdsburg has prospered by wine-industry related tourism to city businesses. That economic asset should be respected, and this valuable vineyard land preserved. The City of Healdsburg should not condemn property that is intended to be used for grape-growing or other sustainable uses, long term. I14-3 Cont'd

In the interest of respecting the neighborhood and community on Foreman Lane, it would be desirable for the city to move the treatment plant facilities from the proposed location, to property just east of parcel number 110-13-12. This location will have the least amount of impact on any neighbors and mitigate any visual, noise, odor and other impacts. I14-4

The EIR has not adequately addressed screening and landscaping WWTP structures and equipment. A proposed 25 ft. building, the Solids Handling Building, would be unattractive and incompatible with the area and existing structures. Consider building it partially below grade to minimize visual impact and to keep it in line with current building heights. Additionally, landscaping should be used to screen buildings and to encourage wildlife habitat. Any ponds should be enclosed with earth berms 12 feet above grade to minimize visual and odor issues.

A distance of at least 70 feet should be allowed between the wastewater treatment and storage buildings, tanks, ponds and equipment and any neighboring property. That area should be landscaped in a manner that considers aesthetics and compatibility with the area. Landscaping design should consider its compatibility with local agricultural crops and local wildlife habitat. Additionally a committee of local residents should be formed to review and approve such plans. I14-5

The EIR proposes so many options that it is difficult to comment. I'm sure that the City will continue to engage input from the area residents. We look forward to further input, once a project has been identified.

I appreciate the City of Healdsburg's efforts to progress with a plan to treat its waste water to a high level of quality. There is an opportunity to include the public in this process and use the human resources of the community to contribute ideas and to create a sense of community pride and ownership. I14-6

Respectfully,

Dennis Hill

LETTER I14 RESPONSE

Dennis Hill
Received on March 21, 2005

I14-1 The City will note this comment as support to implement tertiary treatment, seasonal irrigation reuse, and continued discharge to the Basalt Pond or to the Russian River.

I14-2 Please refer to the response to comment I1-1, which describes the City's consideration of the Syar property south of the Phase V Pond as suitable for shallow percolation pond placement. Please refer also to the responses to comments S2-12, O2-6, and I4-17, which describe the reasons why other locations for placement of shallow percolation ponds are limited. The City will note this comment as support for locating the shallow percolation ponds option, if it is selected, on Syar property.

I14-3 The response to comment I4-33 describes the current status regarding the existing requirement for Syar Industries to install a weir on the Russian River levee. The comment also reiterates comment I14-2 and further states that the conversion of vineyard to shallow percolation ponds is an economic impact. The comment also presents several issues relating to the comparative merits of economic sustainability between aggregate mining by Syar Industries and long-term agricultural land uses. However, the comment does not raise any significant environmental issues pertaining to the draft EIR analysis; therefore, no specific response is provided.

I14-4 With the exception of moving the WWTP to a new parcel closer to the Russian River, the proposed WWTP upgrade would be consistent with the recommendations stated in this comment. The WTPU options would produce tertiary treated wastewater that meets Title 22 water recycling requirements for unrestricted reuse. Constructed facilities for the project are specifically proposed for the east side of the City-owned property at the WWTP to maximize the distance of facility operations from adjacent landowners. In addition, as described in Chapter 2 of the draft EIR, the project-related facilities would be constructed and operated in a manner to minimize adverse noise, traffic, and odor impacts. Lighting would not appreciably change from existing conditions.

I14-5 Please refer to the response to comment O2-10.

I14-6 The City will note this comment as general support for implementation of higher level wastewater treatment for water quality improvements.

TO THE CITY COUNCIL OF HEALDSBURG

Why do you neglect to look into other options when you know the dangerous hazards of your plan?

Whether it be percolating ponds or pond V and the imminent spillage into a pond VI the plan is flawed. I15-1

How can you infiltrate the aquifer with your wastewater that feeds into thousands of homes? I15-2

The destruction of this beautiful agricultural valley is so immense and the contamination of water defies all priorities. I15-3

The solution is to remain in the Basalt Pond while growing Redwood trees for future use. I15-4

Water is precious and so are my grandchildren.

Sincerely,

Peggy F. Love
3280 Westside Rd.
Healdsburg, Ca. 95448

LETTER I15 RESPONSE

Peggy F. Love
Received on March 14, 2005

I15-1 The comment does not specify what the "dangerous hazards" associated with the shallow percolation ponds and the Phase V Pond are, so no specific response can be provided. The reference to the concern about "imminent spillage" into the Phase VI Pond relates to the risk of treated wastewater discharge into the Phase VI Pond either by leakage through the soil or by overflow of the ponds. Information presented in the draft EIR on known infiltration rates of the aquifer, and information based on the groundwater modeling conducted for the City's 2001 Wastewater Outfall Relocation EIR, concludes that there is no evidence to suggest that overflow would occur. The data and modeling indicate that the Phase V Pond and shallow percolation ponds would be expected to have discharge characteristics to groundwater similar to the existing Basalt Pond discharge that has operated for 30 years. The combination of pond size and infiltration rates can readily accommodate the City's wastewater discharge rate without hydraulically overloading the aquifer. Also, as described in the responses to comments S2-5, S2-8, and S2-9, the draft EIR shows that the quality of the water produced under all the proposed effluent disposal options would comply with applicable water quality objectives, so there would be no adverse impacts on drinking water or on any other designated beneficial use. Consequently, incidental movement of groundwater from discharge ponds to other ponds also would meet water quality objectives.

I15-2 As described in the responses to comments S2-5, S2-8, and S2-9, the City's existing measured wastewater and projected tertiary treated would fully comply with applicable Basin Plan water quality objectives and Title 22 drinking water standards, which are the applicable criteria for protecting municipal and domestic beneficial uses, including for drinking water. Therefore, implementing the proposed effluent disposal options would not result in adverse impacts on drinking water or degrade beneficial uses.

I15-3 The comment expresses general opposition to the project but no specific comments on the contents of the EIR. No further response can be provided.

I15-4 The comment will be noted by the City as a recommendation for the continued use of the Basalt Pond for effluent disposal in the preferred project. The recommendation to include redwoods probably indicates a preference for the Syar SIR option, which is the only SIR option that specifically includes redwood tree plantings. Also, please refer to the response to comment O1-2, which discusses the feasibility of redwood irrigation.

I16

3/10/05

Dear Healdsburg City Council Members,

Subject – your current EIR in circulation.

Your wastewater is dangerous to us. We need a pure aquifer, not one contaminated by drugs of unknown source and danger.
We will lose our well which is relied on by our four bedroom rental, our 5 acres of very valuable zinfandel and pinot noir, and our home and our family cottage. You will destroy us [and you are offering no solution to replace that water]. No one gave you the right to, in affect, to steal our water. I16-1

You can stay in Basalt Pond for a long time. If you apply formally , you can in time hook into the Geysers pipeline. I16-2

This is not our problem. We handle our wastewater and not by dumping it into the City of Healdsburg. You solve your own problems. Don't do it by destroying our livelyhood and by lowering the value of our property by an untold amount of money.
We have consulted with well qualified environmental engineers and they assure us that. you are wrong. I16-3

If you by chance do chose the percolating pond method by taking valuable land why, do you not go where the land is not right over the aquifer and our only source of water? I16-4

Sincerely,

James F. Love
3280 Westside Rd.
Healdsburg

RECEIVED
MAR 1 1 2005
CITY OF HEALDSBURG
PUBLIC WORKS

LETTER I16 RESPONSE

James T. Love
Received on March 11, 2005

I16-1 Please refer to the responses to comments S2-5, S2-8, and S2-9. The water quality analyses in the draft EIR conclude that the tertiary treatment upgrades and disposal options would meet all the regulatory water quality objectives and regulations and that they would not degrade the beneficial uses mentioned in this comment. The comment does not identify any specific reasons why wells would be lost if the project is implemented, other than the reference to water quality.

I16-2 The City will note this comment as support for the Basalt Pond option for continued effluent disposal. Please refer to the response to comment S2-1, regarding the infeasibility of relying on the Geysers Pipeline.

I16-3 The comment expresses opposition to the project and provides no specific comments on the contents of the draft EIR. No further response can be provided.

I16-4 Please refer to the responses to comments S2-12, O2-6, I1-1, and I4-17.

I17

Caroline Marker

From: Peter Maier [pmaier@erda.net]
Sent: Friday, March 18, 2005 1:47 PM
To: Publicworks
Subject: Comments EIR for Healdsburg WWTF expansion.

Attention: Jim Flugum

Comments: EIR for Healdsburg WWTF expansion.
By: Peter Maier, Ph.D., P.E.
March 17, 2005.

Mr. Sunswheat recently learned about my activities to correct the BOD test in EPA's NPDES permit program, as this essential test is incorrectly used and leads to faulty and misleading engineering data. He asked me to comment on the EIR for the Healdsburg WWTF.

Introduction:

Sewage contains carbonaceous (fecal) and nitrogenous (urine and amino acids) food sources for bacteria, which both, while consuming this waste, use oxygen, hence exert a BOD (Biochemical Oxygen Demand). In order to measure this oxygen demand, English researchers in 1920 developed the BOD test, which measures both C-BOD and N-BOD and would take 30 days. They also found that during the first 6 to 10 days, the test solely measures the oxygen use by the heterotrophic bacteria, hence C-BOD5 and that the N-BOD could be determined by the TKN (Total Kjeldahl Nitrogen) test and would be 4.6 times this TKN value. It is generally assumed that raw sewage contains a BOD5 of 200 mg/l and a TKN of 40 mg/l, for a total BOD = 1.5 x BOD5 + 4.6 x 40 = 484 mg/l.

The goal of the 1972 Clean Water Act is to eliminate all pollution by 1985, which could be achieved by initially demanding 'secondary treatment', Congress was told represented 85% treatment. Unfortunately, when EPA established treatment requirements for NPDES permits, EPA used the BOD5 (5-day test reading) and thereby not only ignored a large portion of the C-BOD pollution but also all the pollution caused by nitrogenous waste, while this waste not only exerts an oxygen demand, but also is a nutrient for algae and thus contributes to the eutrophication of open waters.

EPA assumed that the BOD5 of raw sewage was 200 mg/l and consequently set treatment requirements to meet an BOD5 effluent of 85% of 200 = 30 mg/l. EPA also set the same treatment requirement for TSS (Total Suspended Solids) which it also assumed to be 200 mg/l in raw sewage, hence less then 85% of 200 = 30 mg/l in the effluent. I17-1

Although correct test data, especially on raw sewage, is limited, it has become obvious that this 5-day delay of autotrophic bacteria activities is not valid and that already a large portion of the 5-day test reading is the result of autotrophic bacteria breaking down nitrogenous waste. Many facilities violated the NPDES permits since their BOD5 test results exceeded the 30 mg/l, while they in fact treated the sewage better as required by their NPDES permit.

EPA acknowledged this in 1984, but in stead of correcting the test procedure, it allows the use of the C-BOD5 test, which is the same test but a chemical is added that selectively only kills the autotrophic bacteria, who consequently can not any longer use oxygen.

More then sixty percent of WWTF out of compliance with their NPDES permits in 1984 got into compliance with their NPDES permit by adding this chemical to their BOD5 test, although EPA never explained why N-BOD was not considered a pollutant. And thus still allows cities to use rivers as giant urinals.

EPA, by an administrative ruling in 1984, lowered the goal of the Clean Water Act from 'elimination of all pollution

3/18/2005

by 1985' to a measly 85% of 40% = 35% treatment, without even informing Congress.

Although all this is well established, regulations and discharge permits still are not written in accordance to the correc use of the BOD test and consequently many WWTF are not tested properly and therefore it is not possible to establish how the perform and what the pollution loading is on our open waters.

EIR for the Expansion of Healdsburg WWWF.

I am not familiar with all the actual test data available for the Healdsburg WWTF, but if it is solely based BOD5 and TSS, as required by the NPDES permit, then this data is technical incorrect and can be very misleading.

Salt Lake City in 1983 planned a $130 million expansion, solely based on BOD5 and TSS data, but after the City performed the correct testing for one day, it discarded their expansion plans and now 20 years later and the facility is still not expanded. One day of correct testing avoided the City to waste millions of public funds, although the city still uses the Jordan River as a giant urinal, but that is another story.

Correct testing is essential and when this information is not available, engineers should insist of getting this information, prior to doing anything.

The following test data on both raw sewage and treated sewage is essential in evaluating actual plant performance as well as pollution loading on the river: I17-1 Cont'd

1. C-BOD5 (also called the inhibited BOD5 test) and COD
2. TKN, Ammonia, Nitrites and Nitrates
3. Phosphates.
4. TSS and TVSS

If the facility in the past solely relied on BOD5 test data, it would be advisable to conduct both C-BOD5 and BOD5 test on the same sample, in order to evaluate or correct any conclusions made in the past solely based on BOD5 test data.

Notes of caution:

1. The results of a BOD test not only depend on the food source presence, but also on the presence of the micro-organisms present. Hence it is extremely important, in case of 'seeding' (adding active sludge or bacteria to the test), that seed is used from the facility itself and not from other facilities. This is especially important in case the WWTF also treats industrial wastewater.
2. When the facility exceeded TSS, one first should evaluate the performance of the clarifiers, as loss of TSS does not reflect bad biological treatment.

Again, I am not familiar with test data available, but if this test data, as indicated earlier, is not available, you should first insist on collecting this data before making any decision what to do with your facility. This data may also be very important in case of legal action.

Don't hesitate to call me if you have any questions,
Regards,

Peter Maier, Ph.D., P.E.
44 Lakeview
Stansbury, UT 84074
(435) 882-5052

LETTER I17 RESPONSE

Peter Maier, Ph.D., P.E.
Received on March 18, 2005

I17-1 Biochemical oxygen demand (BOD) is a chemical measurement in water or wastewater that is used as a primary indicator of wastewater treatment performance for organic waste reduction and the control of waste loading effects on dissolved oxygen levels in natural receiving water bodies. This comment refers to research by the commenter that indicates that use of the 20°C, 5-day carbonaceous biochemical oxygen demand (C-BOD) test commonly used in the wastewater treatment industry likely results in oxygen demand data that can lead to inadequate waste treatment levels with respect to permit limits. The comment states that the adoption of the C-BOD test reduced the protection afforded by the standard BOD test, which was originally developed to coincide with the intended pollution reduction goals of the Clean Water Act. The comment suggests that the standard BOD test is the more appropriate test for gauging the oxygen demand of wastewater containing mixed carbonaceous and nitrogenous oxygen-demanding substances.

The standard 5-day BOD test is the form of the measurement required to be monitored in the City's NPDES permit and is thus using the most stringent measure recommended in this comment. In addition, the City's recently adopted NPDES permit issued by the RWQCB lowered the allowable BOD effluent permit limits considerably from the previous permit limits.

The comment does not raise any significant environmental issues or substantial evidence regarding the City's BOD removal performance or receiving water dissolved oxygen levels. Therefore, the City believes that the draft EIR accurately characterizes the issue and the environmental impact analysis presented in the draft EIR.

I18

March 19, 2005

Mr. Jim Flugum, Sr. Civil Engineer
City of Healdsburg
Community Development Center
401 Grove Street
Healdsburg, CA 95448-4723

RE: Healdsburg – DEIR: Wastewater Treatment Plant Upgrade/ Disposal Options

I'd like to preface this submittal to the record for the Healdsburg DEIR with a statement that the residents impacted by the Treatment Plant Upgrade and Disposal Options continue to seek alternatives and solutions that meet everyone's needs. The objective of the environmental review process is supposed to be MITIGATION, not mere paper studies check off a box to forestall litigation. The community of landowners has requested testimony from experts to help the City of Healdsburg discern the irreparable impacts of certain alternatives to the groundwater and our wells, and other studies and proposals to help craft solutions that both protect the natural landscape and the value of our properties.

Please carefully review and consider Dr. Wickham's and Don McEnhill's proposed solutions. Healdsburg has an opportunity to be a model community, and to set some important precedents in terms of preserving the viewscape so treasured by our tourist industry and protecting our drinking water aquifer, so integral to Sonoma County's health and long-term prosperity. I18-1

Healdsburg is not the only wastewater discharger who regards the Middle Reach aquifer as merely a leach field versus respecting it as a drinking water aquifer and the location of people's homes. The City of Santa Rosa is planning to dispose of millions of gallons of wastewater in the valleys both to the north and south of Healdsburg. It's time for Healdsburg to stop viewing the preferred wastewater disposal method as the cheap and dirty solution merely imposed on the people living downstream.

Healdsburg needs to view its actions from the perspective of an entity that may soon be severely impacted as well – which is a likelihood if Santa Rosa's discharge has insufficient treatment before its disposal into water resources above the Healdsburg well field. We beg the Planning Commission and City Council to set the standard for protection of private and municipal wells by its actions; only then can Healdsburg justify the standards expected of Santa Rosa, set to ensure their future discharges do not imperil the City of Healdsburg's or Middle Reach domestic and irrigation wells. I18-2

We are saddened that the City of Healdsburg continues to spend so much of its ratepayers resources on lawyers and litigation pursuing its ill-conceived plan to directly discharge wastewater into groundwater via Pit V. There are solutions that can benefit all involved parties, and it's time to start investing in alternatives that actually solve the problem.

Given that Healdsburg hasn't been willing to work with the community, the Water Quality Control Board or the Board of Supervisors in a constructive manner, I submit the following comments to the record:

I question whether this situation is a proper use of a Program EIR – Cities need to go to advanced water treatment by 2008, so I question the need to study components of this project at a high level, certifying a Program EIR and then choosing the preferred project. Unfortunately, the Draft "Program EIR" we currently reviewed is totally inadequate: it does not lay out the full range of alternatives, and does not fully assess the impacts. Certainly impact analysis and mitigation measures for any of these alternatives need to be far more specific and comprehensive. *What will be included in a project specific EIR – how will it relate to or rely on the Program EIR?* I18-3

To assert that the impacts of discharging wastewater into Pit V are merely those associated with the construction of a 130 foot pipe when the Water Quality Control Board has gone on record stating that a discharge to Pit V is a direct discharge to groundwater not only does not meet the requirements of CEQA, it discredits the validity of the entire Draft EIR. The DEIR is beneath the quality of work product expected from EDAW. I18-4

Conditions have changed: Recycling outdated studies and conclusions from the previous Pit V Outfall Project EIR does not meet the criteria of CEQA. The Draft EIR studies do not take Syar Pit VI, into consideration. This is especially a problem given the proposal to connect Pit V/VI by a mere 100 foot separator, to mine in the separator between Pit V/VI and between Pit VI and Basalt, and given the influence of Pit V/Pit VI on subsurface groundwater movement. **Thus, Pit VI is a "substantial change with respect to the circumstances under which the project is undertaken" under CEQA 15162/Section 21166.**

Syar's Pit VI, which is planned to only have a 100 foot separator and to lie directly south of Pit V, is a known probable future project. As your own studies acknowledge, gravel pits impede the flow of groundwater; and with the addition of Pit VI, the gravel beds to the south will no longer exist. The subsurface flow from Pit V will be impeded by Basalt Pond to the east and Pit VI to the south. Any discharge into Pit V will contaminate the groundwater contained in both Pit V and VI, and the plume of wastewater contaminated water will push farther to the west. I18-5

The DEIR does not address the change in subsurface flow out of Pit V, does not address the contamination impacts on the additional 4-6 adjacent irrigation and domestic wells influenced by Pit VI, nor does it address the impacts of increasing the subsurface groundwater levels on premium grape production.
Why was a new assessment of inflow volumes, mounding impacts, flow pattern, and contamination potential with Pit VI in the equation not prepared as part of this DEIR?

Why are the impacts to irrigation and domestic wells not addressed in the Draft EIR? If your studies truly showed no risk of contamination of groundwater or contamination of wells, provision of alternative water sources should contamination occur in adjacent wells I18-6 would be a very low risk mitigation measure. *Why are there no required mitigation measures, such as providing alternative water source for all wells within the Zone of Influence of Pits V/VI or the perc pits not considered?* I18-6 Cont'd

As the characteristics and impacts of various treatment and disposal options are only covered at a very high level, and adequate mitigation measures are not included in this Draft EIR, I offer the following comments and questions, in hopes that the Final EIR will actually provide enough information to assess the impacts of the alternatives being considered:

Upgrade to Advanced Water Treatment – Please treat and improve the quality of Healdsburg's effluent to highest feasible level with a treatment facility configured to have the least noise/odor impacts on Foreman Lane and other adjacent residents. Possible mitigations that could result in a "showcase facility" as envisioned by the Planning Commission include:

- Enclose all operations that produce, noise, light or odors in buildings and landscape buildings to mitigate visual impact.
- Do visual screening of all structures, equipment, or ponds by planting riparian trees and other vegetative screening that does not harbor vineyard pests.
- Construct holding ponds in uneven natural shapes – with vegetated berms to blend in with the visual landscape. I18-7
- Use subsurface emitters to water riparian trees, or other screening vegetation, around all ponds, treatment facilities and gravel pits… the trees will both yield ag-reuse disposal benefits and can be planted in natural configurations to mitigate gravel mining visual damage to the Middle Reach.
- *Which AWT alternative does a better job of removing chemicals and harmful constituents from wastewater?*
- *Riparian tree plantings would reduce the impact of green-house gases from the wastewater treatment plant – has the City of Healdsburg looked into carbon credits for its proposed planting of redwood trees over 7 acres?*
- *PG&E has energy efficiency programs for wastewater treatment plants – has Healdsburg looked into these options as a way to reduce costs to its ratepayers?*

Improve conservation efforts and minimize infiltration: *What measures is Healdsburg taking to reduce their wastewater discharge?*
What conservation programs are in place?
What new conservation programs are going to be required to mitigate the impacts and costs of treatment and disposal? I18-8
What measures are being taken to upgrade of leaky sewer lines to prevent infiltration?

Include Geysers Pipeline alternative – CEQA Section 15126.6 requires that alternatives intended to avoid and/or lessen the environmental effects of the project be assessed. The environmentally superior alternative, removal of wastewater from the SCWA's drinking water aquifer, was dismissed on an erroneous assertion that Santa Rosa will not allow this option – there was no factual or financial justification to support this allegation. I18-9
What documentation exists that shows the costs of this option?

What documentation exists that proves Santa Rosa has foreclosed this option? I18-9 Cont'd

Continue discharge into Basalt Pond under a NPDES permit. Basalt Pond discharge is an indirect discharge to the River, therefore it must operate under terms of NPDES permit. Other indirect disposal options, such as beneficial Urban Reuse and Ag Reuse, required for the May 15 – September 30 period should be embraced. I18-10

CEQA Section 15123 requires an EIR to cover known areas of controversy: Water Quality issues are the heart of the problem – especially as it relates to groundwater contamination. **Pit V and Basalt do have equal impacts; Basalt Pond discharge appears to be the "environmentally superior alternative" – Healdsburg's own studies assert that Basalt Pond is polishing the wastewater in ways that Pit V cannot.** Although the data set is small and over a short duration, Appendix D studies assert that Basalt Pond is working to filter to reduce the concentration of certain constituents before they reach the River. Also, Luhdorff and Scalmanini studies assume sediment thickness in the sides and bottom of the Basalt Pond, and their model asserts that the sediment decreases the travel time of the wastewater to the River and groundwater aquifer. I18-11

- *As Pit V and the perc ponds do not have the benefit of these sediment deposits – how will they polish the wastewater if there is no contact time with cleansing soil but merely the rapid injection of un-polished wastewater to the groundwater?*
- *Why were other soil cleansing options considered before disposal into receiving waters?*

Pit V disposal also requires an NPDES permit and must meet higher water quality standards than Basalt Pond disposal. Healdsburg's own hydrologic models indicate that 160,000 gallons/day of effluent exit Pit V and that Pit V has a hydrological connection to the Russian River. Attached for the record, is a letter and set of exhibits prepared by WASA's lawyers, Shute, Mihaly & Weinberger outlining the reasons why an NPDES permit is required for Pit V. I18-12

Draft EIR does not address GeoTrans Review and Findings: An August 12, 2002 review of Healdsburg's hydrologic and water quality studies conducted by GeoTrans, the company that created the MODFLOW model that Luhdorff & Scalmanini (LSCE) rely on, cited a number of flaws in assumptions, study methodology and purported results. GeoTrans recommended actions to be taken to substantiate the claims made by the Healdsburg LSCE studies – *Have these tasks been completed? And, why are they not addressed in the new Draft EIR?*

GeoTrans Recommendations: I18-13

1. a thorough re-evaluation of geologic and hydrogeologic data available
2. a site visit
3. a steady-state model based on the LSCE model for fall conditions be constructed and calibrated
4. a transient model based on steady-state heads be ran for the duration of good water level data, including the past five years of data since the October 1997 report; and

5. a particle tracking analysis to determine travel times from the Phase V pond to the Russian River and other areas of interest.

Water quality requirements for "direct discharge to groundwater" are higher than "indirect discharge" to Russian River through the Basalt pond discharge point. I18-14

The **County's ARM Plan** Section 7.6.3 (page 7-35) **states,** "No other terrace pit (beside the Basalt pit) may be used for the storage or disposal of effluent from public sewage systems unless the Board of Supervisors finds that the proposal is the environmentally superior alternative being considered, will meet applicable water quality standards enforced by the WQCB, and will **avoid significant impacts on nearby ground water and surface water."**

On Aug 15, 2002, **the Water Quality Control Board stated,** "The Regional Water Board has made it clear that a discharge to Phase V could not be permitted, due to **concerns about the pollution of ground water**. We continue to discourage the City about including Phase V pond as a potential discharge point or storage facility." I18-15

On March 8, 2005, the **Water Quality Control Board stated,** "Since September 1999 when the City of Healdsburg decided to relocate their outfall to the Phase V Pit, Regional Water Board staff have been concerned with the impact to nearby drinking and agricultural wells from the discharge of wastewater. The areal groundwater is designated for municipal drinking water use and is of high quality. Statewide Anti-Degradation Policy requires protection of existing high quality waters to avoid degradation from discharges of waste. While Regional Water Board staff and our expert consultants have found that many of the City's groundwater modeling studies have poor model construction in addition to other flaws, the studies do indicate that nearby wells could be impacted by the discharge of wastewater into the Phase V Pit."

The **Anti-Degradation Policy states** that, "... lesser quality water cannot be discharged into higher quality water absent compliance with **best practicable treatment or control** of the discharge in order to avoid pollution and maintain the highest water quality."

— *Given that State and County policy is clear on the requirements for disposal, what is the basis or criteria used by Healdsburg to assert that their discharge does not need to meet the Anti-Degradation Policy or the Porter Cologne Act?* I18-16

— *How much has Healdsburg spent on lawyers to fight the Water Quality Control Board and the Board of Supervisors from 2001 to the present? What is the rational for spending ratepayer resources on legal fees versus spending the assessments as intended – to build the "best practicable treatment or control" facilities?* I18-17

— *Do drinking water standards address chemicals, pharmaceuticals and other organic and inorganic constituents in wastewater?* I18-18

— *What is causing the spikes in aluminum in our drinking water aquifer? Does aluminum create adverse biological impacts in a neutral pH environment?* I18-19

— *How does aluminum, copper or other metals in the effluent affect the production of premium grapes?* I18-20
— *How does the mounding effect, which is purported to raise the groundwater levels adjacent to the gravel pits, going to impact the production of premium grapes?* I18-21

Perc pit disposal options also are a direct discharge into the groundwater aquifer, with similar groundwater contamination impacts. Where are the studies of groundwater elevations around all perc pits? The Draft EIR lacks supporting data – there are "several hydrogeologic data gaps, including a paucity of groundwater and surface water elevation data" to characterize the groundwater table. Analysis must be done year round as the aquifer recharges the river at certain times of the year and the River recharges the aquifer at other times – this movement of the groundwater back and forth brings many more wells into the Zone of Influence of the perc pits. I18-22

— Please provide a table containing historical measured groundwater elevations and depths to groundwater in the vicinity of all alternative disposal sites – especially the data from "MW" and "S" monitoring wells that are not subject to pumping.
— *Why are there no studies of groundwater elevations at each season of the year in all monitoring wells and domestic/irrigation wells along Foreman Lane and in the zone of influence of Pond V/VI?*
— *Why are the perc pits not located outside the 500 year flood plain?* I18-23
— *How does a perc pond with 20 foot depth function when winter groundwater levels are at 15 feet?* I18-24
— *How many and which parcels have irrigation and domestic wells within the zone of influence for the perc pits and Pit V/VI?* I18-25
— *How will wastewater be controlled or contained in the perc pits?* ***The DEIR indicates that it is known that copper, aluminum, nitrate, chloride and floride are elevated in the groundwater influenced by Healdsburg's wastewater*** *– how will these metals and constituents influence well water? How will they influence the production of premium grapes?* I18-26
— *How will "Rapid infiltration" not impact many more wells as the perc pits will be built directly in the groundwater?* I18-27
— *How will the impacts to groundwater and well water be mitigated?* I18-28

Why wasn't a biological assessment of lands proposed for percolation pits conducted? These lands, like the Salvation Army site, have numerous intermittent drainages, some perennial drainages and seasonally high groundwater levels and surface water overflow creating wetland areas. The same special status species are likely to live in this location as on the Salvation Army site. I18-29

Air Quality Standards – Diesel Emissions: *Why was there no analysis of air quality impacts from diesel equipment for extensive construction required for the perc pits?* I18-30

The WQCB has shown that Healdsburg's plant historically violates its effluent limits in wet-weather conditions, including suspended solids violations. I18-31

— *What studies were conducted to show the impacts of these violations on receiving waters and the wells within the zone of influence of the discharge points?* I18-31 Cont'd

We beg Healdsburg to join the new millennium by investing in Advanced Water Treatment and then mitigating the impacts of their waste disposal on adjacent neighbors and the environment. We respectfully request that the City's actions reflect the values of its constituency by ensuring the truly environmentally superior alternative, not the quick and dirty alternative be chosen, and then a full range of mitigation measures be applied to its wastewater actions.

Sincerely,

Judith Olney
3300 Westside Road
Healdsburg, CA 95448

Attachments:
June 16, 2004 Shute, Mihaly & Weinberger letter with Exhibits

- Exhibit 1: Transcript: State of California vs. City of Healdsburg
- Exhibit 2: Respondent's Memorandum of Points and Authorities
- Exhibit 3: GeoTrans Inc. Comments
- Exhibit 4: Portions of DEIR, May 2001
- Exhibit 5: Portions of Luhdorff & Scalmanini report
- Exhibit 6: Appendix K: L&S Technical Memorandum

March 8, 2005 Water Quality Control Board Letter

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June 16, 2004

Eric Speiss
Office of the Chief Counsel
State Water Resources Control Board
1001 I Street, 22nd Floor
Sacramento, CA 95812-0100

Dear Eric:

As you know this firm represents Westside Association to Save Agriculture ("WASA") in litigation challenging the City of Healdsburg's approval of a project to discharge wastewater into what is known as "Pond V," which is adjacent and hydrologically connected to the Russian River. The purpose of this letter is to set forth WASA's position that (1) any discharges by the City to Pond V should also be subject to the Federal Clean Water Act and the requirement to obtain National Pollutant Discharge Elimination System ("NPDES") permit; and (2) the Regional Board should not rely on the current Pond V EIR because changes in circumstances that will make impacts to groundwater resources more significant require preparation of a subsequent EIR.

On January 23, 2004, the U.S. District Court for the Northern District of California issued an order finding that an NPDES permit is required for the City's discharges of treated wastewater to the Basalt Pond, which is between Pond V and the Russian River. The court based this decision on its determination that the Basalt Pond is hydrologically and ecologically connected to the Russian River and therefore is a water of the United States subject to the requirements of the Clean Water Act. It is our understanding that, based on this decision, the Regional Water Quality Control Board for the North Coast Region will require the City to obtain an NPDES permit for its continuing discharges of wastewater to the Basalt Pond.

As detailed below, both the City and the Regional Board have repeatedly indicated that Pond V is hydrologically connected to the Russian River (and the Basalt Pond). Evidence supporting this fact includes the following:

1. Statements by the City and its attorney during litigation (<u>Westside Association to Save Agriculture v. City of Healdsburg</u>, Alameda County Superior Court No.

EXHIBIT 1

2002-045680) that Pond V and the Basalt Pond are part of the same water body. See Exhibits 1 and 2.

2. The findings of GeoTrans that Pond V and the Basalt Pond are both hydrologically connected to the Russian River and therefore discharges to these ponds should be subject to an NPDES permit. See Exhibit 3 at pages 2, 3, 4.

3. The determination by the City's environmental impact report for discharges to Pond V that Pond V and the Basalt Pond are "part of the same unconfined alluvial aquifer." Exhibit 4 at 3. The EIR concludes that discharges to Pond V will ultimately reach the Basalt Pond and thereafter, the Russian River. Exhibit 4 at 5; see also Exhibit 5 at 5. This is also confirmed in the EIR and its attached technical studies.

This evidence clearly demonstrates a sufficient connection between Pond V, the Basalt Pond, and the Russian River such that any discharges to Pond V would also constitute a discharge to waters of the United States. Indeed, because it has been mined almost continuously since certification of the City's EIR, Pond V is far deeper than the Basalt Pond and it lacks the layer of silt that currently lines the bottom of the Basalt Pond. As such, Pond V is likely to be even more permeable than the Basalt Pond.

Therefore, we urge the Regional Board to deny approval to any wastewater discharges to Pond V, and if such discharges are approved, to require that the City first obtain an NPDES permit before it discharges any wastewater to Pond V.

In addition to the need to require an NPDES permit prior to permitting any discharges into Pond V, new information and changes in circumstances require preparation of a subsequent EIR before any discharges into Pond V may be approved. Specifically, subsequent to certification of the EIR, Syar submitted an application for a Phase VI gravel mining operation immediately south of the existing Pond V. This extraction site, and the resulting pond, are located precisely in the area where the Healdsburg EIR determined the Pond V outflow would migrate. The wastewater flow models used in the EIR provided the primary technical information from which all water quality conclusions were reached as to the rate of the Pond V plume migration, relative direction of plume flows, degree and rate of polishing of the plume, the degree of water/wastewater mounding and around Pond V, and so on.

Included within the Pond VI Mining and Reclamation Plan was a new water modeling report (Appendix K) that demonstrates the resulting subsurface flows will be substantially different than those predicted by the groundwater reports relied upon in the Healdsburg EIR. Note that the Healdsburg EIR and Pond VI groundwater modeling reports were prepared by Luhdorff and Scalmanini, so there is no issue of disagreement among experts. The Appendix K report concludes that the excavation of Pond VI will result in a further mounding to the south of Pond V and send the Pond V outflow in a wider arc to the west. This will increase the area of groundwater contamination, increase the number of affected wells, and reduce the travel time to the wells already acknowledged as impacted by Pond V. Depending upon timing, any wastewater discharge to Pond V will also expose mining operators in the Phase VI pit to direct contact with the water/wastewater mix leaving Pond V. Information regarding Pond VI and its impact on groundwater flows from Pond V was presented to the Board during the public comment period of the Board's February 11, 2004 meeting. A copy of Appendix K and excerpts of earlier modeling of flows from Pond V (without Pond VI) is attached hereto as Exhibit 6.

Given that these issues directly relate to the regulatory responsibility of the Regional Board, the Board has an obligation as a Responsible Agency under CEQA Guidelines section 15096 (e)(3) to direct preparation of a subsequent EIR prior to approving any discharge into Pond V. This requirement exists irrespective of whether such a discharge would be permitted through the WDR process or the NPDES process. The Regional Board's current action challenging the Healdsburg EIR is now pending in Alameda County Superior Court. Regardless of the ultimate outcome of that suit, new information regarding the Phase VI mining plan became available subsequent to the certification of the EIR. Therefore, pursuant to Public Resources Code section 21166 and Guidelines section 15096(e)(3), the Board must require preparation of a subsequent EIR to consider this new information. Only with the preparation of a subsequent EIR can the Regional Board ensure the protection of the surrounding groundwater and surface waters, and those who rely upon them.

Finally, by this letter I am requesting that the Regional Board include me on its mailing list for all matters related to proposed discharges by the City to the Basalt Pond, Pond V, the future Pond VI, or the Russian River.

Thank you for your attention to this matter.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

ELLISON FOLK

cc: Judith Olney
Jim Love

COPY

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF ALAMEDA

BEFORE THE HONORABLE BONNIE SABRAW, JUDGE

DEPARTMENT NO. 512

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WESTSIDE ASSOCIATION TO SAVE AGRICULTURE, a California non-profit unincorporated association, JAMES T. LOVE, PEG LOVE, and JUDITH OLNEY, individually, Plaintiffs and Petitioners, vs. CITY OF HEALDSBURG, a municipal corporation, et al., Defendants and Respondents.	No. 2002-045680
SYAR INDUSTRIES, INC., a California corporation, et al., TOWN OF WINDSOR, et al., Real Parties in Interest.	
CONSOLIDATED WITH THE PEOPLE OF THE STATE OF CALIFORNIA, Plaintiff and Petitioner, vs. CITY OF HEALDSBURG, et al., Defendants and Respondents.	

MARYLOU GUTIERREZ, CSR 5980

Exhibit 1

environment other than their statements that, well, the water within the Phase V Pond itself may be polluted as a result of the discharge, and I will address that in a moment, Your Honor. Other than that, nobody is challenging that this project will not have a significant impact on the groundwater, that the groundwater -- nobody's actually raised at least a credible challenge to that either orally or in our papers. We've briefed that in our papers as well.

I would refer to the Court in terms of looking at the evidence in the record, and we've cited to this section repeatedly in our brief, but in particular the responses to comments to the Regional Board's letters. Letters of comment which are contained in the Administrative Record starting at page 186, Volume 2 really get into the heart of a lot of the City's discussions regarding water quality impacts as well as the discussion in the Draft EIR itself. No showing has been made that the City's decision -- that there's not going to be significant impact on the water quality, no showing has been made that that decision is not supported by substantial evidence.

The second independent reason for upholding the City's CEQA determination here is that the City's determined that the impacts to the environment under this project will be no worse than the impacts to the existing environment. The City already discharges its secondarily treated wastewater into the Basalt Pond. It is simply proposing to change the point of discharge to a new pond that goes into the same aquifer.

MARYLOU GUTIERREZ, CSR 5980

As the Town of Windsor points out, its wells are -- which are way far away, is in the same water, groundwater aquifer as this point of discharge. The aquifer covers both the Basalt Pond and the Phase V Pond. It's the same body of water that the City is discharging into. The City's just moving the point of discharge to avoid the flooding issue.

The City's determination that the impacts on the environment under this project will be no worse than the impacts on the existing environment is supported by substantial evidence and should be deferred to by this Court. That's a second independent reason. Even if the Court found or disagreed with the City's conclusion that there will be no significant impact just from the disposal of the water into the Phase V Pond, the point is those impacts are not going to be any worse than under the existing environmental condition because the City already disposes the same amount of water into the Basalt Pond.

THE COURT: Let me ask a question --

MR. JARVIS: Sure.

THE COURT: -- with respect to that. And maybe I need some clarification, but in terms of the evidence in the record -- maybe you can point me to the Administrative Record -- but it seems that there's evidence to suggest that water discharged into Pond V may actually end up in the Basalt Pond, and that can be from the underground aquifer that you're referring to.

MR. JARVIS: Um-hum.

THE COURT: Are -- is there an adequate discussion in the record with respect to alternatives that minimize the possibility of a further breach of the Basalt Pond as a result of the -- any Phase V water ending up there and creating the same problems that you've had in the past?

MR. JARVIS: I don't remember seeing that argument made.

The problem with the -- the records discussion, including the responses to the Regional Board Quality -- Regional Water Quality Control Board's arguments, establishes that once the water exits through the groundwater from the Phase V Pond, that fil -- the act of filtering through that, before it emerges either in the Russian River or if it were to emerge in the Basalt Pond, already undergoes a certain level of treatment. But, yeah, we are disposing into the same pond but -- okay, one problem with that question is it ignores -- your question goes to, well, is the City going to still potentially have a violation of the Clean Water Act because it's discharging into the Phase V Pond, and that water, some of that water will incrementally end up in the Basalt? Phase V Pond.

THE COURT: Really my question is if alternatives to avoid that were discussed in the record and, if so, where.

MR. JARVIS: Well, alternatives to the project were discussed in the Draft EIR. So we're sort of slipping into the discussion of the alternatives in the EIR, and I've got a lot to say --

THE COURT: Okay. And maybe I should wait for my questions. That's why I was waiting, because some of them have already been addressed. So why don't you just go ahead

MARYLOU GUTIERREZ, CSR 5980

MR. JARVIS: Let me go back to the issue of the EIR's discussion of water quality impacts in and of themselves. And then after I deal with that, I'll address the issues regarding alternatives and project description and scope of the project.

The one argument that I've heard challenging the adequacy of the EIR's analysis of impacts to the environment is that by discharging secondarily treated wastewater into the Phase V Pond, the water, the groundwater at the bottom of the Phase V Pond itself will itself become polluted and that the contention that the City in the EIR did not adequately consider that impact. And the problem with that argument is that the groundwater in the bottom of the Phase V Pond is the same as the groundwater at the bottom of the Basalt Pond, which is the same as the groundwater surrounding these ponds.

This is all one groundwater aquifer. And if you'd like to look, I've changed the map back. The aquifer encompasses the Syar/Phase V Pond, the Basalt Pond, and even goes down to the Town of Windsor wells. You have one large underground water aquifer, one body of water right there. And what the Regional Board is trying to do is trying to take out one little chunk of that and treat it as separate from all the rest. Now, maybe that's a reasonable thing to do or maybe that's not a reasonable thing to do, but that's -- the issue before the Court is not what the Regional Board would like to do, but whether the City abused its discretion in the analytical approach it took.

If reasonable minds could differ as to the correct approach, the Court must defer to the actions taken by the City. The City cannot be found to have abused its discretion if -- just because somebody else has a different opinion as to how an analysis is to be conducted. The City quite properly inquired to reasonably treat the entire water basin as a source of impact. And any, you know, adverse impacts to the water in the Phase V/Basalt Pond is going to be offset by the loss of -- the reduced impact of the Basalt Pond, the City no longer discharging its wastewater into that pond. That's reasonable. And to illustrate that point, as well as several other points, I want to focus on the Regional Board's Antidegradation Policy.

A lot of arguments have been made that the EIR ignored the Antidegradation Policy, should have analyzed it more. And there are lots of problems with those arguments. And to illustrate those problems, let's take a look at the text of the policy. And it's reproduced on page 186, Volume II of the Administrative Record. This is an excerpt from the Regional Board's own letter. It's a recitation of the Regional Board's own letter.

THE COURT: One second here.

MR. JARVIS: Sure.

THE COURT: All right.

MR. JARVIS: Okay. States that -- and it's in the middle of the page, the first bullet item in the middle of the page, starting on the second line. Policy states that:

> ...the disposal of wastes into the
> waters of the State shall be so regulated

water quality standard that needs to be, in and of itself, be assessed for determining significant impact on the environment.

Now let's talk for a second about waste discharge requirements. The Regional Board has issued a waste discharge requirement to the City authorizing the discharge of waste to the Basalt Pond. That policy has been -- that waste discharge requirement was issued years ago. And the City has been discharging to the Basalt Pond based upon the authority provided by that policy. The Basalt Pond, like the Syar, Basalt, the floor of the Basalt Pond is below the groundwater level. Any argument they want to make the discharge to the Syar Pond is direct discharge to groundwater is also an argument that discharge in the Basalt Pond is discharge to the groundwater. There is no functional distinction between those two ponds with respect to whether it's discharged to the groundwater, whether it's a pollution to the groundwater.

The Regional Board in issuing those waste discharge requirements, which it did pursuant to a public hearing pursuant to the procedures required by statute, must have then determined that the discharge to the Basalt Pond does not violate the State's Antidegradation Policy. It must have determined that the discharge to the Basalt Pond does not result in a pollution or nuisance and does not avoid compliance with achieving the highest water quality consistent with the maximum benefit to the people of the State. They must have determined that the highest water quality consistent with this benefit will be maintained.

MARYLOU GUTIERREZ, CSR 5980

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Rec'd
10/21/02
RT

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF ALAMEDA

WESTSIDE ASSOCIATION TO SAVE AGRICULTURE, et al., Plaintiffs and Petitioners, v. CITY OF HEALDSBURG, a municipal corporation, HEALDSBURG CITY COUNCIL, et al., Defendants and Respondents. SYAR INDUSTRIES, INC., et al., Real Parties in Interest.	**CASE NO. 02-045680** **RESPONDENTS' MEMORANDUM OF POINTS AND AUTHORITIES IN OPPOSITION TO PETITIONS FOR WRIT OF MANDATE** Petitions filed: October 25, 2001 November 19, 2001 <u>Hearing</u> Date: December 11, 2002 Time: 9:00 a.m. Dept.: 512 Hon. Judge Bonnie Lewman Sabraw

Harry Neal

Thus, the issue for the Court is whether there is substantial evidence in the record supporting the EIR's determinations, regardless of any conflicting evidence in the record. Moreover, it is Petitioners' burden to address all of the applicable evidence under the substantial evidence test:

> "We repeat what every lawyer should know, namely than when [a petitioner] urges the insufficiency of the evidence to support the findings it is his duty to set forth a fair and adequate statement of the evidence which is claimed to be insufficient, He cannot shift this burden to respondent, nor is a reviewing court required to undertake an independent examination of the record when [petitioner] has shirked his responsibility in this respect . . . . [The] failure to do so will be tantamount to a concession that the evidence supports the findings." (*Markley v. City Council of the City of Los Angeles* (1982) 131 Cal.App.3d 656, 673, internal quotations and citations omitted.)

Here, Petitioners have wholly failed to meet their burden. WASA in particular makes numerous, repeated arguments without even bothering to provide any citation to the administrative record, much less discuss the evidence on point in the record. This failure is "tantamount to a concession that the evidence supports the findings." (*Ibid.*)

1. <u>There is substantial evidence in the record supporting the EIR's conclusions of insignificant water impacts.</u>

There is substantial evidence in the record supporting the EIR's analysis of water impacts. The EIR first discusses the existing environmental setting of the Project. (I AR 23-24.) As to groundwater, the EIR discloses that both the Basalt and Phase V Ponds are located within a much larger groundwater basin, which is hydraulically connected to the Russian River. (I AR 23-24.) Groundwater moves toward the Russian River most of the year, while the flow in the Russian River recharges the groundwater reservoir in the fall. (I AR 24.) The EIR discusses existing surface water quality and existing groundwater quality, including extensive water quality data which the City has collected over the past 20 years from the wastewater treatment plant effluent, the Basalt Pond and nearby wells. (I AR 26-29, 110-112.)

To evaluate whether the Project would have a significant impact on hydrology or water quality, the EIR defined significance criteria based on Appendix G of the CEQA Guidelines. (I AR 35.) The EIR then concluded that the Project would not have a significant effect on the groundwater quantity in the area. (I AR 36-37.) This conclusion was supported by two studies prepared by expert consultant Luhdorff and Scalamini ("LSCE studies"), who developed a computer model of the pond and surrounding aquifer to analyze water levels in the Phase V Pond and in the surrounding aquifer. (I AR 36-37, 152-176B.) The computer model simulated several scenarios with varying pond sizes, varying average annual wastewater discharge volumes, varying aquifer permeability at the bottom of the pond, and at varying times of the year. (I AR 37, 153-159.) The report disclosed that, under a worst case scenario, a small groundwater "mound" would form around the pit as a result of the infiltration of commingled groundwater, rainfall and wastewater from the pond, but concluded that there will be no adverse impact to neighboring agricultural land uses. (I AR 37, 158.)

As to groundwater quality, the EIR concluded that the Project would not have a significant impact on the quality of the existing groundwater in and downgradient of the Phase V Pond. (I AR 38; II AR 281.) The EIR observes that the current wastewater discharge into the Basalt Pond has not caused any significant adverse impacts to groundwater quality, and the proposed discharge into the Phase V Pond would continue to meet drinking water quality standards. (I AR 38.) This conclusion was supported by the LSCE studies discussed above and by an expert water quality analysis conducted by the City. (I AR 38, 108-151.)[14] The City's monitoring program included water quality sampling at the maximum depth in the Basalt Pond, to determine water quality in the Basalt Pond before it enters into the aquifer. (I AR 114.)

The EIR and the expert reports demonstrate that the quality of water found in wells downgradient of the City's wastewater outfall pond, ***as well as water in the outfall pond itself,*** would meet applicable standards for drinking water quality, with minor exceptions for aluminum and coliform bacteria. (I AR 38, 122; II AR 189-190, 288. See also III AR 674, 703, 774-775 [expert staff testimony].)[15] The expert water quality analysis demonstrates that, due to the substantial treatment that would occur over the long period of residence time in these deep ponds, "the City's effluent would meet drinking water standards ***before percolating to the aquifer.***" (II AR 195, emphasis added; I AR 108-151.)

As to the Town's wells (located across the Russian River and 8,100 feet downstream), the EIR and the expert report provide that "the water quality data and groundwater modeling clearly show that the proposed discharge would not cause significant adverse impacts to groundwater quality." (I AR 38, 123.) The proposed wastewater discharge would not cause drinking water standards to be exceeded in or near the Phase V Pond, and only a small portion of the discharge would ever potentially reach the area of the Town's wells, and then only after six and one-half years traveling through the aquifer, "with substantial dilution, soil-aquifer treatment, and pond treatment occurring as it migrated." (I AR 38, 122; II AR 283-284.)

The EIR explained that the current discharge into the Basalt Pond does not impact the Town's

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[14] Although some members of the public questioned the expertise of City Associate Civil Engineer Jim Flugum who prepared this report, Mr. Flugum is a California registered Civil Engineer with over 15 years of water quality experience, and is clearly qualified to conduct this expert analysis. (II AR 263; *Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359, 1380.)

[15] The high aluminum levels are associated with its natural occurrence in the soils, and not the City's wastewater effluent. (I AR 38.) The coliform bacteria levels detected in the surface water samples from the Basalt Pond and the Syar Phase III pond were typical of levels found in the Russian River and are present in all surface waters in the Russian River basin. (I AR 38.) The results of well sampling demonstrated that the coliforms are effectively removed by passage through soil pores in the aquifer, and that the wastewater discharge does not cause drinking water standards for bacteriological quality to be exceeded in water supply wells. (I AR 38, 122; II AR 187.) Thus, although the discharge would not meet drinking water standards for bacteria at the point of discharge, the standards would be met at the nearby supply wells. (II AR 187-188.) As the Final EIR points out, even an AWT treatment plant would not meet these standards at the point of discharge. (II AR 188.)

wells, that the Phase V Pond is located 2,000 feet further away from the Town's wells than the Basalt Pond, and that the effluent would have to travel ***across*** the Russian River, a "significant barrier," to even reach the Town's wells. (II AR 283.) Accordingly, the EIR concluded that "any influence which may exist between the City of Healdsburg wastewater discharges and the Town of Windor's wells will be ***decreased*** by the proposed project." (II AR 283.) Moreover, as discussed above, the "industry standard" and the standard used by the Town of Windsor itself for analysis and prediction of groundwater quality impacts associated with treated effluent is 1,000 feet from the discharge point. (II AR 283; XIV AR 3922.) The City here went well beyond the industry and the Town's own standard in analyzing whether the Project would impact the Town's wells, located 8,100 feet away. (II AR 283-284.)

In addition, the Town recently proposed and approved its own "Well 10 project," which included construction of a new water supply well located approximately 150 feet north of its existing wells and 150 feet closer to the Phase V Pond. (II AR 270.) The Town prepared a mitigated negative declaration for its Well 10 project, which stated that the data provided by the City on the Phase V Project indicated that: "Healdsburg's discharge of wastewater to the ponds does affect groundwater quality [and that] ***these impacts do not currently cause exceedance of any health levels for any monitored constituents*** . . ." (II AR 270-271, emphasis added.) Following consideration of the City's data, the Town approved the Well 10 project on April 11, 2001. (II AR 271.) Thus, the Town's approval of a new well, even closer to the Phase V Pond than its original wells, and its concession that the City's discharges do not exceed any health levels, vitiates the Town's current claim that the Project has a significant environmental impact on the Town's wells. Interestingly, the Final EIR also states:

> "[T]he Town's primary concerns are chlorides and total dissolved solids (TDS). As noted in the DEIR, TDS and chloride levels in the Basalt Pond and nearby wells are well below recommended levels. It should also be noted, as pointed out in Response A-9, that the AWT treatment suggested by many commenters would not remove chlorides, nor will it remove TDS. In its October 2000 Water Reclamation Master Plan EIR, Windsor noted that TDS levels in its own tertiary-treated effluent averaged 410 mg/L. No data were provided for chlorides. This compares to average TDS levels measured at the City's secondary treatment plant during the 1996 Groundwater Study (see DEIR page 4-5) of 303 mg/L. Both are well below the recommended level of 500 mg/L and the maximum contaminant level of 1000 mg/L." (II AR 271.)

Thus, the Town's arguments are wholly inconsistent with its own data and actions.

As to surface water, the EIR determined, based on the modeling and water quality analysis conducted by the City (I AR 108-151), that the Project would not have a significant impact on the quality of the existing surface water in the project vicinity, including the Russian River. (I AR 39.) The EIR explains that the existing discharge into the Basalt Pond does not significantly impact the Russian River. Because the Phase V Pond is located further away from the Russian River than the Basalt Pond, switching the discharge to the Phase V Pond will ***diminish*** the flow leaving the discharge pond in the direction of the Russian River (from 0.35 cfs to 0.25 cfs), and it would take water from the Phase V Pond at least one year to travel to the Russian River. (I AR 39.) As the Final EIR explains, "[t]he water quality objectives are met by the current discharge, and the proposed project would ***substantially improve*** the situation." (II AR 188, emphasis added.) This conclusion was supported by a comment letter from the Regional Board itself, which stated:

> "This new pond, by virtue of it being located farther away from the Russian River, will likely have ***less potential impact to the underflow*** of the River than the Basalt Pond. It will definitely have ***less potential impact on surface flows***, as it will remove the threat of direct discharge of treated waste to the River during flood events." (V AR 1204, emphasis added.)

These expert reports and staff testimony are sufficient to constitute substantial evidence supporting the EIR's determinations that the Project will not result in any significant adverse impacts on hydrology or water quality. (Pub Resources Code § 21080(e)(1); 21082.2(c) [substantial evidence includes "expert opinion supported by fact."].) The City may defer to the conclusions reached by its experts even though other experts disagree with the underlying data, analyses or conclusions. *(Laurel Heights I, supra,* 47 Cal.3d at 407-08.) "An expert can make a judgment on existing evidence, without further study, that a particular condition will have no significant impact." (*National Parks and Conservation Assn., supra,* 71 Cal.App.4th at 1362.) Moreover, "expert planning personnel may be entitled to conclude without additional evidence or consultation that a project will not have a particular environmental impact." (*Gentry, supra,* 36 Cal.App.4th at 1380 [county planning department could reasonably find, based upon its experience and review of the project, that the project would not have certain impacts]; *Leonoff v. Monterey County Bd. of Supervisors* (1990) 222 Cal.App.3d 1337, 1354.)

To the extent Petitioners are urging this Court to independently weigh the expert opinions, it is the City's job to weigh the credibility of expert opinions. (*Leonoff, supra,* 222 Cal.App.3d at 1349 ["The courts should not substitute our own credibility determinations for those of the public agency."]; *National Parks and Conservation Assn., supra,* 71 Cal.App.4th at 1365 ["Effectively, the trial court selected among conflicting expert opinion and substituted its own judgment for that of the County. This was incorrect."].) In a case with similar facts, the court explained:

> "Petitioners contend that the EIR was deficient because it failed to analyze the possibility of groundwater connection between Ward Valley and the Colorado River, in the manner postulated by the Wilshire Report. DHS determined that such connections, and the possibility of adverse environmental effects therefrom, were untenable, a conclusion DHS reexamined once the Wilshire memorandum broached the subject again. Petitioners' contention rests on a difference of opinion among experts, and does not provide grounds for rejecting the EIR." (*Fort Mojave Indian Tribe v. California Department of Health Services* (1995) 38 Cal.App.4th 1574, 1600, citing *Laurel Heights I, supra,* 47 Cal.3d at 392-393.)

Thus, the determinations and analysis in the EIR regarding water quality are supported by substantial evidence in the record. No more is required for the Court to uphold the EIR.

2. The Town's arguments regarding water impacts do not provide a ground for setting aside the EIR.

The Town raises several specific challenges to the EIR's discussion of water impacts, and the accompanying expert reports. None of these challenges are sufficient to set aside the EIR. To the contrary, most of these challenges misleadingly cite incomplete statements from the expert reports, and ignore the context and analysis in which those statements were made. Once these statements are put in context, it is clear that the Town's efforts to distort these expert reports can be easily disregarded. (See *Leonoff, supra,* 222 Cal.App.3d at 1349 [criticizing petitioners for identifying "a very selective, if not misleading, version of the evidence. . ."].) The Town also cites only the May 2001 LSCE study, while completely ignoring the City's accompanying May 2001 water quality study. The LSCE study is expressly augmented by the water quality analysis in the second study. (I AR 176B.)

First, the Town states that "*all*" of the discharge from the Phase V pond will eventually find its way to the Russian River, citing the May 2001 LSCE expert study at I AR 172-173, 174. This statement misconstrues and ignores the conclusions of the expert study. First, the expert study discussed the ***existing*** discharge from the Basalt Pond, and disclosed that only 0.35 cfs of the 2.1 cfs flow discharged into the Basalt Pond flows toward the Russian River. (I AR 171-172.) The expert study then stated:

> "Acknowledging that it is likely that the entire volume of treated waste water and aggregate wash water discharged to Basalt Pond (2.1 cfs) will eventually migrate to the River, either directly through the aquifer or indirectly following additional soil/aquifer or pond treatment, the contribution of the entire volume of the discharge to the River (as outflow from the Basalt Pond) is less than one percent of the streamflow. As such, it would be expected that ***the potential impact of the Basalt Pond outflow on the water quality of the River is indistinguishable.***" (I AR 172-173, emphasis added.)

The expert study then discussed the ***change*** in ***this existing condition*** that would result from switching the discharge from the Basalt Pond to the Phase V Pond. The expert study concluded that the direct flow toward the Russian River would actually ***decrease*** (from 0.35 cfs to 0.25 cfs), and that "the contribution of outflow from the Phase V Pond to the River (assuming all treated waste water discharged to the Pond eventually migrates to the River either directly or indirectly) would be less than one percent of the River's streamflow and ***generally considered to be indiscernible.***" (I AR 176, 176A, emph. add.)

Thus, contrary to the Town's suggestion, the expert study acknowledged and explained the discharge flow to the Russian River, and concluded that the potential impacts were negligible. The Town has offered no substantial evidence to contradict this conclusion. Moreover, the controlling question for purposes of CEQA is whether there is any ***adverse change*** in the ***existing environment.*** (Pub. Resources Code § 21068; CEQA Guidelines § 15382; *Baird v. County of Contra Costa* (1995) 32 Cal.App.4th 1464, 1468-1469 ["CEQA is implicated only by adverse *changes* in the environment."].) Here, the expert study clearly demonstrated that the Project will ***decrease*** direct flows to the Russian River and thereby "substantially improve the situation." (II AR 188.) CEQA requires nothing more.

The Town further mischaracterizes the expert study by claiming that the study recognizes that outflow from the Phase V Pond would eventually migrate to the Town's wells, citing I AR 174. First, the expert study concluded that there will be ***no*** direct migration of any outflow to the Town's wells. (I AR 174.) The expert study acknowledged that "some amount" of outflow would eventually migrate

indirectly to the Town's wells, but only ***after*** migrating for six and one-half years through the aquifer, mining ponds and the Russian River, with substantial dilution and treatment occurring as it migrated. (I AR 174-176, 176B.) The expert study expressly stated that its results needed to be augmented with the results of the City's water quality monitoring program (I AR 176B), which the City did and which the Town completely ignores. Specifically, the City's expert study concluded that the water quality data ***and*** the groundwater modeling data cited by the Town together show that "the proposed wastewater discharge would have no significant impact on ground water quality at the Windsor wells or other downstream water supplies." (I AR 123. See also II AR 270-271, 283-284.) Indeed, because the Phase V Pond is located ***further away*** from the Town's wells than the Basalt Pond, the EIR concludes that any possible influence on the Town's wells will be ***decreased*** by the Project. (II AR 283.)

The Town next cites the LSCE expert study's statement that the Phase V Pond discharge will result in a "greater proportion of outflow directly to the surrounding aquifer . . ." (I AR 176A), and accuses the City of ignoring this evidence. The complete sentence in the expert study provides that the Phase V Pond will contribute a smaller proportion of outflow to the Russian River than the Basalt Pond, but a greater proportion to the surrounding aquifer. (I AR 176A.) The City's May 2001 expert study on water quality expressly took this conclusion into account (I AR 114), and, based on the extensive groundwater monitoring program, determined that the Phase V Pond will not have a significant impact on groundwater quality. (I AR 38, 122.) The Town has simply mischaracterized the evidence.

Similarly flawed is the Town's argument that the EIR failed to adequately analyze the fact that 75 percent of the groundwater in the area of the nearby supply wells would consist of outflow from the Phase V Pond. (I AR 176A.) The EIR expressly acknowledged that fact (I AR 114), and concluded, based on extensive groundwater monitoring and analysis, that the quality of water found in wells downgradient of the City's wastewater outfall pond would meet applicable standards for drinking water quality. (I AR 38, 122; II AR 189-190, 288, 296; III AR 674, 703.)

This result was based on, among other factors, the treatment before the wastewater is discharged into the pond, the substantial treatment that would occur over the long period of residence time in these deep ponds, and the effect of the passage through soil pores in the aquifer. (II AR 192-193.) As discussed above, the City's groundwater modeling included a sampling site at the maximum depth of the existing Basalt Pond, to determine water quality in the Basalt Pond ***before*** it enters the aquifer. (I AR 114.) Before being discharged into the pond, the wastewater undergoes screening, aeration and chlorine disinfection. (I AR 15; II AR 264; IV AR 798.) Treatment processes in the Phase V Pond itself, which would occur before infiltration to the saturated aquifer, include denitrification by anerobic organisms, predatory activity by microorganisms, and evaporation of volatile organic compounds at the pond surface. (II AR 192.) Thus, the studies concluded, "the City's effluent would meet drinking water standards ***before percolating to the aquifer.***" (II AR 195, emphasis added; I AR 108-151.)

Thus, the Town's effort to portray the LSCE study as contradicting the EIR is just wrong. As the expert studies clearly demonstrate, while the direction of the flow from the Basalt Pond differs from the analysis to estimate the direction and ***rate*** of movement of water, to estimate the length of time for water migrating from the Phase V Pond, and analyze whether there would be any short-term impacts from the wastewater discharge. (I AR 171, 173-174. See also II AR 215-216, 268-269.) The June 1999 expert study prepared by LSCE included, in addition to the steady state model, an idealized transient model encompassing the Phase V Pond area "to predict short-term (daily and monthly) fluctuations in the Phase V Pond stage during winter hydrologic conditions." (I AR 154, 156-158.) The model evaluated the impacts during winter, when ground-water levels are typically approaching their highest levels. (I AR 156.) The expert study concluded that the winter fluctuations in the pond would be "well below the planned pond berm elevation." (I AR 158.) Thus, the short-term impacts and impacts from sudden fluctuations in the water levels were analyzed and the Town's conclusory statements to the contrary are just wrong.

The Town's argument that the EIR failed to analyze the combined impact of the Basalt Pond and the Phase V Pond misses the point. The City will not be disposing into two ponds; rather, the disposal into the Basalt Pond will cease once the disposal into the Phase V Pond starts. (I AR 15.) Nor will there be any impacts from treated wastewater percolating from ***both*** ponds. As discussed above, the treated wastewater in the ponds will meet drinking water standards before percolating to the aquifer. Thus, even if there was treated wastewater percolating from both ponds, there would be no impact. However, the commingled wastewater discharge has an "extended residence time" in the ponds before percolating to the aquifer, and both ponds have a similar residence time of approximately one year. (I AR 112.) As soon as the City ceases discharging to the Basalt Pond, the mounding effect that induces flow out of the Basalt Pond would rapidly diminish, further increasing the residence time while simultaneously reducing outflow. Similarly, the mounding effect that is necessary to induce flow out of the Phase V Pond would take time to develop, and little or no treated wastewater will immediately percolate from the Phase V Pond. (I AR 112; III AR 775.) Thus, there is little or no overlap where commingled wastewater will be percolating from both ponds at the same time.

Finally, the Town makes the blanket assertion that the hydraulic connection between the groundwater and the Russian River means that discharge to ***any*** gravel pit, including the existing Basalt Pond, creates significant, adverse environmental impacts. There are several responses to this assertion. First, the Town cites absolutely zero evidence to support this assertion. Second, it misses the point of CEQA, which is to analyze ***adverse changes*** to the ***existing environment***. (Pub. Resources Code § 21068; CEQA Guidelines § 15382.) Here, the existing environment includes the City's discharge into the Basalt Pond, which has been ongoing for the last 20 years. The only issue under CEQA is whether ***changing*** this discharge to the Phase V Pond will result in any potentially significant impacts.

Third, the EIR and the expert studies all acknowledge a general hydraulic connection between the groundwater basin and the Russian River. (I AR 24 ["The groundwater basin is hydraulically connected to the Russian River."]; I AR 111, II AR 281.)[16] Indeed, "***all*** of the water, whether rain, irrigation, wastewater discharges, or other source, in the basin that is not evaporated or evapotranspirated is eventually 'discharged' to the underflow of the River via the groundwater aquifer." (II AR 281, emphasis added.) The purpose of CEQA, however, is to determine whether there are any potentially significant environmental impacts from changing the City's discharge of treated wastewater from the Basalt Pond to the Phase V Pond. Based on the numerous expert studies described herein, none of which have been contradicted by any comparable studies by Petitioners, the EIR concluded:

> "Due to the nature of the aquifer, the proximity of the existing Basalt Pond to the Phase V Pond, and the comparable treatment characteristics in the Basalt and Phase V Ponds (see Response A-8), there is no identified significant impact to the ground or surface water quality as a result of this project." (II AR 281.)

Moreover, "the water quality monitoring clearly shows a significant *reduction* in the amount of water discharged to the underflow of the River when compared to the existing situation, and a significant increase in its travel time and corresponding treatment through the aquifer and down-gradient pools (see 2001 LSCE study)." (II AR 281, emphasis original.) The Town has offered absolutely no evidence to contradict these conclusions.

The Town further accuses the City of downplaying the amount of discharge that reaches the Russian River. However, as discussed above, the LSCE study expressly analyzes the direct and indirect flows to the Russian River and determined that, not only are the impacts negligible, but that the Phase V Pond will have even less impact than the existing Basalt Pond. (I AR 176-176A.)

The Town's reliance on an early 1996 study by Phillip Williams and Associates is misplaced. (See XII AR 3260-3297.) First, the 1996 report expressly states that it had no reliable data regarding the hydraulic connection between the Basalt Pond and the Russian River, a fact which the Town acknowledges. (Town's Opening Brief, p. 15, ll. 23-27, citing XII AR 3274, 3292-3293.) That report failed to conclusively show any direct measurable impact on the Russian River from discharges to the Basalt Pond (which have a more direct correlation and discharge to the underflow of the Russian River than the Phase V Pond). (II AR 289.) The EIR and the accompanying expert studies disclose and discuss the earlier 1996 study and provide additional data and analysis not contained in the 1996 report. (I AR 27-28, 110-111.) They explain how further analysis and additional data demonstrate that actual

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[16]This hydraulic connection between the groundwater aquifer and the Russian River exists between the ***underflow*** of the River and the groundwater basin, and not the ***surface flow*** of the River. (II AR 281.) The Project results in an ***indirect*** discharge to the ***underflow*** of the River, not all of which will necessarily surface through the river bed. (II AR 281.) Although not relevant to this CEQA case, Petitioners' assertions that an NPDES permit would be required for this ***indirect*** discharge is not only wrong, it is wholly inconsistent with the position previously taken by the Regional Board. (See V AR 1098 ["So long as the percolation pond is not located in waters of the United States and the groundwater beneath the percolation pond does not have a ***direct*** hydraulic connection to waters of the United States, an NPDES permit will not be required."] Emphasis added.)

groundwater flows from the pond to the Russian River are "significantly less than estimated in the 1996 Phillip Williams and Associates report." (I AR 28, 111.) Thus, the Town is simply identifying arguably conflicting expert studies (although the six-year old expert study is not as much conflicting as based on insufficient data), which is not enough under CEQA to set aside the EIR. The EIR summarizes the main points of disagreement between these expert reports, which is all that CEQA requires. (CEQA Guidelines § 15151.)

Thus, the Town has failed to meet its burden of showing that the EIR's determinations regarding the Project's water impacts are not supported by substantial evidence.

3. **The Regional Board's arguments regarding the antidegradation policy are without merit.**

The Regional Board argues that the EIR failed to adequately address the State Water Resources Control Board's "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (the "antidegradation policy"). (V AR 1373-1374.) That policy provides whenever the existing quality of water is ***better*** than the quality established in other policies, such existing high quality will be maintained unless a certain showing is made. (V AR 1373.) Also, discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control ("BPTC") of the discharge necessary to assure that pollution or a nuisance will not occur and the highest water quality will be maintained. (V AR 1373.)

The Regional Board argues that the EIR ignored the antidegradation policy, and, in particular, failed to evaluate whether the secondary treatment in the City's existing wastewater treatment plant constitutes BPTC. These arguments miss the point. First, contrary to the Regional Board's statement that the antidegradation policy applies where water quality "meets or exceeds" other water quality objectives, the plain language of the policy states that it only applies where existing water quality ***exceeds*** other water quality objectives. (V AR 1373.) As the Regional Board's own evidence states, "[i]n order to determine whether the allowance of limited degradation is consistent with these provisions, we must first see if existing water quality is better than water quality established in policies." (Regional Board's RJN, Exh. B, p. 29.) The Regional Board has never made this preliminary showing that existing water quality is better than water quality established in policies.

Second, there is nothing in CEQA, and the Regional Board certainly does not cite anything in CEQA, which would require the City to evaluate the antidegradation policy in the EIR. CEQA requires an EIR to identify and focus on the potentially significant environmental effects of the proposed project (CEQA Guidelines § 15126.2(a)), and specifically, the adverse changes in the existing environment caused by the project (CEQA Guidelines § 15382). It does not require evaluation of every state policy which may have some tangential connection to the Project, or a finding that the secondary treatment in the City's existing treatment plant constitutes BPTC. The Regional Board's effort to impose some new requirement on the City under the guise of CEQA must be rejected. "Courts should not interpret CEQA to impose procedural or substantive requirements beyond those explicitly required in the statutes or

CEQA Guidelines." (*Dry Creek, supra,* 70 Cal.App.4th at 36; Pub. Resources Code § 21083.1.)

The EIR defined significance criteria based on Appendix G of the CEQA Guidelines, to evaluate whether the Project would have a significant impact on hydrology or water quality. (I AR 35.) Pursuant to these criteria, the EIR evaluated whether the Project would violate any water quality standards or waste discharge requirements, or would substantially degrade water quality. (I AR 35; CEQA Guidelines, Appendix G.) The EIR and accompanying expert studies evaluated whether the Project would cause drinking water standards to be exceeded. (I AR 25; II AR 191.) These drinking water standards "address the [Regional Board's] water quality standards for groundwater contained in Table 3.2 of its Basin Plan, and in addition included other constituents not listed in Table 3.2 (e.g., copper, trihalomethanes and several other organic chemicals)." (II AR 191.) These other constituents were added to drinking water standards by the California Department of Health Services after the Basin Plan was adopted. (II AR 191.) Thus, the City's criteria actually went beyond the groundwater objectives in the Regional Board's Basin Plan. (II AR 191.)[17]

The EIR determined, based on the extensive groundwater monitoring program and expert studies, that the Project would not violate any water quality standards or waste discharge requirements, would not substantially degrade water quality, and would not exceed any drinking water standards. (I AR 36-39.) This analysis is sufficient to comply with CEQA, and sufficient to respond to the Regional Board's claim regarding the antidegradation policy. The Regional Board expressly concedes that the antidegradation policy ***does not apply*** where a project would not cause degradation or any adverse change in water quality. (Regional Board's Opening Brief, p. 13, n. 13.) Because there is substantial evidence supporting the EIR's determinations, as discussed above, the antidegradation policy does not even apply in this case.

CEQA does provide that an EIR should discuss any ***inconsistencies*** between a proposed project and applicable regional plans, including water quality control plans. (CEQA Guidelines § 15125(d).) Here, however, the antidegradation policy not only does not present any inconsistencies, it does not even apply. Accordingly, the EIR was not required to discuss the antidegradation policy.

The Regional Board takes the novel position that the discharge of treated wastewater into the Phase V Pond will "degrade" the water that naturally fills the pond, regardless of the water quality in the groundwater aquifer or at nearby groundwater wells. This argument is not supported by any authority and is plain wrong. First, the entire point of discharging to the Basalt Pond and the Phase V Pond is to further treat the wastewater in the pond. The City's extensive groundwater modeling program

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[17]WASA argues that the City fails to apply the significance criteria in Appendix G of the CEQA Guidelines because the City did not apply the anti-degradation policy and other standards contained in the North Coast Basin Plan. As this evidence demonstrates, however, the City not only addressed Regional Board's water quality standards for groundwater contained in Table 3.2 of the North Coast Basin Plan, it also included other constituents not listed in the Basin Plan. (II AR 191.)

demonstrated that this treatment is successful and the treated wastewater will meet drinking water standards before it ever percolates to the aquifer. The Regional Board's novel new position simply does not raise a CEQA issue. The significance criteria in the EIR are adequate to determine whether the Project could cause significant adverse impacts.

Second, there is no ***adverse change*** in the City's discharge of the treated wastewater that would even trigger the antidegradation policy, assuming it applied. That is because the current discharge into the Basalt Pond also mixes with water that naturally fills the pond before percolating to the aquifer. (I AR 24-25; II AR 189.) The Regional Board tries to distinguish the Phase V Pond from the Basalt Pond, citing its own unsubstantiated (and late) comment letter that the Phase V Pond is deeper than the Basalt Pond, and does not initially have the layer of silt or fines that exist in the Basalt Pond. The Final EIR specifically addressed these comments:

> "The County-approved Mining and Reclamation Plan for the Syar Phase V Pond indicates that the pond will be excavated to a greater depth than the existing Basalt Pond. ***The existing Basalt Pond, while shallower, still extends well below the groundwater level,*** which varies from 0 to 40 feet below ground level (DEIR page 4-2). Fines discharged to the Basalt Pond are likely to be much less permeable than the in-situ material. While fines will not be discharged from the Syar processing plant to the Phase V Pond, there will still be significant sediment deposited in the Phase V Pond as a result of the mining itself. Sediments that contribute to the reduction in conductivity are washed out of the native materials, suspended, and then deposited within the pond as a result of the mining activity itself. While it is also true that biological growth on the sediments lining the sides and bottom of the pond will restrict conductivity over time, the largest effect can be expected immediately after the pond has been excavated. ***Regardless, the conclusions in the DEIR regarding water quality impacts are based on treatment within the ponds, and not on any filtration provided at the pond liner.***" (II AR 189-190, emphasis added. See also II AR 195, 214, 219-220.)

Thus, while the Basalt Pond is shallower than the Phase V Pond, this is a distinction without a difference, because both ponds extend well below the groundwater level and both ponds will provide sufficient treatment before percolation to the aquifer.[18] As the City's expert Civil Engineer concluded:

> "Since the Phase V Pond is not a shallow percolation pond and extends below the ambient groundwater level, the critical parameter in describing water quality impacts to the surrounding aquifer is the volume of the pond and the treatment it provides. In this respect the Basalt and Phase V ponds are equivalent." (II AR 246. See also II AR 291, 293.)

City staff further explained that the silt or fines in the pond are "really irrelevant with respect to groundwater," because what filters the groundwater is the sands and gravel in the aquifer itself. (III AR

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[18]Indeed, the EIR and City staff explained that even with shallow percolation ponds, the evidence demonstrated that there would be periods of time during the winter months where groundwater levels would rise above the bottom of those ponds, and effluent would, under the Regional Board's theory, be discharged directly to the groundwater with virtually no additional treatment. (II AR 192-193; III AR 754.) With the Basalt Pond and the Phase V Pond, however, the extended residence time and treatment is adequate to meet drinking water quality standards before percolation to the aquifer. (I AR 191-193.)

DRAFT FOR REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)

Date: August 12, 2002

To: Mark Neely, RWQCB

From: Guy Roemer, GeoTrans
Mike Malusis, GeoTrans
Art Willden, GeoTrans

Cc: Wes Ganter, Tetra Tech

Subject: Comments on the Draft Environmental Impact Report (EIR) for Wastewater Outfall Relocation (City of Healdsburg, California, May 2001)

Background

The City of Healdsburg and their consultants have developed a groundwater model to evaluate the environmental impacts from several wastewater ponds on the nearby Russian River. The results of the groundwater modeling have been summarized in several documents submitted to the Regional Water Quality Control Board (RWQCB) for review and comment. GeoTrans has reviewed the available documentation and evaluated the modeling results. Results and recommendations from this review are provided below.

General Comments

Documentation reviewed by GeoTrans contains insufficient water quality data to support the assertion that the discharge of wastewater effluent to the Phase V pond presents no significant potential water quality impacts. In addition, the studies conducted clearly illustrate that a direct connection exists between the percolation pond (Basalt Pond) and the Russian River. The results further show that this hydraulic connection would continue to exist if the outfall was relocated to the Phase V pond.

In general, GeoTrans does not view the outfall relocation and treatment plant upgrades as "separate and independent" projects. Conversely, discharge of secondary treated effluent to the Phase V Pond is viewed as only as an interim measure until the upgrades are completed to achieve tertiary treatment levels. Thus, it is GeoTrans opinion that the proposed outfall relocation may be approved, if a definitive schedule for completing the upgrades also is

EXHIBIT 3

submitted and approved.

As such, GeoTrans views the potential outfall relocation as a potentially viable interim solution that would require commitment from the City to complete tertiary treatment upgrades within an acceptable time frame. A proposed schedule for implementing Advanced Water Treatment (AWT) should be prepared by the City and included herein for review by the RWQCB.

Specific Comments

1. Page 3-1, 2nd bullet – GeoTrans does not support the proposal to cease providing an alternative water source after only one year of sampling. One year is not sufficient to demonstrate that water quality in the Love and Seghesio wells would not be affected by the outfall relocation. As noted in Appendix D (Figure 1) of this EIR, several months may be required for outflow from the Phase V Pond to reach the Love Domestic Well. In addition, absence of water quality impacts within the first year of discharge to the Phase V Pond does not guarantee the absence of future water quality impacts to these wells due to changes in the wastewater chemistry, inadequate maintenance of the treatment facilities, high wet weather flows, and/or other unforeseen events. Relocation of the outfall to the Syar Phase V pond would require an alternative water source to be provided to the affected properties for the entire duration of time that the new outfall is in service, or until the wastewater is treated to meet tertiary standards and other effluent limits typically included in NPDES permits for tertiary treatment plants (e.g., chlorine, dissolved metals, etc.).

2. Page 3-3, 4th paragraph – The 1999 Syar Phase V MND states that wastewater concentrations would be "marginally higher" in the Phase V pit. Has the City attempted to quantify the expected increase in wastewater concentrations? Please clarify.

3. Page 3-4, last paragraph – GeoTrans does not view the outfall relocation and treatment plant upgrades as "separate and independent" projects. Conversely, discharge of secondary treated effluent to the Phase V Pond is viewed as only as an interim measure until the upgrades are completed to achieve tertiary treatment levels. Thus, the RWQCB may consider approving the proposed outfall relocation if a definitive schedule for completing the upgrades also was submitted and approved.

4. Page 4-1, 3rd paragraph – GeoTrans notes that the Phase V Pond is outside the 100-year flood zone. However, the Basalt Pond also is outside the 100-year flood zone, which clearly was not sufficient to prevent breaches of the levee. Also, GeoTrans notes that the 1999 Mining and Reclamation Plan for the Phase V Pond includes construction of a levee such that the bank of Phase V Pond will be 3 feet higher than the 100-year flood plain. What levee height is required to achieve this 3-ft separation (i.e., what is the elevation of the Phase V Pond bank with no levee relative to the 100-year flood plain)?

5. Page 4-2, 3rd paragraph – The reported groundwater elevations in Figures 4.2 and 4.3 appear to be limited to areas around the Basalt Pond, not the Phase V Pond. Have groundwater

measurements also been collected in MW#9 and the Seghesio irrigation well? A table should be provided that contains historic measured groundwater elevations and depths to groundwater in the vicinity of both the Basalt and Phase V ponds, including MW#6, 7, 8, 9, and the Seghesio irrigation well.

6. Page 4-4, 2nd paragraph – The text states that the treatment plant historically has experienced violations of the effluent limits (e.g., suspended solids, BOD, pH) that have been corrected by changes to the sampling procedures and/or the treatment system. Please describe these changes in greater detail. Also, the suspended solids violation was attributed to high wet-weather flows. What changes, if any, were made to prevent future violations under wet-weather conditions? The historic violations, although minor, illustrate the potential for future water quality impacts and the need for an alternative water supply to be provided to the Love and Seghesio properties for the entire duration that the Phase V pond receives wastewater discharge.

7. Page 4-5, 2nd paragraph – The results of this study clearly illustrate that a direct connection exists between the existing percolation pond (Basalt Pond) and the Russian River. The results further show that this hydraulic connection would continue to exist if the outfall was relocated to the Phase V pond. For example, the modeling results indicate that at least 160,000 gallons/day of effluent would exit the Phase V Pond and eventually discharge into the Russian River. Also, the City acknowledges in this report that groundwater concentrations of nitrate, chloride, and fluoride are elevated due to the pond discharge (page 4-6). Thus, the Phase V Pond would act as a non-point source of pollution to the Russian River and should be subject to NPDES permit requirements.

8. Pages 4-4 through 4-7, general – Historic surface water and groundwater quality data should be summarized in a table that contains the analytical results for each of the sampling locations.

9. Page 4-7, last paragraph – Please provide data to support that the elevated aluminum in the groundwater is related to the natural composition of the alluvium rather than the wastewater discharge.

10. Page 5.2, 4th bullet – The Basalt Pond also appears to be located outside the 100-year flood zone in Figure 4-2. However, two levee breaches occurred within three years due to flooding of the Russian River. It is not clear how the location of the site relative to the 100-year flood zone is sufficient to ensure protection against future commingling of wastewater and surface water from the Russian River during future flood events. A more appropriate statement would be that flood waters from the Russian River would be prevented from reaching the Phase V Pond because the Basalt Pond would capture the flood water.

11. Page 5-3, last paragraph – The text indicates that the depth to groundwater in the area where grapevines are cultivated closest to the Phase V pond varies between 15 and 30-35 feet. Which wells were monitored as a basis for this estimated range? Please clarify. In general, this report lacks supporting data to characterize the groundwater table in the area of the Phase

V pond.

12. Page 5-4, 2nd and 3rd paragraphs – No data is provided to support the statements that excessive aluminum and coliform bacteria levels are characteristic of the alluvium and/or the Russian River. In general, this document contains insufficient water quality data to support the assertion that the discharge of wastewater effluent to the Phase V pond presents no significant potential water quality impacts. Tables should be provided that list the historic measured water quality data for the sampling stations shown in Figure 4-5.

13. Page 5-4, last sentence – This sentence is confusing and appears to be incorrect. Please revise as appropriate.

14. Page 5-5, 1st paragraph – Please provide the toxicity testing results and reference the testing method.

15. Page 5-5, 3rd paragraph – The suspended solids violation in March 2001 (see Page 4-4) is not discussed. What processes, if any, were corrected to prevent future violations?

16. Page 7-6, 5th paragraph – GeoTrans considers the proposed outfall relocation a potentially viable interim measure contingent upon progress toward achieving Advanced Water Treatment (AWT). A proposed schedule for completion of treatment plant upgrades necessary for AWT should be included in this report for approval by the RWQCB.

17. Page 7-7, last paragraph – Because a direct hydraulic connection exists between either pond (Basalt or Phase V) and the Russian River, the effluent essentially is discharging to the Russian River and should be treated to a tertiary level. The noted NDPES permit requirements also apply to this discharge.

18. Page 7-8, last paragraph – GeoTrans acknowledges that discharge may be necessary upon implementation of AWT. However, AWT alleviates the concerns of the RWQCB regarding potential water quality impacts associated with the discharge. The RWQCB may support discharge of such treated wastewater to the Phase V pond as a long-term (rather than interim) solution, provided that tertiary standards and other NPDES permit requirements are met.

Appendix A, Initial Study (November 2000)

19. Page 3, 4th paragraph – GeoTrans views the potential outfall relocation as a potentially viable interim solution that would require commitment from the City to complete tertiary treatment upgrades within an acceptable time frame. In this regard, such treatment plant upgrades are not considered as "separate and independent", but rather are directly linked to RWQCB approval of the outfall relocation. A proposed schedule for implementing AWT should be prepared by the City and included herein for review by the RWQCB.

Model Review

The objectives of this model review are as follows: 1) determine if there is enough hydrologic data to create a representative groundwater model of the middle reach of the Russian River and to 2) assess the quality of the groundwater model and subsequent model predictive model runs. All comments in this review are based on the following Luhdorff and Scalmanini Consulting Engineers' (LSCE) three reports:

1. Groundwater flow modeling performed by LSCE (October 1997) for Syar Industries to evaluate potential groundwater impacts from all mining projects being considered by Syar and Kaiser Sand and Gravel;

2. Steady-state and transient groundwater flow modeling performed by LSCE (June 1999) for the City of Healdsburg to evaluate groundwater impacts due to relocation of the wastewater treatment discharge outfall to Phase V Pond; and

3. Steady-state groundwater flow modeling performed by LSCE (May 2001) for the City of Healdsburg to estimate outflow from Basalt Pond to the Russian River and impacts to the aquifer due to discharge of wastewater to Basalt Pond.

This review is organized into three sections: specific comments for the three reports, general comments, and recommendations.

Specific Comments on October 1997 Report

1. Hydrologic Conditions, page 9 – In the second full paragraph, three irrigation wells are discussed, in which two are identified as domestic wells in Table 3-1 not irrigation. In order to discuss historical static water levels, why were only domestic/irrigation wells used and not monitoring wells, which are not influenced by pumping? Also, the well at the north end of the valley (8N/9W-28N1) is mislabeled in this paragraph. The hydrograph for 8N/9W-28N1 could be influenced by Dry Creek and releases from the Warm Springs Dam depending on which formation the well is screened in. We assume the well logs are not available from Syar for S12 or any of the other "S" wells. A different well, such as MW4, should be used for comparison purposes to determine historical water-level conditions for the alluvial aquifer or measurements need to be taken in the field.

2. Aquifer Characteristics, page 12 – The report states that transmissivity values were calculated from the two pumping tests conducted at Grace Ranch and the Town of Windsor wells. Why does the transmissivity value that is approximately 700 feet northeast of the town of Windsor seven times lower, since it is located even closer to the Russian River and the alluvium thickness is similar? Which method was used to calculate transmissivity from specific capacity? What value of S (storage coefficient) was used and why?

5

3. Hydrologic Boundaries, page 16 – The report states the Glen Ellen and Wilson Grove formations comprise the hills along the eastern side of the valley, and the Franciscan formation comprises the hills along the western edge of the valley. Approximately one-half of the western model boundary coincides with Westline Road and the eastern boundary coincides with Eastline Road (see Figure 4-2). A geologic map of the quadrangle and actual cross sections, if available, would be helpful. This geologic map would be needed to verify that the extent of the alluvium occurs at Westline and Eastline roads, which are physical boundaries not hydrologic boundaries.

4. Model Grid and Boundary Conditions, page 23 – The report states, "All model boundaries were designated as constant head cells that allow a hydraulic head to be specified for each boundary cell and held constant throughout the simulation." Ringing the model with constant head boundaries in an attempt to replicate a measured potentiometric surface generally indicates a lack of understanding of the hydrogeological conditions of the area of interest (Michigan DEQ, 2002). Although there is a lack of hydrologic data in the area, the only cells that should be assigned constant heads are Dry Creek, Mill Creek, and cells near the Russian River on the north and south. The model grid needs to be modified to have general head boundaries / no flow boundaries at the other boundary cells or move the boundaries to where no flow boundaries are appropriate, if the extent of the alluvium is further than the roads (See Comment 3). Constant head boundaries just like no flow boundaries force the potentiometric lines to be perpendicular to the boundary. Also, were the same values of head assigned to both layers 1 and 2 for the constant head boundaries?

5. Aquifer Properties, page 24 – The previous model by the same consultants (LSCE, 1995) had only one value of hydraulic conductivity for the entire alluvium. Eighteen zones of hydraulic conductivity seem excessively for this model with two distinct hydrogeologic units: alluvium and Franciscan formation. Due to the facies changes in the alluvium, there should probably be about five zones (two zones on each side of the river and one for river deposits) not 12, if the calibrated zones with the same values are combined. There is not enough aquifer tests or geological characterizations to warrant 12 distinct zones. An explanation of each zone would be helpful.

6. Pond Properties, page 26 – The sediment thickness in the sides and bottom of the Basalt Pond was more than doubled. In addition, the hydraulic conductivity was decreased by a factor of four. Were samples taken in the field or was a deposition rate calculated based on a literature value or observations? These two modifications combined decrease the travel time through the sediment by a factor of almost nine. The report states hydraulic conductivity estimates were not changed in calibration, but the initial estimates were. This modification sounds like a change in calibration, and a better explanation is needed.

7. Net Recharge/Discharge, page 28 – The estimation of a net recharge/discharge term is not a typical method to use. Usually, the recharge and ET packages are used separately in MODFLOW. The ET package requires an extinction depth as input. It would be helpful if actually numbers were listed for each component (i.e., ET rates from Healdsburg and Vino Farms pumpage rates). Also, grapes in vineyards should have a well-documented transpiration rate and

root depth that could be used to assign an ET rate and an extinction depth in the ET package.

Model Calibration, page 29 – The report states, " ...model calibration is a process of adjusting model parameters such as hydraulic conductivity, constant head boundary conditions, ..." Constant head boundaries are suppose to be known quantities. They should never be adjusted in calibration. There is no discussion how much constant heads were modified during calibration or a discussion on the physical justification for these modifications.

9. Model Calibration, Figure 4-4 – Wells 8N/9W-22E1, P15, and P20 are located within a cell or two of the constant head cell boundaries. Since constant head boundaries were modified during calibration, heads could be influenced in these wells due to their proximity to these boundaries. A detailed description of calibration procedures is needed to explain what process was used.

10. Sensitivity Analysis, Table 4-4 – Constant head boundaries were not used in the sensitivity analysis. Why not? They are the largest inflow component in the water budget and a contributor to outflow as well.

11. Mining Scenarios K-1, K-2, K-3, and K-4, page 40 – The report states, "The areal extent of the predicted ground-water level declines associated with the four projects combined (mining scenario K-4) is limited to approximately 1,000 feet east ..." The 0.2 ft contour hits the eastern boundary, thus, limiting the areal extent of the ground-water level decline and creating an artificial source of water. This boundary should be a general head boundary to see how much water is being produced at the boundary.

12. Baseline Scenario B-2, Figure 5-5 – GeoTrans assumes figures show hydraulic heads in Layer 1 since the report stated simulated heads from Layer 1 were used to assess the calibration on page 29. On page 15 of this report, it states, "The portions of the bottom layer beneath the remaining areas were designated as ten feet thick to accommodate the large amount of pumpage that would be derived from the Ranney collectors being considered by the SCWA." This statement implies Layer 2 thickness was increased to ten feet, thus, decreasing the thickness of Layer 1 to honor the elevation of the base of the alluvium. What were the hydraulic heads in Layer 2? There could be an impact from pumping across the river in Layer 2.

Specific Comments on June 1999 Report

Basalt Pond Analysis, Existing Discharge, page 4 – The report states, "The cross-sectional area of flow between the Pond and the River was estimated as 120,000 ft^2..." GeoTrans assumes this is based on available pore space (i.e., porosity was used in the formulation). Second, explain how a value of 0.0175 for hydraulic gradient was obtained. The highest gradient we estimated is 0.002 (5 ft/ 2400 ft) using Figure 1, which we assume shows the calibrated hydraulic heads from October 1996. Finally, according to Table 2.4 in Freeze and Cherry (1979), the lower range of porosity for both unconsolidated sand and gravel is 0.25. Using this higher value of porosity would decrease travel times by approximately 20%.

In several locations in the report, qualitative descriptions of modifications during calibration are provided. However, quantitative descriptions are not provided. A section describing specific issues encountered during calibration and a table with initial and final values of modified parameters would be helpful, too.

General Comments on June 1999 Report

There is no table of ground-water levels for January 1997. There is no description of what values of specific storage or specific yield were used in MODFLOW. There is no discussion of calibrating the transient model to the January 1997 ground-water levels. What values were used for the recharge/discharge term? January 1997 should have different values of precipitation, pumpage, and ET.

The general procedure for running a transient model is as follows: 1) transient models start with hydraulic heads from the steady-state model as the initial conditions; 2) the model runs from October 1996 to January 1997 by varying recharge, etc.; 3) the model is calibrated to the ground-water levels from October 1996 to January 1997, if water levels are available; and 4) the predictive scenarios are ran. The Healdsburg Model does not appear to allow time for the ground-water system to come to equilibrium before predicting pond stages and ground-water levels.

General Comments on May 2001 Report

The particle tracking analysis appears to be only valid for October 1996. Discharge to the pond will occur year round and all months should be analyzed since ground water flow conditions change (i.e., the river recharges the aquifer).

A scenario should have been ran where the Basalt pond was taken out of the model. If treatment plant outfall is only going to discharge into the Phase V pond, the Basalt pond should be removed, assuming time has taken place for it to fully infiltrate the ground water. Thus, a larger portion of flow from the Phase V pond will travel to the Russian River and a better estimate of travel time to the river would be obtained. GeoTrans performed a calculation using Darcy's law and the values of hydraulic conductivity, hydraulic gradient, and porosity. The calculation resulted in a travel time from the northeast corner of Phase V pond in the direction of flow to the river of approximately 225 days (174 days to the bottom of the liner and 51 days through the alluvium).

Modeling Recommendations

The model from the October 1997 report was a good first attempt as quantifying groundwater flow in the middle reach of the Russian River. There are still several hydrogeologic data gaps for this area, which are thoroughly addressed by LSCE. Most notably gaps are the paucity of ground-water and surface-water elevation data (river and ponds). The results of the model might be acceptable with respect to less than one foot of ground-water level decline, but the construction of the model and the procedure of calibrating are questionable. Ringing the model with constant head boundaries that coincide with roads and then modified them during calibration is not acceptable. Also, the number of hydraulic conductivity zones designated with limited supporting hydrogeologic data is debatable. There also could be errors in the model input files. The transient model only applies to one month and does not appear to be calibrated separately from the steady-state model. GeoTrans recommends the following tasks: 1) a thorough re-evaluation of geologic and hydrogeologic data available, 2) a site visit, 3) a steady-state model based on the LSCE model for fall conditions be constructed and calibrated; 4) a transient model based on the steady-state heads be ran for the duration of good water level data, including the past five years of data since the October 1997 report; and 5) a particle tracking analysis to determine travel times from the Phase V pond to the Russian River and other areas of interest.

DRAFT

ENVIRONMENTAL IMPACT REPORT

WASTEWATER OUTFALL RELOCATION PROJECT

HEALDSBURG, CALIFORNIA

State Clearinghouse Number 1999092030

Prepared by:

City of Healdsburg Department of Public Works (Lead Agency)

with Technical Assistance provided by:

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Prepared pursuant to:

California Environmental Quality Act

May, 2001

EXHIBIT 4

HYDROLOGY AND WATER QUALITY

SETTING

Surface Drainage. Both the existing and proposed outfall ponds, are located on river terrace land that slopes gently in a southeast direction, with prevailing ground elevations approximately 85 feet above mean sea level. Surface drainage movement is toward the Russian River, separated from the site by both the Basalt Pond and a levee. The levee, constructed in the 1950's by the Basalt Rock Company, is 120-foot wide and 5 to 8 feet high. The Basalt Pond is about 200 feet west of the mid-line of the river. Within the vicinity of the Healdsburg Wastewater Treatment Plan, the Russian River is located approximately 800 to 850 feet east of the perimeter of the facilities (see Figure 2-2).

Dry Creek is the largest tributary to the Russian River within the area (see Figure 2-2). Warm Springs Dam impounds much of Dry Creek's winter flows, and summer flows in Dry Creek are maintained by releases of stored water. The mouth of Dry Creek is approximately 1,200 feet from the northwest corner of the wastewater treatment plant site. Four intermittent streams, including Mill Creek, West Slough, Norton Slough and Foss Creek, also join the Russian River in the vicinity of the treatment plant.

Figure 4-1 shows the boundary of the 100-year flood zone in the project site vicinity. The existing treatment plant, as well as most of the properties adjacent to Foreman Lane, are outside of the 500-year flood zone. Except for a narrow area that extends to the southwest corner of the treatment plant, the area immediately south of the treatment plant, including the Phase V Pond, is also outside of the 100-year flood. In addition, the 1999 Mining and Reclamation Plan for the Phase V Pond includes construction of a levee around the pond which will be 3 feet higher than the 100-year flood plain[3].

Groundwater. Both the Basalt Pond and the project site, including the Phase V Pond, are located within a local groundwater basin consisting of unconsolidated alluvium and river channel deposits, with some water coming from the Glen Ellen Formation. In and near the foothills on the margins of the valley, wells tap older rocks, such as those belonging to the Franciscan Complex and Dry Creek Conglomerate, and yield only minor quantities of water to wells[4]. Beneficial uses of groundwater in aquifer associated with the Russian River and Dry Creek in the general project vicinity include domestic, municipal, industrial, and agricultural water supply.

The extent and composition of the Russian River alluvial aquifer, in which both the existing and proposed outfall ponds are located, is well documented. The 1983 Department of Water Resources Bulletin 118-4, one of four reports describing the major aquifers of Sonoma County,

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[3] Sonoma County Permit and Resource Management Department, "Syar Industries Phase 5 Terrace Pit Mining and Reclamation Plan Mitigated Negative Declaration", August 1999.

[4] Department of Water Resources and Sonoma County Water Agency, "Evaluation of Ground Water Resources, Sonoma County, Volume 5, Alexander Valley and Healdsburg Area", Department of Water Resource Bulletin 118-4, June 1983.

described groundwater resources in the Alexander Valley and Healdsburg areas[5]. This unconsolidated alluvium underlies the alluvial plains of the Russian River, Dry Creek, and tributaries. Deposits adjacent to the river and streams consist of loose, permeable gravel and sand that range in thickness from 10 feet to more than 80 feet. Farther from the river, the alluvial gravel contains less coarse material and more silt and poorly sorted sand and gravel deposited by tributary creeks. In the Dry Creek tributary, subsurface flow into the Russian River alluvial aquifer has been estimated at 1,000 acre feet, or about 330 million gallons, per year[6].

The groundwater basin is hydraulically connected to the Russian River. In the Russian River Valley, groundwater moves from the margins toward the Russian River during most of the year. Groundwater in the project area generally flows to the southeast with a gentle gradient. When groundwater levels are depressed, usually during the fall, flow in Russian River recharges the groundwater reservoir. River water moves into the alluvium during high river stages in the autumn and winter, and also during the summer in locations where large volumes of water are withdrawn from the river. Most recharge to the groundwater is derived from infiltration of rain that falls on the valley floor and from seepage into permeable deposits that underlie channels of the tributary streams.

More recent records collected by the City indicate that groundwater levels in the project vicinity vary significantly between seasonal highs during the winter and lows during the late fall. Figures 4-2 and 4-3 show static groundwater levels and depth to groundwater at three monitoring wells located near the treatment plant and the existing Basalt outfall pond between 1992 and 1995. These show seasonal swings of as much as 18 feet, and depth to groundwater varying from 0 to about 40 feet, depending on ground elevation.

The closest off-site wells in the vicinity of the Phase V Pond include one irrigation well and two domestic wells on the Seghesio property. One domestic well on the Seghesio property serves the Love property to the south. The Seghesio irrigation well, Seghesio domestic well, and the Love domestic well are located approximately 250, 1,500, and 650 feet from the Phase V Pond, respectively. Figure 4-4 shows known wells in the project vicinity.

The existing Syar Phase V terrace mining pit/pond is currently devoid of vegetation. The expansion area for the existing terrace mining pit/pond is currently planted in wine grapes. A row of medium-sized Monterey Pines is found along the southern boundary of the treatment plant facilities. Due to long term cultivation of the area, the project site lacks any native plant habitat.

The City of Healdsburg owns and operates a wastewater treatment facility on a 35-acre site. This facility includes a system of aeration ponds that provide a secondary level of effluent treatment for a current dry weather flow of 1.0 million gallons a day (mgd), and a total capacity

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[5]Department of Water Resources and Sonoma County Water Agency, "Evaluation of Ground Water Resources, Sonoma County, Volume 5, Alexander Valley and Healdsburg Area", Department of Water Resource Bulletin 118-4, June 1983

[6] R.S. Ford, "Evaluation of Ground Water Resources, Sonoma County. Volume 1, Geologic and Hydrologic Data", Department of Water Resource Bulletin 118-4, 1975

the cloudiness of water, and is measured by the passage of light through a sample. High turbidity is common in North Coast rivers and only becomes a problem during the high turbidities experienced during and after storm events. Sport fishing conditions are usually poor during periods of high turbidity. Besides its effects on sport fishing and the esthetics of a stream, turbidity excludes sunlight and restricts the growth of both planktonic and benthic algae, which are important to the food chain in a stream.

National Pollutant Discharge Elimination System (NPDES) permits are required for discharges to surface waters under Section 401 of the federal Clean Water Act, which is administered by the RWQCB. Provided there is no direct hydraulic connection to the waters of the United States, percolation ponds are not subject to NPDES permits or the associated seasonal discharge restrictions and dilution requirements that apply to direct discharges to the Russian River[10]. The RWQCB has permitted the City's discharge and other percolation pond discharges in its jurisdiction under Waste Discharge Requirements pursuant to the Porter-Cologne Water Quality Control Act (Water Code, Division 7, Sec. 130000 et seq.).

Existing Groundwater Quality. The City has collected extensive water quality data over the past 20 years from the WWTP effluent, the Basalt Pond, and from nearby wells. The results and these and other sampling efforts are described below. In addition, to provide information on the potential water quality impacts of the proposed project, the City initiated a more comprehensive one-year monitoring study specifically for this EIR. The results of the water quality study are detailed in Appendix B and summarized in the "Impacts" section.

1993-1995 Groundwater Monitoring Program: This sampling program was a requirement of the City's Waste Discharge Requirements issued in RWQCB Order 92-80. A network of 14 existing and new wells was established in the area of the existing WWTP and the Basalt Pond to gather water quality and groundwater elevation data. Surface water samples within the treatment ponds, the Basalt Pond and two locations on the Russian River were also monitored to evaluate the hydraulic link between groundwater and surface water within the river. This program was completed in 1996 and summarized in an April 1996 report prepared by Phillip Williams and Associates[11].

The sampling program included measurements of pH and the levels of chloride, fluoride, total dissolved solids, nitrate, total coliform, and fecal coliform. Although the City's current effluent limits include no specific limits for nitrate, one of the primary targets of the study was to quantify the nitrate-nitrogen loading from the Basalt Pond to the Russian River. As part of the study, the consultant also developed a computer groundwater model using MODFLOW, a public-domain groundwater modeling package developed by the U.S. Geological Service. The MODFLOW model was used to evaluate groundwater flow from the Basalt Pond and in the surrounding area.

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[10] Nathan Quarles, RWQCB, "City of Healdsburg STP; Proposed Disposal System; NPDES Permit versus Waste Discharge Requirements", March 23, 1998.
11 Phillip Williams & Associates, "Potential Water Quality of Treated Wastewater Discharge at Healdsburg", April 17, 1996.

Based on the sampling results and computer modeling, the report drew several conclusions:

- Discharge of wastewater, combined with some groundwater inflow at the northwestern corner of the Basalt Pond, maintains a hydraulic gradient from the pond to the river in both the wet and dry seasons, except short-term flood events. That is, groundwater flows from the Basalt Pond to the Russian River most of the time.
- While bacterial concentrations are sometimes high in the Russian River, bacteria counts in groundwater samples were low and indicated that the effluent discharge was not the source.
- Similarly, the contribution of total dissolved solids from the treatment plant to the river is likely to be insignificant.
- Concentrations of nitrate, chloride and fluoride in the groundwater near the pond are elevated due to the pond discharge. Treated effluent was the most likely source of chloride and fluoride since the City's drinking water is treated with fluoride. Chlorides are introduced by the use of chlorine for disinfection in the City's water and wastewater systems, and are also a component of human waste.
- Nitrate-nitrogen data indicated that there were relatively high concentrations (ranging up to 21 mg/l) in the wastewater treatment pond (western end) and in wells immediately downgradient of the pond. The wastewater discharge could be a potential source of nitrate-nitrogen, a contaminant that could contribute to the development of potential algal blooms in the river. However, high concentrations of nitrate also appeared in a well not influenced by the pond discharge, suggesting that vineyard fertilizer may also be a major contributor. Nitrate was sometimes higher in the deeper wells than in the shallow wells, which may reflect different rates of nitrification or denitrification (reduction of nitrates or nitrites, commonly by bacteria, producing nitrogen gas) in different layers of the aquifer.

The report also estimated mass loading based on the results of a groundwater model simulation, which estimated groundwater flows from the pond to the River at approximately 4.3 and 4.5 cubic feet per second (cfs) in January and September 1995, respectively. However, in its discussion of the conclusions, the report acknowledged that high clay content in soils lining the Basalt Pond may reduce the actual hydraulic conductivity and infiltration to the river.

A recent review of additional data indicates that actual groundwater flows from the Basalt Pond to the River, as well as the loading rates, were significantly less than estimated in the 1996 Phillip Williams & Associates report. Since the MODFLOW simulation assumed a steady-state condition (i.e. constant flows), outflows from the pond must be equal to inflows. Dry-weather inflows from the treatment plant and discharges from a gravel-washing process water line from Syar Industries are the only sources of inflow to the Basalt Pond during the dry months. During the summer of 1995 (the period simulated in the model), treatment plant inflows averaged less than 1.0 million gallons per day (1.5 cfs). Process water discharge to the Basalt Pond from Syar at that time was estimated at 228,000 gallons/day, or 0.35 cfs[12]. Based on pan evaporation records for Lake Sonoma[13], an average of approximately 339,000 gallons/day, or 0.5 cfs would

[12] North Coast Regional Water Quality Control Board, "Waste Discharge Requirements for Syar Industries, Inc. (Healdsburg), Order No. 87-123", October 29, 1987.
[13] Sonoma County Water Agency operations records. Records for June 1 to September 30, 1995 indicate an average evaporation rate of 0.25 inches/day.

have been lost to evaporation from the 50-acre Basalt Pond during the summer. Since Lake Sonoma is approximately 15 miles northwest of the wastewater treatment plant on Dry Creek, evaporation rates would be similar. The maximum discharge rate to groundwater during the summer of 1995 was therefore approximately 1.4 cfs. Since the percolation occurs on all sides of the pond, the portion of the groundwater percolation reaching the Russian River would be a fraction of that amount. Further analysis conducted for this EIR, the results of which are described in the "Impacts" section, confirm that actual groundwater flows from the pond to the River are significantly less than reported in the 1996 study.

Nitrogen is a common contaminant of concern for wastewater effluent, and maximum contaminant levels for nitrogen compounds are expressed in a several ways to account for different health effects of the respective compounds. The recent one-year monitoring study mentioned above addresses these compounds in more detail. Results are described in the "Impacts" section.

Syar Industries Sampling: In addition to the City's sampling programs, Syar Industries, Inc. has collected and analyzed its own samples from wells MW-1 through MW-6 and from the Basalt, the Phase I, and the Phase IIII ponds. Sampling locations for this program are shown in Figure 4-5. These samples were collected beginning in 1993 to assess the impacts of gravel mining operations, including impacts on groundwater flow. The monitoring wells and ponds are sampled quarterly for pH, temperature, turbidity, conductivity, dissolved oxygen, total petroleum hydrocarbons (TPH), and pesticides; and annually for nitrates, phosphates, pesticides, herbicides and metals. These contaminants were selected for monitoring because of their association with mining equipment and operations as well as vineyard practices in the area. Syar's annual reports for 1998, 1999 and 2000 indicate that no petroleum hydrocarbons or pesticides were detected in the samples collected between 1997 and 2000. Monitoring well data indicated that groundwater in this area, which is just south of the Phase V Pond, flows consistently in a southeasterly direction.

Result of this sampling also show aluminum at elevated levels at these sites from 1998 to 2000, in several cases at levels above drinking water standards. Aluminum is the most abundant metal in the earth's crust, and is known to be common in the feldspar and other silca-based gravels in the Russian River alluvial aquifer. The presence of aluminum in these samples appears to be a result of the natural composition of the alluvial materials[14].

[14] Personal communication, Mark T. Egbert, Project Geologist, Brunsing Associates, Inc. (Windsor, CA), April 25, 2001.

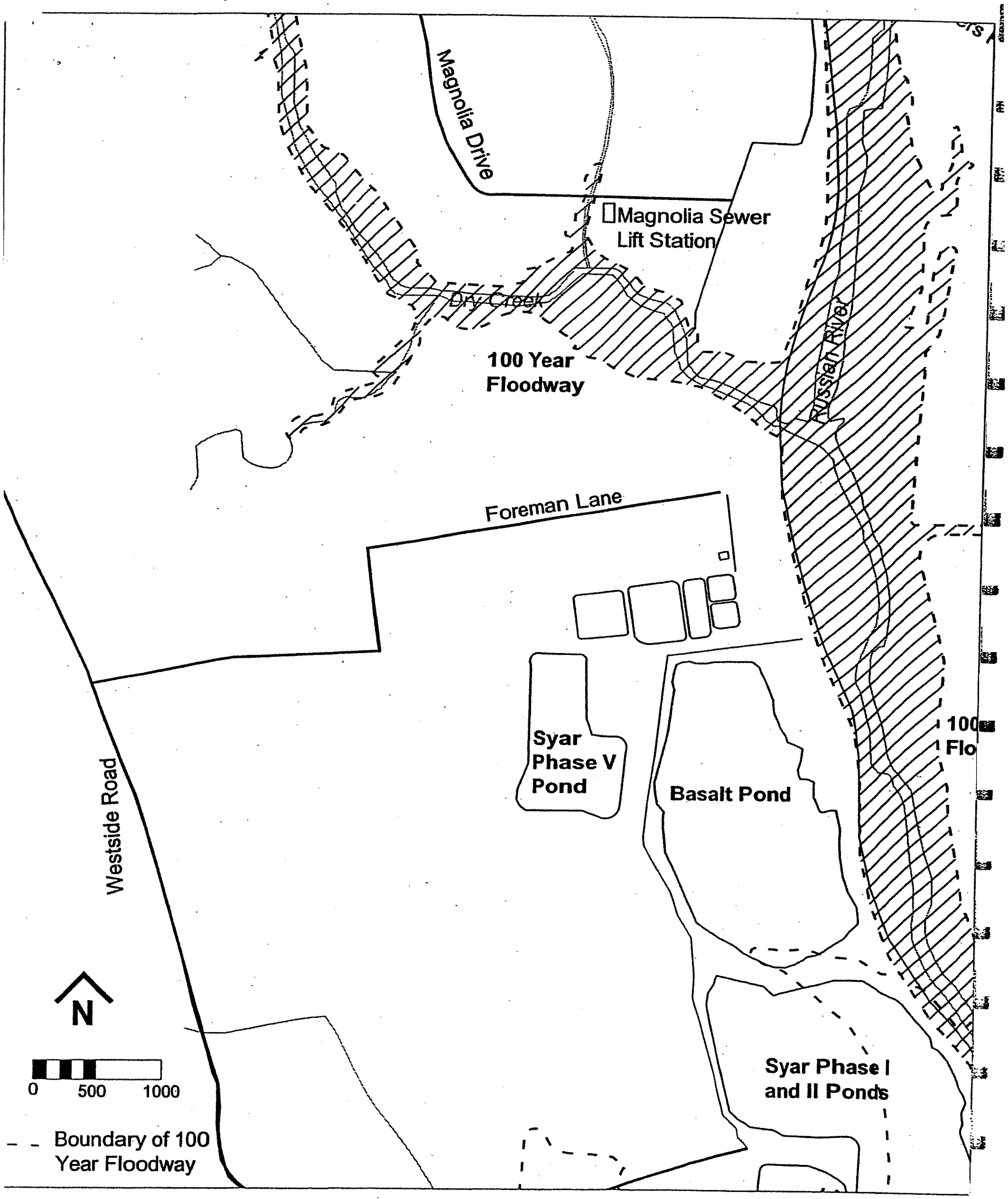

Figure 4-1 - Boundary of 100 Year Floodway In The Project Vicinity

4-8

have no significant impact on groundwater quality at the Windsor wells or other downstream water supplies.

3. Effects on Surface Water Quality

Finding: No Significant Impact. Based on the modeling and water quality analysis conducted by the City (see Appendix B), the implementation of the project would not have a significant impact on the quality of existing surface water in the project vicinity, including the Russian River. Toxicity testing is generally used to detect toxicity to aquatic life and is typically included in NPDES permits for wastewater discharges to waters of the state. The toxicity testing results demonstrate that the existing wastewater discharge has not caused adverse impacts to aquatic life, and that the proposed discharge to the Syar Phase V Pond would not adversely impact aquatic life. An insignificant amount of the infiltration flow from the Basalt Pond (0.35 cfs) is estimated to flow in the direction of the Russian River, and it is unlikely that all of this flow surfaces in the Russian River. With the proposed discharge to the Syar Phase V Pond, the flow leaving the discharge pond in the direction of the Russian River would be diminished further (to 0.25 cfs), and would take at least one years to travel the horizontal distance to the Russian River. With the minimal amount of flows and the long travel times, neither the existing discharge to the Basalt Pond nor the proposed discharge to the Syar Phase V Pond would have the potential to significantly affect aquatic life, particularly in the Russian River.

It should be noted that the Basalt Pond will continue to be exposed to flooding from the Russian River, and that endangered or threatened species such as coho and steelhead salmon are trapped in ponds as flood levels recede[17]. With the existing discharge to the Basalt Pond, this fish entrapment exposes these and other aquatic species to commingled wastewater discharges, both in the pond and in the Russian River. While the water quality monitoring data indicate that no significant impacts to aquatic life would occur, the Syar Phase V Pond is not subject to these periodic flood events, and the proposed wastewater discharge would eliminate this exposure, and thus eliminate any potential for impacts.

4. Conformance with Treatment Standards

Finding: No Significant Impact. With only minor exceptions, the City's treatment plant currently complies with its effluent limitations in its Waste Discharge Requirements prescribed by the RWQCB. The City's annual monitoring report for the year 2000 notes minor violations for pH (3 violations) and Biological Oxygen Demand (BOD, 1 violation.) The pH violations were corrected with process changes in the treatment plant. The BOD violation may have resulted from unrepresentative sampling practices. These were isolated events, later corrected by sampling and/or treatment changes, and do not represent a significant or ongoing water quality problem. Implementation of the proposed project would not affect compliance with Waste Discharge Requirements.

[17] Sonoma County Water Agency, "Fish Rescue - Annual Report", 1997, 1998, 1999 and 2000.

CITY OF HEALDSBURG
OUTFALL RELOCATION PROJECT

2000-2001 WATER QUALITY STUDY

Prepared by: **Jim Flugum, P.E.**
Associate Civil Engineer

May 2001

Syar Industries Sampling: In addition to the City's sampling programs, Syar Industries, Inc. has collected and analyzed its own samples from wells MW-1 through MW-6 and from the Basalt, the Phase I, and the Phase IIII ponds. Sampling locations for this program are also shown in Figure 2. These samples were collected beginning in 1993 to assess the impacts of gravel mining operations, including impacts on groundwater flow. The monitoring wells and ponds are sampled quarterly for pH, temperature, turbidity, conductivity, dissolved oxygen, total petroleum hydrocarbons (TPH), and pesticides; and annually for nitrates, phosphates, pesticides, herbicides and metals. These contaminants were selected for monitoring because of their association with mining equipment and operations, as well as vineyard practices in the area. Syar's annual reports for 1998, 1999 and 2000 indicate that no petroleum hydrocarbons or pesticides were detected in the samples collected between 1997 and 2000. Monitoring well data indicated that groundwater in this area, which is just south of the Phase V Pond, flowed consistently in a southeasterly direction.

Result of this sampling also show aluminum at elevated levels at these sites from 1998 to 2000, in several cases at levels above drinking water standards. Aluminum is the most abundant metal in the earth's crust, and is known to be common in the feldspar and other silica-based gravels in the Russian River alluvial aquifer. The presence of aluminum in these samples appears to be a result of the natural composition of the alluvial materials[4].

IMPACT ANALYSIS

Commingled wastewater discharge that did not evaporate from the Phase V Pond would eventually enter the alluvial aquifer after an extended residence time in the pond, as it does with the present discharge to the Basalt Pond. The extent and composition of the Russian River alluvial aquifer is well documented. The 1983 Department of Water Resources Bulletin 118-4, one of four reports describing the major aquifers of Sonoma County, described groundwater resources in the Alexander Valley and Healdsburg areas[5]. This unconsolidated alluvium underlies the alluvial plains of the Russian River, Dry Creek, and tributaries. Deposits adjacent to the river and streams consist of loose, permeable gravel and sand that range in thickness from 10 feet to more than 80 feet. Farther from the river, the alluvial gravel contains less coarse material and more silt and poorly sorted sand and gravel deposited by tributary creeks. In the Dry Creek tributary, subsurface flow into the Russian River alluvial aquifer has been estimated at 1,000 acre-feet, or 330 million gallons, per year[6].

The potential water quality impacts associated with discharge of treated wastewater to the proposed Phase V Pond have been evaluated by analyzing water quality associated with the existing discharge to the Basalt Pond, and by analyzing the quantity and direction of groundwater flow which would infiltrate the aquifer from the Syar Phase V Pond. As described above, both ponds are situated well within the bounds of the same unconfined alluvial aquifer. With the existing discharge to the Basalt Pond, the treated effluent receives additional treatment during the extended residence time in the pond, and a secondary purpose of the sampling program described below is to evaluate the effectiveness of this treatment. Because the Syar Phase V Pond would provide a similar residence time[1] and therefore a similar level of treatment, and because both ponds percolate to the same aquifer, it is reasonable to expect that water quality impacts near the Basalt Pond will reliably predict water quality impacts near the proposed Phase V Pond outfall.

[1] The City's total annual wastewater flows between 1998 and 2000 ranged from 420 and 455 million gallons. The Basalt Pond has a volume of 450 to 740 million gallons, depending on water level, which provides at least one year of theoretical detention time in the pond for the average 1998-2000 effluent flows. The volume of the Syar Phase V Pond, which is nearly completed, would range from about 400 to 500 million gallons[1], which will provide a theoretical detention time of at least 11 months.

With the exception of toxicity testing, the results of the sampling program described below were compared to applicable drinking water standards established by the California Department of Health Services (DHS). Toxicity testing is generally used to detect toxicity to aquatic life, and is typically included in NPDES permits for wastewater discharges to waters of the state. A computer groundwater flow model was used to predict the quantity and direction of groundwater flow from the Syar Phase V Pond. The results of these two analyses, described in the sections below titled "Groundwater Flow Evaluation" and "2000-2001 Sampling Program", were used to identify where and what water quality impacts could be expected.

GROUNDWATER FLOW EVALUATION

In addition to the water quality monitoring, two separate studies have evaluated the impacts to groundwater flow from the existing discharge to the Basalt Pond and the proposed discharge to the Phase V Pond.

To analyze water levels in the Phase V Pond resulting from the City's outfall relocation project, the City and Syar Industries, Inc. hired a consultant, Luhdorff and Scalmanini, to develop a computer groundwater model of the pond and surrounding aquifer. The resulting report, titled "Technical Memorandum on Potential Interim Project Impacts, City of Healdsburg Wastewater Treatment Plant, Middle Reach of the Russian River" and dated June of 1999, was attached as an appendix to the City's Outfall Relocation Project Mitigated Negative Declaration in 1999. The computer groundwater model simulated several scenarios with varying pond sizes, varying average annual wastewater discharge volumes, varying aquifer permeability at the bottom of the pond, at varying times during the year.

The report found that in the worst case, a ground water 'mound' approximately 4' above the normal groundwater aquifer could be expected to form around the pit as a result of the proposed wastewater discharge. This 'mound' would cause groundwater to flow outward from the pit, and decrease in height to approximately 1.8 feet at a distance of 1000 feet out from the Phase V Pond. At the time the report was prepared, excavation of the Syar Phase V Pond had not begun, and it was expected that the City would begin its discharge to the pond when it had been excavated to only 10 acres of its ultimate 20.7-acre size. The worst case scenario described above corresponded to the 10-acre interim pond size. With the Syar Phase V Pond excavated to 20.7 acres, the report projected that the mound would reach only 2' above the normal groundwater aquifer. As of May 2001, the Syar Phase V Pond had been excavated to approximately 18 acres.

Projected groundwater contours in the reports showed in all scenarios that, of the three nearby private wells (Seghesio domestic well, Seghesio irrigation well and Love domestic well), only the Seghesio irrigation well and the Love domestic well would be downgradient of the Syar Phase V Pond. The Seghesio domestic well would be upgradient of the Syar Phase V Pond, so that no groundwater reaching this well would derive from the proposed discharge pond.

A second study prepared for the City by Luhdorff and Scalmanini in April of 2001 addressed the long-term fate of groundwater flow from the existing discharge to the Basalt Pond and the proposed discharge to the Phase V Pond. The purposes of the 2001 study were to:

- reevaluate the estimate of groundwater flow from the existing Basalt Pond discharge reaching the Russian River (first evaluated in the 1996 Phillip Williams and Associates study described above); and

- describe the fate of groundwater flow originating from the "mound" that would be created by the proposed discharge to the Phase V Pond and, to the extent it can be discerned, quantify the expected groundwater flow reaching the Russian River from the proposed Phase V Pond discharge.

The study, completed in May 2001, drew several conclusions on the existing and proposed outfall ponds:

- Under fall conditions, the groundwater flow from the Basalt Pond in the direction of the Russian River was estimated at 0.35 cfs, or 0.23 million gallons/day (mgd). This is significantly less than the flow estimated in the 1996 Phillip Williams and Associates study, and the difference can be attributed to new information on the reduced permeability in the "lining" at the boundaries of gravel mining ponds. This new information was incorporated into the computer model in the form of lower values of soil permeability assigned to the pond/aquifer boundaries. This flow represents less than one-tenth of one percent of normal summer flows in the Russian River, which range from 200 to 300 cfs. The 0.35-cfs estimate represents flow from the eastern boundary of the Basalt Pond. Not all of this flow would necessarily surface in the Russian River; a portion may remain in the aquifer as underflow.
- Because of the slight mound that would form as a result of the proposed discharge to the Syar Phase V Pond, approximately 0.25 cfs would exit the northern boundary of the pond and flow easterly in the aquifer around the Basalt Pond in the direction of the Russian River. The model indicates that with the projected velocities, this flow would take at least one year to travel as far as the Russian River. As with the Basalt Pond, not all of this flow would necessarily surface in the Russian River, and a portion may remain in the aquifer as underflow.
- As a rough estimate, approximately 75% of the groundwater near the Seghesio irrigation well and the Love domestic well could be expected to originate from outflow from the Syar Phase V pond. The approximate travel time to the Love domestic well would be three months, while the travel time to the Seghesio irrigation well would be significantly less. In general terms, the proposed discharge to the Syar Phase V Pond would result in a larger proportion of the pond outflow migrating to the regional groundwater flow, but would result in a smaller proportion migrating to the Russian River, and only then after at least one year of travel time in the aquifer.
- Outflow from the Syar Phase V Pond would not be expected to migrate directly to the Town of Windsor wells, but instead would reach the area only after migrating through the other Syar mining ponds south of the Basalt and Phase V ponds, with substantial dilution, soil-aquifer treatment, and pond treatment occurring as it migrated. Particle-tracking analysis shows that the small portion of Syar Phase V Pond outflow that would flow south and west of the other mining ponds would reach a point opposite the Windsor wells only after a travel time of at least 6 ½ years. Groundwater gradients toward the Russian River on both sides present a barrier to groundwater flow across the river, and it is unknown whether pumping from the Windsor wells is capable of inducing flow across this barrier.

2000-2001 SAMPLING PROGRAM

The samples for the 2000-2001 program were collected by City staff to examine water quality at six sites, shown in Figure 2:

1. <u>Basalt Pond - Site #3:</u> This site was selected to characterize water quality in the Basalt Pond before it enters the aquifer. Site #3 is at the approximate point of maximum depth in the Basalt Pond.

2. <u>Well 7A (MW #7A, near the southeast corner of the Basalt Pond):</u> This site represents groundwater quality immediately down-gradient of the existing outfall pond, and was selected to represent the expected groundwater quality in the Seghesio and Love wells as a result of the proposed wastewater

discharge to the Syar Phase V Pond. MW #7A is located less than 100 feet downgradient of the Basalt Pond, while the Seghesio and Love wells would be from 250 to 650 feet downgradient from the Syar Phase V Pond. Past water level monitoring in the Basalt Pond and in the Russian River (see Figure 3) demonstrates that with the exception of short-duration flood events, the gradient is from the Basalt Pond towards the Russian River. MW #7A is the deepest of three cluster wells at site 7, and is 70 feet deep.

3. Syar Phase III Pond: For the purpose of characterizing water quality in ponds not directly affected by the direct discharge, samples were drawn from the Syar Phase III Pond, at a depth of 30 feet below the water surface.

4. Well 13 (MW #13): This site is located approximately 3,000 feet south of milligrams/liter (mg/L) at the northwest corner of the pond known as the "No Name" pond.

5. Seghesio domestic well: This domestic well is located approximately 1,500 feet west of the northwest corner of the Syar Phase V Pond, and 2,600 feet west of the Basalt Pond. Groundwater modeling and well level monitoring have demonstrated that this well is up-gradient of the Basalt Pond and is not influenced by the current discharge. Samples were collected from this well to characterize background water quality, and to provide an after-project baseline if the proposed project is implemented.

6. Seghesio irrigation well: This irrigation well is located approximately 250 feet west of the southwest corner of the Syar Phase V Pond, and 1,400 feet west of the Basalt Pond. Samples from this well also provide background information.

Because wells in the vicinity provide drinking water (e.g. the Seghesio and Love domestic wells, and Windsor wells) this analysis compares water quality in the ponds and in the aquifer to drinking water standards. The quality of drinking water is generally characterized in two ways: the presence of contaminants that might cause adverse health effects, and the properties of water that affect aesthetics. Contaminants that may cause adverse health effects include inorganic and organic chemicals, and microbiological contaminants. The aesthetic qualities of drinking water include characteristics that make the water unpalatable or bothersome to customers. Examples are hardness, taste, odor, color, and the tendency to discolor plumbing fixtures.

Table 2 lists the constituents and parameters analyzed. The list includes all of the constituents listed under the DHS "Drinking Water Standards/Primary Maximum Contaminant Levels (MCL's) and Lead and Copper Action Levels"[7]. Constituents shown in italics are constituents not included in the MCL list. Chloride, total coliform, fecal coliform, total dissolved solids (TDS), and N-Nitrosodimethylamine (NDMA) were also added to the list.

Pond samples were collected from a rowboat at the selected sites in the Basalt Pond and the Syar Phase III Pond. Each of the sites was marked for the duration of the study with a mooring buoy. The 30-foot sample depth was established by sounding. Samples were collected using a polyethylene container that can be opened from the surface when the sample container reaches a desired depth. Sample water was transferred into bottles obtained directly from the analytical laboratory. Each sample container was labeled with a self-adhesive tag. The City's field staff labeled each tag with date and sample-site information using waterproof ink.

Groundwater samples were collected at a depth of forty feet using a two-inch submersible Grundfos pump. Each well was purged for a minimum of eight minutes. Sample water was transferred to bottles supplied by valley across from the Town of Windsor municipal wells (located east of the Russian River) is approximately six and one-half years. The approximate travel times for the outflow to migrate away from the Phase V Pond are also shown on Figure 1. In all cases, the Phase V Pond outflow would be subject to further soil/aquifer and/or pond treatment, as well as commingling with ground water in the regional aquifer system, during these travel times before reaching the water supply wells, the River and adjacent mining ponds.

As a complement to the particle tracking work, a zone budget analysis was utilized with the Phase V Pond model scenario to quantify the predicted amount of outflow from the Pond. The zone budget analysis for the Phase V Pond scenario was conducted similar to the analysis for the Basalt Pond described in the previous section of this memorandum. Also as in the previously-described Basalt Pond analysis, the zone budget analysis for the Phase V Pond calculated gross flow volumes from the Pond to the aquifer. The inflow to and predicted outflow from the Phase V Pond is presented in Table 2.

Table 2
Inflow and Predicted Outflow, Phase V Pond
Calibrated Model Scenario

Flow Components	Flow Volumes (cfs)
Discharge of treated waste water to Pond	2.3
Direct Outflow toward Russian River (North)	0.25
Direct Outflow to Aquifer (South and West)	1.14 (0.74 and 0.40, respectively)
Direct Outflow toward Basalt Pond (East)	0.26
Direct Outflow through Pond Bottom	0.55
Net Loss from Evaporation and Rainfall	0.1
Total Outflow	2.3

Relative to the predicted outflow volume from the Basalt Pond directly toward the adjacent portion of the Russian River (0.35 cfs), a slightly smaller volume of outflow is expected to migrate from the Phase V Pond toward the River (0.25 cfs). In addition, the Phase V Pond outflow is expected to migrate through the aquifer for approximately one year before reaching the River, based on the particle tracking analysis described above. Again, relative to the volume of the streamflow in the adjacent Russian River, the contribution of outflow from the Phase V Pond to the River (assuming all treated waste water discharged to the Pond eventually migrates to the River, either directly or indirectly) would be less than one percent of the River's streamflow and generally considered to be indiscernible.

The zone budget approach was also employed to develop an estimate of the proportion of the ground water near the Seghesio and Love water supply wells that would be derived from the

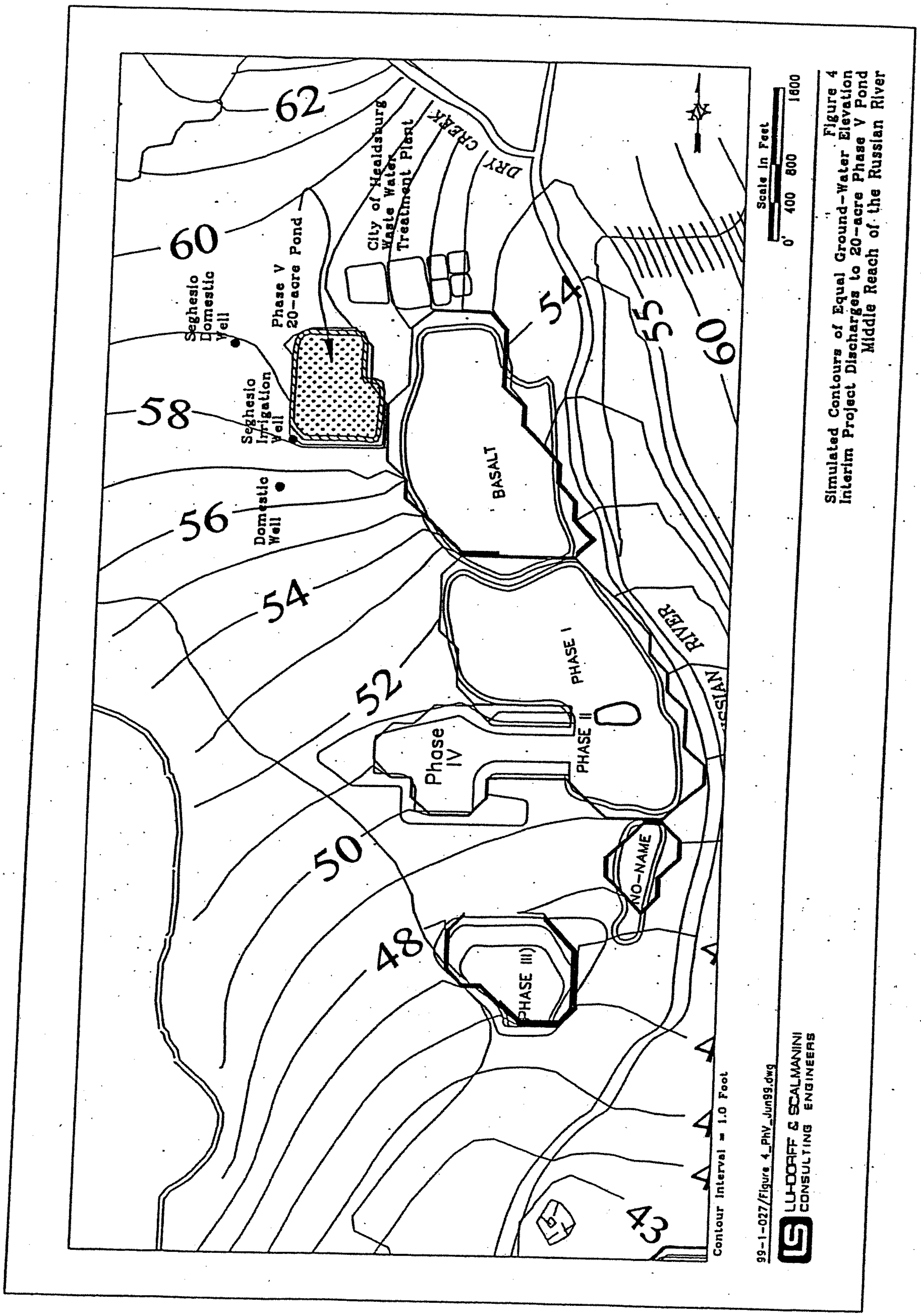

Figure 4
Simulated Contours of Equal Ground-Water Elevation
Interim Project Discharges to 20-acre Phase V Pond
Middle Reach of the Russian River

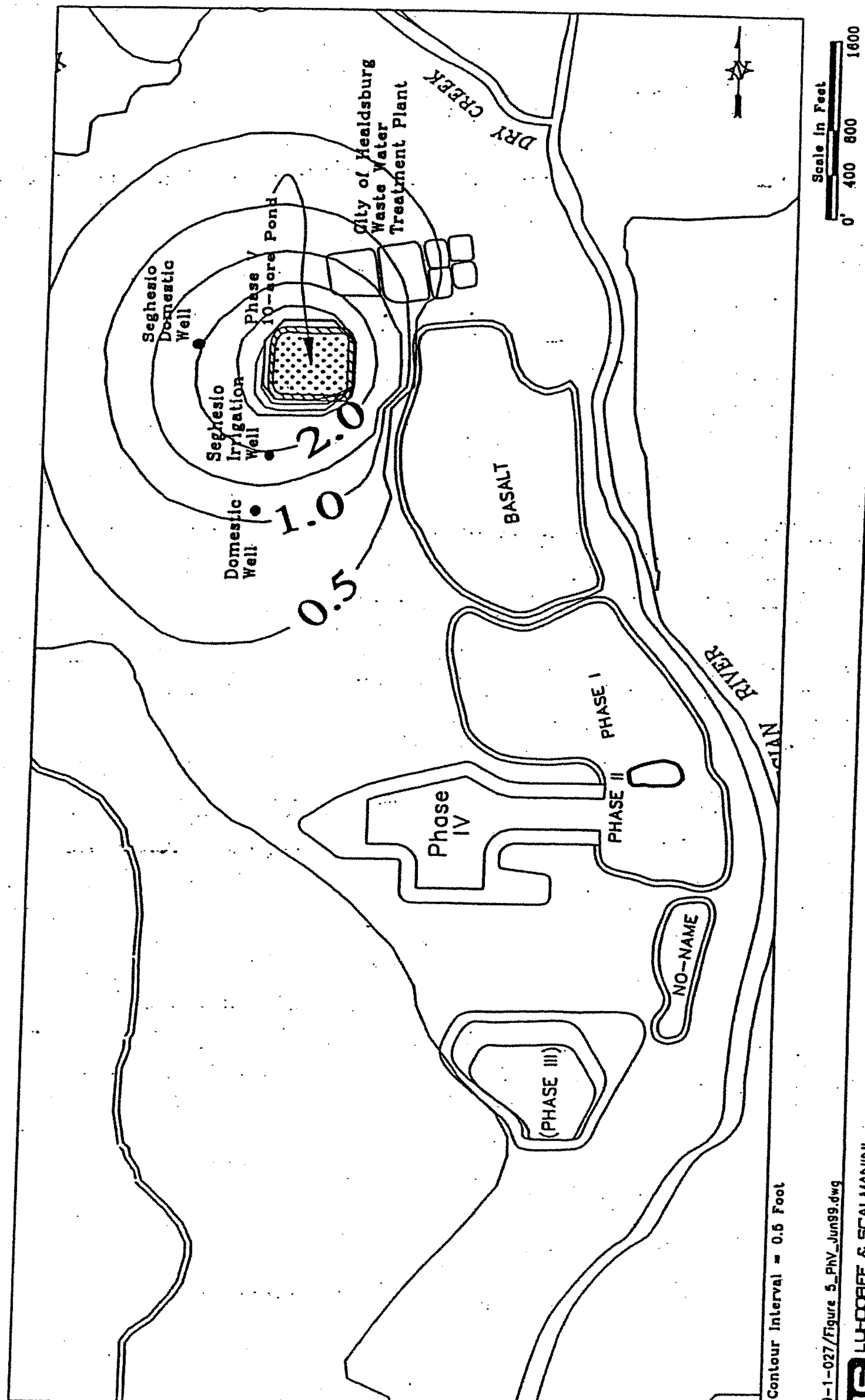

Figure 5
Simulated Contours of Equal Rise in Ground-Water Elevation
Interim Project Discharges to 10-acre Phase V Pond
Middle Reach of the Russian River

Phase V Pond outflow. The regional ground-water flow through the area (between Basalt Pond and Westside Road) was predicted to be approximately 1.5 cfs, of which approximately 1.14 cfs would be derived from the Pond outflow. This latter amount is the portion of outflow from the Pond's south and west edges, which is the only portion predicted to migrate through the area based on the particle tracking results. As a rough estimate, 75 percent of the ground water near the Seghesio and Love water supply wells could be expected to be derived from the Pond's outflow. In comparison to the existing condition with the City's discharge to the Basalt Pond, a rough estimate of the proportion of ground water near these water supply wells derived from the Basalt Pond outflow is 15 percent (based on a predicted 0.22 cfs of outflow from the Basalt Pond toward the area, see Table 1).

It is important to reiterate that these percentages are approximate estimates, and they are only useful in providing input to a qualitative comparison of the potential impacts from the existing condition (outflow from Basalt Pond) and the planned scenario (outflow from Phase V Pond). As such, it appears that the planned scenario with the City's discharge to the Phase V Pond will result in a larger proportion of pond outflow migrating directly to the surrounding aquifer but a smaller proportion migrating directly to the Russian River. Alternatively, the existing condition with the discharge to Basalt Pond apparently results in a smaller proportion of pond outflow migrating to the surrounding aquifer and a greater proportion migrating to the River. In considering the predicted increase in pond outflow to the aquifer surrounding the Seghesio and Love water supply wells (with the discharge of treated waste water to the Phase V Pond), it should be noted that the great majority of this outflow is predicted to migrate into the Phase I/II Pond (see Figure 1). As a result, only a minor portion of the outflow would be expected to migrate through the remaining portion of the aquifer south of the Phase I/II Pond.

Summary

The ground-water flow modeling, zone budget, and particle tracking analyses provide estimates of the direction, rate of movement, and volume of outflow from the Basalt Pond (existing conditions) and the Phase V Pond (planned scenario) to various locations within the valley encompassing the middle reach of the Russian River. These features included nearby water supply wells, the Russian River, and nearby mining ponds. This in turn provided an indication of the potential impacts to water quality from the existing Basalt Pond outflow and the planned scenario with outflow derived from the Phase V Pond.

The results indicate that only minor contributions of outflow are expected to migrate from the ponds directly to the Russian River (less than one-tenth of a percent of the average summer and fall streamflow). In addition, the outflow would be subject to soil/aquifer and/or pond treatment prior to reaching the River. Thus, the potential impact to the water quality of the River from the outflow (in either case) would be expected to be indiscernible. The results indicate that the planned discharge to the Phase V Pond will likely contribute a greater proportion of outflow directly to the surrounding aquifer but a smaller proportion to the Russian River, in comparison to the existing condition of outflow from the Basalt Pond. It is therefore expected that a comparatively larger proportion of pond outflow to the aquifer surrounding the Seghesio and Love water supply wells will we derived from the planned discharge to the Phase V Pond than from the existing discharge to the Basalt Pond. The results also indicate that outflow from the Phase V Pond would not be expected to migrate directly to the Town of Windsor municipal wells, but instead would likely reach the wells after migrating into Syar's mining ponds and the Russian River, with substantial dilution and treatment occurring as it migrated.

These results need to be augmented with the results of the City's water quality monitoring program and assessment of the existing ground-water quality conditions in the area, which in turn will provide an indication of the impacts associated with the long-term discharge of treated waste water to Basalt Pond. Collectively, these results will more fully assess the potential impacts of redirecting the City's discharge to the Phase V Pond. In addition, it is again recommended that "baseline" and "detection" monitoring be conducted, as previously proposed to the City. The baseline monitoring would be conducted at some time prior to commencing the City's discharge to the Phase V Pond in order to determine the current ground water conditions near the Phase V Pond. Detection monitoring would be conducted during the on-going discharge to the Phase V Pond at some regular frequency in order to identify any impacts from the discharge. The baseline and detection monitoring programs could build upon the monitoring program already implemented by the City. It is recommended that the monitoring include both ground-water levels and quality, with a number of selected water-quality constituents to be based on the results of the water-quality evaluation currently being completed by the City. Baseline and detection monitoring specific to the Phase V Pond area is recommended to address the Town of Windsor's stated concerns about relocating the City's treatment plant outfall to the Phase V Pond. This monitoring would enable the City to assess whether any impacts to ground-water quality occur in the area near the Phase V Pond, including near the Seghesio or Love water supply wells, or further downgradient in the valley.

LUHDORFF & SCALMANINI
CONSULTING ENGINEERS

GROUND-WATER RESOURCES
HYDROLOGY • DEVELOPMENT • MANAGEMENT

November 4, 2002
File No. 99-1-013

APPENDIX K

Mr. Tal Bailey
Syar Industries, Inc.
2301 Napa-Vallejo Hwy
P.O. Box 2540
Napa, CA 94558

SUBJECT: GROUND-WATER IMPACTS OF PROPOSED PHASE VI MINING MIDDLE REACH OF THE RUSSIAN RIVER, SONOMA COUNTY

Dear Mr. Bailey:

This letter is in response to your recent request to estimate the probable impact to ground water of the terrace mining by Syar Industries, Inc. (Syar) in its Phase VI mining area. The current configuration of the Phase VI mining area is approximately the southern half of the Phase V parcel originally planned for mining in 1997 (Figure 1). The Phase V mining plan analyzed in 1997 was 67 acres at grade (42 acres at the waterline); in 1999, it was reduced to a mining area approximately 30 acres at grade (22 acres at the waterline) in the northern half of the originally-planned parcel; currently, it is a mining pit 27.6 acres in size but with a slightly different shape from that of the 1999 plan. The currently-proposed Phase VI mining area is to be 36.78 acres at grade and 26.6 acres at the waterline.

As you recall, Luhdorff and Scalmanini, Consulting Engineers (LSCE) evaluated the potential impact to ground water of Syar's mining along the middle reach of the Russian River, as planned in 1997, using a ground-water flow model of the area to comply with the provisions of Sonoma County's ARM Plan (LSCE, October 1997). The model was used to simulate projected impacts (on ground-water levels) from mining by Syar, including Phases IV, V, and VI on the west side of the River, and by Kaiser, along the east side. This configuration totaled 171 acres on the River's west side by Syar and 130 acres on the east side by Kaiser (acreages at grade). The model scenarios predicted the impact of mining the individual parcels, as well as the cumulative impacts of all the then-planned mining along the middle reach. The results of the model scenarios indicated that the only impact of Syar's proposed mining on ground-water levels beneath the properties adjacent to Syar would be to slightly raise the water levels; the maximum predicted rise from all proposed mining ("Scenario W-1") was 0.85 feet just west of the Phase V parcel.

Additional scenarios were subsequently analyzed to predict the ground-water level impacts from all planned mining as described above, but with the following modifications. The subsequent scenarios incorporated a proposed minor expansion of Syar's Phase IV mining (as shown in

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EXHIBIT 6

Figure 1) (LSCE, January 30, 1998). In addition, subsequent scenarios included increased pumpage from the planned Sonoma County Water Agency Ranney collectors, at their projected design capacity (20 mgd) instead of their average demand (7.7 mgd) (LSCE, April 16, 1998). The results of the subsequent scenarios indicated that the predicted cumulative mining impact was of a similar magnitude and distribution throughout the valley as compared to the earlier modeling results (the predicted rise in water levels west of the Phase V parcel was identical) (Figure 2).

In 1999 and 2001, separate evaluations were made of the potential ground-water level impacts from two separate proposed plans to mine a Phase V area that would be smaller than originally proposed in 1997 (LSCE, February 3, 1999, and February 1, 2001). Both plans were for a Phase V mining area 30 acres or less in size but with slightly different shapes. The then proposed Phase V mining areas were to be located within the northern half of the original Phase V parcel (see Figure 1), which was included in all the previous 1997-1998 simulations. It was understood during 1999 and 2001 that Syar might propose at a later date to either expand its Phase VI mining area northward or add a smaller separate mining area within the remaining southern portion of the original Phase V parcel. In either case, the total area proposed for mining was not to exceed the cumulative area already simulated with the model, and the extent (areally) of the proposed mining areas would not exceed the extent of the mining areas included in the model. In light of this, it was logical to expect that the predicted impacts from any new model scenarios to simulate the 1999 or 2001 proposed Phase V configurations would be similar to or smaller than those from the previous modeling. Given that the model scenarios conducted previously had predicted less than significant ground-water level impacts off-site (i.e., ground-water level changes of less than one foot off-site, per the Sonoma County ARM Plan requirements), it was logical to expect that mining of the 1999 or 2001 proposed Phase V area would not have any significant ground-water level impacts off-site either.

The Phase VI mining area, as currently proposed at 36.78 acres at grade, will be located essentially within the southern half of the originally proposed Phase V parcel; reflecting the current conditions, the Phase VI mining area will be directly adjacent to and south of the current Phase V mining pit. As such, the total area mined (or to be mined) on the Phase V and VI areas is 64.38 acres at grade, which is slightly smaller than the originally proposed Phase V parcel. Therefore, the total mining area for the Phase V mining pit and the currently-proposed Phase VI mining area would not exceed the cumulative area of the original Phase V parcel already simulated with the model, and the areal extent of the proposed mining areas would not exceed the areal extent of the mining areas included in the model. Therefore, we would expect the predicted individual impacts from any new model scenarios using the currently-proposed Phase VI configuration to be effectively equivalent to those from the previous modeling, and we would thus expect those results to satisfy the requirements of the County's ARM Plan regarding ground-water impacts of the currently-proposed Phase VI mining. Similarly, we would expect the predicted cumulative impacts from any new model scenarios incorporating the currently-proposed Phase VI configuration with the original Phase VI parcel (to the south) to be effectively equivalent to those from the previous "worst case" modeling and to thus also satisfy the ARM Plan requirements.

Given the close similarity between the original and the current cumulative mining areas (both in their total acreage and areal extent), the above conclusions are based on our interpretation that independent model runs would show no appreciable or significant change from those previously conducted. We trust that such an interpretation will satisfy the ARM Plan requirements, and that additional simulations will not be necessary to reach the same conclusions.

We trust that the above responds to your request regarding the probable impact of the modified Phase VI mining area. If we can respond to questions or provide further details regarding any of the above, we would be pleased to do so.

Sincerely,

LUHDORFF AND SCALMANINI
CONSULTING ENGINEERS

Liese L. Schadt

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LUHDORFF & SCALMANINI CONSULTING ENGINEERS

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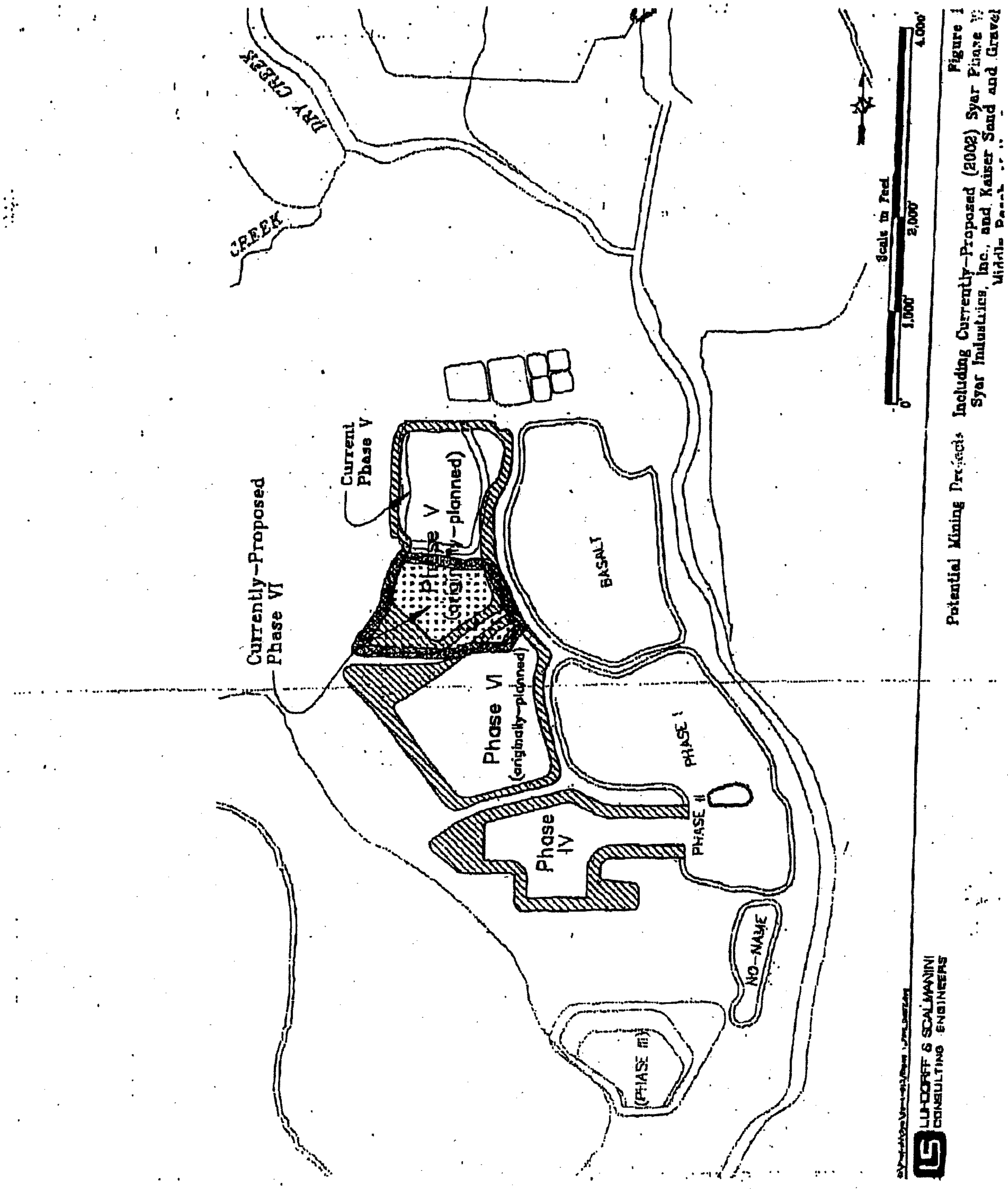
DRY CREEK
CREEK
Current Phase V
Currently-Proposed Phase VI
Phase V (originally-planned)
Phase VI (originally-planned)
BASALT
PHASE I
PHASE II
Phase IV
NO-NAME
PHASE III
Scale in Feet
0
1,000'
2,000'
4,000'
Potential Mining Projects Including Currently-Proposed (2002) Syar Phase VI
Syar Industries, Inc., and Kaiser Sand and Gravel
Figure
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K-4

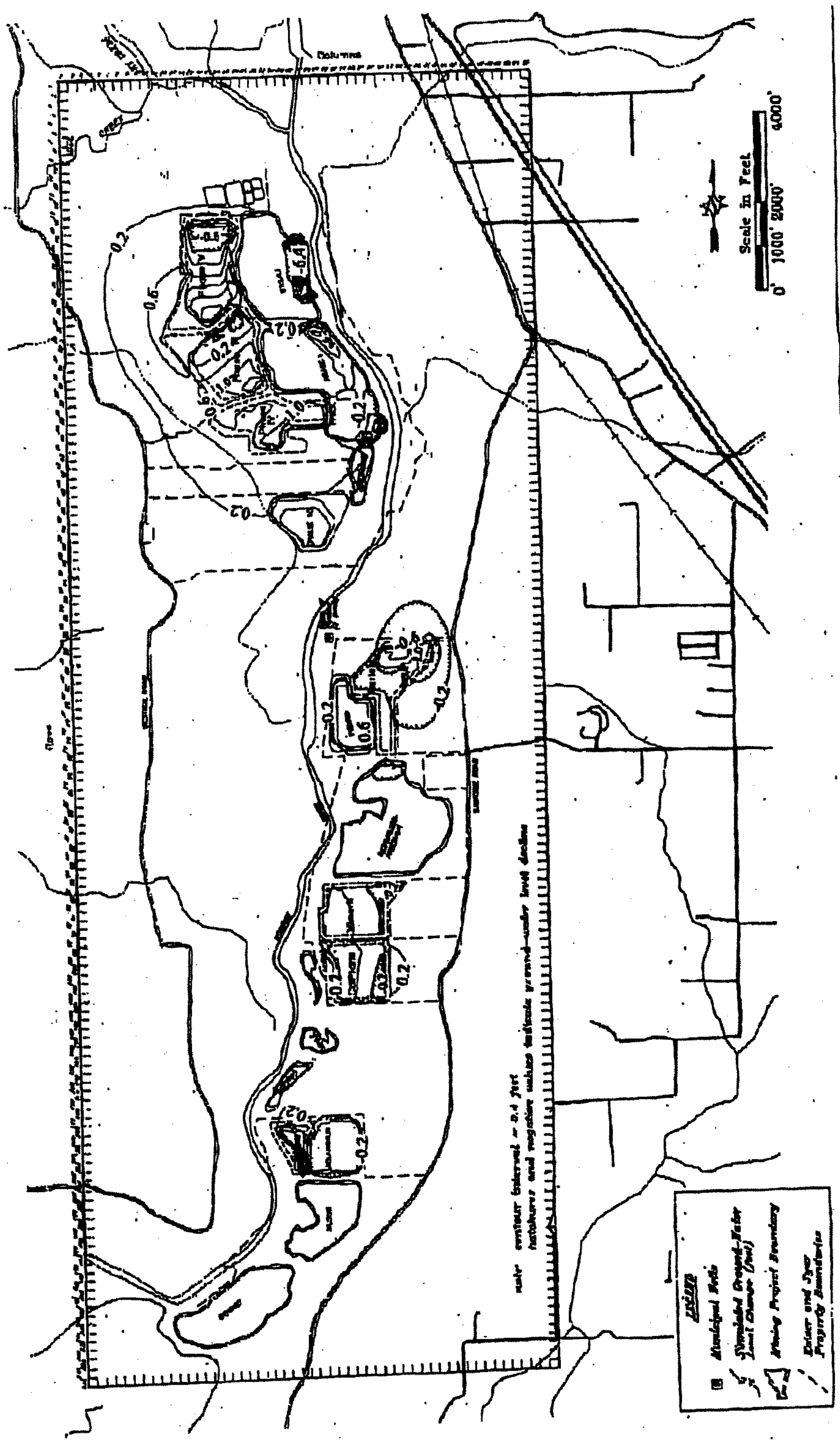


Figure 2
Contours of Simulated Ground-Water Level Change, Worst-Case Mining Scenario (1998)
All Potential Syar and Kaiser Mining Projects
Middle Reach of the Russian River

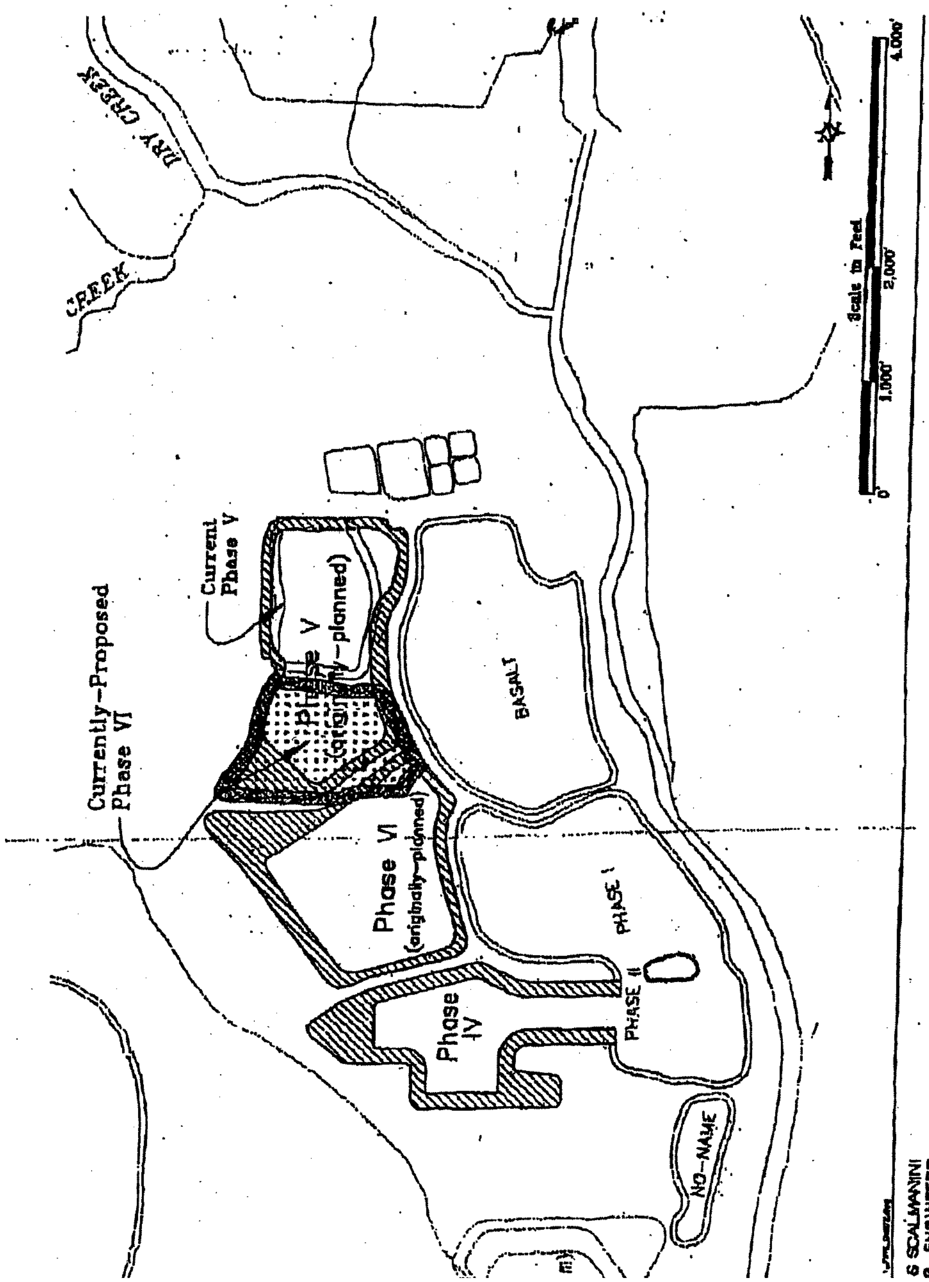
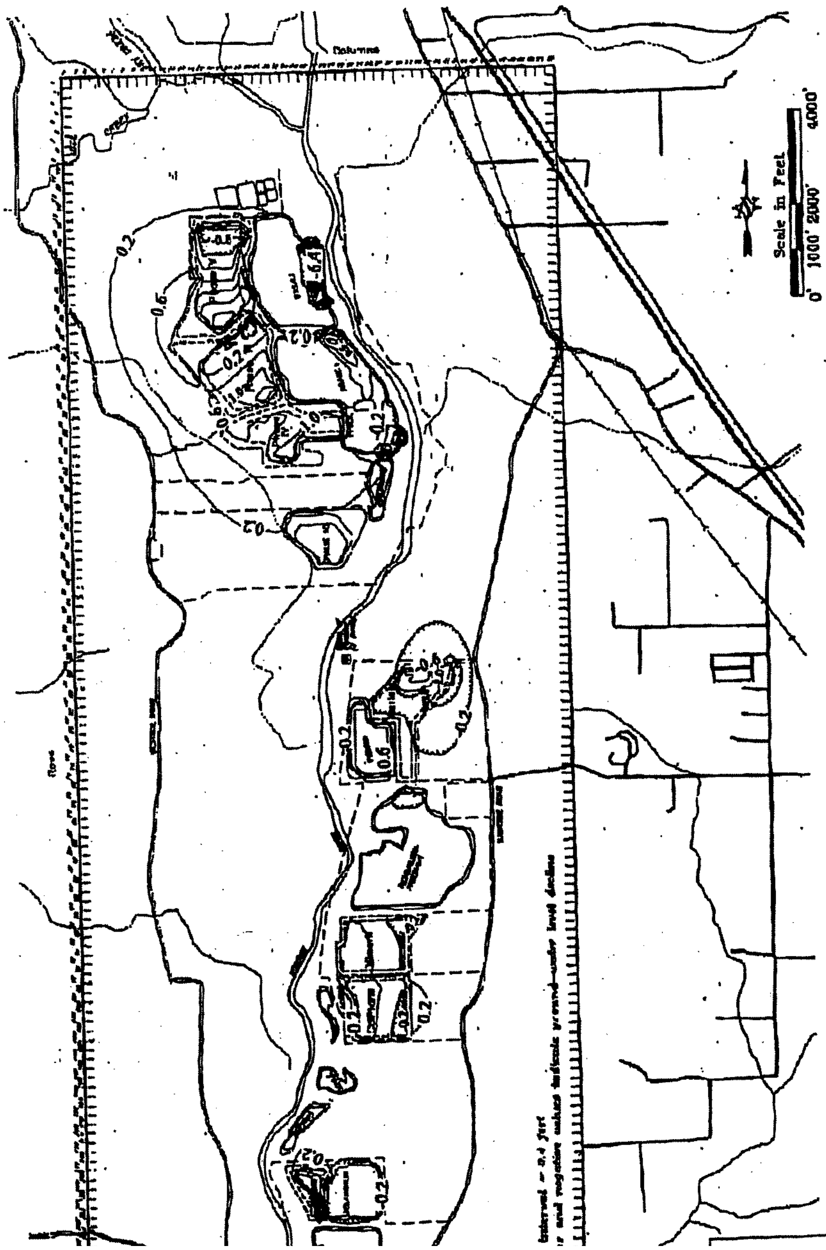


Figure 1
Potential Mining Projects Including Currently-Proposed (2002) Syar Phase
Syar Industries, Inc., and Kaiser Sand and Gravel



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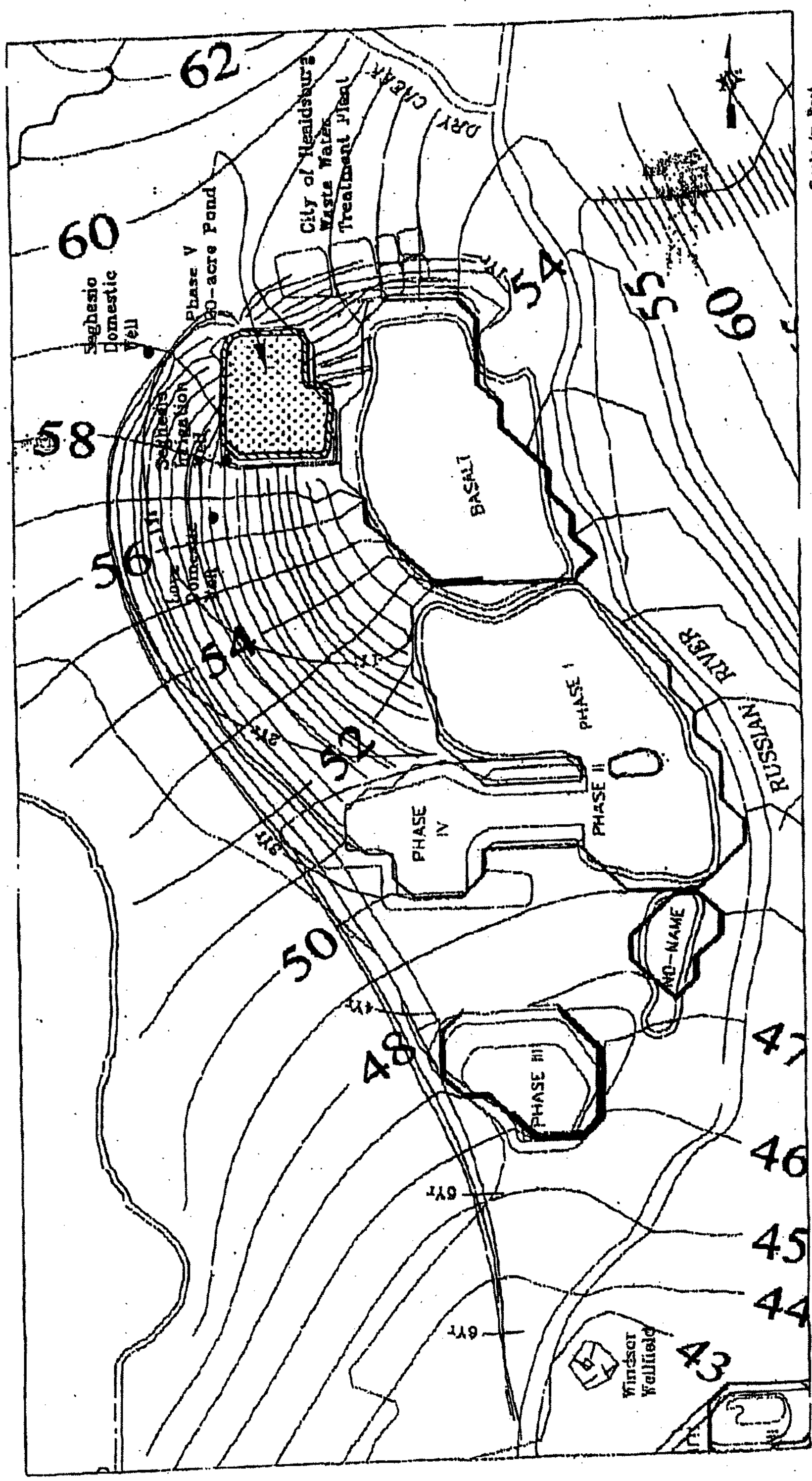

Figure 1
Simulated Contours of Equal Ground-Water Elevation and
Flow Paths and Travel Times for Outflow from the Phase V Pond
Middle Reach of the Russian River

LUHDORFF & SCALMANINI CONSULTING ENGINEERS

TECHNICAL MEMORANDUM
POTENTIAL IMPACTS FROM OUTFALL RELOCATION PROJECT
CITY OF HEALDSBURG WASTE WATER TREATMENT PLANT
MIDDLE REACH OF THE RUSSIAN RIVER

prepared for
City of Healdsburg

by
Luhdorff and Scalmanini,
Consulting Engineers

May 2001

LUHDORFF & SCALMANINI
CONSULTING ENGINEERS

Technical Memorandum

This technical memorandum has been prepared to report the results of ground-water flow modeling and particle tracking conducted to evaluate the potential water-quality impacts of the City of Healdsburg's waste water treatment plant outfall relocation project. The analysis is based on the City's current desire to discharge secondarily-treated waste water from its treatment plant to a 20.7-acre pond within the Syar Industries, Inc., Phase V parcel on a long-term basis. The City plans to cease the current discharges to Basalt Pond and redirect all subsequent discharges to the Phase V Pond. It is our understanding that the City is also currently evaluating the feasibility of upgrading the treatment plant to tertiary standards at some point in the near future.

This modeling and particle tracking work builds upon a previous evaluation of the potential water-level impacts from redirecting the treated waste water discharges to the Phase V Pond (LSCE, June 1999). The previous evaluation, conducted for the City and Syar, provided estimates of the expected stage within the Phase V Pond and the associated ground-water levels in the adjacent aquifer, including at the locations of the closest off-site water supply wells. The previous results indicated that the discharge to the Phase V Pond would be expected to raise water levels in the Pond approximately five feet. In addition, a ground-water mound would be expected to form around the Pond, raising ground-water levels in the surrounding aquifer at the closest wells by approximately two feet.

At that time, an evaluation of the potential water-quality impacts from the project had been proposed (LSCE, March 1999) in order to provide a comprehensive assessment of the project's potential impacts. The proposed water-quality evaluation was to assess current water-quality conditions (associated with the long-term discharge of treated waste water to Basalt Pond) as an indicator of the expected water-quality conditions with the planned Phase V Pond discharge. In addition, a particle tracking analysis was to be conducted to estimate the expected flow paths and travel time for water from the Phase V Pond to off-site water supply wells. The current modeling and particle tracking work, conducted at the recent request of the City and reported herein, is intended to partially address the potential water-quality impacts from the project. In addition, the City has implemented a water-quality monitoring program and is assessing the current water-quality conditions as part of the evaluation of the planned project's potential water-quality impacts.

Water Quality Evaluation Approach

The evaluation of potential water-quality impacts from the planned project was conducted using a two-fold approach. First, at the request of the City, an assessment was made of the amount of

LUHDORFF & SCALMANINI CONSULTING ENGINEERS outflow from the Basalt Pond to the adjacent portion of the Russian River. This work was completed in order to estimate the relative contribution of Basalt Pond outflow to the River's streamflow, and thereby develop an indication of the potential impact that the outflow has on the water quality of the River with the current waste water discharge to the Pond. The assessment was conducted utilizing an existing calibrated, steady-state, numerical ground-water flow model of the valley encompassing the middle reach of the Russian River (LSCE, October 1997) in conjunction with a "zone-budget" analysis. The steady-state model was prepared for Syar and for Kaiser Sand and Gravel in conformance with Sonoma County's ARM Plan requirements that such a model be developed and used to simulate projected impacts of all proposed terrace mining. The steady-state model simulates longer-term conditions whereby the ground-water levels and flow in the valley are assumed to be in equilibrium (it is calibrated based on October 1996 hydrologic conditions). The zone budget analysis provides a method for quantifying the model-simulated volume of flow into and from designated zones within the model area. In the current assessment of Basalt Pond outflow, the steady-state model and zone budget analysis were used to quantify the amount of flow (simulated by the model) from the Basalt Pond, eastward through the area dividing the Pond and the Russian River, directly toward the adjacent portion of the River. This approach was also used to quantify the amount of flow from the Pond northward and westward to the adjacent aquifer and southward to other pond areas.

Secondly, as originally proposed, a particle tracking analysis was completed for the Phase V Pond to estimate the direction and rate of movement of water (and any conservative chemical constituents) from the Phase V Pond to various locations within the valley. This work was completed in order to estimate the travel time for water migrating from the Phase V Pond to several known water supply wells and to the Russian River, thereby providing an indication of the length of time during which the water would be subject to additional soil/aquifer and pond treatment. The analysis was conducted utilizing the steady-state model (configured with a scenario simulating the City's discharge to the Phase V Pond) coupled with a particle tracking program (Path3D). In the current analysis, it was determined whether water from the Pond was expected to flow toward the Seghesio irrigation and domestic wells, the Love domestic well, the Town of Windsor municipal wells, the other Syar mining ponds, and the Russian River; and if so, the travel times to those features were calculated. Based on the results of the particle tracking analysis, a zone budget analysis was also conducted that quantified the amount of water (simulated by the model scenario) that would flow from the Phase V Pond toward the Russian River and the adjacent aquifer and pond areas. This analysis was completed in order to compare the amounts of outflow from the two ponds (current discharge into the Basalt Pond and planned discharge to the Phase V Pond) to the River and adjacent aquifer and ponds.

Basalt Pond Analysis, Existing Discharge

This analysis utilized the calibrated steady-state model, which simulates the existing combined discharge of treated waste water (City) and aggregate wash water (Syar) to the Basalt Pond, in conjunction with a zone budget analysis. The model incorporates the discharge that occurred during October 1996, the model's calibration period (1.34 mgd or 2.1 cfs). Zone budget "nodes" were placed in the model cells surrounding and underlying the Basalt Pond (specifically, in the Lake Package cells comprising Basalt Pond in the model) to calculate the volume of outflow from the Pond. The zone budget analysis procedure is designed to calculate a "net" flow volume between the nodes and adjacent model cells. However, because the discharge of treated waste water to Basalt Pond is of a sufficient volume to raise the pond stage approximately seven feet above the surrounding aquifer and the River (LSCE, October 1997), water only flows from the Pond to the surrounding zone budget nodes (i.e., no water flows from the nodes into the Pond). As a result, in this case, the zone budget analysis calculated "gross" flow volumes to the nodes. A review of the model's water budget, in particular the Lake Package terms, confirmed that water only flows out from the Pond to the aquifer.

The results of the zone budget analysis indicate that the amount of outflow from the Basalt Pond along its eastern edge is approximately 0.35 cfs. This outflow is expected to reach the adjacent portion of the Russian River, which is approximately 400 feet away, in the most direct route of travel; alternatively, outflow from the Pond along its other portions necessarily travels farther, either through the adjacent aquifer to the north and west, into Syar's Phase I/II Pond to the south, or to the thin portion of aquifer beneath the Basalt Pond. The inflow to and predicted outflow from Basalt Pond is presented in Table 1.

Table 1
Inflow and Predicted Outflow, Basalt Pond
Calibrated Model

Flow Components	Flow Volumes (cfs)
Discharge of treated waste water and aggregate wash water to Pond	2.1
Direct Outflow toward Russian River (East)	0.35
Direct Outflow to Aquifer (North and West)	0.30 (0.08 and 0.22, respectively)
Direct Outflow toward Phase I/II Pond (South)	0.29
Direct Outflow through Pond Bottom	1.06
Net Loss from Evaporation and Rainfall	0.1
Total Outflow	2.1

The average summer and fall streamflow in the adjacent part of the Russian River has been 200 to 300 cfs since 1986 when Decision 1610 designated the current schedule of minimum releases from Warm Springs Dam to Dry Creek (tributary to the Russian River) (personal communication, J. Flugum, City of Healdsburg, May 1, 2001; LSCE, October 1997). Relative to this average streamflow, the contribution of outflow from the Basalt Pond to the River (assuming the entire volume of 0.35 cfs reaches the River directly) is approximately one-tenth of one percent of the streamflow. Acknowledging that it is likely that the entire volume of treated waste water and aggregate wash water discharged to Basalt Pond (2.1 cfs) will eventually migrate to the River, either directly through the aquifer or indirectly following additional soil/aquifer or pond treatment, the contribution of the entire volume of the discharge to the River (as outflow from the Basalt Pond) is less than one percent of the streamflow. As such, it would be expected that the potential impact of the Basalt Pond outflow on the water quality of the River is indistinguishable.

The outflow volume predicted by the calibrated model between the Basalt Pond and the River (0.35 cfs) was compared to the outflow volume calculated using an analytical method (Darcy's Law). The analytical method calculates the volume of flow based on the cross-sectional area through which flow occurs, the hydraulic conductivity of the material through which flow occurs, and the gradient for flow. The cross-sectional area of flow between the Pond and the River was estimated as 120,000 ft^2 from previous geologic work in the area, specifically a contour map of the base of alluvium constructed for the model area (LSCE, October 1997). The hydraulic conductivity of the material in that area was estimated as 16 ft/day, which was an effective hydraulic conductivity calculated from the model-calibrated conductivity values for the Pond sediment liner and aquifer materials (and their relative thicknesses). The gradient for flow between the Pond and the River was calculated as 0.0175 from the observed hydraulic heads for the model calibration period (October 1996). Using Darcy's Law to calculate the volume of flow as the product of these three terms, the calculated outflow along the eastern edge of the Basalt Pond toward the River is 33,600 ft^3/day or 0.39 cfs, which is comparable to the amount predicted utilizing the calibrated model and zone budget analysis. This "check" of the predicted outflow volume from the model analysis provides some level of confidence in the model's reliability and the predicted outflow volume.

Phase V Pond Analysis, Planned Discharge

In the previous analysis of potential water-level impacts from redirecting the City's discharge to the Phase V Pond (LSCE, June 1999), one model scenario predicted the stage in a 20.7-acre Phase V Pond and the ground-water levels in the surrounding aquifer. The Phase-V parcel is currently being mined and is approaching 20 acres in size (personal communication, J. Perry, Syar, April 11, 2001). The actual annual average discharge to Basalt Pond during the year 1996 (1.5 mgd or 2.3 cfs) was used in the simulation of the planned discharge to the Phase V Pond. This rate was selected because 1996 had the highest recorded discharge of the last several years, thus providing a current and conservative evaluation of the potential impacts. Use of an average discharge rate is appropriate in steady-state modeling, which predicts longer-term equilibrium conditions. It should be noted that the model scenario also simulated the individual pumpage from the Town of Windsor municipal wells and the areal pumpage for irrigation purposes.

For this analysis, the model scenario described above was coupled with a particle tracking analysis using *Path3D* (3rd version, S.S. Papadopulos and Associates, Inc., 1991). "Particles" were placed in the model cells surrounding the Phase V Pond to determine the direction and rate of movement of water from the Pond through the model area. The aquifer porosity specified for the particle tracking was 20 percent, based on a typical value for unconsolidated sand and gravel (DWR, 1983). The particle tracking procedure is typically used to predict the paths and travel times for ground water and any conservative chemical constituents (those that migrate by advection) in the ground water. The results of the particle tracking analysis indicate that water is expected to flow from the Phase V Pond in a radial pattern to the surrounding and underlying aquifer and to the adjacent mining ponds. Of particular importance is that, from the west and south edges of the Phase V Pond, the water is expected to flow southward in the direction of the Seghesio irrigation well and the Love domestic well. Also, from the north edge of the Phase V Pond, the water is expected to flow eastward (north of the Basalt Pond) in the direction of the Russian River. The predicted paths of water flowing out of the Phase V Pond are shown on a contour map of the simulated ground-water elevations in the northern portion of the valley encompassing the middle reach of the Russian River (Figure 1).

The particle tracking analysis indicates that outflow from the Phase V Pond is expected to migrate in various directions from various portions of the Phase V Pond: 1) from the north edge, toward the Russian River (traveling north of Basalt Pond), 2) from the east edge, toward the Basalt Pond, 3) from the south edge, toward Syar's Phase I/II Pond (including the Phase IV extension), and 4) from the west edge, toward the Phase I/II Pond (including the Phase IV extension), as well as to Syar's Phase III Pond. This analysis indicates that a small portion of the outflow from the west edge is expected to migrate further south parallel to and on the west side of the Russian River, across from the Town of Windsor's municipal wells, but not to the wells (see Figure 1). Some portion of the Phase V Pond outflow will migrate toward the Russian River "directly" (in the aquifer to the north of Basalt Pond) while the remaining portion of outflow will migrate toward the River "indirectly" (by first flowing toward and then into Syar's other mining ponds mentioned above, before flowing out of those ponds). The analysis indicates that outflow from the Phase V Pond is expected to migrate directly toward the nearby Seghesio irrigation well and the Love domestic well, but is not expected to migrate directly to the more distant Town of Windsor municipal wells, which are approximately 9,300 feet (flow path distance) to the southeast. While the particle tracking analysis indicates no direct migration of outflow to the municipal wells, it is acknowledged that some amount of outflow would likely eventually migrate indirectly to the municipal wells. This would likely occur by first flowing through the aquifer and mining ponds (as described above), then contributing flow to the Russian River streamflow and "underflow", before being intercepted by the municipal wells.

The particle tracking analysis also predicted the travel times for water flowing out of the Phase V Pond to reach the water supply wells, the Russian River, and adjacent mining ponds in the valley. The outflow is expected to migrate southward through the aquifer to the Love domestic well in approximately three months, while likely reaching the Seghesio irrigation well in significantly less time. The travel time to the latter well cannot be predicted with any certainty using the particle tracking method because the size of the model cells (200 feet) is approximately the same as the distance between the well and the closest edge of the Phase V Pond. The expected travel time for outflow to migrate eastward through the aquifer to the Russian River (north of the Basalt Pond) is approximately one year. The expected travel time for outflow to migrate southeastward through the aquifer to the Phase I/II Pond is approximately one to two years and to the portion of the

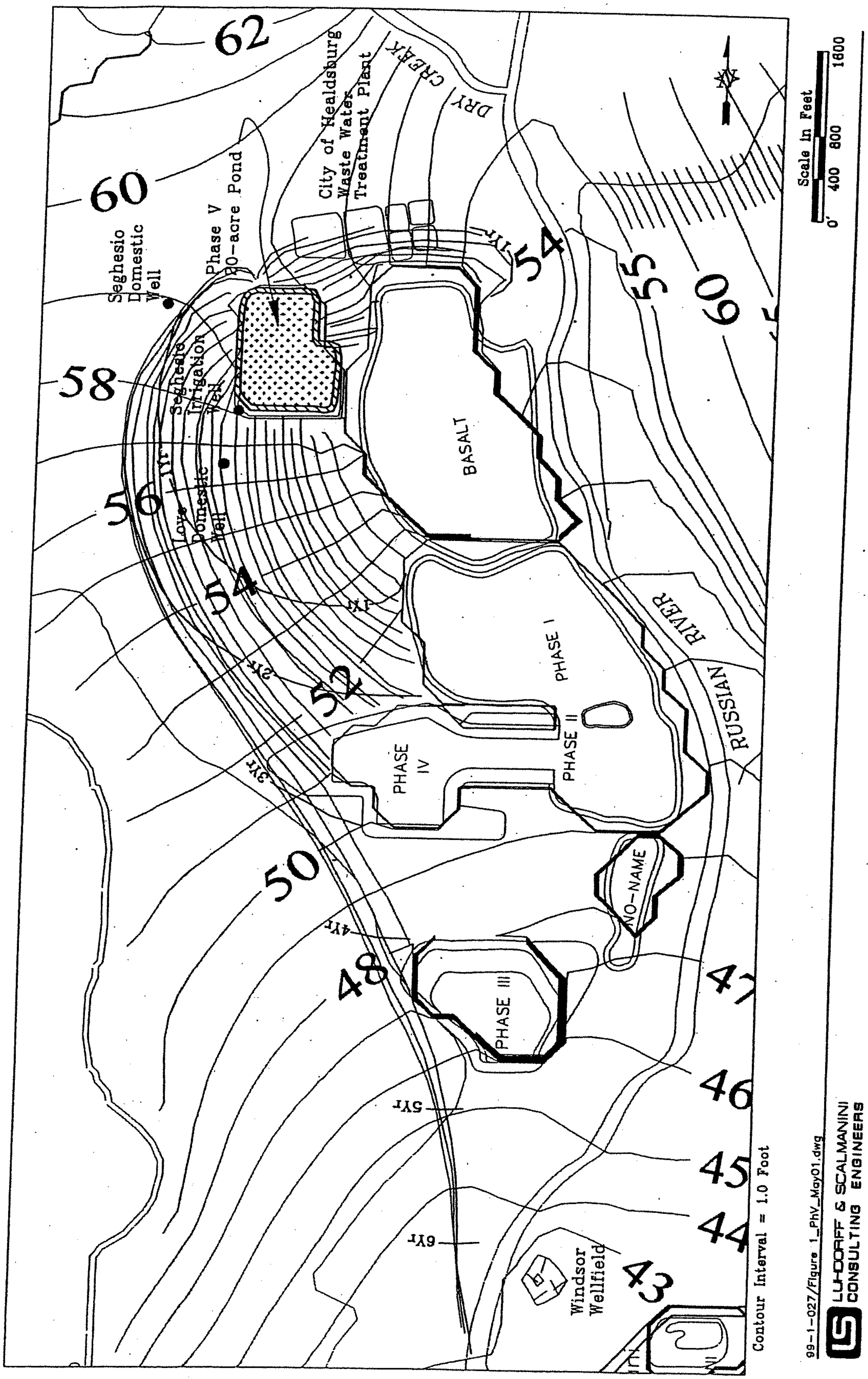

Figure 1
Simulated Contours of Equal Ground-Water Elevation and Flow Paths and Travel Times for Outflow from the Phase V Pond Middle Reach of the Russian River

California Regional Water Quality Control Board
North Coast Region
Beverly Wasson, Chairperson

Alan C. Lloyd, Ph.D.
Agency Secretary

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Arnold Schwarzenegger
Governor

March 8, 2005

Mr. Michael Sotak
Permit Resource and Management Department
2550 Ventura Avenue
Santa Rosa, CA 95403

Dear Mr. Sotak:

Subject: Mitigated Negative Declaration regarding Syar's Application for a Zone Change, Use Permit and Reclamation Plan for the Phase VI Terrace Pit

File: City of Healdsburg Wastewater Treatment Facility, WDID No. 1B82046OSON, NPDES Permit No. CA0025135

Thank you for the opportunity to comment on the above referenced project. The North Coast Regional Water Quality Control Board (Regional Water Board) is a responsible agency for this project, as defined by the California Environmental Quality Act (CEQA). It is our understanding that the Board of Supervisors is reopening the public hearing on March 15, 2005, at the City of Healdsburg's request, on the Mitigated Negative Declaration and the proposed project to discuss the condition of approval for the project requiring dedication of open space easements over the Phase V and Phase VI Terrace Pits.

The Regional Water Board strongly supports the dedication of open space easements for the Phase V and Phase VI Terrace Pits. Since September 1999 when the City of Healdsburg (City) decided to relocate their outfall to the Phase V Pit, Regional Water Board staff have been concerned with the impact to nearby drinking and agricultural wells from the discharge of wastewater. The areal groundwater is designated for municipal drinking water use and is of high quality. Statewide Anti-Degradation Policy requires protection of existing high quality waters to avoid degradation from discharges of waste. While Regional Water Board staff and our expert consultants have found that many of the City's groundwater modeling studies have poor model construction in addition to other flaws, the studies do indicate that nearby wells could be impacted by the discharge of wastewater into the Phase V Pit.

California Environmental Protection Agency

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Additionally, the Basalt Pond that the City currently discharges to has characteristics that are likely more protective of water quality than the Phase V Pit; the Basalt Pond is located further away from drinking water wells, is more shallow and has more soil in the substrate, introduced from the reclamation process, which likely slows the rate that the wastewater leaves the Pond and enters the surrounding groundwater and the underflow of the Russian River. The proximity to drinking water wells, greater depth, smaller surface area and lack of soil substrate of the Phase V Pit will likely cause increased pollution to the nearby wells.

Please contact Mona Dougherty at (707) 570-3761 or mdougherty@waterboards.ca.gov, if you have any questions.

Sincerely,

John Short

John L. Short
Senior Water Resource Control Engineer

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LETTER I18 RESPONSE

Judith Olney
Received on March 18, 2005

I18-1 The comment incorporates by reference the comment letter provided by Don McEnhill with the Russian Riverkeeper organization (comment letter O4) and Dan Wickham (comment letter I22). The City will consider the comments submitted by the referenced authors in its deliberations on the project.

I18-2 This comment is a general and introductory and indicates opposition to the Phase V Pond option for effluent disposal. Note that, with respect to wastewater discharge, the City is proposing to upgrade its treatment plant to tertiary standards and to discharge water that meets Title 22 standards for unrestricted use. As stated in the draft EIR and in the response to comment S2-8, the proposed project would not adversely affect beneficial uses of groundwater or river water. No information has been introduced by any comments that would refute this conclusion.

I18-3 It is unclear why the comment refers to a program EIR (which is specifically defined in CCR Section 15168). The draft EIR is a project-level EIR, and as described in Section 1.2 of the draft EIR, the site-specific analysis provided in the draft EIR meets the requirements of CEQA and fully supports the consideration and authorization of discretionary approvals and use permits for the construction and implementation of a preferred set of tertiary treatment upgrades, effluent disposal, and seasonal irrigation reuse options. The comment asserts that the draft EIR does not include a full range of alternatives but does not explain why. Chapter 5 provides a detailed discussion of the alternatives screening that was conducted to select the WWTP upgrade options that were evaluated at an equal level of detail in the draft EIR. The main analysis in the EIR addresses several alternatives. Because specific comments are not provided, no further response can be provided.

I18-4 In the draft EIR, the implementation of the Phase V Pond option was evaluated for every potential environmental impact on the resources evaluated in the EIR. As suggested in the comment, it is correct that the only significant impacts associated with the Phase V Pond option were identified for the construction-related contribution to several of the resource effects (e.g., air quality emissions, noise). The environmental impact analysis was complete for all other potential resource issues, such as for potential water quality effects.

Please refer to the responses to comments S2-8 and S2-9, which describes that the information and analysis presented in the draft EIR fully addresses the RWQCB concerns related to this comment. The water quality analysis (Impact 3.2-3) and hydrologic analysis (Impact 3.2-5) were based on available measured effluent and receiving water quality data, projected tertiary treated effluent quality data, and available groundwater data and modeling results. The response to comment S2-8 describes how the draft EIR shows that the water quality effects under all the proposed effluent disposal options would comply with applicable water quality objectives and would not result in adverse impacts on drinking water or to any other designated beneficial use. In all cases, tertiary treated wastewater produced and disposed of or reused would be of higher quality than wastewater under current conditions. Thus, the draft EIR correctly concludes that the potential water quality and hydrologic impacts would be less than significant.

Although the comment expresses apparent disagreement with the EIR conclusions, it does not explain why the conclusions are incorrect. No further response can be provided.

I18-5 The City acknowledges that minor changes in the existing and future environmental conditions may result in slight differences in the potential mounding and plume movement characteristics of wastewater that is discharged to the Phase V Pond and to the shallow percolation ponds, as compared to the previous modeling that was conducted by Ludhorff and Scalmanini Engineers in association with the City's 2001 Wastewater Outfall Relocation EIR. However, it was determined that additional modeling was unnecessary to characterize the potential differences because the previous water quality studies and hydrologic modeling results show that the discharges would cause minor changes to the background conditions and have less-than-significant environmental impacts. As previously discussed, the effluent discharged from the upgraded wastewater treatment plant will be high-quality water that meets drinking water and all other applicable standards.

Further, as described in the impact analysis in the draft EIR (Impact 3.2-5), the mounding effects would be minor with respect to the rooting depth of grapes, existing groundwater levels, and seasonal fluctuations, and they would not adversely change the existing groundwater characteristics beyond several hundred feet from the perimeter of a discharge pond. The water quality analysis (Impact 3.2-3) in the draft EIR, and as described above in the responses to comments S2-5, S2-8, S2-9, S2-10, and I18-4, shows that the discharge of wastewater would fully comply with applicable RWQCB regulations and regulatory water quality objectives and would not adversely degrade the beneficial uses for drinking water, agricultural, adjacent existing or future mining ponds, or any other beneficial uses. Therefore, differences in the baseline project area conditions in these highly permeable aquifer materials would not appreciably change the demonstrated hydrologic dispersion and water quality effects of project-related discharges when compared with previous modeling results for the Phase V Pond. Consequently, the draft EIR accurately characterizes the small differences to previously identified less-than-significant impacts as also being less than significant. The City believes that the draft EIR accurately characterizes the minor changes that would result under variable baseline conditions and that these minor changes would not alter the conclusions of the draft EIR.

Although the comment raises concerns, none address the basic premise with respect to the quality of treated wastewater. The comment does not provide information that would change the conclusions or the analyses presented in the draft EIR.

I18-6 Please refer to the responses to comments S2-5, S2-8, S2-9, and I18-5, which address the less-than-significant potential hydrologic impact (Impact 3.2-5) and water quality impact (Impact 3.2-3). Pursuant to the State CEQA Guidelines, CCR Section 15126.4(a), mitigation measures are required only to avoid or minimize significant environmental impacts. Therefore, mitigation measures were not necessary for these impacts.

I18-7 The comment recommends several landscaping design considerations. Final designs and plans will not be developed until there is an approved project. In addition, please refer to the response to comment I2-34, which identifies the City's addition to Mitigation Measure 3.9-1. The addition describes the City's commitment to prepare a vegetation planting plan for the berms to address visual impacts of the shallow percolation ponds. The public input process for these types of design considerations is described in the response to comment O2-10.

Both the MBR and conventional extended aeration wastewater treatment upgrade options would produce high-quality tertiary treated wastewater with similar contaminant removal characteristics; the response to comment I4-1 further describes some of the major differences between these two processes.

Although carbon dioxide production is not a significant impact of the project, the City will note and consider in its deliberations on the project the recommendations to investigate obtaining carbon credits for the redwood plantings associated with the Syar seasonal irrigation reuse route and to investigate the PG&E energy efficiency program.

I18-8 Please refer to the response to comment L4-13, which fully describes the water conservation measures potentially available with the WWTP upgrade options and other measures being implemented by the City.

I18-9 The response to comment S2-1 describes the status of the City of Santa Rosa's Geysers Pipeline facility and the reasons why the City considers it not to be a feasible option for effluent disposal at this time.

I18-10 The comment will be noted by the City as support for the Basalt Pond effluent disposal option and all of the seasonal irrigation reuse options.

I18-11 The comment states that the Basalt Pond should be considered the environmentally superior alternative because the option would provide greater contaminant removal via wastewater "polishing" than the Phase V Pond and shallow percolation pond options. The City does not support this position because all three options would have similar effluent quality characteristics and ability to operate in full compliance with the applicable regulatory water quality objectives and anticipated RWQCB permit terms and conditions. In particular, the quality of undiluted treated wastewater effluent is anticipated to be fully compliant with the anticipated regulatory water quality objectives applicable to each effluent discharge option. Thus, the small potential differences that might occur after the effluent is discharged to the disposal facility via differences in physical, chemical, biological, soil interaction, or hydrologic properties are not relevant, given that the water quality associated with the undiluted effluent would be within acceptable limits.

With regard to issues of controversy, the EIR thoroughly evaluates the water quality impacts of each of the project options.

I18-12 The comment states, and refers to an attached June 16, 2004, letter by Shute, Mihaly, & Weinberger sent to the State Water Resources Control Board on behalf of the Westside Association to Save Agriculture that also states, that any proposed wastewater discharge to the Phase V Pond for effluent disposal option would require an NPDES permit because of the hydrologic connection to the Russian River. This issue was the central subject of the January 23, 2004, U.S. District Court decision for the *Northern California River Watch vs. City of Healdsburg* case regarding the City's existing waste discharge to the Basalt Pond. The City has submitted a petition to the Ninth Circuit Court of Appeals for review of the U.S. District Court decision. Because this issue is a legal issue currently being deliberated in the courts, the City will not use this environmental review process as a forum for debate.

Moreover, as described below, the issue is not relevant to the review and comment of the environmental impacts of the project and the draft EIR, nor is the referenced letter a comment letter on the draft EIR (it was submitted 7 months before publication of the draft EIR). Whether an NPDES permit would be needed is not relevant to the water quality impact analysis and conclusions presented in the draft EIR. As described in the response to comment S2-8 and summarized above in the response to comment I18-1, the information presented in the draft EIR shows that the project would produce high-quality effluent that could be disposed of or reused in full compliance with the applicable water quality objectives and regulations that the RWQCB would use as the basis for permit terms and conditions.

I18-13 The response to the comment S2-8 fully addresses this comment regarding the groundwater modeling conducted for the 2001 Wastewater Outfall Relocation EIR, as well as validation of the modeling by Ludhorff & Scalmanini Engineers and a third-party independent consultant.

I18-14 This comment is not entirely correct and does not raise a significant environmental issue; therefore, a specific response cannot be provided. However, in general the applicable regulatory concentration-based water quality objectives applied through discharge permits to a surface water versus a groundwater will vary depending on several factors, including the beneficial uses that need to be protected, the governing regulation (i.e., Basin Plan, Title 22, CTR), specific water quality parameters (i.e., metal, organic compound, coliform bacteria), and the proposed discharge operation characteristics (e.g., dilution flow credit, receiving water quality characteristics). Consequently, the single statement provided in the comment does not reflect the complex nature of how regulatory water quality objectives are established and applied in permits.

I18-15 The response to comment S2-8 fully addresses the concerns expressed in this comment.

I18-16 Please see the response to comment S2-10, which was prepared for a similar comment regarding the state antidegradation policy. The City will be required to comply with the state antidegradation policy and the Porter-Cologne Act and does not assert otherwise.

I18-17 The comment requests information regarding the City's legal costs that is not relevant to environmental impacts of the project or the contents of the EIR. As described in the response to comment S2-10, the City believes the proposed upgrade to tertiary treatment processes represents the best practicable treatment control available and is consistent with the Porter-Cologne Water Quality Control Act and the state antidegradation policy.

I18-18 The Title 22 drinking water quality MCLs are human-health criteria that apply to the quality of water that is delivered and consumed. Thus, centralized water supply service providers such as the City's municipal supply must meet or exceed the Title 22 MCLs in the water distribution network after water has been treated. The Basin Plan incorporates by reference all the Title 22 criteria and applies these criteria to the untreated source water designated for domestic beneficial uses (i.e., certain surface waters, all groundwater) to ensure that these water sources can reliably provide safe drinking water, particularly untreated domestic groundwater wells. The Title 22 criteria do not *per se* apply to wastewater discharges. However, the human health criteria can be used as the basis to establish a permit limit for a wastewater discharge when said criteria are the lowest applicable concentration-based criteria. Drinking water standards address a number of chemical constituents, but not all. The issue of pharmaceuticals—generally combinations of chemicals—is not currently regulated but is under study. This issue is addressed in Impact 3.2-4 of the draft EIR.

I18-19 As described in the draft EIR (page 3.2-13), elevated values of aluminum found in groundwater monitoring of Syar and City wells in the project area are not attributable to the City's wastewater and are believed to be naturally occurring. The EPA recommended aquatic life criteria for aluminum designated to prevent chronic aquatic toxicity are described in the draft EIR on page 3.2-35 and vary depending on the pH and total hardness concentrations in the receiving water. Therefore, at a fixed neutral pH value of 7.0, the criteria vary in relation to water hardness. As shown in the discussion for Impact 3.2-3 in the draft EIR, aluminum in the City's undiluted wastewater is only slightly higher than the lowest regulatory objective, and the projected effluent quality would be lower. However, the EIR concludes that project-related discharges of aluminum would comply with regulatory objectives because the analysis does not account for the variable pH and hardness values actually present in the project area receiving waters, and tertiary filtration will remove some aluminum that is typically associated with filterable particles.

I18-20 A general answer to describe the effects of these individual chemicals on grape production is not possible; moreover, it is not relevant to the review of the draft EIR because regulatory water quality objectives are developed in recognition of agricultural crop toxicity thresholds. As identified in the draft EIR, the water quality analysis was conducted to evaluate potential discharge water quality effects with respect to the lowest applicable water quality objectives shown in Table 3.2-4, which included agricultural guidance values that have been established by the RWQCB (2003). The applicable agricultural water quality goal is 200 micrograms per liter (μg/l) for copper and 5,000 μg/l for aluminum. The existing measured levels of copper in the City's effluent have generally been less than 30 μg/l, and the maximum value of aluminum has been 150 μg/L. Consequently, constituent concentrations in the City's effluent are well below the lowest agricultural goals. Therefore, the project-related discharges would not adversely affect the quality of groundwater for agricultural uses.

I18-21 The potential groundwater mounding effects of the effluent discharges are fully described in the discussion of Impact 3.2-5 of the draft EIR.

I18-22 Please refer to the response to comment I18-5, regarding groundwater hydrologic effects of the effluent disposal options. In addition, the analysis for Impact 3.2-5 in the draft EIR documents the potential mounding effect under worst-case summer low groundwater conditions. The potential impacts during other seasons would be less because the background groundwater level conditions are known to vary over the entire range of depth from low levels to near the ground surface. The previous groundwater modeling results indicate that mounding effects cause minor changes in groundwater levels and over a relatively small, limited spatial area surrounding the discharge location. The relative magnitude of the potential project-related groundwater mounding effects are particularly small relative to these much larger natural seasonal variations that the existing crops are exposed to. Therefore, the draft EIR accurately characterizes the small effects as a less-than-significant impact.

I18-23 The shallow percolation ponds are located out of a designated floodplain and would be protected from flooding inundation.

I18-24 Please refer to the response to comment S2-5. Shallow percolation ponds would be constructed to generally maintain a separation distance between the bottom of the ponds and the groundwater table for most of the year. During winter, groundwater may rise above the level of the shallow percolation ponds, but only for extremely short periods during severe storm events. However, the ponds would continue to function properly during periodic inundation from groundwater because the wastewater would provide a positive hydraulic head difference between the pond water surface and the groundwater table.

I18-25 The City anticipates that there is only one well in the area identified for shallow percolation ponds: the existing Seghesio irrigation well located on parcel 110-080-018. This well is used to irrigate the area that would be used for construction of the shallow percolation ponds.

I18-26 Please refer to the responses to comments S2-5 and I18-20, which address the issues expressed in this comment.

I18-27 As described in the response to comment S2-12, the percolation rates are expected to be very similar for the shallow percolation ponds sites and other areas of the Russian River Valley. Therefore, the anticipated mounding effect of up to 60 acres of shallow percolation rates will be similar to or less than the effects modeled for the Phase V Pond.

I18-28 Please refer to the response to comment I18-6.

I18-29 A wildlife biologist and botanists conducted assessments of the shallow percolation sites from aerial photography and site "windshield" level site visit analysis. Mitigation is included in the draft EIR to reduce any potential impacts on sensitive resources. Because the area is currently in active agricultural land use, few sensitive resources would be affected. The comment is not correct that the habitat and species present at the shallow percolation ponds sites would be the same as those identified at the Salvation Army parcels. Disturbed agriculture lands generally have much lower levels of habitation and species diversity as reflected in the comparisons presented in the draft EIR for vineyards (page 3.4-1) and the memorandum describing the Salvation Army property (Appendix G), which contains wetlands and vernal pools, both of which are sensitive habitats.

I18-30 The air quality analysis presented in the draft EIR addresses all the emissions of criteria pollutants from diesel equipment in the discussion of Impact 3.6.1 (page 3.6-18) and toxic emissions in the discussion of Impact 3.6-4 (page 3.6-27).

I18-31 The existing WWTP performance for total suspended solids is not relevant to the water quality analysis of the effects of the proposed tertiary treatment upgrades. Removal of total suspended solids to extremely low levels is a key feature of tertiary treatment, and the resulting effluent concentrations are typically consistently lower than background receiving water levels.

I19

Ricci Vineyard
396 Foreman Lane
Healdsburg, CA 95448

March 21, 2005

Jim Flugman and George Hicks
City of Healdsburg Public Works Department
401 Grove Street
Healdsburg, CA 95448

We're writing in regard to the percolation ponds on Foreman Lane. According to your EIR reports there is no significant impact on the reports with the W.W.T.P. concerning Foreman Lane.

This would be a great impact on fifteen homes and ranches on Foreman Lane. These homes and lands are our livelihood, and most of us have lived here for 37 years or longer. I19-1

We want you to take more consideration of Basalt Pond and irrigation systems for the ranches in the area. This would also be revenue for the city and help pay for the project.

If you were to use the percolation ponds, the expense of the 60 acres and the excavating of the ponds, the cost would probably be in the $30,000,000.00 plus area. I19-2

Looking at your plans on page Exhibit 2-7, you are leaving seven homes on small pieces of property. In turn, these ponds would ruin our wells, give foul odors, and block views of the countryside, which will decrease the value of the remaining property. I19-3

Syar Property has 6-8 acres plus of vineyard between Basalt Pond and pond 5. This currently has discharged piping going into Basalt Pond, which would be the likely solution, in conjunction with your effluent storage pond in the new treatment plant, or at least should be considered as an option. I19-4

Regarding the new treatment plant, we hope for good landscaping, low noise factor, no foul odors, and lights not shining towards our properties. I19-5

Sincerely,

Eugene and Darlene Ricci

LETTER I19 RESPONSE

Eugene and Darlene Ricci
Received on March 21, 2005

I19-1 The City believes that the analysis and discussion of potential environmental impacts in the draft EIR adequately addresses all the effects of the project. Please refer to the response to comment O2-11, which describes why socioeconomic effects are not considered environmental impacts in the EIR. Because the comment does not identify any specific example related to the suggestion that other issues were not addressed with sufficient detail, and because it does not offer any substantiation that would contradict the analysis of environmental impacts in the draft EIR, a more specific response cannot be provided.

I19-2 The comment will be noted by the City as support for the Basalt Pond effluent disposal option and all the seasonal irrigation reuse options.

I19-3 The comment expresses an opinion on the potential high cost of construction of the shallow percolation pond options. Please refer to the response to comment I4-26, which describes why economic cost factors are not specifically considered with alternatives that were evaluated in detail. The comment states that implementation of the shallow percolation ponds option would cause adverse impacts on groundwater wells and odors. Refer to the responses to comments S2-5, S2-8, and S2-9, which describe the water quality impact analysis of effluent disposal for the Phase V Pond and shallow percolation ponds options. As described in the discussion of Impact 3.6-5 (page 3.6-29) of the draft EIR, the potential odor impacts are associated with the wastewater treatment plant operations; however, the disposal of high-quality tertiary treated wastewater discharged to the ponds would not cause substantial odors. Rather, the chemicals responsible for noxious odors in wastewater would be removed through the treatment process.

The comment also expresses concern that the shallow percolation ponds option may cause reduced property values. Please see the response to comment O2-11, which describes the reasons that socioeconomic impacts are not considered environmental impacts. The comment also expresses concern for the shallow percolation ponds option to cause visual impacts, which are addressed in the draft EIR. In addition, please refer to the response to comment I2-34, which identifies the City's addition to Mitigation Measure 3.9-1. The addition describes the City's commitment to prepare a vegetation planting plan for the berms to address visual impacts of the shallow percolation ponds. Based on the concerns expressed in this comment, the City will consider this comment as express opposition to the shallow percolation pond options.

I19-4 The City will note this comment as support for the Basalt Pond option for effluent disposal.

I19-5 Please refer to the response to comment O2-10, regarding aesthetic characteristics of the facility designs and the process for providing recommendations to the Planning Commission, which is the entity responsible for conducting design review of the project. The City will note this comment for the record as a concern for the aesthetics of the WWTP, and it will be considered by the City in its deliberations on the project.

I20

Attention : Jim Flugum, Senior Civil Engineer, City of Healdsburg.
Board of Supervisors of the city of Healdsburg

Webster's Dictionary lists the word environment as "surroundings,esp. the conditions and influences under which one lives" the draft environmental impact report dated February 4, 2005 is a insult to the residents of Foreman Lane and Westside Road. I am appalled that the DEIR places the Northern red legged frog, foothill yellow legged frog or the western pond turtle in a higher regard than Mrs. Hill, Mr. and Mrs. Ricci, Mr. and Mrs. DeBennidetti,, the Gregor Family, the Collins family, the Shea family, Mr. and Mrs. Williams, Mr. and Mrs.Brown. and many more families to numerous to list. The names listed above are the community which this DEIR fails to mention in the report drafted for the proposed project. The people of Foreman Lane and Westside Road are the people who will be adversely affected by the expansion of the City of Healdsburg's Waste Treatment Plant. I20-1

The DEIR section ES.5 lists the known areas of controversy for this project. One single paragraph realistically cannot describe the devastation caused to the agricultural land area and community brought on by the potential expansion of a waste treatment plant. Reference was made in section ES.5 to receiving 11 letters regarding this project. On the surface this may appear to be a sign of indifference to the proposed project but the truth is revealed with a closer look at the people of the area. The average age of the residents of Foreman Lane is 70 years +. The residents of Foreman Lane are a mirror of the "Greatest Generation". These people who lived through WWII, The Korean War, and the Vietnam War are now expected in their Golden Years to go to battle one more time to fight the City of Healdsburg from taking their hard earned properties due to expansion of the treatment plant or decreasing the value of the property considerably. The past year in Sonoma County has seen incredible increases in property value of up to 22%. The few residents of Foreman Lane who have put their properties on the market , most likely due to the impending fear of the devastation the expansion project can bring to the area, have had buyers back out due to the uncertainty of the future on Foreman Lane. I20-2

I find it ironic that the cover of the DEIR has a photo of a beautiful vineyard which Sonoma County and the City of Healdsburg prides itself as being a proud supporter of agriculture. The picture in truth should be of an 8'high dirt burm which is what Jim Flugum is proposing to replace the vineyard with. Jim Flugum proved to the I20-3 residents of Foreman Lane that public comment to the Department of Public Works is just a technicality of government regulations. The council meeting held in March proved Mr. Flugums is discounting two of the four options prior to the public comment forum. Mr. Flugum expressed his distaste for the Geyser pipeline hook-up and the Redwood grove options without any material evidence of the failure of these proposed options.

I urge the board of supervisors to look into all options of the DEIR with careful consideration for the residents of the surrounding area. The importance of maintaining our aquifer is imperative to the health of all residents in the area. The supervisors must take full responsibility for the actions of the City of Healdsburg. I20-3 Cont'd

Respectfully, Patrick Shea
Resident Foreman Lane

Letter I20 Response

Patrick Shea
Received on March 21, 2005

I20-1 The City believes that the analysis and discussion of potential environmental impacts in the draft EIR addressed all the effects of the project. Please refer to the response to comment O2-11, which describes why socioeconomic effects are not considered environmental impacts in the EIR. Because the comment does not identify any specific example related to the suggestion that other issues were not addressed with sufficient detail, and because it does not offer any substantiation that would contradict the analysis of environmental impacts in the draft EIR, a more specific response cannot be provided.

I20-2 Please refer to the response to comment O2-11.

I20-3 As described in the response to comment I7-9, the City of Healdsburg has made an effort that extends well beyond what is required by CEQA to notify and involve the public in the environmental review process for this project. The City has sought input from the public and involved agencies, and it presents in the draft EIR a thorough analysis of options being considered and explains in Chapter 5 why certain alternatives were considered infeasible and were eliminated from detailed consideration. The reasons for eliminating the Geysers Pipeline option and the north Healdsburg redwood seasonal irrigation reuse option are presented in Sections 5.6.3 and 5.6.4 of the draft EIR. Please refer also to the responses to comments S2-1 and O1-2.

I21

Dear Mr. Flugum, March 20, 2005

My name is Mariah Silveira and I am the 12 year old granddaughter of Joe and Ramona De Benedetti. Not only am I family, but very close friends with my grandparents.

The De Benedettis live at 638 Foreman Lane, one of the houses you plan to surround with percolation ponds. If not just the ponds, maybe the entire property will be covered with ponds. The De Benedettis have live at 638 Foreman Lane for 42 years, since 1963. When I think of their homes surrounded by ponds or not having a home on Foreman Lane I am quite sad. I consider this place home. When everyone in my family meets for special occasions and holidays, we all come here to Foreman Lane. All of the family knows of this place as home. As grandchildren, it's all we know! The sentimental value of this place is so immense that a check could not equal that value. We as grandchildren learned to walk here, we held Easter egg hunts in the grass off the kitchen, helped decorate the Christmas tree in the bay window **and we all grew up here**. Joe and Ramona ***live here***. Here you can find comfort and we could never bid it good-bye.

I don't think you all comprehend the love we have for this property, this sanctuary, not just the house. If your family's house were to be surrounded by ponds or yet even taken away, would you just let them? I know you are trying to do this for the greater good, the whole town of Healdsburg, sacrificing a small group of land-owners. But ponder this, a town's sewage or someone's home? I believe that what you are doing is hurting my family, not just the ones that live here. I21-1

I was born in Healdsburg at the Hospital my grandmother worked for more than 30 years. Healdsburg is home to me, more than any place will ever be to me. My grandparents planted the grapes, nurtured the grapes, and sold the grapes year after year. At the end of this long process came their retirement. They hoped to reap the benefits of all their hard work; they looked forward to a good outcome. Taking their land and filling it with ponds for sewage is obliterating all their hard work. The elbow grease they put in, gone. The love they have for the vineyard, gone. I cannot stress enough to you that what you want to do is wrong.

Thank you very much for your time and cooperation.

Sincerely,
Mariah S. Silveira
Mariah Silveira

LETTER I21 RESPONSE

Mariah S. Silveira
Received on March 21, 2005

I21-1 Please refer to the response to comment I8-19.

I22

Caroline Marker

From: Dan Wickham [pirana@ev1.net]
Sent: Saturday, March 19, 2005 7:35 AM
To: Publicworks
Subject: Fw: Comments to Draft EIR on Healdsburg WWTP Expansion

City of Healdsburg
Public Utilities
Attn. Jim Flughum, P.E.

Comments to the Draft EIR for the Healdsburg Wastewater Upgrade:
The City Council of Healdsburg is moving toward long term solution of their wastewater treatment needs and is considering a number of options that will enhance the quality of the Russian River aquifer, if they proceed in the appropriate fashion. Like many cities facing similar circumstances the City is dependent on engineering consultants for direction. Healdsburg needs to conduct a much more active outreach into diverse sources of technology to solve their issues than they are likely to get from the existing consulting sources.

Up until approximately the mid 1980's expertise in treatment technologies appropriate at the municipal scale was consolidated in engineering firms that focused in large scale treatment technology designed to collect, treat and dispose of wastewater in the most rudimentary fashion. These technologies were largely "brute force" and energy intensive. Mechanical processes dominated and "biological" treatment was largely a silent partner in the process.

The United States congress recognized in 1998 that the widely held assumption that the entire country would be "sewered" by 2000 was in fact wrong. The population served by decentralized "on-site" systems had grown from 25 to 28% over the period from the enactment of the Clean Water Act in 1970 to the time of their study. Congress finally admitted that "on-site" wastewater technology was a permanent feature of the United States needs. As a consequence the engineering community dedicated to 'On-Site", which had largely been dominated by designers of septic systems and soil leach disposal systems, shifted their focus and made tremendous strides in advanced treatment technologies. Because the diversity of situations they confronted was far beyond that of the engineers focusing on centralized systems they created new and exciting systems that conventional municipal engineers have had difficulty coming to grips with. The centralized consulting engineers have persisted in refusing to acknowledge the advances made by their compatriots in the On-site community, much to the cost and detriment of the municipalities that have engaged their services. I22-1

New Proven Technologies Exist: Where this impinges on the community of Healdsburg is the lack of expertise in the municipal sector in the use of the natural environment as part of the treatment process. The centralized model had always been, treat as fully as

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possible, disinfect and discard the wastewater in the cheapest possible fashion. On-site engineers took a different tack, in which treatment was minimized while the natural environment became the method for final purification.

Engineers in the On-site sector now acknowledge that more treatment is needed as population increases, but they have steadily improved in their understanding of harnessing the natural environment as part of the treatment process.

<u>The Issue:</u> Healdsburg now faces the prospect of building an extremely expensive advanced treatment system, but also having their disposal options narrowed to where they still will not be able to meet the demands of the populace living downstream along the Russian River. The current EIR makes passing reference to some systems that might help them break this log-jam but it is clear from comments from their own staff that they have little to no understanding of the potential of these technologies. I22-1 Cont'd

The City and the surrounding community appear to be committed to continued use of the Basalt Percolation pond, assuming that advanced treatment will allow them to reach a level of treatment where pollution from the leachate will no longer occur. Of concern is the ability to meet the requirements of the California Toxics Rule. Also, the City's NPDES Permit requires alternative treatment during the summer period, and a solution exists to meet this need with minimal expense. It could be done with biological treatment systems that have significantly greater power and flexibility than those of the city's current or prospective disposal options.

The Solution: The core of this option involves use of the living soil as the final treatment component in the treatment stream. Extended air treatment, as conducted currently by the city, removes a substantial fraction of the readily digestible organic material in domestic waste. What merely dumping efflunent in a pit cannot do, however, is degrade compounds such as pesticides, medicines, hormones, bacteriacides, and many other compounds of a synthetic nature. It also is extremely limited in the ability to remove mineral nutrients such as phosphorous or nitrogen. Discharge of such compounds into percolation ponds such as Basalt, especially during low summer flows, does little to guarantee that these untreated compounds do not reach the Russian River, stimulating algal blooms, threatening endangered species in the River and posing a threat to the Sonoma County Water Agency drinking water resource.

<u>Subsurface Irrigation is an Effective, Low Cost Alternative:</u> Certain advanced technologies such as Reverse Osmosis can remove these compounds to a some~~er~~ -degree, but at a great cost. **Abundant evidence, however, shows that certain ecosystems have the capacity to sequester and degrade most of the above compounds, and in such a fashion that they create beneficial mitigation in a number of other ways.** Further, they do so at a tiny fraction of the cost of mechanical treatment. I22-2

I was fortunate to conduct studies on a subsurface irrigation system that the City of Santa Rosa installed at Sonoma State University a few years back. **Data from this system showed that passage of treated effluent wastewater through the shallow root zone of a redwood forest resulted in an almost complete elimination of**

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noxious nutrients of the type that currently threaten Healdsburg's disposal system. This system used a device called an "Ecochamber" which at the time represented an early form of subsurface irrigation. The cost of that system was relatively high. **Since that time, however, other subsurface irrigation systems, such as Geoflow or Netafim, have been widely distributed and which cost a small fraction of the earlier systems.**

In fact, despite comments by Healdsburg's staff, such systems have been widely implemented to dispose of wastewater of varying treatment levels. Daily disposal via such systems throughout the United States is well in excess of hundreds of millions of gallons and the implementation of this technology is accelerating at a logarithmic pace. Small community and individual disposal systems have raced ahead of the municipal sector in taking advantage of the cost savings of these systems, and in many instances the existence of these technologies have convinced many communities to dispense entirely with the notion of centralized sewage systems.

<u>Solution may require only 10 acres at a cost of less than $20,000/acre to install:</u> Healdsburg is not so fortunate to be able to go back in time and build a system along the more modern decentralized mode. They can, however, take advantage of some of these technologies to make their existing system finally affordable and workable. The City owns substantial acreage both at the treatment site and elsewhere. Through negotiations with Syar or residents along Forman Lane, the City could have access to a substantial area surrounding the percolation pit at Basalt. **The city could move immediately to implement forest based land disposal systems on as much as 10 acres that could easily handle the release of up to a million gallons per day during the summer period where such treatment would be of the highest value.** The cost of such a system would be less than $20,000 per acre, requiring an investment of only a tiny fraction of what the city is currently spending on both consulting and legal expenses related to this issue. Neither of which investments has contributed a single iota of value to the existing system. I22-2 Cont'd

The optimal configuration of such a system at the Basalt pond would be to install a peripheral riparian forest consisting of any number of tree species. These could include redwoods, cottonwood, alder, willow, Oregon ash, Black walnut, to name just a few. Subsurface dripline is put in place using a vibratory plow, which allows the line to be deposited underground at the desired depth with no excavation. A tine is drawn behind a tractor that lays the line and buries it as it passes through the soil, and the line is flexible so that a non-linear, natural tree pattern can be achieved. Ten acres of such a system could literally be laid in a few days. Planting of trees is accommodated to the grid pattern of the drip emitters and can also be done in a few days time. **By placing the drip line at a depth of approximately 6 inches the water is dispersed in the upper soil profile. This is the area of maximum biological potential, plus most of the applied water in that zone would be evapotranspired by vegetation during the summer period. If such a riparian zone were established around basalt pond any flow escaping uptake through evapotranspiration would move laterally through the soil infiltrating into the percolation pond only after transit through the biologically rich root zone of the upper soil.** These soils could be enriched with compost during the first years to

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maximize bacterial and fungal degradation of any organic constituents in the wastewater. Humus is known to sequester a wide range of organic compounds and thereby acts to provide sufficient treatment time for bacteria in the soil to degrade even the most recalcitrant organics.

Riparian Forest effective within 2-5 Years: Within 1-2 years the resident forest will be depositing a significant load of leaf litter to replace the original compost thereby continuing the biological enrichment. **Comments by staff suggest that trees do not grow fast enough to make such a system functional, but this is absolutely incorrect. In the first place, the simple passage of wastewater through the soil, as shown at Sonoma State, is enough to eliminate most of the constituents of concern. Secondly riparian trees are some of the most rapidly growing plants on earth.** A system of Ecochambers at the Mountain View District in Martinez showed that redwoods increase the transpiration rate to beyond that of a surface irrigated pasture by the second year. The rate steadily grew until by year 5 the system could no longer deliver enough water to saturate the trees. It was estimated that the system could take 50,000 gpd/acre even with the less efficient distribution pattern of the more primitive Ecochamber system. I22-2 Cont'd

Where the system is located around a water body, restrictions of flow are less an issue since it is part of the design of the system to move this water through the soil for infiltration into the pond. Application rates of 100,000 gpd/acre are not out of the question for such a purpose. It should be noted that the land surrounding the Basalt pond currently accepts much greater volumes of water during typical winter storms without any standing water. Establishment of a substantial forest root zone increases the permeability of the upper two to three feet, thereby enhancing the capacity.

Mill Creek option: The subsurface drip systems mentioned above have tremendous flexibility for installation in existing forest systems. Land near the treatment plant or in the Mill Creek vicinity could easily receive such flow. Our company installed drip system in Michigan in existing forest land using a walk-behind vibratory plow that laid the line as it meandered through and around the existing trees. It was impossible to discern that an irrigation/disposal field had been installed in the area in just a week after installation. Comments by staff to the effect that installation of such systems would be difficult or expensive is completely inaccurate. I22-3

Political viability of forest irrigation: During the contentious twenty year that the City of Santa Rosa has conducted its various public comment period on their own wastewater disposal issues there was only one option that ever was presented to universal acclaim and acceptance by the public. That option was establishment of wastewater groves of trees, particularly redwoods. The City is only now beginning to seriously address the use of such land-based disposal technologies but Healdsburg should be aware that what they choose to do will ultimately affect the choices of the much larger Santa Rosa Subregional system. The current IRWP program of Santa Rosa is focusing on the drainage area around and to the north, thereby upstream, of Healdsburg. Should Healdsburg choose to avoid the option of an environmentally beneficial riparian restoration, forest irrigation option it will set a precedent for Santa Rosa. Healdsburg I22-4

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would lose any standing should Santa Rosa opt for increased river discharges upstream of the Healdsburg water supply.

Again should Healdsburg not take advantage of the land that it currently controls for such measures, the much larger City of Santa Rosa could attempt to co-opt the local watershed infiltration gallery thereby eliminating the option for Healdsburg in the future.

Healdsburg could act to set an example that would hold Santa Rosa to similar conditions regarding their options along the Russian River. A riparian infiltration project, if designed correctly, could ultimately lead to increased restoration of the entire upper Russian River watershed, much to Healdsburg's benefit. Not only would Santa Rosa have to incorporate more ecologically friendly technology, other communities such as Ukiah, Hopland, Cloverdale and Geyserville, all upstream of Healdsburg, would be moved to similar improvements.

Healdsburg is well aware of the legal and political costs it is currently subject to due to the perceived intransigence it is exhibiting with regard to its sewer plant upgrades. Moving to tertiary treatment will certainly be a step in the right direction, but its disposal options are far more critical to eventual public acceptance, and a concomitant reduction in wasteful legal costs. I22-4 Cont'd

The City Council should begin to look at this as an opportunity to be perceived as leaders. Riparian restoration and forestation with the city's wastewater fits into new international programs such as the Kyoto protocols for reducing carbon emissions. A substantial trade in carbon credits is already underway internationally. Healdsburg would be eligible for such credits should it choose to pursue them.

For the city to discount a system that could almost immediately allow safe disposal of up to a million gallons per day for a cost of a few hundreds of thousands of dollars represents an almost reckless disregard of the public purse. The technology is old and well established, even if the consultants hired by the City are unfamiliar with it. The city needs to reach further into the engineering community at large to free itself of the narrow focus of conventional consulting companies.

Submitted by:

Dr. Daniel E. Wickham
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3/21/2005

LETTER I22 RESPONSE

Dan Wickham
Received on March 21, 2005

I22-1 The comment is introductory and states that the City is committed to pursuing the Basalt Pond option for effluent disposal. The draft EIR evaluates all the identified WWTP upgrade options for tertiary treatment, effluent disposal, and seasonal irrigation reuse at an equal level of detail. The City has not taken a formal position on the preference of any of the options in the EIR.

I22-2 The comment is introductory and suggests that discharge of wastewater to ponds cannot degrade synthetic organic compounds and is limited in removal of nutrients. As described in Section 3.2 of the draft EIR, effluent sample analyses to date for synthetic organic compounds have resulted in very few samples with positive detections, and the detected constituents did not exceed regulatory objectives. The range of nutrient concentrations (i.e., nitrate and total phosphorus) measured in the Basalt Pond (refer to Table 3.2-3) is considerably lower than the concentrations measured in the effluent (refer to Table 3.2-3) and indicates that substantial reduction and/or attenuation occurs in the pond. Nitrate levels are well below the regulatory objective of 10 mg/L as N. This comment does not refer to any specific content of the EIR or the environmental impacts of the project; therefore, no further response can be provided.

The comment also describes and recommends the use of subsurface drip irrigation and forest plantings as an option to consider for effluent disposal. It is unclear whether this option refers to year-round or seasonal reuse. Given that the EIR already addresses seasonal reuse in the project options, including the use of redwoods, it is presumed that the comment is intended to suggest a year-round reuse scenario. As described in the response to comment O1-2, the City considers options that discharge wastewater to redwoods or similar forestry plantings to represent seasonal irrigation reuse. However, although these seasonal irrigation scenarios may be effective for summer reuse, when irrigation demands are high, they do not reliably provide for effluent disposal during the winter season. The combination subterranean leach field and/or tree planting scenarios described in this comment are essentially similar to other comments that suggest that redwood irrigation be used exclusively for effluent disposal, which can be constrained by high groundwater levels and rainfall during winter. The comment suggests that the recommended system for the City's rate of effluent discharge could be operated on less than 10 acres.

The comment's assertion that the City's wastewater flows could be accommodated with such a limited subterranean system is not supported by any data, other than the reference to apparent dry season evapotranspiration rates. It is unclear from the comment whether this disposal method would rely on evapotranspiration, percolation, or both. In fact, the percolation rates with a surface or subsurface drip line system may be considerably less in the project area than any of the effluent disposal ponds considered in the City's draft EIR because drip lines would produce much less hydraulic head pressure to "force" effluent into the ground. Also, the topsoils in the project area would be expected to have less permeability than the deeper, unconsolidated gravel substrates.

Nevertheless, the City will note this comment as support for seasonal irrigation with trees or subterranean drip lines.

I22-3 The Foreman Lane/Mill Creek Road seasonal irrigation reuse route option would provide recycled water to existing agricultural land use areas. The recycled water would be provided to landowners to use for agricultural irrigation on a voluntary basis. The City would not own or operate any irrigation facilities with this route option, and the adjoining areas are already developed as vineyards. Therefore, it is unlikely that landowners would choose to abandon existing investments in vineyards to implement redwood or other forestry irrigation systems or subterranean drip systems as recommended in this comment. Nevertheless, the City does not anticipate restricting the use of recycled water by participant irrigators for such application, provided that the irrigation use complies with all applicable Title 22 recycled water reuse regulations. Because this comment does not address the environmental impacts of the project, no further response is possible.

I22-4 The comment is general in nature and recommends implementation of subsurface irrigation and tree irrigation reuse systems. The comment will be noted by the City as support for including seasonal irrigation reuse options in the set of WWTP upgrade options that are ultimately selected for the preferred project. No comments are provided on the content of the EIR or the specific environmental impacts of the project. No further response can be provided.

Regarding the reference in the comment to the City of Santa Rosa's IRWP, this program is under the jurisdiction of the City of Santa Rosa and not the City of Healdsburg. The City of Santa Rosa will be required to evaluate the IRWP on its own merits, and to the degree that IRWP elements could affect the City of Healdsburg, the City will have an opportunity to review the Santa Rosa project at the time an EIR is released, and can comment if needed.

PH

The Healdsburg Planning Commission met in regular session, called to order by Chairperson Brush at 7:00 p.m.

ITEM:

1. **ROLL CALL**

Present: Commissioners Worden, Baldenhofer, Eddinger, Cohen, Wood and Chairperson Brush

Absent: Commissioner Small

Staff present (head count only): Richard Spitler, Planning Director; Andy Gustavson, Senior Planner; George Hicks, City Engineer; Jim Flugum, Senior Civil Engineer

2. **ADMINISTRATIVE ACTIONS**

A. APPROVAL OF THE AGENDA FOR FEBRUARY 23, 2005

Action: Motion was made by Vice Chair Eddinger and was seconded by Commissioner Cohen to adopt the agenda for the meeting of February 23, 2005. The vote carried by voice vote: 6-ayes, 0-noes.

B. DECLARATIONS OF CONFLICT OF INTEREST

None were declared.

3. **PUBLIC COMMENTS –**

Chairperson Brush opened and closed the public comment period having heard no comment.

4. **PUBLIC HEARINGS**

A. APPLICANT: CITY OF HEALDSBURG
PROPOSAL: REVIEW OF THE DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) REGARDING THE CITY'S PROPOSAL TO UPGRADE ITS WASTEWATER TREATMENT PLANT AND CONSIDER ALTERNATIVES FOR TREATED EFFLUENT DISPOSAL (APNs 110-130-23 & 29; 110-08-06, 07 & 08)

Director Spitler explained the purpose of the document, the process for approval of the final document/project, and the reason for holding a public hearing on the proposed DIER. The comment period would run thru 5:00 p.m., March 21, 2005, therefore allowing the opportunity for comments to be submitted until that date. A written response would be prepared by the consultant to each comment/question raised during the public hearing.

Engineer Hicks introduced the staff of EDAW, Gary Jakobs, Jeff Lafer and Jim Merk. Gary Jakobs presented a summary of the DEIR. He explained the CEQA process, the purpose of preparing an EIR, the project objectives and proposed wastewater facility upgrade options, and an overview of the potential environmental impacts of the project. The impacts identified were summarized as follows: less-than-significant impacts included fisheries, traffic & transportation, hazards & hazardous waste, mineral resources, population & housing, public services and recreation; significant impacts that are able to be mitigated to a less-than-significant level included short term impacts to agriculture, water quality, cultural resources, wildlife, wetlands, earth resources, noise, and public utilities; significant and unavoidable impacts consisted of the conversion of farmland, construction emissions, air quality, odors, and visual impacts. The DEIR includes an evaluation of alternatives and included in the proposed document is the no project alternative, and an alternative that addresses direct discharge of treated wastewater to the Russian River. The Final EIR will include responses to comments received on the DEIR prior to the 5 o'clock deadline, March 21, 2005.

In response to questions raised by the Commission members, Engineer Hicks explained that the project would upgrade the existing facility. The upgrade is a result of requirements of the City's NPDS permit issued from the Regional Water Quality Control Board (RWQCB). The Geysers Pipeline serves as a conduit to connect Santa Rosa's facilities with the geysers steam fields. Connection to the pipeline is not available to the city at this time, and therefore it was not considered as an alternative effluent disposal option. The type of tertiary treatment plant being proposed has a long life-span and should continue to meet water quality regulatory standards long into the future.

Chairperson Brush opened the public hearing to receive public comment on the DEIR.

Testimony of Mark Bommersbach, 3300 West Side Road, and member of the Westside Association to Save Agriculture:
He stated concern regarding the alternative to dump sewage into the drinking water aquifer, which serves their wells. In 2002/2001 they had proposed, to the City, the planting of Redwood trees to clean the effluent in the plant. The City should consider planting trees to deal with the disposal of effluent as an alternative. PH-1

Testimony of Scott Stegeman, 1430 High School Rd., Sebastopol:
He stated there are internal inconsistencies within the DEIR and also inconsistencies with the previous Pond-5 EIR. Pond-5 is a mining pond, governed by the County and State mining and reclamation law which carries a number of implications. Pages 1-2 & 2-27 reference to appropriate responsible agencies should include the County and State Bureau of Mining Reclamation for discharge to Pond-5. PH-2 In the "references" section, page 7-2 lists the original Pond-5 DEIR; however, the document excludes the final EIR, thereby excluding comments and criticisms from neighbors and regulatory agencies. PH-3 Relative to water quality standards, the basic choice of what water quality standards to be applied is different from the disposal options. The DEIR maintains that any discharge to Pond-5, or the percolation ponds, would not be governed by the NPDES permit, but by groundwater treatment standards. PH-4 The EIR for Pond-5 demonstrated that both Basalt and Pond-5 indirectly discharge to the Russian River. A lot of the water quality analysis of the tertiary treatment relies on a comparability comparison to Santa Rosa. He questioned whether it was a fair comparison. If it was not known what Santa Rosa's water quality was under secondary treatment, then how can it be fairly compared to the City's theoretical tertiary treatment? If the cities are not the same at the secondary level, it can not be PH-5

presumed that there would be the same results from comparable tertiary treatment and there is nothing in the document that supports the assumption. In the discussion of copper toxicity they rely on results from the Basalt Pond, which is not comparable to Pond 5, and in fact, Syar is further diluting what goes into the Basalt Pond. In the discussion of copper, the EIR acknowledges a 40% discharge increase in volume; however, on page 3.2-40 relative to water mounding, this EIR maintains their will be no mounding because there would not be an increase in discharge. He concluded by reported that he was disturbed by the result of the document and as prepared the document does not give legal support to the project. PH-5 Cont'd PH-6 PH-7

Testimony of Judith Olney 3300 West Side Rd.:
She read from a letter received the RWQCB, which stated that discharge to Phase 5 could not be permitted due to concerns about the pollution of ground water. She questioned, why has a document been written that talks about the impact of Phase 5 as merely being the construction impacts of a 130ft pipe? The RWQCB has told the city that a Pond-5 discharge is a direct discharge to groundwater. There is no need to take 60 acres of prime farmland out of cultivation when other alternatives could be sought such as subterranean irrigation by planting trees. She will provide further comments in writing. PH-8 PH-9

Engineer Flugum explained the document is available to download from the City website.

Testimony of Bill Wendt:
In response to his questions, staff re-iterated that connection to the Geysers Pipeline is not available at this time. The new project would consist of a new stand alone treatment facility. The existing ponds would be converted into storage ponds. Mr. Wendt noted that tertiary treated water would not pollute the ponds, but ultimately may improve them because the water would be treated to the standard of drinking water. PH-10

Chairperson Brush closed the public hearing having heard no other comment.

The Planning Commission members discussed items related to the DEIR

In response to Commissioner Baldenhofer's inquiry regarding why a grove of redwood trees is not being considered for treatment of effluent, Engineer Flugum explained that in 2002 the city had identified the Salvation Army Property as a possible site for irrigation. In the case of this parcel, there were too many environmental constraints and the available area became so small that the expense of running a pipe could not be justified. There are some redwood plantings being proposed in the Syar irrigation option. There have been no other properties identified for the option. Engineer Hicks reported that in order for a redwood grove to provide adequate disposal and be a meaningful option, mature trees, permeable soil and flat land is required and the city does not have such land available. PH-11

In response to Commissioner Wood's inquiry regarding what would happen if Pond 5 was removed from consideration, Engineer Hicks explained that the RWQCB will consider the EIR and would be a determining factor. The County, Syar Industries, and the City will have influence as well. The EIR on Pond-5 had been contested and was upheld in court. PH-12

Vice Chair Eddinger noted that there are mitigation measures (i.e. on pg. 3.1-13 & 18) that appear to him to be contradictory. He will be submitting written comments. PH-13

In response to Commissioner Baldenhofer's inquiry on which ponds receive untreated wastewater and which ponds receive tertiary treated wastewater, Engineer Flugum reported that the storage ponds at the treatment plant site are designed to store wastewater inflows during high flows so that they would not percolate water into the aquifer. The ponds receiving tertiary treated water could conceivably affect the groundwater and/or the river; however the tertiary treated water would have been treated to drinking standards. PH-14

Commissioner Eddinger noted that the EIR states that eleven letters were received on the NOP, but the appendix in the EIR only includes nine letters. PH-15

In response to Commissioner Worden's inquiry whether any other new and innovative disposal options that have not been considered that should be, Engineer Hicks reported that every reasonable and feasible disposal option that would meet the needs of the city had been studied and this project was the best option. PH-16

Chairperson Brush noted the design of the facility would be important to minimize visual PH-17
impacts. He suggested that once an option is selected, that others should not be dismissed such PH-18
as irrigation and growing trees. He and Commissioner Worden suggested a program for public awareness be implemented/incorporated to educate people on what kind of solids go into the pond. PH-19

Commissioner Worden will submit his comments in writing. PH-20

There being no further Planning Commission comments, Chairperson Brush closed the discussion regarding this item.

ADJOURNMENT

As there was no further Commission business, the meeting adjourned at approximately 8:15 p.m. to the upcoming meeting of the Planning Commission scheduled Tuesday, March 8, 2005 beginning at 7:00 p.m. in the Council Chambers of City Hall, 401 Grove Street, Healdsburg.

RICHARD SPITLER, SECRETARY

JIM BRUSH, CHAIRPERSON

February 23, 2005

PH-1 Please refer to the response to comment O1-2. The City will note this comment as support for inclusion of seasonal irrigation reuse options in the preferred project.

PH-2 In response to this comment, the California Department of Conservation – Office of Mine Reclamation and Sonoma County Permit and Resource Management Department will be added to the list of responsible agencies, identified on page 1-1 of the draft EIR, that may have discretionary review and/or approval authority over some aspects of the project. Table 2-2 will also be modified to include the California Department of Conservation – Office of Mine Reclamation as follows:

Table 2-2
Potential Permit or Consultation Requirements

Permit/Agreement	Agency	Jurisdiction/Purpose
State Agencies		
Mine reclamation plan approval	California Department of Conservation – Office of Mine Reclamation	Supports review and approval of mine reclamation plans subject to the Surface Mining and Reclamation Act

PH-3 The City's draft EIR for the Wastewater Outfall Relocation Project (2001) was used as a reference in the draft EIR because it contains water quality data and groundwater modeling results that were used for impact analyses presented in the draft EIR. No information contained in responses to comments, which were added to the draft EIR to create the final EIR for the Wastewater Outfall Relocation Project, were used. The water quality data and modeling results were not revised in the response to comments document.

PH-4 The specific type of permit that would apply to the Phase V Pond and shallow percolation pond options for effluent disposal would depend on the statutes and regulations mentioned in this comment and the outcome of the City's current appeal to the Ninth Circuit Court of Appeals described on page 2-5 in the draft EIR. Please refer to the response to comment I18-12, regarding a similar comment. In addition, the potential permit terms and conditions that may be issued for the effluent disposal options is not relevant to the water quality analysis presented in the draft EIR (Impact 3.2-3) and conclusions reached. As described in the response to comment S2-8, S2-9, and S2-10, the information presented in the draft EIR shows that the project would produce high-quality effluent that could be disposed of or reused in full compliance with any of the applicable water quality objectives and regulations that the RWQCB would use as the basis for permit terms and conditions.

PH-5 The City believes the use of City of Santa Rosa tertiary treatment effluent quality data for conventional physical and inorganic constituents (i.e., those starting with ammonia through total suspended solids in Table 3.2-5 of the draft EIR) is a valid approach to assess the potential water quality impacts of the City's proposed WWTP upgrade. The identified list of constituents is highly treated by tertiary treatment and nitrification/denitrification processes. Therefore, the Santa Rosa data provides a suitable surrogate set of data that the City's tertiary treatment processes would likely resemble because the same processes would be used by the City. The Santa Rosa data for metals, organics, and several other inorganic constituents (i.e., upper portion of Table 3.2-5) were identified; however, the water quality impact analysis was based on the City's data. Because the City's data reflect secondary treated wastewater that was not treated with chemical coagulants and not filtered, the analysis is considered conservative for evaluating the effects of the proposed tertiary treated effluent, which would include a much higher level of treatment and contaminant removal.

PH-6 The comment correctly identifies an inconsistency with the water quality analysis for copper concentration effects. The City's existing effluent discharges to Basalt Pond and resulting copper concentrations are influenced to some degree by Syar's discharge of aggregate washing process water. The proposed discharges under the Phase V Pond and shallow percolation ponds options would not be influenced by the Syar process water discharge. The Syar discharge flow is approximately 0.28 mgd, which is approximately 20% of the City's average annual discharge rate of approximately 1.4 mgd and thus may dilute the City's wastewater by up to an equivalent 20% factor assuming the Syar discharge is contaminant-free. Assuming a proportionate relationship between Syar wash water volume and ultimate copper levels, the projected maximum copper concentration of 4.5 μg/L in the Basalt Pond would translate to a 20% higher receiving water copper concentration of 5.4 μg/L under the Phase V Pond option. This is still well below the most restrictive of the final copper effluent limits established in the City's NPDES permit, which at the average receiving water hardness of 140 mg/L (as measured in the Basalt Pond) would be 11.0 μg/L. The projected concentration would not exceed the most stringent criteria applicable to this constituent, which is the chronic criterion for aquatic life exposure under the California Toxics Rule (CTR). This revision also does not alter the analysis described in the response to comment O1-1, which describes the regulatory considerations. As presently regulated, the CTR criteria would not apply to discharge to shallow percolation ponds. The Basin Plan allows for a concentration of 200 μg/L; human health exposure limits under the CTR are 1,300 μg/L; acute toxicity limits under the CTR are 13 μg/L.

Thus, it is anticipated that maximum receiving water copper concentrations in the Phase V Pond and shallow percolation ponds would be less than the lowest applicable regulatory criteria and would therefore not result in a significant impact on water quality. This revision in the discussion of copper does not change the significance conclusions of the impact. Further, there are several highly conservative assumptions associated with the conclusion that copper levels could increase to as high as 5.4 μg/L. This analysis likely overestimates the actual level of effect that would occur. First, the analysis is based on total copper values, and the applicable CTR criteria are based on the dissolved form of the metal measured in a filtered sample. Total copper is always higher than dissolved copper; however, the proportion of dissolved to total varies depending on many variables. The limited set of data for the Basalt Pond shown in Table 3.2-3 of the draft EIR indicates that dissolved copper did not exceed about 85% of the total value. As described above, the measured values represent secondary treated and unfiltered wastewater and do not reflect the lower values that would be expected following implementation of the tertiary upgrades. The higher level of filtration would remove an unknown percentage of total copper, although it would not likely remove any dissolved copper. In addition, the response to comment O1-1 describes the possibility for the City to develop a water effects ratio (WER) adjustment to the copper criteria that would be applicable to the discharge, if necessary. Development and application of a WER to the City's regulatory objectives could be expected to increase the applicable CTR criterion by 5 to 20 times the CTR hardness-based criteria (i.e., identified in the response to comment O1-1 as potentially increasing from 11 μg/L to 55 to 220 μg/L). And finally, water quality sampling conducted for the draft EIR measured copper levels in effluent in the Basalt Pond under current secondary treatment technology and demonstrated that these do not measurably increase copper levels in the Russian River. Therefore, the City believes this supplemental evaluation does not alter the conclusions reached in the draft EIR for Impact 3.2-3 and the impact is less than significant.

The comment also states that potential groundwater mounding impacts (Impact 3.2-5) did not account for the projected maximum effluent discharge rate of 1.4 mgd. In fact, the modeling studies conducted for the 2001 Wastewater Outfall Relocation EIR were conducted using a flow rate of 1.5 mgd. Thus, the predicted magnitude of potential mounding effects depicted in Exhibit 3.2-3 in the draft EIR represents a conservative assessment and likely overestimates the effects that would actually occur.

PH-7 The City believes the draft EIR does adequately characterize all the potential environmental impacts of the project. Because specific examples of EIR inadequacies are not provided, additional response cannot be provided. No further written comments were received by this commenter.

PH-8 The response to comment S2-8 fully addresses the concern stated in this comment.

PH-9 The City will note this comment as opposition to the shallow percolation ponds option. Please refer to the response to comment O1-2, regarding the use of redwood irrigation for effluent disposal on a year-round basis.

PH-10 The comment indicates general support for the tertiary treatment upgrade and does not raise a significant environmental issue; therefore, no further response is provided.

PH-11 A response to this comment was provided by the City Public Works Director during the hearing. No further response is required.

PH-12 A response to this comment was provided by the City Public Works Director during the hearing. No further response is required.

PH-13 The comment identified unspecified contradictions in mitigation measures on pages 3.1-13 and 3.1-18. The draft EIR does not contain a page 3.1-18; therefore, the contradiction is unknown. The comment stated that written comments would be provided to clarify the matter; however, no written comments were received. Mr. Eddinger met with a member of the City's staff to discuss his questions about the draft EIR, rather than formally submitting comments to the City as part of the draft EIR review process.

PH-14 A response to this comment was provided by the City during the hearing. No further response is required.

PH-15 The comment is incorrect. Appendix C of the draft EIR includes 11 letters submitted on the notice of preparation. Letters were received from Judith Olney and Dennis Hill, J. Matthew Mullan (Town of Windsor), Bill Wendt, Major Clyde D. Curnow (The Salvation Army), Jane M. Hicks (U.S. Army Corps of Engineers), Robert W. Floerke (DFG), Mark K. Neely (RWQCB), E. Peter Seghesio (Seghesio Family Vineyards), Frank Carraro (Frank Carraro Investments, LLC), Marc Bautista (Sonoma County Water Agency), and Angus Latta (County of Sonoma Permit and Resource Management Department).

PH-16 A response to this comment was provided by the City Public Works Director during the hearing. No further response is required.

PH-17 Please refer to the response to the comment O2-10.

PH-18 The City will note the comment as support for retaining the option to implement seasonal irrigation reuse options at a later date and not be dismissed following selection of a preferred project.

PH-19 The City will note the comment as support for including a public awareness program with the project.

3 REVISIONS TO THE DRAFT EIR

In response to comments received on the draft EIR and to provide corrections to minor errors in the document, revisions have been made to the EIR. This chapter presents those text changes in the order in which they appear in the original draft EIR. Deletions from the text are shown in strikeout (~~strikeout~~), and text additions are shown in underline (underline). The revisions made in the document do not affect the significance determinations for impacts identified in the draft EIR, nor do they change the severity of any identified impacts.

EXECUTIVE SUMMARY

In response to comment L2-1, the text of Mitigation Measure 3.1-3 in Table ES-1 is revised as follows:

a) ~~Construction activities shall be restricted to periods outside the growing season (i.e. growing and harvesting periods).~~ Construction activities shall be undertaken in an expedient fashion, and associated construction staging areas shall be located outside of the agricultural fields.

CHAPTER 1, "INTRODUCTION"

In response to comment PH-2, the list of responsible agencies, on page 1-2, is revised to include the California Department of Conservation – Office of Mine Reclamation and the Sonoma County Permit and Resource Management Department:

> Those state and local agencies, other than the lead agency, that are responsible for carrying out or approving a project or components of a project are termed "responsible agencies" under CEQA. For this project, the responsible agencies are:

- California Department of Fish and Game (DFG);
- California Department of Health Services (DHS);
- California Department of Conservation – Office of Mine Reclamation;
- California Environmental Protection Agency;
- State Water Resources Control Board (SWRCB);
- Regional Water Quality Control Board (RWQCB), North Coast Region;
- California State Lands Commission;
- Sonoma County Permit and Resource Management Department; and
- Northern Sonoma County Air Pollution Control District (APCD).

CHAPTER 2, "PROJECT DESCRIPTION"

In response to comment PH-2, the "State Agencies" section of Table 2-2, on page 2-27, is revised to include the California Department of Conservation – Office of Mine Reclamation:

Table 2-2 Potential Permit or Consultation Requirements		
Permit/Agreement	Agency	Jurisdiction/Purpose
State Agencies		
Mine reclamation plan approval	California Department of Conservation – Office of Mine Reclamation	Supports review and approval of mine reclamation plans subject to the Surface Mining and Reclamation Act

In response to comment I2-1, the "Local Agencies" section of Table 2-2, on page 2-27, is revised to include the Sonoma County Department of Transportation and Public Works encroachment permit requirement:

Table 2-2 Potential Permit or Consultation Requirements		
Permit/Agreement	Agency	Jurisdiction/Purpose
Local Agencies		
Encroachment permit	Sonoma County Department of Transportation and Public Works	Authorizes construction within County-owned land or rights-of-way

In response to comment S2-13, the second full paragraph on page 2-35 is revised as follows:

> For the bridge crossings of Mill Creek and Foss Creek, pipeline would be attached to either the upstream or downstream vertical edges of bridge decks using engineered brackets. The attachments would be designed so that the pipeline does not intrude into the flowing creeks. Pipeline attachments would be designed in accordance with standard engineering practice procedures for seismic safety standards and not be implemented in a manner that would preclude future seismic retrofit of bridges.

SECTION 3.1, "LAND USE CONSISTENCY AND AGRICULTURE"

In response to comment L1-1, the following text is added as a new paragraph following the second paragraph on page 3.1-5:

> A specific policy included in the Sonoma County Aggregrate Resources Management (ARM) Plan applies to the use of existing terrace mining ponds for disposal of domestic wastewater as follows:
>
>> Wastewater storage: Several cities near the Russian River place treated sewage effluent in ponds for evaporation, filtering by the surrounding sand and gravel deposits, and further treatment by biological processes. The only site where this is done in the Middle Reach terrace mining area is the old Basalt pit use by the

City of Healdsburg for many years. Monitoring thus far has not found any significant water impacts connected with this use. Any reclamation plan for this pit shall serve to protect and maintain the City of Healdsburg's ability to continue to use the pond for wastewater storage in accordance with applicable water quality standards. The processing sediments which have been piped into this pit may be removed to enlarge effluent storage capacity and provide fill for agricultural reclamation of other mined areas as long as the transfer of sediments meets the standards for imported fill stated above. No other terrace mining site may be used for storage or disposal of effluent from Public sewage treatment systems unless the Board of Supervisors finds that the proposal is the environmentally superior alternative being considered, will meet applicable water quality standards enforced by the Regional Water Quality Control Board, and will avoid significant impacts on nearby groundwater and surface water. (ARM Plan, p. 7-42)

SECTION 3.2, "HYDROLOGY AND WATER QUALITY"

In response to comment S2-5, the last sentence of the third paragraph on page 3.2-2 is revised as follows:

> Other communities, including Cloverdale and ~~Healdsburg~~ Ukiah, as well as a number of smaller private systems, discharge~~s~~ treated wastewater to constructed percolation ponds adjacent to the Russian River, and Healdsburg discharges to a historic terrace mining pond adjacent to the Russian River.

In response to comment S2-6, Table 3.2-1, on page 3.2-7, is revised as follows:

Table 3.2-1
Beneficial Uses of the Russian River and Apparent Beneficial Uses of ~~Syar~~ ~~Ponds~~ the Basalt Pond

Hydrologic Subarea	Designated Beneficial Uses in Basin Plan																	
	MUN	AGR	IND	PRO	GWR	FRSH	NAV	POW	REC 1	REC 2	COMM	WARM	COLD	BSA	WILD	RARE	MIGR	SPWN	AQUA
Russian River, Middle, Warm Springs subarea	E	E	E	P	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
~~Syar~~ Basalt Pond~~s~~ *			E		E				E	E		E			E				
Groundwater	E	E	E	P															

* Potential beneficial uses supported in ~~Syar ponds~~ the Basalt Pond. Basin Plan does not include formally designated uses for ~~these water bodies~~ the Basalt Pond.

E = =existing use; P = potential use

MUN-Municipal and Domestic Supply; AGR-Agricultural Supply; IND-Industrial Service Supply; PRO-Industrial Process Supply; GWR-Groundwater Recharge; FRSH-Freshwater replenishment; NAV-Navigation; POW-Hydropower Generation; REC 1-Water contact recreation; REC 2-Non-contact water recreation; COMM-Commercial and sport fishing; WARM-Warm freshwater habitat; COLD-Cold freshwater habitat; BSA-Biologically Significant Areas; WILD-Wildlife habitat; RARE-Rare, threatened, or endangered species; MIGR-Migration of aquatic organisms; SPWN-Spawning, reproduction, and/or early development; AQUA-Aquaculture.

In response to comment S2-9, the second full paragraph on page 3.2-15 is revised as follows:

> ~~Following the sampling, the results of the laboratory analyses were subjected to a statistical analysis (i.e., parametric t-test) that compares two sets of data for their statistical similarity. A statistical difference between the upstream and downstream data sets (increase of a parameter from upstream to downstream site) would indicate a potential influence by the Basalt Pond.~~ The upstream Russian River and Dry Creek data were combined to create a flow-weighted composite load that was compared to the calculated mass load for the downstream site. The sampling results indicate that, for many constituents, concentrations were higher in the Basalt Pond than in the river. The analytical results ~~of the t-test showed no significant~~ indicate that there was no appreciable difference ~~existed between~~ in constituent concentrations measured in samples collected in the Russian River upstream and downstream ~~(~~of the Basalt Pond~~)~~ ~~for the parameters analyzed at the 95% confidence level (p < 0.05)~~. The laboratory analytical results ~~and subsequent statistical analysis~~ indicate~~s~~ that discharges of City's treated wastewater into Basalt Pond appear to not be detectable in the Russian River.

In response to comment L1-1, the following text is added as a new paragraph following the first partial paragraph on page 3.2-26:

> A specific policy included in the Sonoma County Aggregrate Resources Management (ARM) Plan applies to the use of existing terrace mining ponds for disposal of domestic wastewater as follows:
>
> Wastewater storage: Several cities near the Russian River place treated sewage effluent in ponds for evaporation, filtering by the surrounding sand and gravel deposits, and further treatment by biological processes. The only site where this is done in the Middle Reach terrace mining area is the old Basalt pit use by the City of Healdsburg for many years. Monitoring thus far has not found any significant water impacts connected with this use. Any reclamation plan for this pit shall serve to protect and maintain the City of Healdsburg's ability to continue to use the pond for wastewater storage in accordance with applicable water quality standards. The processing sediments which have been piped into this pit may be removed to enlarge effluent storage capacity and provide fill for agricultural reclamation of other mined areas as long as the transfer of sediments meets the standards for imported fill stated above. No other terrace mining site may be used for storage or disposal of effluent from Public sewage treatment systems unless the Board of Supervisors finds that the proposal is the environmentally superior alternative being considered, will meet applicable water quality standards enforced by the Regional Water Quality Control Board, and will avoid significant impacts on nearby groundwater and surface water. (ARM Plan, p. 7-42)

In response to comment S2-2, the second bulleted item in Mitigation Measure 3.2-1, on page 3.2-32, is revised as follows:

- Erosion Control: BMPs will be included to stabilize exposed soils, including stockpiled soil; minimize offsite runoff; remove sediment from onsite runoff before it leaves the site; slow runoff rates across construction sites; and, identify post-construction soil stabilization BMPs. Appropriate temporary and long-term seeding, mulching, and other erosion control measures will be identified.

In response to comment L4-6, the first full paragraph on page 3.2-37 is revised as follows:

> Uses of tertiary treated recycled water for irrigation of urban landscapes and agricultural operations under the SIR options have the potential to create or contribute to incidental offsite runoff and discharge to adjacent drainages. Therefore, discharges of irrigation runoff could reach natural surface waters and potentially cause incidental changes in water quality conditions. The potential for such occurrences of offsite runoff from irrigated areas is considered low because the City must develop a detailed engineering report under the applicable Title 22 regulations described above that identifies the operational controls and environmental protection measures that will be implemented with the system. In addition, the projected effluent quality described in Table 3.2-5 indicates that the anticipated constituent concentrations would be low and the small quantity of incidental runoff events would not be expected to substantially impair receiving waters. Also, agricultural and urban irrigation reuse would be fully protective of groundwater quality objectives, as demonstrated in Table 3.2-5, and recycled water irrigation would result in beneficial uptake of nutrients and additional contaminant reduction via soil-aquifer interaction. This impact would be less than significant.

SECTION 3.9, "VISUAL RESOURCES"

In response to comment I1-2, the mitigation required for the shallow percolation ponds in Mitigation Measure 3.9-1, on page 3.9-8, is revised as follows:

> **Shallow Percolation Ponds option:** The berms of the shallow percolation ponds shall be landscaped so they blend into the middle ground viewshed. The City will engage the services of a professional landscape architect or arborist to develop and implement a vegetation planting plan for the berms.

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APPENDIX A

TECHNICAL MEMORANDUM BY
S.S. PAPADOPULOS & ASSOCIATES, INC.
FOR THE CITY OF HEALDSBURG

Σ²Π

S.S. PAPADOPULOS & ASSOCIATES, INC.
Environmental & Water-Resource Consultants

RECEIVED

MAR 02 2005

Memorandum

REGISTERED PROFESSIONAL ENGINEER
JOHN M. LAMBIE
NO. C53259
EXP. 6/30/06
CIVIL
STATE OF CALIFORNIA

Date:	April 28, 2005
From:	John Lambie, P.E., C.E.G.
To:	Jim Flugum, City of Healdsburg
Cc:	Gary Jakobs, EDAW Jeff Lafer, EDAW
Project:	SSP-783
Subject:	**Comments by Tim Durbin on behalf of Town of Windsor Regarding Prospective Impacts by the City of Healdsburg's Wastewater Treatment Plant Upgrade Project**

<u>Summary Comments</u>

Field data collected by the City of Healdsburg in the Russian River and its tributary at Dry Creek upstream and downstream of the current wastewater discharge to Basalt Pond provides useful and relevant information in evaluating the current and prospective water quality impacts of wastewater discharges by the City of Healdsburg.

Those field data coupled with numerical evaluations by myself[1] and Luhdorff & Scalmanini Consulting Engineers[2] on behalf of the City of Healdsburg demonstrate that there is no measurable impact of chloride or other dissolved constituents in the treated water discharge, to either the Russian River or to the Town of Windsor's groundwater supply wells. In addition, Luhdorff & Scalmanini in May 2001 properly evaluated the prospective future discharge of water to the Phase V pond to ascertain that no significant water-quality impact would occur to the Russian River or the Town of Windsor's wells. This work was done using a well documented and calibrated groundwater flow model.

The report produced by Timothy J. Durbin, Incorporated, Consulting Hydrologists of March 18, 2005[3] (hereinafter the "Durbin Report") is based upon a flawed analysis of the groundwater and surface water interaction in the area. The Durbin Report relies upon an undocumented and apparently uncalibrated numerical model of the groundwater system. Furthermore, it uses inaccurate analytical methods to evaluate groundwater and surface water impacts of chloride. The Durbin Report therefore does not provide an accurate or credible evaluation of current or prospective future water-quality impacts to the Russian River or the Town of Windsor's wells.

[1] Expert Report of John Lambie, July 2003 in the matter of Northern California River Watch vs. City of Healdsburg, United States District Court, Northern District of California, Case No. C01 4686

[2] Appendices C and D, of "Draft Environmental Impact Report Wastewater Outfall Relocation Projects, Healdsburg, California", May 2001 prepared by Luhdorff and Scalmanini.

[3] Timothy J. Durbin, Consulting Hydrologists, "Impacts of Proposed Healdsburg Wastewater Discharges on the Russian River, March 18, 2005

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Detailed Review

There are a variety of inaccuracies, flawed assumptions, and undocumented uncalibrated numerical evaluations in the Durbin Report that lead him to the wrong conclusions. We have chosen to address them in the order they appear in the Durbin Report for simplicity.

Page 1 In the 3rd paragraph the elevation of water in Basalt Pond is misstated as "about the same as the groundwater-table elevation near the pond". This has been shown by field measurement to be grossly inaccurate. The stage elevation of water in the Basalt Pond is approximately 7 feet higher than surrounding groundwater due to the current wastewater effluent disposal into Basalt Pond and Syar process water. This water elevation difference between Basalt Pond and adjoining groundwater is due to the flow resistance of the sediments on the bottom and sides of the Basalt Pond. This phenomenon produces a radial flow of water out of the Basalt Pond and into the adjoining groundwater aquifer. Except for irrigation reuse periods, this same phenomenon would be expected and is predicted to occur for each of the effluent disposal options. This is an important error in the Durbin report because radial flow from the effluent disposal option means that water exiting the pond does not all flow to the Russian River in the short or the long term as the author of the Durbin report asserts. Furthermore radial flow from the effluent disposal point mixes the concentrations of trace constituents in the effluent with the rainfall recharge coming into the system annually and with the groundwater aquifer as a whole thereby diminishing the concentrations of a conservative constituent like chloride both near the effluent disposal point and away from it. This misstatement of the facts in the Durbin Report subsequently leads to significant analytical error.

Page 4 The first full paragraph describes the use of chloride as a surrogate or tracer for the other constituents. This is an inaccurate and misleading statement. Chloride is not a surrogate for other trace constituents. It is the most conservative tracer (i.e. dissolved chemical least affected by physical transport) and thereby represents only itself as a constituent in the effluent. Other trace constituents that are found in the wastewater at levels above background, such as fluoride, metals, and nitrate, are retarded and/or degraded in the groundwater aquifer, significantly attenuating any conceivable impact to surface waters such as the other ponds or to groundwater. These constituents other than chloride were considered along with chloride by the City of Healdsburg. Field data collected by City of Healdsburg in both groundwater and surface water demonstrate that there is no measurable impact from the current Basalt Pond effluent disposal option to the Russian River.

Pages 5 to 8 The groundwater model described is not sufficiently documented to evaluate its accuracy. The assignment at page 6 of a uniform hydraulic conductivity of 200 ft/day is highly suspect given the variability of material reported in the alluvium by driller's logs. The absence of concrete calibration information specifically regarding the head change in the Basalt Pond which is currently receiving discharge makes it suspect to rely upon the model for further evaluation of prospective water-quality impacts.

Page 9 The first full paragraph assigns a chloride concentration of 50 mg/L (or ppm) chloride to the effluent discharge. This data value is cited to the Draft Environmental Impact Report by EDAW.[4]

[4] EDAW, "Draft Environmental Impact Report City of Healdsburg Wastewater Treatment Plant Upgrade Project" February 4, 2005

Examination of the data in the EDAW report reveals that this assignment is unscientific and inappropriate. A chloride concentration of 50 mg/L was the one time maxima reported in the DEIR by EDAW for the Basalt Pond in Table 3.2.3. For a long-term quantitative analysis of the type purported in the Durbin Report the average or mean concentration of the effluent must be used as found in Table 3.2.5. That mean concentration is reported in the DEIR by EDAW as 42 mg/L. Furthermore the historical average reported in Basalt Pond in the DEIR of May 2001 regarding outfall relocation. This creates an inaccurate appraisal subsequently in the Durbin Report of the likely impacts of chloride in the groundwater aquifer.

For the same reasons, the assignment of chloride concentration to the percolation pond effluent disposal option at 60 mg/L. The assumed initial concentration of 50 mg/L is incorrect. Furthermore the evaporation model is imprecise as to chloride concentration as it would not increase the concentration as much as 20% over initial as stated by the Durbin Report. The evaporative index is at most 17.9% based on the discharge rate and evaporative index stated and cited in the Durbin Report at Page 9. These incremental errors further undermine the subsequent conclusions in the Durbin Report

In the third full paragraph on page 9, the assignment of ambient chloride concentrations at 5 mg/L is apparently not based upon data analysis. Prior evaluation of background well water quality demonstrates the background concentration is 5.6 mg/L not 5.0 mg/L. Perhaps more importantly the Russian River background concentration has been found to be 5.9 mg/L and not 5.0 mg/L (the Durbin Report slips this value in as the Russian River background at the bottom of page 12).[5] This is important error as the Russian River quality is the principal control on the water quality at the Town of Windsor's current wellfield. Further the Durbin Report's stated percentage shifts in the Russian River and the Town of Windsor's wells are thereby incorrect and exaggerated.

Page 10

There are inconsistencies and errors in the description of dissolved solids loading to the system versus concentration. The use of equations 2.3 and 2.6 is inconsistent with the Durbin Report's earlier discussion of evaporation on page 9. Applied irrigation water from the groundwater system would be subject to evapotransipirational losses and would thereby be at a higher concentration than initial. In this base case evaluation L_1 can equal zero , <u>but</u> under the author's earlier assumptions of evaporative concentration of constituents such as chloride, C_1 would be higher than the initial concentration. This set of consistent assumptions would act to increase the chloride concentration in the aquifer over time due to the fact that water is being consumed by evapotranspiration, meaning $N_1 > 0$. Thus equation 2.6 on page 11 is incorrect as it does not define the concentration increase over time due to water losses in the base case. This would exaggerate the net impact of using wastewater effluent to irrigate crops on the water quality in the groundwater system.

Equation 2.4 is wrong. W_2 cannot represent groundwater pumping per unit area as stated.

Equation 2.5 is wrong for non-conservative solutes. Most of the solutes in city wastewater are non-conservative and would be reduced in the soil horizon. This equation may hold for chloride.

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[5] Page 11 and Figure 4 of Expert Report of John Lambie, July 2003 in the matter of Northern California River Watch vs. City of Healdsburg, United States District Court, Northern District of California, Case No. C01 4686.

Page 11 The assignment to the irrigation reuse options of 50 mg/L chloride for the groundwater recharge component is wrong as for the other effluent disposal options and the resulting analysis is in error.

Pages 14 to 15 The evaluation of resulting Russian River concentrations uses an appropriate general methodology but makes numerous errors with respect to bounding assumptions that lead to erroneous results. As would be expected those erroneous predicted concentrations therefore do not match the actual field data collected by the City of Healdsburg in the Russian River.

The assumption in the second paragraph of the Durbin Report on page 15 that all effluent discharged to the Basalt Pond or any of the effluent disposal options flows to the Russian River is incorrect and constitutes gross error. The groundwater and surface water in this portion of the Russian River basin carry almost the same gradient as the Durbin Report points out in paragraph 2 on page 3. Thus groundwater receiving wastewater discharge flows out the bottom of the basin along the axis of the valley, exchanges readily within the other surface water ponds, and flows into the Russian River and vice versa. All the groundwater does not flow into the Russian River as inferred by this assumption. Furthermore, the existing numerical model of May 2001 by Ludhorff & Scalmanini indicates that most of the flow from the Basalt Pond travels within the groundwater system. That report states that approximately 17% of the flow into Basalt Pond reaches the Russian River(0.35 cfs out of 2.1 cfs).[6] My subsequent analysis using a variation of that same numerical model showed that perhaps 26% of the flow into the Basalt Pond reaches the Russian River with the entry into the river of some of the subflow in the groundwater aquifer but with most subflow not entering the river.[7] This assumption alone leads to a highly inaccurate analysis. However, there are additional errors.

The concentrations of trace constituents in the effluent is taken as the maximum existing value in the Basalt Pond collected for each trace constituent rather than the projected effluent mean concentration of these constituents given in Table 3.2.5 of the DEIR by EDAW. This is incorrect and leads to a simple exaggeration of the potential impacts. This is particularly egregious error for the likes of arsenic.

The assumption that each trace constituent behaves in a conservative manner is embedded in the analysis on page 15 of projected Russian River impacts. This is gross error for all constituents except chloride as none of the others are conservative. The resulting calculations therefore would not match observed conditions in any event, and do not support the Durbin Report's assertion that the sampling location is incapable of measuring the full impact of the current effluent disposal to the Basalt Pond. It is an incorrect and irrelevant analysis of predicted surface water concentrations.

The seepage to the Russian River from the current Basalt Pond effluent disposal option that was occurring in the fall of 2003 when surface water samples were collected reaches its maximum potential impact at the downstream toe of Phase I and II ponds based upon modeling done by Luhdorff & Scalmanini and me. This is the location of the downstream sample location sampled by Larry Walker & Associates in the fall of 2003 and reported in the DEIR by EDAW. The Durbin Report is incorrect in stating that the Luhdorff and Scalmanini modeling efforts of 1999

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[6] Page 3 of Appendix D, of "Draft Environmental Impact Report Wastewater Outfall Relocation Projects, Healdsburg, California", May 2001 prepared by Luhdorff and Scalmanini.
[7] Page 8 of Expert Report of John Lambie, July 2003 in the matter of Northern California River Watch vs. City of Healdsburg, United States District Court, Northern District of California, Case No. C01 4686

and 2001 indicates otherwise. The downstream sample location is at a point where most of the return flow to the Russian River from the current effluent disposal point has occurred as indicated by the L&S models and my own version of their model. Thus the field data collected are representative of the maximum downstream shift in water quality. The Durbin Report incorrectly concludes that the sample point was not sufficiently downstream to find their predicted impacts when the error is actually in the application of Equation 4.3 to the data.

The Durbin Report is correct that the number of surface water samples collected was too small to perform meaningful statistical analysis. However, the field data collected on trace constituents are not meaningless and affirm that the current effluent disposal option does not have a measurable impact on water quality in the Russian River.

Page 17 The calculated chloride load stated in the fourth paragraph to the Russian River is incorrect; the chloride load to the Russian River does not equal that released at the effluent disposal point since not all of that flow enters the river

The analysis of chloride concentrations in the third and fourth paragraphs of page 17 of the Durbin Report are incorrect as they are based upon flawed assumptions and a flawed application of the methods described. All of the impacts of chloride described by their modelling analysis are exaggerated by these errors and do not match actual data from the field. Furthermore the analysis again states that chloride is a surrogate for other constituents when it is not.

Page 18 In the first paragraph on page 18 the Durbin Report raises a new point when it incorrectly concludes that the City did not properly measure the current impact to the Russian River water quality due to dilution effects within the river. The DEIR by EDAW describes a flow mixing model for Dry Creek and the Russian River analogous to that in the Durbin Report. The downstream sample location is a direct function of the mixing of the tributary flows and groundwater seepage. Thus the dilutionary effects of mixing flows containing a conservative constituent are reflected in the field data by its very nature.

Further in this first paragraph the Durbin Report again restates the incorrect hypothesis that load of a conservative constituent becomes load to the Russian River. This is incorrect. The load of a conservative constituent becomes load to the entire surface water and groundwater system. Much of the chloride load is diluted out by rainfall recharge over the entire basin. Moreover groundwater subflow out of the basin carries a substantial portion of the chloride load. The statement and the analysis are inherently flawed.

The last paragraph on page 18 states that an adequate quantitative analysis has not been done. Analysis and measurements have been done to assess the potential significance of effluent disposal options on groundwater and surface-water resources. Both the quantity and quality effects have been considered and they do not rise to the level of significance required for the more detailed studies recommended by the author(s). Moreover the water flow system between surface water disposal points, groundwater, and subsequent surface water entry points does not behave the way the Durbin Report contends.

JOHN M. LAMBIE

Groundwater Hydrologist

Education

MS in Sediment Mechanics, 1984, Massachusetts Institute of Technology, Cambridge.
BS in Earth & Planetary Sciences, 1983, Massachusetts Institute of Technology, Cambridge.
Specialized Training: Short Courses in Groundwater Modeling, 1985, 1987, 1989, 2003

Registrations

Professional Civil Engineer: California (No. C58059), Oregon (No. 72442PE), Washington (No. 40125)
Certified Water Rights Examiner: Oregon (No. 72442WRE)
Certified Engineering Geologist: California (No. EG 1662)
Registered Geologist: California (No. 4607)

Professional History

S.S. Papadopulos & Associates, Inc., Portland, Oregon: Vice President and Principal Hydrologist, 2002 to present.
Environmental H2O, Portland, Oregon: Managing Director, 2001-2002.
SECOR International Inc., San Francisco, California: Vice-President and Principal Hydrologist, 1991-2001.
Levine-Fricke, Oakland, California: Project to Senior Associate Hydrogeologist, 1986-1991.
Environmental Research & Technology (ERT), Concord, Mass.: Staff Hydrogeologist, 1984-1986.

Summary of Qualifications

Mr. Lambie has over 20 years experience in hydrogeologic investigations involving water supply, water rights, numerical modeling, and contaminant transport. His expertise includes engineering evaluation of alternatives, predictive modeling of water resource availability and relationships between surface water and groundwater; and financial decision analysis using probabilistic tools. For engineering evaluations, he has applied innovative approaches to assess and then execute new technologies using engineering and financial risk-control techniques. He has utilized a variety of analytical and numerical models for evaluating groundwater and surface-water quantity and quality. For decision analysis, he has used a variety of tools including PortfolioDefender™, RemedyDefender™, @RISK™, Decision Programming Language, and Crystal Ball™. In addition, Mr. Lambie has conducted investigations of spring water supply and stability, availability of water for mineral processing operations, and impacts of groundwater withdrawals on surface-water quantity and quality.

Mr. Lambie has lectured on groundwater modeling and evaluation of remedial design systems for the University of California at Davis and for the University of Wisconsin Extension Program. Mr. Lambie has presented some of his decision-analysis techniques to short-course offerings of the American Bar Association. Mr. Lambie is office manager of SSP&A's Portland, Oregon office.

Professional Societies

Association of Groundwater Scientists and Engineers (AGWSE)
American Water Resources Association
American Water Works Association
California Groundwater Association
International Association of Hydrogeologists

JOHN M. LAMBIE

Groundwater Hydrologist

RESUME — Page 2

Representative Project Experience

Mr. Lambie has conducted and directed a wide variety of projects involving contaminant transport and remediation, water-resource, and a wide range of decision support issues. Examples of his project experience are presented below:

Water Resource Studies

Water Quantity and Quality Study, Russian River, Healdsburg, California — Evaluated quantity of flow reaching Russian River from ponds in the river floodplain. Changes in groundwater surface-water interaction were evaluated and placed into a numerical model of the sub-portion of the basin. One pond is being utilized for secondary wastewater treatment creating an artificial discharge condition to the Russian River year round. Reviewed existing models for the area and developed and refined a groundwater model in MODFLOW and MT3D to evaluate quantity of flow to river and the effect on river and groundwater quality under different portions of the climatic cycle.

Gold Mine Water Supply, Niger, West Africa — Performed groundwater modeling to evaluate withdrawal of shallow groundwater near the Niger River for a prospective gold mining operation. This study showed sufficient water was available for the expected life of mine for both hydraulic sorting and facility drinking water supply.

Coal Mine Water Supply, Utah — Applied a basin-scale groundwater model to evaluate effects of proposed water withdrawals for coal slurry pipeline. Evaluated springs and surface-water flows on adjacent valley. Conducted stochastic modeling of rainfall inputs to evaluate reliability of outcomes for 99-year projected mine life. Used predictive tools to evaluate actual water table declines and to provide benchmark criteria to guide water resource withdrawal.

Spring Source Evaluation, Mount Shasta City, California — Investigated multiple locations for borehole interception of spring water. Study involved installation of a number of shallow and deep wells to map fracture and structure patterns to geology that produced springs and then to determine areas that were supplying flow to springs. Drilled spring borehole on property over 500 feet from spring emergence and established adjacency under California Dept. of Health Services spring water criteria. Performed dye tracer studies, stable isotope evaluations of water provenance, and withdrawal tests on sustainable borehole/spring yield.

Spring Source Evaluations, Arizona and California — Reviewed spring areas in upland portions of Arizona and throughout Lake County, California for acquiring possible new sources and locations of new bottling plants for bottled water company. Evaluated potential anthropogenic effects and pollution potentially affecting watershed sources to springs. Evaluated water rights available for spring flows and history of high and low flows by researching historic records, conducting interviews, reviewing aerial photographs, and walking the watersheds.

Groveland Wells Site, Groveland, Massachusetts — Evaluated city water supply wells for enhanced treatment and/or relocation under federal contract. Performed groundwater modeling using USGS Finite Difference code to evaluate impact of nearby Merrimack River on withdrawals from glacial outwash aquifer. Analysis demonstrated viability of locating wellfield closer to river to improve quality and reliability of supply.

JOHN M. LAMBIE

Groundwater Hydrologist

RESUME — Page 3

Representative Project Experience — *continued*

Groundwater and Soil Remediation Projects

Mr. Lambie has worked on characterization and remediation of a wide range of chemical releases including: creosote and coal tar sites, chlorinated solvents, heavy metals (especially As, Cr, Cu, Pb, and Hg), perchlorate, MTBE, pesticides (especially EDB and DBCP), and wastewater loadings.

Middlefield Ellis Whisman (MEW) Superfund Site, Mountain View, California — Designed and implemented soil and groundwater remediation system for chlorinated solvent release at a former semiconductor manufacturing facility within this multi-party regional Superfund site. Conducted analytical groundwater capture analysis to develop control strategy for the specific client's site and evaluated influence of nearby site and regional remedies. Participated in EPA-responsible party meetings to coordinate progress and provide input on remedy selection process.

Plessey Microsciences Site, Mountain View, California — Managed all aspects of remediation review for large chlorinated release site. Existing remedial systems that were using UV/oxidation technologies were expensive and unreliable. Step-wise evaluation and re-design of the remediation process yielded immediate and long-term benefits. Logic circuit diagrams were analyzed for flaws, and decision ladders were rebuilt to improve system uptime. After additional characterization of source areas for metals and solvents, a change in remedial technologies was implemented to better remediate known areas and to lower system costs. Over $1MM in savings were recorded in 4 years of project operation.

Hillview-Porter Site Soil and Groundwater Remediation, Palo Alto, California — Evaluated two of nine sites involved in this large regional groundwater contamination investigation that involved RI/FS reports and a Remedial Action Plan (RAP). Each site was characterized using innovative techniques such as BAT and installation of multi-port monitoring wells. Developed a complex series of numerical models of groundwater and surface-water flow to evaluate sustainable flows and complex discharge patterns to surface water induced by structural deformation of the subsurface. Developed a site-specific groundwater remediation plan for each of the two sites based primarily on the numerical modeling evaluations in MODFLOW and PATH3D. Participated in lengthy public review process with highly active citizen group.

Teledyne/Spectra-Physics Superfund Site, Mountain View, California — Managed and oversaw performance of all aspects of the CERCLA compliance program for one of the two responsible parties. Conducted extensive investigations of soil and groundwater affected by chlorinated solvents. Fate and transport analysis of chlorinated solvents and their degradation products revealed a variety of sources in the area including sewer lines. Applied a groundwater numerical model and soil chemical transport models to establish remediation alternatives for on-site and off-site areas. Project involved complex interactions and negotiations with municipal, state and private parties to obtain access for off-site remediation in newly redeveloped residential area.

Iron and Steel Foundry, Berkeley, California — Evaluated chromate contamination and other metals releases from small iron foundry. Obtained historical information on uses of adjacent property to demonstrate off-site sources for hexavalent chrome. Developed control and abatement plan for in-situ chromate reduction.

JOHN M. LAMBIE

Groundwater Hydrologist

RESUME — Page 4

Representative Project Experience
— continued

Phone Wire and Phone Manufacturing Plant, Kearny, New Jersey — Performed extensive testing for facility closure under ISRA rules. Developed a statistically based approach for sampling soil and groundwater for this large (~100-acre) facility to improve data reliability. Directed the analysis of anomalous patterns of background detections for lead, copper, chromium, and other constituents using statistical filtering techniques. Off-site atmospheric sources from surficial contamination by metals were found for some of the metals, and the negotiated cleanup levels were adjusted accordingly. Characterized and remediated PCB-affected areas associated with railyard operations. Conducted aquifer tests to define extent of small plume of cleaning solvents discovered within the railyard area. A shallow interception drain was used to capture and remove the affected groundwater.

Soil Bioremediation at Nuclear Facility, Vallecitos, California — Performed bioremediation of diesel- and motor-oil-range hydrocarbon-contaminated soil located within a radiation exclusion zone. The soil was irrigated and fertilized over a 6-month period to reduce the hydrocarbon concentrations to acceptable levels. The soil was then reworked within the radiation exclusion zone.

<u>Decision Analysis Support</u>

Puente Valley Superfund Site, California — Evaluated impacts of chlorinated solvent releases on groundwater. Assisted in numerical model analysis using MODFLOW and MT3D of potential impacts to water supply wells. The basin-wide model included evaluation of some 50 separate source sites using unique source fitting solutions. Alternative remediation approaches were evaluated, and recommendations regarding compliance and cost-allocation were provided to the client and legal counsel.

Merced, California — Provided litigation support to group of dry cleaners sued by the City of Merced, California for potential impacts to water supply wells. Evaluated groundwater impacts and modeled potential outcomes technically and financially. Assisted client in successful resolution of lawsuit using remediation cost-cap insurance criteria.

Hillview Porter Decision Analysis, Palo Alto, California — Developed decision-tree matrix for future remedial options, contingencies, and expected cost outcomes. Worked with a team of lawyers, scientists, and client environmental managers to determine the high risk cost areas for the project and to develop strategies for cost control on those aspects. Further guided settlement strategies in cost allocation among parties and in maintaining certain portions of remedy to ensure positive public relations. Modeling was performed using decision-programming language and @RISK™.

Acme Solvent Superfund Site, Rockford, Illinois — Performed detailed groundwater fate and transport modeling for a wide range of chemicals at this waste disposal site in support of a human health risk assessment (nearby resident water supplies were affected and the decision to replace currently unaffected supply wells was pressing). Completed the Conceptual Site Model for exposure pathways, supported by numerical modeling. Used detailed numerical forecasting and probabilistic techniques to estimate likelihood of impact to other residential wells and the nearby Rock River.

Chlorinated Solvent Contamination, Spartanburg, South Carolina — Developed decision analysis structure for project midway through problem characterization. The decision model guided investigations to complete Conceptual Site Model and to fill in missing information necessary to develop appropriate conceptual remedies for a site that had limited access.

JOHN M. LAMBIE

Groundwater Hydrologist

Representative Project Experience *— continued*

Phone Manufacturing Facility, Shreveport, Louisiana: Developed decision tree structure to evaluate pilot testing of competing technologies for remediating a chlorinated solvents plume. Potential cost outcomes for overall remediation were evaluated using @RISK™ to identify the most promising technologies for long-term cost reduction. Conducted pilot tests of technologies including use of steam heating for bioenhancement, high vacuum extraction, and enhanced anaerobic bioremediation. A staged approach for testing of technologies was used to prioritize the lowest expected cost outcomes from the decision analysis framework.

Napa River Flood Control Improvement Project, Napa, California — Using RemedyDefender™, modeled the costs for a large-scale excavation and treatment of oil-contaminated soil. Cost increases for scope enlargement were correlated with lower unit cost of performance to demonstrate that project had reasonable cost stability enabling the client to move forward.

Multiple Processing Site Purchase, Central United States — Evaluated remedial costs for purchaser of 18 large natural-gas processing plants from Texas through Wyoming and Utah. PortfolioDefender™ was used to model the cost growth expected with scope uncertainties, the probable timing of facility closure, and required conformance to environmental standards. Project was successful in controlling risk using remediation cost-cap insurance on this $1.4 billion acquisition.

<u>Legal Support</u>

Expert Witness Testimony — Mr. Lambie has been retained as an expert on a variety of legal cases. He has testified on cases before both State and Federal Courts, which resulted in some landmark decisions. In addition to courtroom testimony, he has provided written opinions and had his deposition taken on a number of matters that settled before trial.

Mediated Settlements — Mr. Lambie has been retained by individual PRPs and large PRP groups in large basin scale releases to evaluate the technical, factual and economic legal liability to help effect settlement. These have been conducted in the following Superfund Site Operable Units: Burbank, California; North Glendale, California; South Glendale, California; Baldwin Park, California; Puente Valley, California; Wichita, Kansas; and the Hillview-Porter State of California Superfund Site.

Neutral Technical Expert — Mr. Lambie has been retained as a neutral technical expert to assist mediation by listening to the factual technical arguments and rendering non-binding opinions to facilitate the mediation process.

JOHN M. LAMBIE
Groundwater Hydrologist

Publications

Lambie, J.M., J. Orolin, T. Buschek, R. Benkosky, and R. Cochran, 2001. **Remediation of MTBE and Petroleum Hydrocarbons in Groundwater at a Fuel Storage Terminal.** *Contaminated Soil Sediment and Water,* December 2001, pp. 6-10.

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