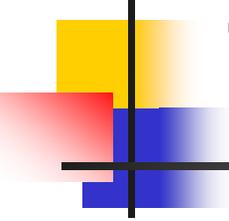


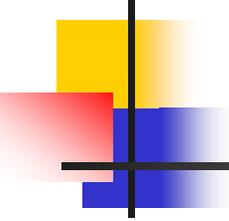
Closure & Postclosure Maintenance Plans

What You Need To Know
or
Secrets Revealed



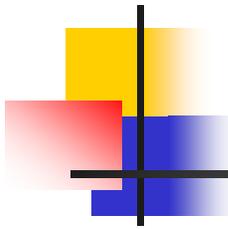
Topics

- **General Overview**
- Special Case – Trickling LFs
- Permit Interaction
- General Review Process
- Specific Review Issues

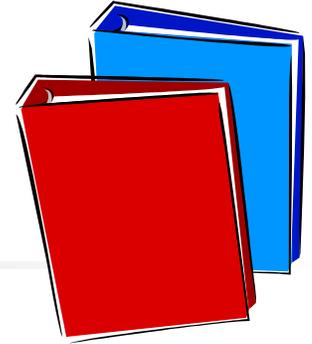


Why?

- Protection of public health and safety and the environment (CIWMB/LEA)
- Protection of water quality (RWQCB)
- Legislature Says So
 - CIWMB/LEA - PRC 43500 et seq.
 - RWQCB - WC 13172

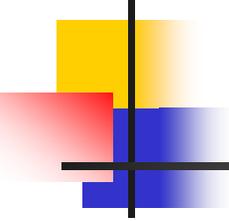


Plan Types



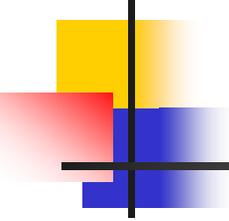
- Closure
 - Describes closure activities (e.g., final cover, drainage, monitoring systems, etc.)

- Postclosure Maintenance
 - Describes inspection, maintenance, and monitoring of landfill during PCM period



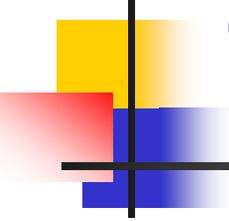
Plan Level/Purpose/Due Dates

- Preliminary
 - Provide basis for cost estimate for C/PCM
 - Conceptual Closure Design
 - With JTD for review, revision, or new SWFP
- Final
 - Provide cost estimate, plan, schedule for C/PCM
 - Detailed descriptions of activities
 - CEQA compliance required
 - LTP Required
 - 2 years prior to anticipated closure date



Plan Level/Purpose/Due Dates (2)

- Partial Final
 - Same as final
 - 2 year submittal not necessary
- PCM Only
 - After site certified closed
 - Minimum every 5 years w/ permit review



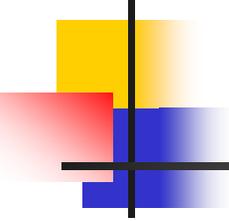
Topics

- General Overview
- **Special Case – Trickling LFs**
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Trickling



- Standard - 3 Parts
 - Flow Level (i.e., "Trigger")
 - Long-term Inactive (12 months)
 - Very Low Flow (2 yrs @ <30% of 10 yr average)
 - Criteria
 - Capacity/likelihood to receive additional waste
 - Cannot be to avoid or delay closure implementation
 - Implementation
 - LEA approval with CIWMB concurrence
 - Maintain site in environmentally sound manner
 - SWFP review/revised after approval
- Burden of Proof - Operator



Trickling Calculation

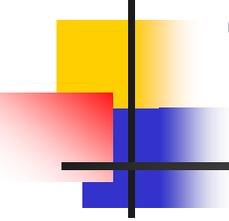
Year	Tonnage	Year	Tonnage
1991	5000	1997	7000
1992	5100	1998	4600
1993	4800	1999	3500
1994	4700	2000	1000
1995	4900	2001	500
1996	5000	2002	400

10-year average (minus max and min) = 4700

2-year average (last 2 years) = 450

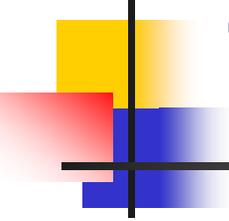
$450/4700 = 9.6\%$ TRICKLING

Note 30% of 4700 = 1410



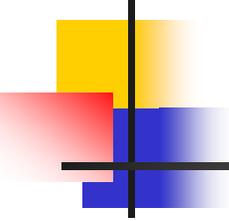
Trickling Approval

- Timelines
 - Operator - Request to LEA (>120 days)
 - LEA - Respond w/in 60 days
 - CIWMB - Respond to LEA approval w/in 60 days
- Effective Feb 2003
 - Sites in violation as of 2/03
 - Only 2 sites approved



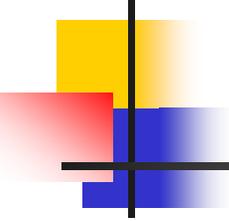
Topics

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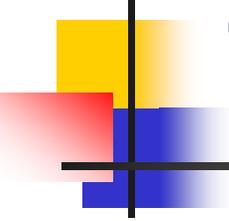
Permit Action

- Complete Plans
 - Needed for permit application
 - New, revised, permit review
- Consistent w/ SMS
 - Needed for SWFP concurrence
 - Effective Feb 03



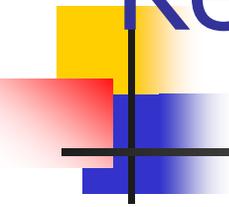
SWFP for PCM

- Effective Feb 03
 - LFs which did not initiate closure
- FCPMP incorporated into SWFP
 - Permit revision not necessary at that time
- SWFP revised to reflect closed LF
 - By time of certification of closure
 - Ministerial action



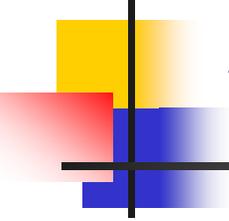
Topics

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- **General Review Process**
- Specific Review Issues



Review/Approval Process

- CIWMB coordinates review
 - LEA/RWB case-by-case basis
- CIWMB/LEA/RWB review for completeness (30-day limit)
- Agencies review for approvable (120-day limit, includes 30-day completeness time)



Approval Levels

- Complete - all areas are addressed although not necessarily adequately (i.e., “in the parking lot”)
- Consistent w/SMS – all areas are addressed appropriately but not necessarily to an approvable level (i.e., “in the ballpark”)
- Approvable - all areas are addressed adequately (i.e., “in the correct seat”)
 - Financial Assurance
 - CEQA/LTP – Final Only

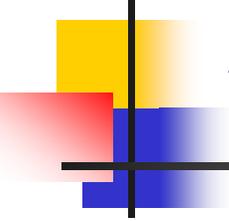


Here in
Parking Lot

In the Ball
Park

Correct
Seat
in
Section
101

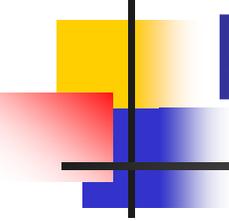




Approval Levels

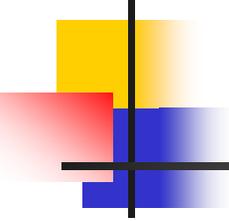
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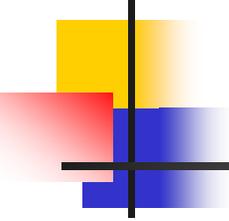
Review Responsibilities

- PRC 43506 (b)
 - RWQCB - portions of plans related to protection of the waters of the State
 - LEA/CIWMB - remaining portions of the plans
- Use JTD Index to determine shared topics



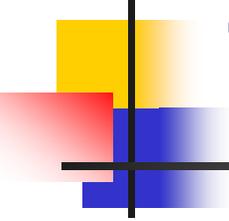
Shared Responsibility

- RWQCB – Water Quality
- CIWMB/LEA – Non Water Quality
 - Cover Design
 - Drainage and Erosion Control
 - Gas Monitoring and Control
 - Postclosure Land Use
 - Slope Stability
 - Construction Quality Assurance



Sole Responsibility

- RWQCB
 - Ground and Surface Water Monitoring
- CIWMB/LEA
 - Site Security
 - Structure Removal
 - Gas Monitoring in Structures



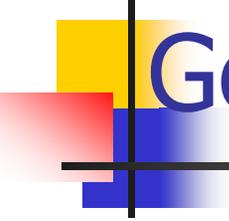
Topics

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Checklists

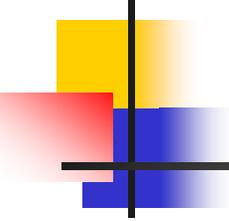
- Complete
 - Preliminary
 - Final
- Adequate/Approvable
 - Preliminary
 - Final
- On web page





General Areas

- Math
- Engineering Calculations
- Design Assumptions
- Cost Estimates



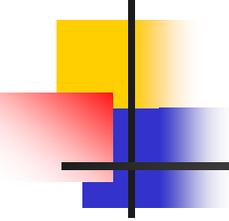
Cost Estimates

- Spreadsheet
 - On web page
 - Detailed
 - Not every item needed for every site

Cost Estimates (2)

- Closure
 - Everything included
 - If not built yet include in estimate
 - 3rd party
 - 20% contingency
- Phased Closure
 - Closure area PLUS open area





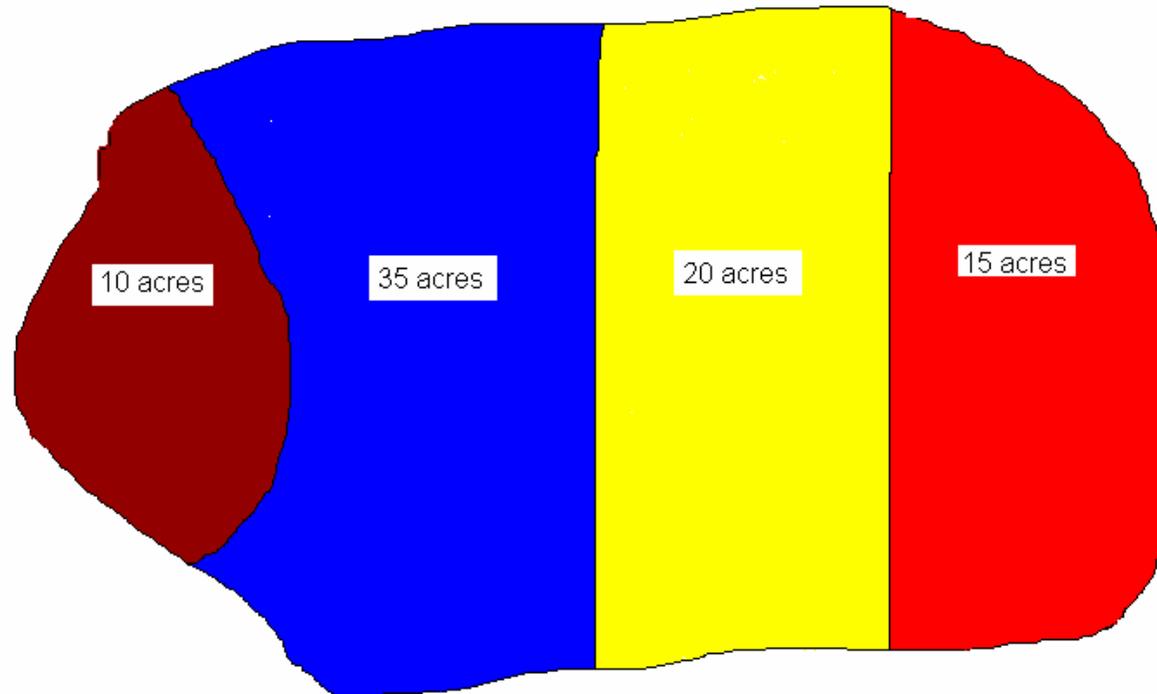
Cost Estimates (3)

- Postclosure Maintenance
 - Annualized cost x 30
 - Prorate for frequency <1/yr
 - No pre-discounting (i.e., less in future)
 - Can have options in PCM plan
 - E.g., frequency table
 - Revise estimate at that time
 - Covers entire site – even if phased closure

Phased Closure

Postclosure = 80 acres

Phased closure = 55/45/10 acres



Gas Monitoring

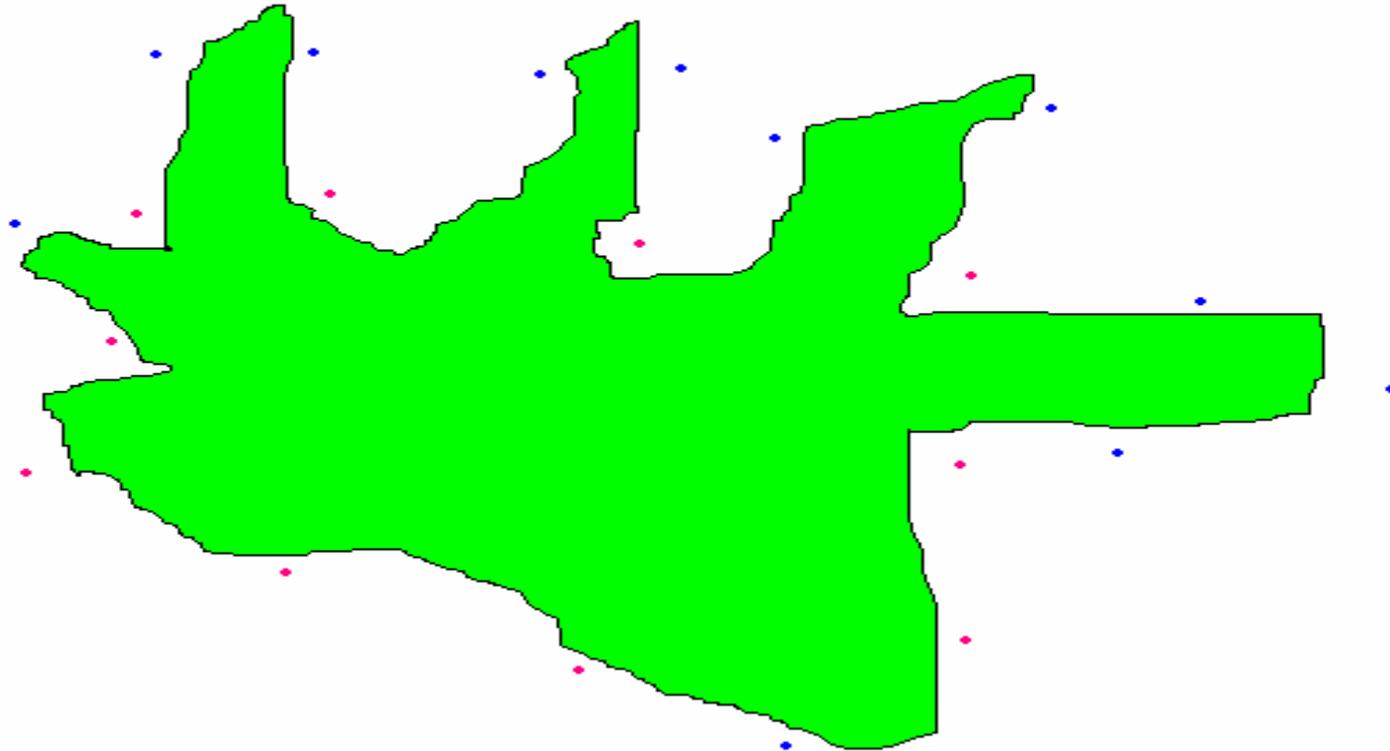
- Triple completion if >30 ft
- At permitted boundary or closer
- Maximum 1000 ft ALONG perimeter
- Structure monitoring
- Control necessary?



Gas Probe Placement

LFG Probes

- **Correct Spacing**
- **Incorrect Spacing**



Final Cover

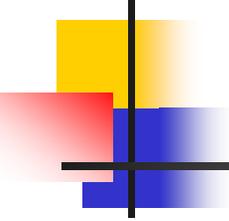


- Minimum 3 ft (ET Covers)
- Interim Cover \neq Foundation Layer
 - Can under certain conditions
- Grading
 - Slopes $\leq 1.75:1$ (h:v)
 - Bench – 15 ft wide every 50 ft elevation

Drainage

- Design Storm
 - Amount used
 - Return frequency
 - Whence data
 - Old DWR report good but out-of-date
 - Caltrans
 - DWR
 - Local Flood District





Slope Stability

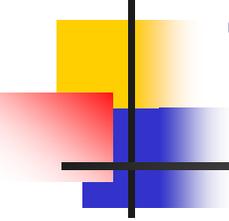
- Assumptions used
- $\geq 3:1$ slopes
- Earthquake area



Postclosure Land Use

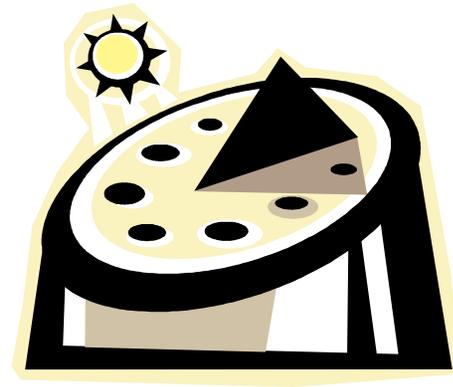
- Included in Plan
 - Transfer Station IS postclosure land use

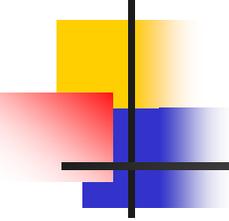




Timelines

- Reasonable





Questions????

Michael Wochnick

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916-341-6318

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