SAN JOAQUIN RIVER RESTORATION PROGRAM

Seepage and Conveyance Technical Feedback Group

January 14, 2011
11704 W. Henry Miller Ave.
Dos Palos, CA

Agenda

- Introductions
- Purpose and Charter
- Monitoring
- Impact Thresholds
- Information and Data Exchange
- Operating Criteria and Triggers
- Next Steps

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Review and Context

TECHNICAL FEEDBACK GROUP PURPOSE AND CHARTER

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Technical Feedback Group Purpose

- Provide a constructive forum
  - To improve the information exchange, knowledge, and understanding
  - Among agencies, water districts, landowners, and Settling Parties
  - Regarding Interim and Restoration flows, conveyance, and seepage issues

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Objectives

- Develop an improved Seepage Monitoring & Management Plan before implementing spring Interim Flows (March 2011)
- Identify and evaluate actions to avoid seepage impacts
- Clarify future claims process

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Core Topics

- Data & Information Consolidation
- Monitoring Plan
- Impact Thresholds
- Impact Avoidance Actions
- Process for Potential Future Claims

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Related Topics

- Temporary Access
- Claims for Impacts Last Year
- Draft Program EIS/EIR
- Reach 4B Flow & Routing Issues
- RA and TAC Flow Recommendations
- Flood Management & Levee Improvements
- Funding and Implementation Timing

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Process & Decision-making

- 3 to 5 meetings through February
  - Focused on SMMP
- Additional topics and meetings identified and considered as we proceed
  - Update Charter in March 2011
- Reclamation and its partner agencies retain decision authority for Program implementation

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Seepage Monitoring & Management Plan

- Purpose: describe the approach to conveying flows while reducing or avoiding adverse seepage impacts
- Uses for the SMMP include:
  - Disclosure of approaches
  - Guidance for actions
  - Forum for input
- The Technical Feedback Group provides a way to solicit input.

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Elements of the SMMP

- Seepage Impacts
- Locations of Known Risks
- Operations Conceptual Model
- Monitoring Program
- Thresholds and Triggers
- Site Visit and Response
- Site Evaluation and Projects

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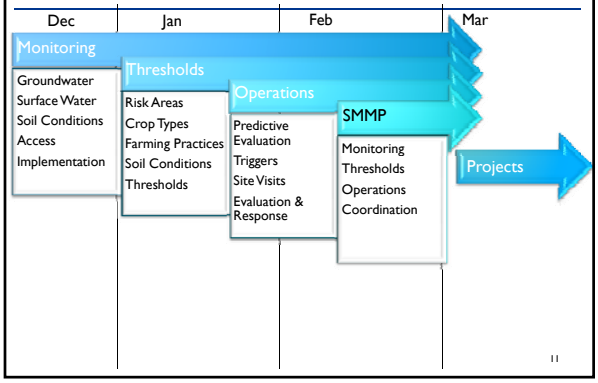
Discussion Topics



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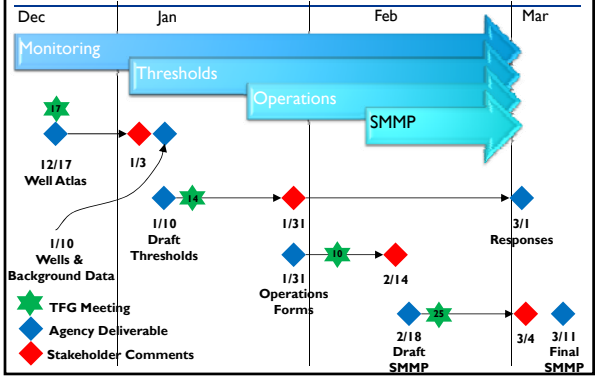
Milestones



Topics Parking Lot

- Conversion of row crops to permanent crops and impact on thresholds
- Timing of flows and relationship to severity of seepage impacts
- Data & Information Exchange
  - Soil conditions
  - Irrigation practices
  - Tile drains
- Disposal of tile drain water

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Topics Parking Lot (Cont.)

- Reach 4B high flow issues
- RA and TAC Interim Flow Recommendations
- Claims process
- Revisit Charter
- Projects to reduce or avoid seepage impacts
  - Remove channel barriers
- Vegetation management in and along the river

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Action Items

Action Items	Due	Assigned to:	Status
1. Revise draft Charter and distribute to group	1/10/11	Gardiner	Posted 1/12/11
2. Share survey data with stakeholders	1/26/11	Harrison	Updating Well Atlas
3. Add ground elevation and soil temperature to monitoring program items	1/26/11	Harrison	Ground elevation data incorporated into Well Atlas. Need more info on issue of soil temperature
4. Plot the profile of flows, stage, and well data to identify sensitive areas	1/10/11	Mooney, Harrison	Two plots included in Thresholds TM on 1/10/11. Remaining plots posted 1/13/11
5. Identify field elevation data to include in the analysis	1/10/11	Harrison	Included in Thresholds TM, 1/10/11
6. Share well Meta data and well screen information that is not in the Well Atlas.	1/26/11	Lee	Rough draft provided to Chris White, 12/20/10. Data being incorporated into Well Atlas

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Follow-Up on Comments

MONITORING APPROACH AND POTENTIAL IMPROVEMENTS

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Monitoring Overview

- SMMP Elements Addressed Include
  - Locations of Known Risks
  - Monitoring Networks
- Discussion Objectives for Today
  - Review what we heard from the last meeting
  - Indicate how we responded to comments
  - Check back for additional concerns

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Monitoring Feedback

Monitoring
- Flow Stage Profiles
- Risk Areas
- EC, soil moisture
- Rainfall and Irrigation

Thresholds
- Soil Conditions
- Ground Elevation Surveys
- Irrigation Practices
- Drainage Practices
- Capillary Rise
- Key Wells

We need more information on this monitoring feedback.

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Monitoring Revisions

- Incorporation of measurements from CCID
- Added field and well elevations
- Proposed transect in Reach 4B
- Identified priority wells for operations
- Identified monitoring to understand physical processes

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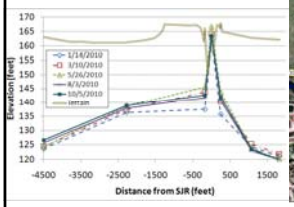
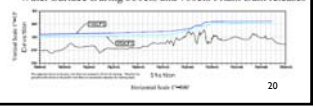
Flow and Stage Profiles



Water Surface During 350cfs and 700cfs Friant Dam releases



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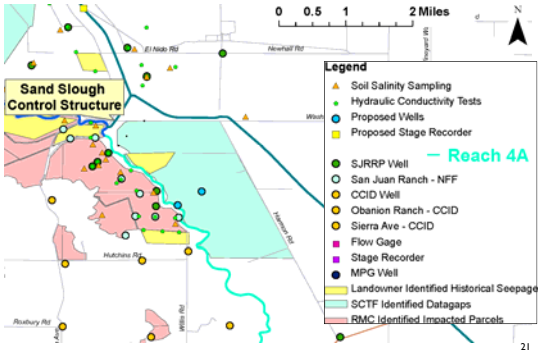
Location of Known Risks



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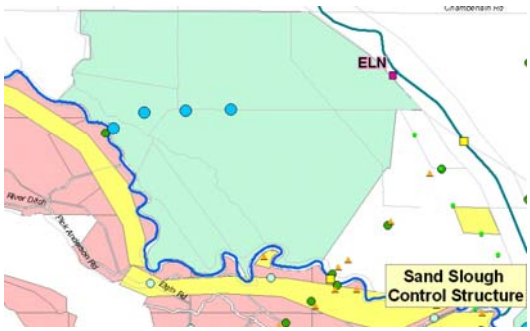
Proposed Monitoring Wells



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Implementation Steps

- Identify Locations for Monitoring
- Acquire Landowner Permission
  - Temporary Entry Permit
  - Monitoring Agreement
- Permitting and Environmental Compliance
- Construction
- Testing (Completion)
- Data Collection

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Monitoring Summary

- Location of Known Risk in the seepage management plan documents anecdotal information – February 18
- The *Monitoring Well Atlas* documents improvements to the groundwater network – January 26
- The thresholds discussion ties monitoring information into the potential for impacts – today

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Presentation on Thresholds and Development Methods

IMPACT THRESHOLDS

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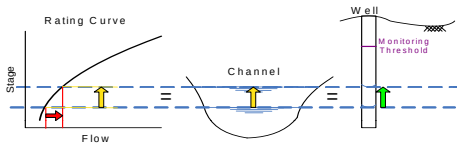
Thresholds Overview



- Thresholds identify potential problems so that Reclamation can establish operating criteria to manage flows

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Threshold Methods

- The approach to establish thresholds will
  - Start conservative
  - Refine assumption with site-specific information
- Methods will sequentially evaluate
  - Agricultural Conditions
  - Historical Data
  - Drainage Direction

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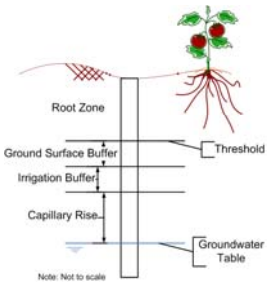
Threshold Agricultural Conditions

- Root Zone
- Ground Surface
- Irrigation
- Capillary Rise
- Groundwater Table



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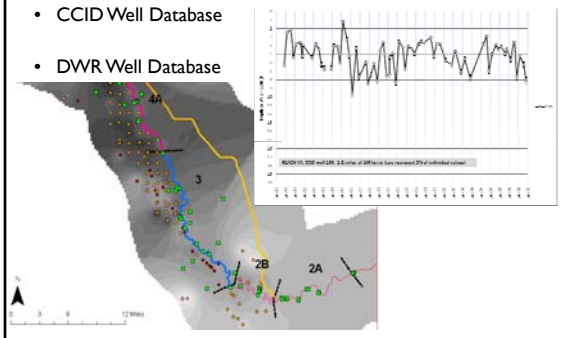
Threshold Historical Data

- CCID Well Database
- DWR Well Database



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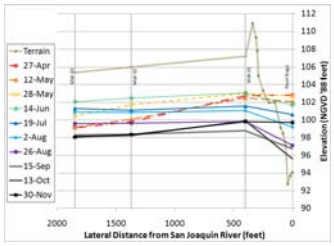
Threshold Drainage Direction

- Groundwater Elevation
- River Stage
- Relative Differences



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Integration of Results

- Reclamation evaluated all wells for agricultural conditions
- Historical data shows groundwater elevations higher than agricultural conditions in some fields and we would want to maintain those conditions
- Some fields may require consideration of drainage to support continued agriculture

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Threshold Conclusions

- Potential Areas for Feedback
  - New Well Locations
  - Irrigation Records
  - Timing of Irrigation and Planting
  - Poorly Drained Soils
  - Crop Types
  - Root Zone Experience
- Next Steps
  - Written Comments by January 31st
  - Final Posting in the SMMP no later than March 1st

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Discussion on Thresholds

INFORMATION AND DATA EXCHANGE

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Information & Data Requested

- At the last meeting you wanted…
  - Monitoring well screen depths and other well parameters
  - Ground elevations for wells and fields
  - Plots of sensitive areas
  - Additional wells to fill gaps
- Here's what we developed
  - Thresholds TM & Plots – on the website
  - Updated Well Atlas – January 26
  - New wells for this year described today

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Information & Data Needs Discussion

- Is there more information available for…
  - Soil conditions?
    - California Soil Resources Lab at UC Davis
    - Reclamation review of site logs
  - Irrigation practices?
  - Cropping patterns?

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Information & Data Needs Discussion

- We're still looking to understand…
  - Wet weather practices
    - What have you seen with the recent flows?
    - How have you changed practices in wet years?

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Preparation, Site Visits, and Changes to Flows

OPERATING CRITERIA AND TRIGGERS

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Operating Criteria and Triggers

- Operating Objectives
  - Release Interim and Restoration Flows
  - Avoid Adverse Seepage Impacts
- Challenges
  - The relationship of flow rates to impacts is not clear
  - We will need flow releases to learn the relationship
- Strategy
  - Incremental Approach
  - Measure Responses
  - Anticipate and Identify Limitations

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Seepage Operation Components

- Monitoring Data
- Triggers
  - Flow Bench Evaluations
  - Daily Evaluations
  - Hotline Intake
- Site Visit
- Response

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Flow Bench Evaluations

- Reclamation performs Flow Bench Evaluations prior to increasing flows.
- Flow Bench Evaluations include:
  - Conveyance Capacity
  - Groundwater Telemetry
  - Groundwater Manual Measurements
  - Flow Stability
  - Groundwater Projections
  - Mendota Pool Operations
  - Feedback
    - Landowners (Seepage Hotline)
    - Levee District
    - CCID
    - SLCC

- Reclamation documents evaluations at:
  http://www.restoresjr.net/flows/FlowScheduling/flow_scheduling.html

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Daily Flow Evaluations

- Reclamation performs daily evaluations when flows exceed 475 cfs
- Daily Flow Evaluations Include
  - Conveyance Capacity
  - Groundwater Telemetry
  - Mendota Pool Operations
  - Landowner Feedback (Seepage Hotline)
- Reclamation documents evaluations at
  http://www.restoresjr.net/flows/FlowScheduling/flow_scheduling.html

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Seepage Hotline Process

- Hotline Intake: A landowner calls the seepage hotline or sends an email
  (916) 978-4398
  interimflows@restoresjr.net
- Site Visit: Reclamation views the problem and meets with the landowner
- Response: Reclamation identifies a course of action

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Hotline Intake

- Location
- Access
- Distance from the River
- Proximity to Levee Toe
- Description of Seepage
- Potential Impact
- Relationship to Interim Flows
- Immediacy of Impact

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Site Visit

- Description of Seepage
- Type of Impact
- Interim Flow Relationship
- Operations Recommendation
- Follow-Up Recommendation
- Photo Log

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Response

- Adjust Monitoring
- Establish New Thresholds
- Set Operations Criteria
- Reduce Flows

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Operations Next Steps

- Initial Feedback
  - Is the general direction and process reasonable?
  - Are there major missing pieces?
- Next Operations Steps
  - Post Operations Forms – January 31st
  - Present Forms and Solicit Feedback – February 10
  - Draft SMMP – February 18

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NEXT STEPS AND FOLLOW-THROUGH

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Next Steps

- Thresholds
  - Comments due January 31st
  - Incorporate Stakeholder Comments
  - Post 2011 Thresholds by March 1
- Operating Criteria and Triggers
  - Post Draft Seepage Management Forms for Comment
  - Incorporate Stakeholder Comments
  - Post 2011 Seepage Management Forms
- Integrate Sections into the 2011 SMMP
- Develop Projects to Avoid Impacts

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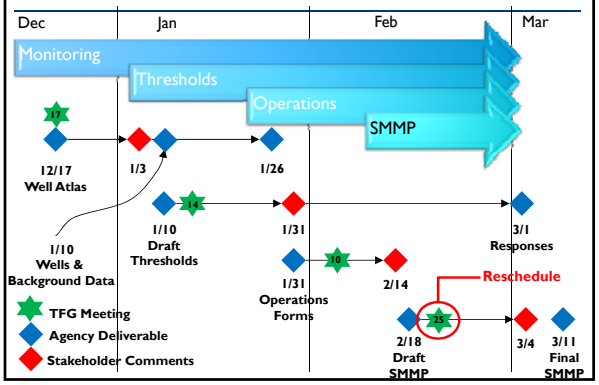
Milestones & Meetings



Action Items and Review

- Update Action Items
  - Revised Actions
  - New Actions

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Meeting and Process Review

- How are we doing?
  - What works?
  - What needs improvement?

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Contact

- Technical Feedback Group – David Mooney
  - (916) 978-5458
  - dmmooney@usbr.gov
- Seepage Concerns – Seepage Hotline
  - (916) 978-4398
  - interimflows@restoresjr.net

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