

Item 7

Order No. R1-2021-0024 Proposed Closure Waste Discharge Requirements for County of Mendocino, South Coast Class III Solid Waste Disposal Site

Terri Cia – Engineering Geologist
North Coast Regional Water Quality Control Board
June 17, 2021



Presentation Outline

- Project Introduction
- Overview- Waste Discharge Requirements
 - Key Points
- Landfill Closure Design
 - Engineered Alternative Design
- Public Comments
- Response To Comments
- Staff Recommendations for Adoption



South Coast Class III Solid Waste Disposal Site

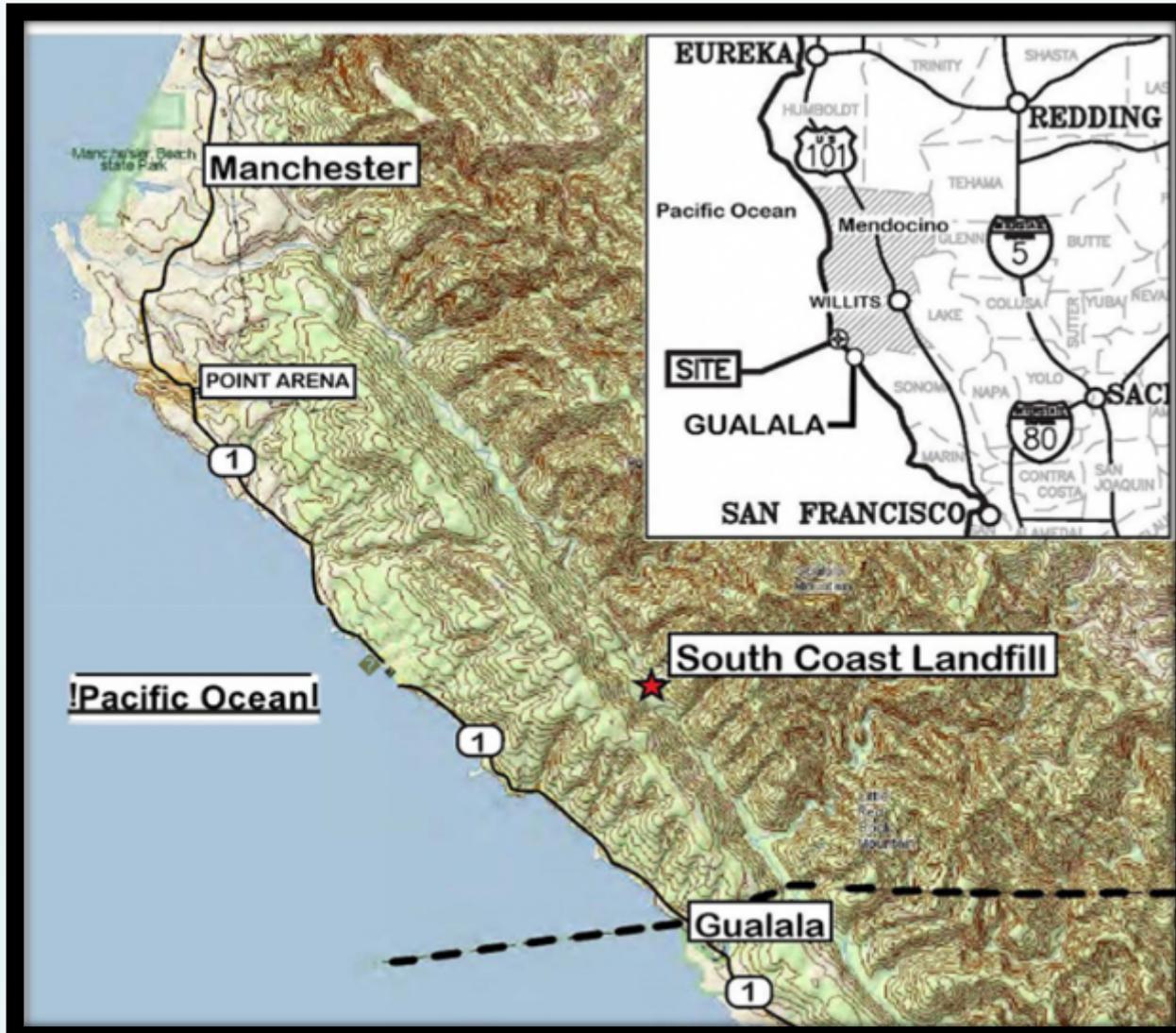
- Project: Proposed Waste Discharge Requirements (WDRs)
 - Construction closure of a landfill cap surface utilizing an engineered alternative design.
- Proposed Order updates and replaces:
 - WDRs Order No. 77-023, as amended by Super Order- State Water Board Resolution 93-62
 - General WDRs Order No. 93-83
 - Cleanup and Abatement Order No. 87-44
- Report of Waste Discharge (ROWD), December 2016.
 - Supplemental information submitted December 2019
 - Recent updates, April 16 and April 29, 2021



Facility Location and Description

- Mendocino County South Coast Solid Waste Disposal Site, 40855 Fish Rock Road, just inland from the town of Gualala
- Owned by the County of Mendocino
 - Service district; southern coastal Mendocino County (communities: Gualala, Point Arena, Manchester, Elk)
- Active landfilling 1970 – 2000; operations converted to transfer station
 - The landfill waste footprint: ~6 acres of ~48 acres
 - Rural coastal setting: forest, timber holdings

Facility Location and Description



South Coast Facility

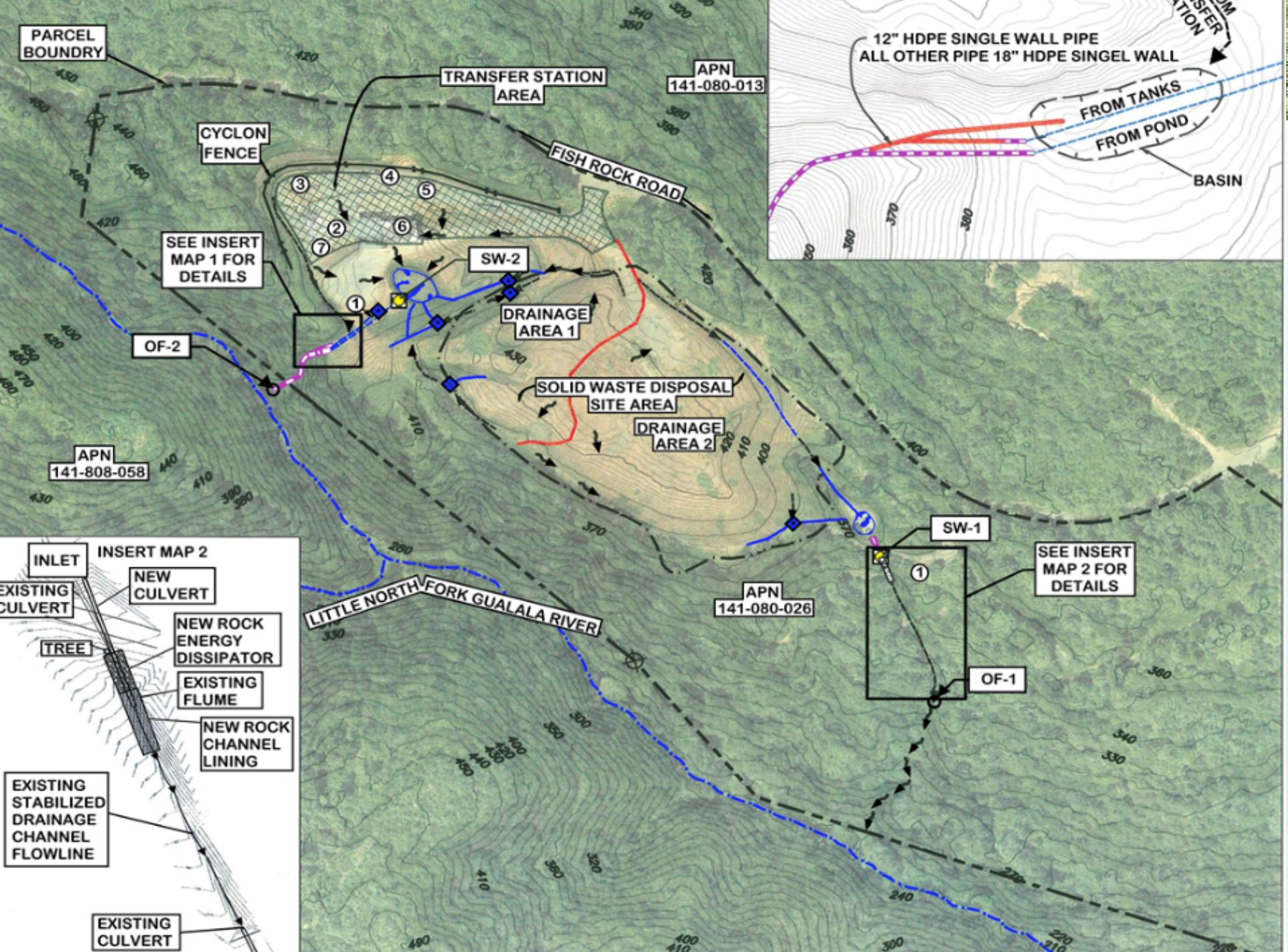


South Coast Transfer Station, NCRWQCB Photo

South Coast Landfill



South Coast Solid Waste Disposal Site NCRWQCB Photo



PARCEL BOUNDARY

CYCLON FENCE

TRANSFER STATION AREA

APN 141-080-013

FISH ROCK ROAD

SEE INSERT MAP 1 FOR DETAILS

SW-2

DRAINAGE AREA 1

SOLID WASTE DISPOSAL SITE AREA

DRAINAGE AREA 2

OF-2

APN 141-808-058

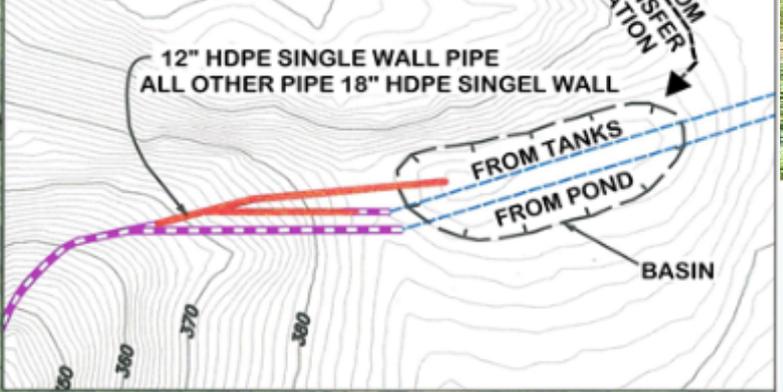
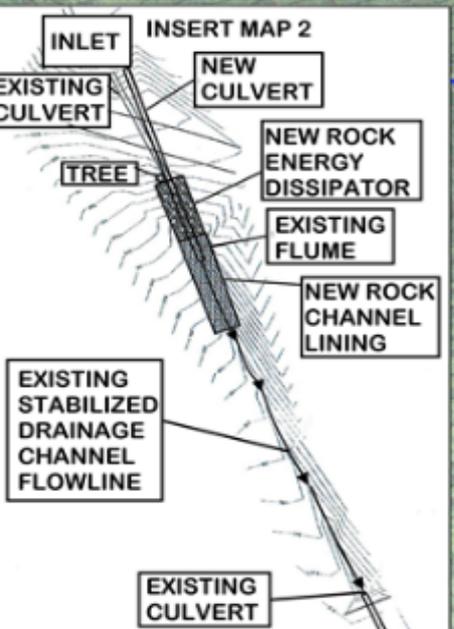
APN 141-080-026

LITTLE NORTH FORK GUALALA RIVER

SW-1

SEE INSERT MAP 2 FOR DETAILS

OF-1





Proposed WDR Overview

Proposed WDR Order No R1-2021-0024:

- Findings overview:
 - Findings and Description, Regulatory History and Background, Site Description, Surface Water, Storm Water, Geology, and Groundwater
 - Environmental Monitoring Systems, Control Systems, Closure and Financial Assurances, Procedural Requirements and Other Considerations
- Requirements overview:
 - Discharge Prohibitions, General Specifications, Closure Specifications, and Provisions; Implement Monitoring and Reporting Program



Key Points - WDR

- **Class III Solid Waste Disposal Site**
 - Classified for Municipal Solid Waste
 - Classified as Unlined
- **Surface Water**
 - Site is ~200 feet northeast of Little North Fork, Gualala River
- **Storm Water**
 - Annual Rainfall = ~41 inches
 - Stormwater control systems: reconstructed during closure activities, runoff diverted through sedimentation ponds
 - Active General Industrial Stormwater NPDES permit



Key Points - WDR

- **Geology**

- Site is within the San Andrea Fault Zone
 - Main trace ~225 feet west of site
 - Eastern trace < ¼ mile east of site
- Seismic Displacement, Factor of Safety: acceptable ranges for the cap

- **Groundwater**

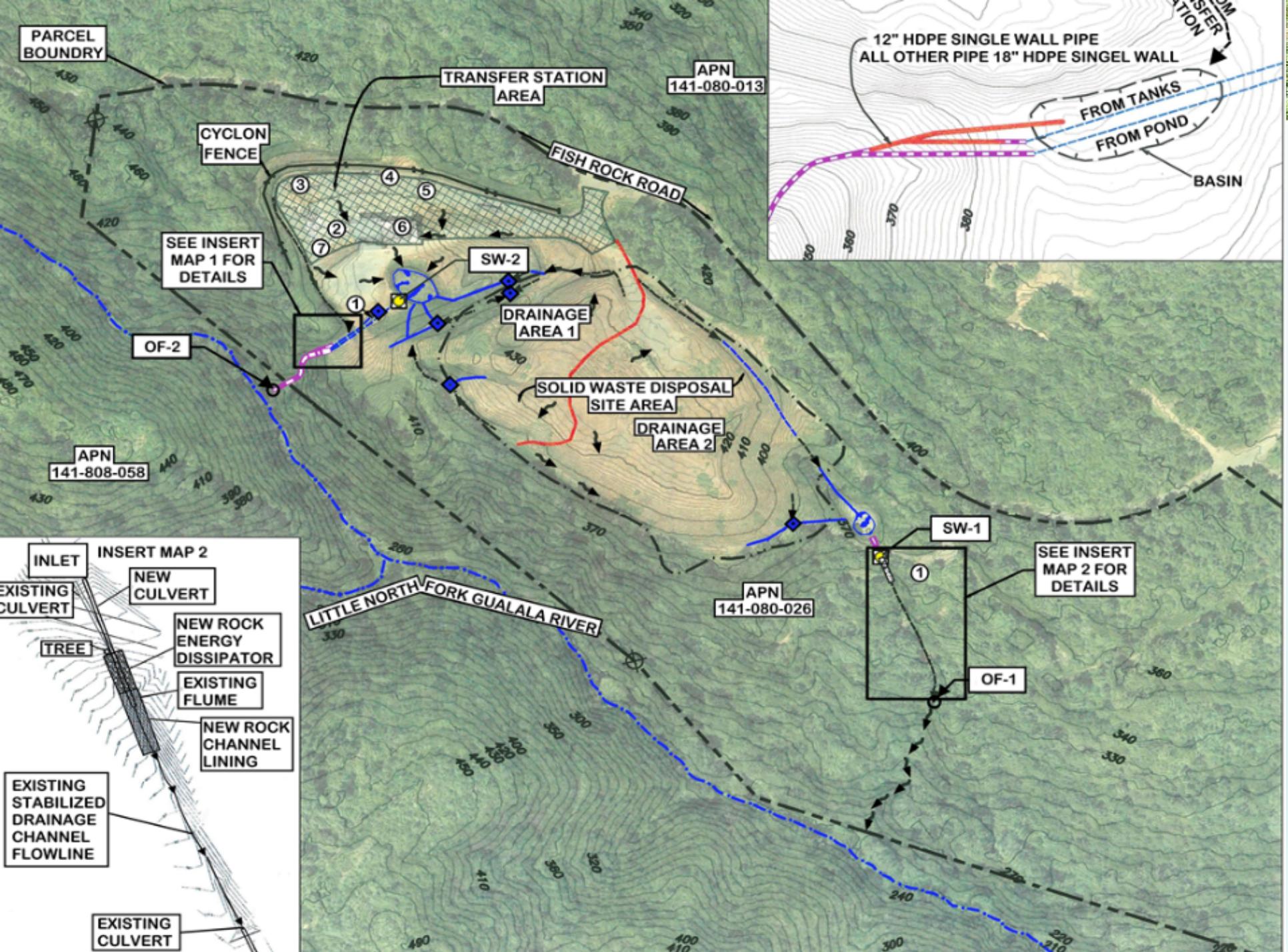
- Occurs in fault gouge zones ~7-23 feet, below ground surface
- Groundwater quality
 - Minor impacts from organic, inorganic compounds
 - Sporadic detections of volatile organic compounds



Key Points - WDR

Environmental Monitoring Systems

- Groundwater: 9 monitoring wells, semi-annual sampling
- Storm/surface water: 2 downgradient locations, 2 new erosion observation locations
- Landfill gas: 3 probes, multi depth sampling
- Leachate:
 - Leachate monitoring: inspection for seeps
 - Leachate sampling: leachate tank sampling ports
 - Leachate disposal: trucked to wastewater treatment plant



PARCEL BOUNDARY

CYCLON FENCE

TRANSFER STATION AREA

APN 141-080-013

FISH ROCK ROAD

SEE INSERT MAP 1 FOR DETAILS

SW-2

DRAINAGE AREA 1

SOLID WASTE DISPOSAL SITE AREA

DRAINAGE AREA 2

OF-2

APN 141-808-058

LITTLE NORTH FORK GUALALA RIVER

APN 141-080-026

SW-1

SEE INSERT MAP 2 FOR DETAILS

OF-1

BASIN

12" HDPE SINGLE WALL PIPE
ALL OTHER PIPE 18" HDPE SINGLE WALL

FROM TANKS

FROM POND

TRANSFER STATION

INLET

INSERT MAP 2

EXISTING CULTVERT

NEW CULTVERT

TREE

NEW ROCK ENERGY DISSIPATOR

EXISTING FLUME

NEW ROCK CHANNEL LINING

EXISTING STABILIZED DRAINAGE CHANNEL FLOWLINE

EXISTING CULTVERT





Key Points - WDR

■ Control Systems

- Leachate Collection System: gravity fed - infiltration galleries, 2 tank farms
- Two Survey Monuments: differential settlement, grade control
- Seven Passive Gas Well Vents
- Two Existing Sedimentation Ponds: runoff, dissipate high energy flow



Closure and Financial Assurances

- Closure and Financial Assurances
 - Discharger's financial mechanisms:
 - Site Closure
 - Post Closure Maintenance
 - Correction Action
 - Mendocino County Board of Supervisors approved these financial costs and mechanisms
 - Discharger proposed:
 - Manufacturer's Performance Policy: Watershed Geo ClosureTurf® Performance Policy, 5 yrs. (option to extend) for the 30-yr. post closure period.



Prescriptive vs. Engineered Alternative Design for Cap

- Closure Design
- Title 27, CCR provides for an earthen prescriptive cap:
 - Prescriptive Cap (top to bottom):
 - 12 inches vegetative cover
 - 12 inches low permeability (1×10^{-6} cm/sec) compacted clay
 - 24 inches compacted, suitable foundation materials
- Title 27, CCR, also allows for “Engineered Alternative Designs” (EAD)
 - EAD must provide equivalent protection to the prescriptive design (earthen cap)



South Coast Engineered Alternative Design for Cap

- Proposed Engineered Alternative Design Cap (EAD)
ClosureTurf® (top to bottom):
 - Sand Ballast Infill (0.5 inches) (EAD)
 - ClosureTurf® Geotextile (EAD)
 - 60-mil low density polyethene (LLDPE) SuperGrip Net (EAD - Liner)
 - 24 inches, suitable foundation materials

ClosureTurf®

ClosureTurf® Rolls

- Turf Mat (top)
- Geomembrane Liner (underneath)

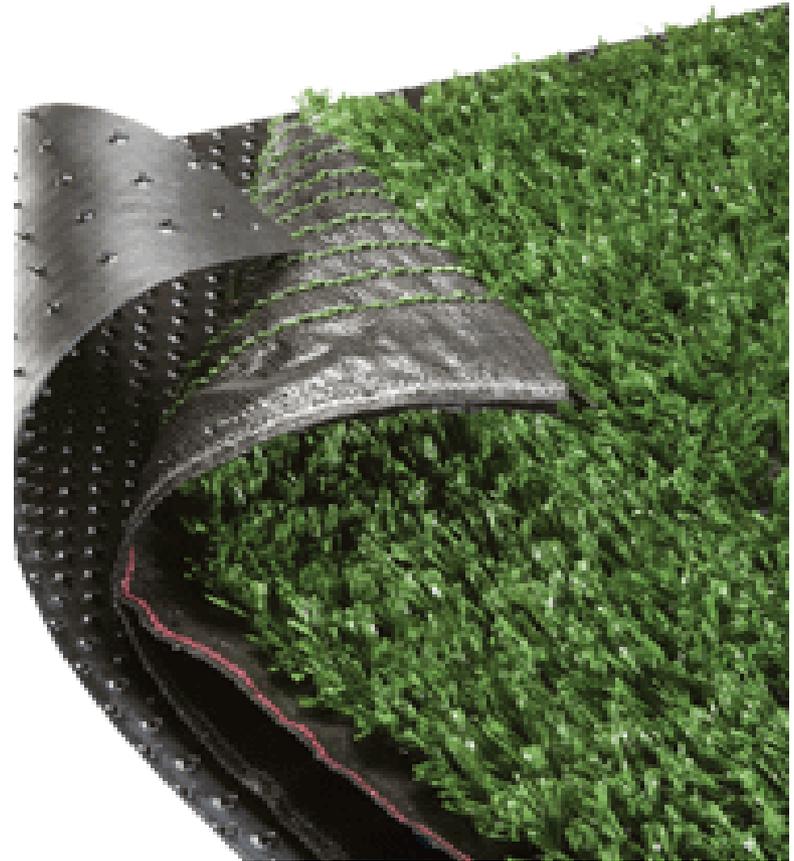


Photo credit Watershed Geosynthetics' (Watershed Geo's) ClosureTurf®

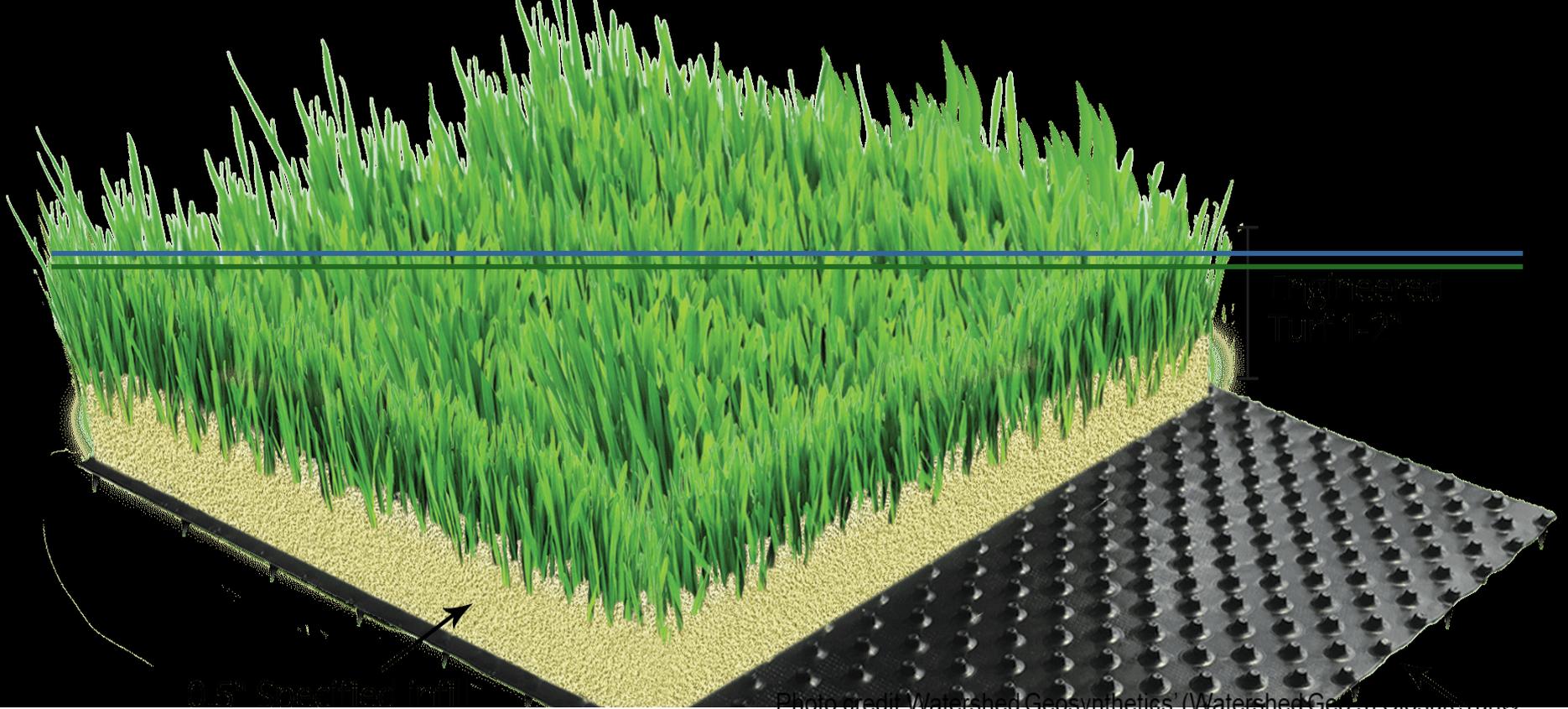


Photo credit: Watershed Geosynthetics (Watershed Geo's) ClosureTurf®

ClosureTurf®

- ClosureTurf® components:
 - Sand Infill
 - Turf Mat
 - Geomembrane liner

Proposed Engineered Alternative Design Cap

ClosureTurf® - EAD

- Sand Ballast Infill (0.5")
- ClosureTurf® Geotextile
- 60-mil low linear density polyethene (LLDPE) SuperGrip Net
- 24 inches foundation soil

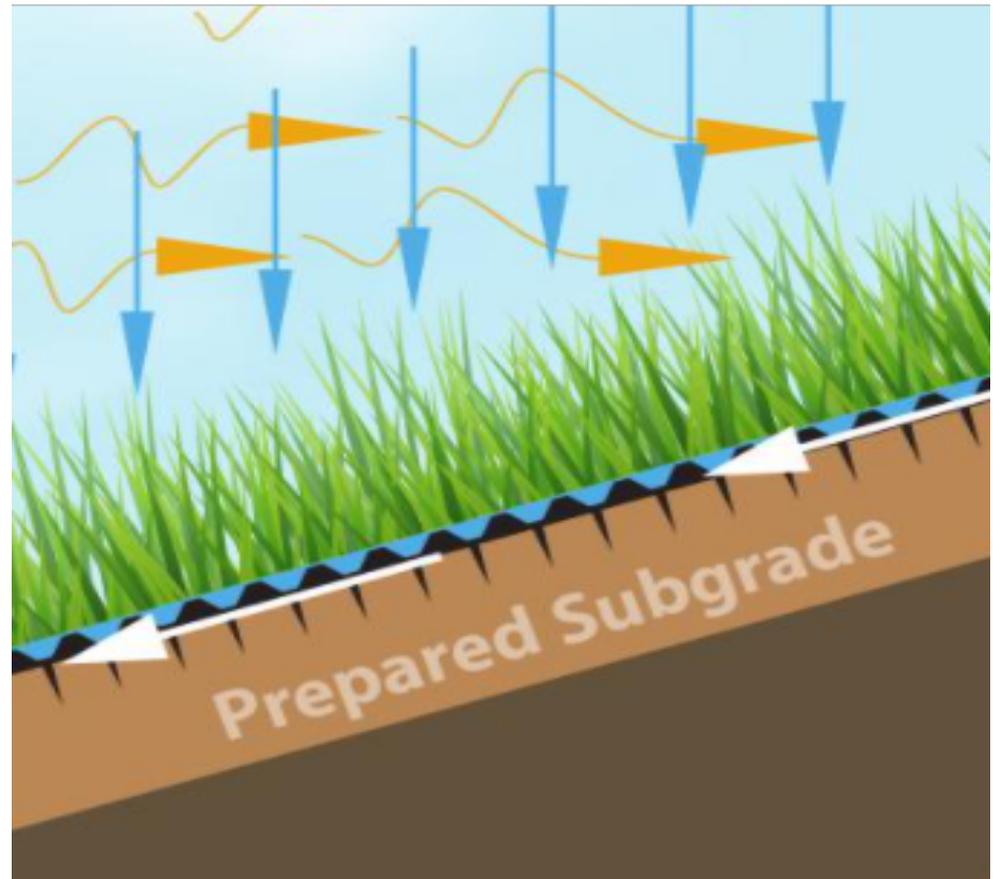


Photo credit Watershed Geosynthetics' (Watershed Geo's) ClosureTurf®

Engineered Alternative

- Proposed Alternative
- Watershed Geo ClosureTurf® example



Photo credit Watershed Geosynthetics' (Watershed Geo's) ClosureTurf®



Proposed WDR

South Coast Engineered Alternative Design for Cap

- Construction Quality Assurance (CQA) throughout the project
 - Comprehensive Final CQA Report
- Watershed Geo Manufacturer's ClosureTurf® Performance Policy
 - Option: Pursuant to EO Approval, equivalent post closure maintenance plan throughout the post closure period



Public Comments

- Noticing
 - State, Federal Regulations: 45-day public notice for municipal solid waste disposal site permitting
- Draft South Coast WDR Public Comment period:
 - February 12, 2021 – April 6, 2021
- Discharger “Comments Package” received April 1, 2021
- No Public Comments or Agency Comments received



Public Comments

Discharger submitted “Comments Package” on April 1, 2021:

- MCDOT: WDR, MRP Comments
- SHN Consulting Engineers and Geologists Inc: WDR, MRP comments
- SWT Civil and Environmental Engineering: Replacement Attachment F
- Watershed Geo comment email
- ClosureTurf® Owners Post Closure Care Manual, Watershed Geo, November 2019



Response to Comments

Staff Review and Response to Discharger “Comments Package”:

- Staff have reviewed proposed changes, found them reasonable and are in support of amending the Draft Order accordingly:
 - WDR: Map labelling updates, clarifying information, updated nomenclature, table and typographical errors.
 - Attachments: Updates for site maps: Attachment B, C; Replacement Attachment F with updates
 - MRP: Clarifying comments regarding surface water sampling locations, observation locations, reporting periods, Constituents of Concern, typographical changes for tables, labels.
- Responses to Comments, Attachment 1, lists changes



Response to Comments

Specific Comments Requiring Clarification:

- The Draft order requires: Manufacturer's Performance Assurance Policy for 30-year Post Closure Maintenance period
 - Condition for constructing a turf based- Engineered Alternative Cap (EAD) cap.
- MCDOT: Stipulated to purchase the manufacturer's ClosureTurf® Performance Assurance Policy for a 5-year period, option to extend.
- MCDOT comments: State they have not agreed to purchase a 30-year plan by manufacturer, citing costs, or potentially unattainable; state they are required to maintain adequate financial assurances under the Proposed Order and current regulations.



Response to Comments

Staff Review and Discussion of Response to Comments:

- Discharger Meetings: April 16, April 29 and May 25, 2021
- Worked to resolve finding an equivalent and acceptable policy subject to Executive Officer approval and in compliance with specific findings in Title 27, CCR.
- Final Language follows:



Response to Comments

- Amended language includes:
 - “The Discharger identified and agreed to purchase and maintain a Watershed Geosynthetics LLC ClosureTurf® Performance Assurance Policy for the first 5 years (with an option to extend) of the 30 years required to satisfy applicable post closure maintenance requirements in title 27, section 21769, and engineered alternative design requirements pursuant to title 27, section 20080 (b)
 - If the Discharger cannot maintain a Watershed Geosynthetics LLC ClosureTurf® Performance Assurance Policy, the Discharger may implement an equivalent policy subject to Executive Officer approval
 - The equivalent policy shall have sufficient detail and specifications to meet title 27, section 21769 requirements pertaining to long term maintenance and related costs including but not limited to: inspection, monitoring, performance, integrity, repair and possible replacement throughout the 30-year post closure period.
 - Any approved policy must also meet title 27, section 20080 (b) requirements to ensure the engineered alternative design offers an equivalent level of water quality protection.”



Staff Initiated Permit Changes

- Staff Initiated Permit Changes:
 - Minor edits and standard language



Staff Recommendation

Adopt Waste Discharge Requirements, Order No. R1-2021-0024, for the County of Mendocino, Closure of South Coast Class III Solid Waste Disposal Site, as proposed.

Terri Cia

Engineering Geologist

Groundwater Protection Unit

Land Disposal Program

Terri.Cia@waterboards.ca.gov



- Extra slides



Response to Comments

- Amended language includes:
 - “The Discharger identified and agreed to purchase and maintain a Watershed Geosynthetics LLC ClosureTurf® Performance Assurance Policy for the first 5 years (with an option to extend) of the 30 years required to satisfy applicable post closure maintenance requirements in title 27, section 21769, and engineered alternative design requirements pursuant to title 27, section 20080 (b).
 - If the Discharger cannot maintain a Watershed Geosynthetics LLC ClosureTurf® Performance Assurance Policy, the Discharger may implement an equivalent policy subject to Executive Officer approval.
 - The equivalent policy shall have sufficient detail and specifications to meet title 27, section 21769 requirements pertaining to long term maintenance and related costs including but not limited to: inspection, monitoring, performance, integrity, repair and possible replacement throughout the 30-year post closure period.
 - Any approved policy must also meet title 27, section 20080 (b) requirements to ensure the engineered alternative design offers an equivalent level of water quality protection.”



Response to Comments

WDR Response to Comments, Amended Language:

“In its Report of Waste Discharge application, and again following release of the draft Order, the Discharger identified and agreed to purchase and maintain a Watershed Geosynthetics LLC ClosureTurf® Performance Assurance Policy for the first 5 years (with an option to extend) of the 30 years required to satisfy applicable post closure maintenance requirements in title 27, section 21769, and engineered alternative design requirements pursuant to title 27, section 20080 (b). If the Discharger cannot maintain a Watershed Geosynthetics LLC ClosureTurf® Performance Assurance Policy, the Discharger may implement an equivalent policy subject to Executive Officer approval. The equivalent policy shall have sufficient detail and specifications to meet title 27, section 21769 requirements pertaining to long term maintenance and related costs including but not limited to: inspection, monitoring, performance, integrity, repair and possible replacement throughout the 30-year post closure period. Any approved policy must also meet title 27, section 20080 (b) requirements to ensure the engineered alternative design offers an equivalent level of water quality protection.”