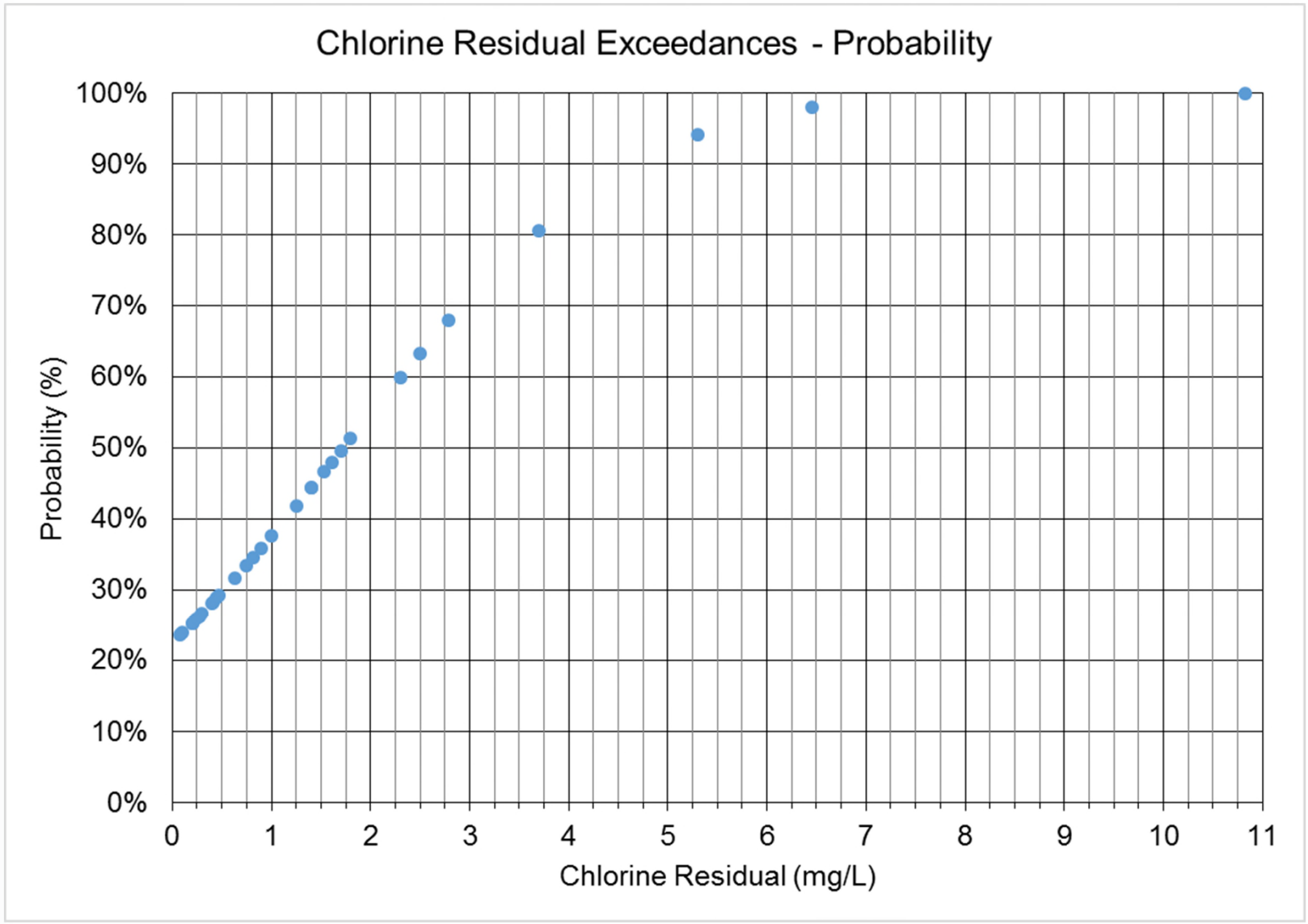
Chlorine Residual Basin Plan Amendment Scope

BACWA Annual Technical Seminar

10/27/2017

Current Status

- Basin Plan 0.0 mg/L instantaneous maximum limit
- **24-hourly readings** reported for compliance (MMP) purposes (per RWB 2004 letter)
- Off hour excursions reported in transmittal letter; RWB discretionary enforcement
- CIWQS query 01/01/2010 – 06/30/2017; (7.5 years)
  - **30 POTW Cl2 excursions** (w/MMPs)
  - 7 POTWs w/1 each; 2 w/2; 2 w/3; 2 w/6
- No CIWQS duration or off-hour excursion data
- Need SMR transmittal letters and 5-day reports


Chlorine Residual Exceedances - Probability
Probability (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
1
2
3
4
5
6
7
8
9
10
11
Chlorine Residual (mg/L)

Excess Dechlorination

- Dechlorination chemical added to quench Cl2 residual
- Excess chemical required for reliable compliance
- Excess bisulfite creates oxygen demand in RW
- Bay-wide about 3 MG of sodium bisulfite used annually
- Bay-wide annual (2017) bisulfite costs about $3.5 M

Key Basin Plan Amendment Issues

- Delete 0.0 mg/L instantaneous maximum limit in Basin Plan Table 4-2
- Replace with 1985 EPA Ambient Water Quality Criteria for Chlorine
  - Saltwater: **13 ug/L 1-hour average**; 7.5 ug/L 4-day average
  - Freshwater: **19 ug/L 1-hour average**; 11 ug/L 4-day average
  - Need rationale for no 4-day average or instantaneous maximum limits
- Use dilution credit to calculate water quality based effluent limits (WQBEL)
  - Deepwater – actual dilution credit (NH3) with RWB discretion to reduce
  - Shallow water – actual dilution credit (~3:1 BP Table 4-6 for Cn not sufficient)
- Develop new Reporting Limit(s) (RL) (e.g., 0.04, 0.1, 0.2, 0.3 mg/L)
- Develop new RLs using updated protocols from SWB 2008 study

Provide Technical Support to RWB to Complete BPA

- Technical and data analysis, BPA staff report, SED (CEQA), draft BPA language
- Clarify RWQCB versus BACWA responsibilities
- Full BPA schedule includes RWB, SWB, OAL, and EPA approvals (~24+ months)
- BACWA scope of work and budget for BPA
- Step-wise approach identified

Step 1. Current Conditions

Task Description	Hours	Budget ($)	Comments
Compliance Problem and Dechlorination Chemical Usage Assessment			3 months
Task 1. Compile Chlorine Magnitude and Duration Excursions and Causes	60	15,500	Necessary to define problem extent
Task 2. Survey POTW Equipment/Controls	60	15,500	Could reduce to field study POTWs
Task 3. Chemical Reductions if Dilution Based Bacteriological Effluent Limits	30	7,500	Could make hypothetical calcs
Subtotal	150	38,500	

Step 2. Deepwater POTW Approach – Develop WQBELs

Task Description	Hours	Budget ($)	Comments
Effluent Limit Alternatives Analysis			3 Months
Task 4. Evaluate Alternative Approaches to Basin Plan 0.0 mg/L Technology Limit	80	20,500	Simplify if only full dilution WQBEL
Task 5. Evaluate Alternative Approaches for Compliance Determination	100	25,500	Instantaneous, 5-min, 1-hr, 24-hr, …
Task 6. Research Alternative ML/RL Derivation Approaches	40	10,500	Could scale back e-literature review
Subtotal	220	56,500	

Step 3. Shallow Water POTW Approach – Develop RLs

Task Description	Hours	Budget ($)	Comments
Field and Laboratory Studies			6-9 Months
Task 7. Develop/Coordinate POTW On-line Analyzer Field Studies Based on SWB 2008	180	46,000 + controls firm	Workplan, 3-4 POTWs, data
Task 8. Coordinate Lab/Field Cl2 Decay Studies to Support RLs	50	13,000	LOE depends on results use
Subtotal	230	59,000	

Step 4. BPA Preparation Assistance

Task Description	Hours	Budget ($)	Comments
Impact Analysis and Documentation			9-12 Months
Task 9. Evaluate Compliance Impacts of Alternative Effluent Limit Approaches on Shallow/Deepwater POTWs	40	10,500	For BPA and CEQA alternatives analyses
Task 10. Summarize Results of Tasks 1-9 Technical/Regulatory Analyses for BPA	120	30,000	Language for BPA staff report/SED
Task 11. Support CEQA/SED Preparation	40	10,500	As-needed support
Task 12. Support WB Stakeholder Outreach	40	10.500	As-needed support
Subtotal	240	61,500	

Project Management Services

Task Description	Hours	Budget ($)	Comments
Project Management Services			
Task 13. RWB Coordination, Meetings, Response to Document Reviews	54	14,000	3 hrs/mo. for 18 mo.
Task 14. Project Administration	36	9,000	2 hrs/mo. for 18 mo.
Task 15. Supplemental Services	80	20,000	As needed, subject to BACWA approval
Subtotal	170	43,000	

Scope of Work Summary

Task Description	Hours	Budget ($)	Timing
Step 1. Current Conditions	150	38,500	3 months
Step 2. Deepwater POTWs – WQBELs	220	56,500	3 months
Step 3. Shallow Water POTWs – RLs	230	59,000	6 months
Step 4. BPA Preparation Assistance	240	61,500	9 months
Project Management	90	23,000	On-going
Supplemental Services	80	20,000	TBD
Cumulative Total	1,010	258,500	18-24 months