

**SEVENTH ANNUAL WATER
CONSERVATION SHOWCASE**
MARCH 23rd • PG&E PACIFIC ENERGY CENTER



**FY 2011 Industrial Wastewater Utilization
and Treatment Facility (N271)
Refurbishment and Upgrade
(Groundwater Re-use Project)**

Ken Kono, Project Manager
NASA Ames Research Center
March 23, 2010

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Marin Municipal Water District
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Solano County Water Agency
Sonoma County Water Agency
Soquel Creek Water District
Zone 7 Water Agency



Ames Research Center
in Silicon Valley

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Ames Research Center
in Silicon Valley

NASA AMES RESEARCH CENTER OVERVIEW

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EBMUD PG&E USCMC



AMES RESEARCH CENTER'S WATER CONSERVATION EFFORTS

CONVERTED IRRIGATION OF APPROX.
40 ACRES TO RECLAIMED WATER 2009



BEYOND LEED PLATINUM OFFICE
BUILDING CONSTRUCTION COMPLETION 2011



GROUNDWATER RE-USE PROJECT
CONSTRUCTION COMPLETION 2011



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GW RE-USE PROJECT GOAL

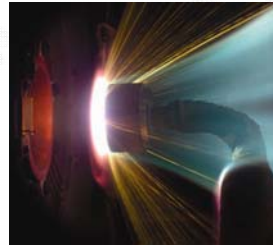
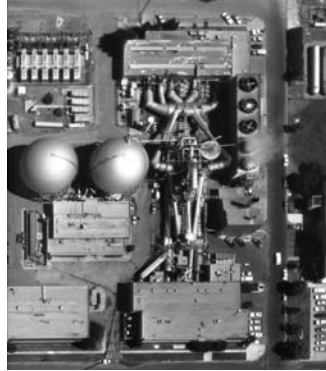
UTILIZE AVAILABLE GROUNDWATER DISCHARGES TO
MEET ALL INDUSTRIAL WATER NEEDS TO
NASA AMES ARC JET COMPLEX AND UNITARY PLAN
WIND TUNNELS

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ARC JET COMPLEX



UTILIZES 110,000 GPD* OF POTABLE WATER TO OPERATE THE STEAM VACUUM SYSTEM

*OPERATING DAY, APPROX. 170 OPERATING DAYS/YEAR

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UNITARY PLAN WIND TUNNELS



UTILIZES 60,000 GPD* OF POTABLE WATER TO MEET FACILITY COOLING REQUIREMENTS

*OPERATING DAY, APPROX. 170 OPERATING DAYS/YEAR

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ACTIVE PUMP AND TREAT FACILITIES AT AMES



NASA RGRP
Sept. 2001

WATS
Nov. 1998

MEW N.101
Oct. 1998

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PRELIMINARY ENGINEERING PHASE

- ASSESS WATER QUALITY AND QUANTITY
- ASSESS EXISTING SOURCE INFRASTRUCTURE
- DEFINE NPDES REQUIREMENTS

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IN SITU SDI (SILT DENSITY INDEX) TESTING AT TREATMENT FACILITIES



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CURRENT DISCHARGE RATE

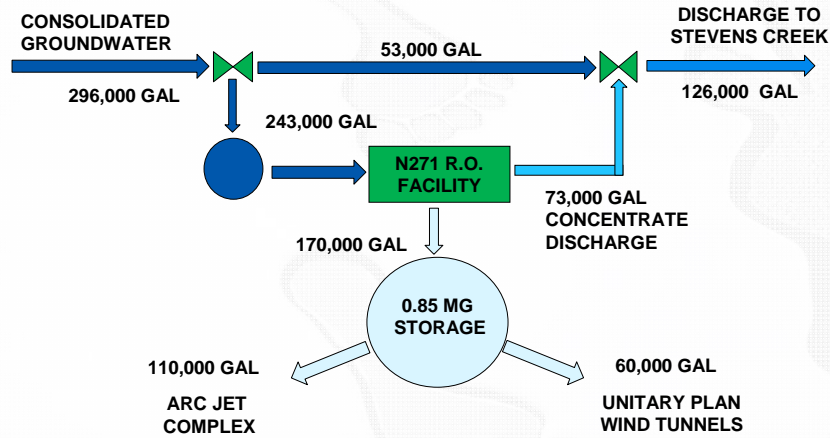
FACILITY	AVERAGE FLOW (gpd)	DESTINATION	REMARKS
N 101 (MEW)	179,000	STEVENS CREEK	VIA 6" DIA. PIPE, PARTIAL RE-USE AT N271
NASA RGRP	22,000	STEVENS CREEK	JOINS N 101 PIPE
WATS	95,000	STORM WATER RETENTION BASIN	VIA STORM WATER CONVEYANCE SYSTEM

**TOTAL FLOW = 296,000 GPD OR OVER 108 MILLION GALLONS PER YEAR
IS AVAILABLE FOR RE-USE
CURRENTLY, LESS THAN 10% IS RE-USED**

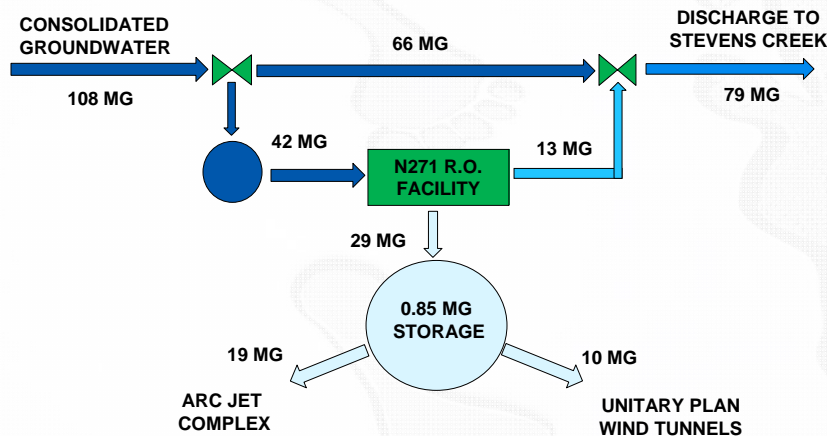
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DAILY PEAK DEMAND WATER FLOW DIAGRAM



ANNUAL WATER FLOW DIAGRAM





WORKING WITH THE STATE WATERBOARD



- NOTIFY THE BOARD OF NASA'S INTENT
- SUBMIT APPLICATION FOR NPDES PERMIT



PROJECT SCHEDULE

- | | |
|--------------------------|-----------------------|
| •PRELIMINARY ENGINEERING | SEPT 2009 – MAR 2010 |
| •FINAL DESIGN | APRIL 2010 – OCT 2010 |
| •CONSTRUCTION | FEB 2011 – OCT 2011 |

