NPDES Requirements for Sand and Gravel Mining

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Overview

- NDPES – Background, Who Needs Permits
- Mining and Natural Resource Section
- Types of Permits for S&G Operations
  - Differences, Similarities
  - Permitting Process for Each
  - Common Application Deficiencies
- Permit Requirements
- Common Noncompliance Issues
- Departmental Inspections
- Enforcement Actions
- Takeaways
- Noncompliance Examples from Inspections

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What is NPDES?

- 1972 – Federal Water Pollution Control Act (FWPCA) Amendments
  - Considered the beginning of NPDES program

- 1977 – Clean Water Act
  - prohibits discharging “pollutants” through a “point source” into a “water of the United States” unless covered by an NPDES permit.

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What is NPDES?

- National Pollutant Discharge Elimination System
  - Municipal Sources
    - POTWs, SIDs, Biosolids, SSOs, MS4s, etc
  - Non-Municipal Sources
    - Process wastewater
    - Nonprocess wastewater
    - Industrial stormwater

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What is NPDES?

- 1975 – Alabama Water Pollution Control Act
  - "every person, prior to discharging any new or increased pollution into any waters of this state, shall apply to the commission in writing for a permit and must obtain such permit before discharging such pollution."
  - Forms and provides ADEM with authority in NPDES in Alabama

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Waters of the State

- AWPCA defines “waters” as:
  - “all waters of any river, stream, watercourse, pond, lake, coastal, ground or surface water, wholly or partially within the state, natural or artificial.”
  - “This does not include waters which are entirely confined and retained completely upon the property of a single individual, partnership or corporation unless such waters are used in interstate commerce.”

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Who needs an NPDES permit?

- "No person shall discharge pollutants into waters of the state without first having obtained a valid NPDES permit or coverage under a valid General NPDES Permit…." (ADEM Admin. Code r. 335-6-6-.03(1))

- "All surface mining operations must have an NPDES permit issued by the Department pursuant to this chapter." (ADEM Admin. Code r. 335-6-9-.05(1))

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Mining and Natural Resource Section

- Handles surface mining 5 acres or greater
- Coal, stone, bauxitic clay, sand & gravel, etc.
- Loadouts handling only extracted minerals
- Coalbed Methane extraction
- Permitting, Compliance, & Enforcement

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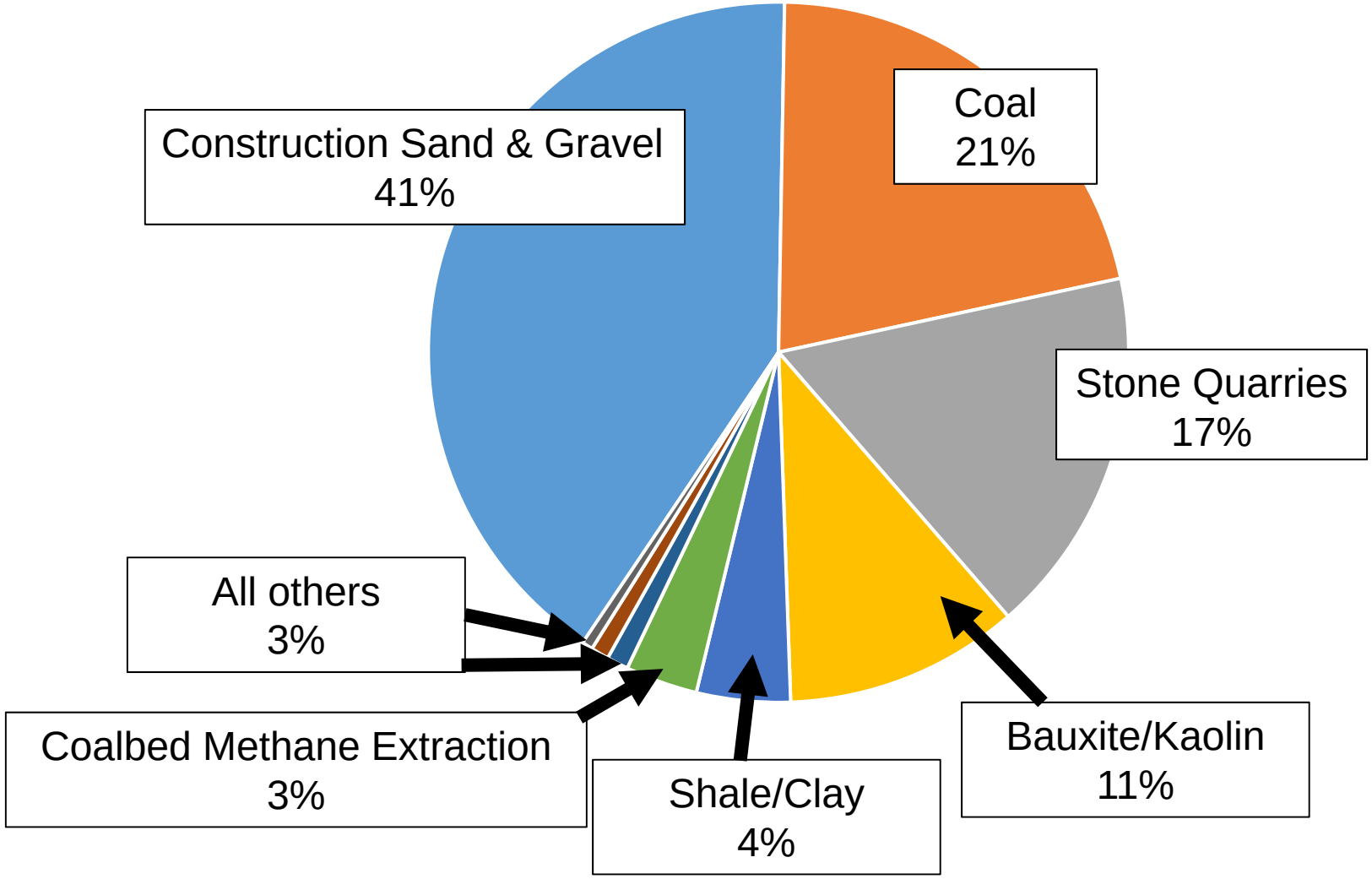
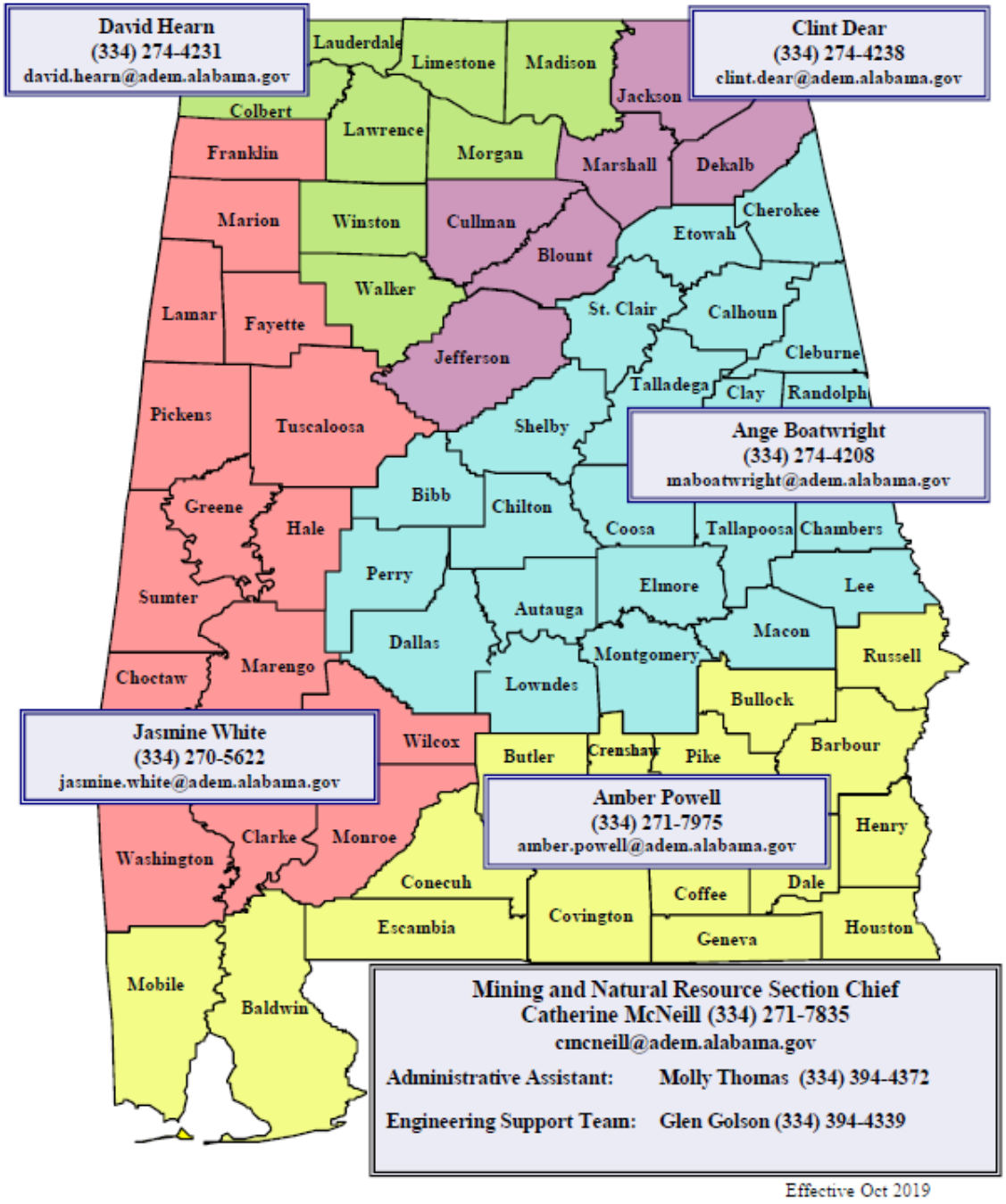
Mining and Natural Resource Section



Mining and Natural Resource Section



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Types of NPDES Permits for S&G Operations

- General Permit ALG890000
  - Must be less than 5 acres disturbance
  - Special Services Unit
- General Permit ALG850000
- Individual Permits

Mining & Natural Resource Section

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Impairments

- If your receiving stream is impaired for a pollutant of concern, you may not be eligible for the ALG85 and an individual permit may be required
- If an individual permit is required, your limitations may be more stringent than similar sites not located on an impaired stream

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Differences between ALG85 and Individual

General NPDES Permit No. ALG850000	Individual NPDES Permit
– Coverage obtained more quickly	– ~6 months to obtain permit
– No public notice	– 30 day public notice
– No opportunity for public hearing	– Potential for public hearing (fee)
– April 1, 2017 - March 31, 2022	– 5 year permit cycle
– No opportunity to review a draft version	– Opportunity to review and submit comments on draft version

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Similarities between ALG85 and Individual

General NPDES Permit No. ALG850000	Individual NPDES Permit

- Fees are same*
  - $5,820 application fee (if no process water)
  - $6,860 application fee (if process water)
  - $1,610 greenfield fee (if not previously permitted)
  - *$8,450 additional fee if public hearing is held
- Both require plans from Professional Engineer
- Monitoring frequencies/costs are the same
- Requirements and conditions are similar*
  - *Individual may receive a higher pH limitation

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Application Process for ALG850000

- ADEM Form 26
- Greenfield inspection (if not previously permitted)
- SPCC Plan (if fuels or other chemicals used or stored onsite)
- Topographic Map
- Pollution Abatement and Prevention (PAP) Plan

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Application Process for Individual Permit

- ADEM Form 315
- Greenfield inspection (if not previously permitted)
- SPCC Plan (if fuels or other chemicals used or stored onsite)
- Topographic Map and Facility Map
- Pollution Abatement and Prevention (PAP) Plan

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Application Process for Individual Permit

- Draft permit sent to applicant for review
- 30 days public comment period (EPA review)
- Possibility of public hearing and extended comment period
- Review and response to received comments
- Final permit decision

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Common Application Deficiencies

- Incomplete application
  - *All* portions must be completed
- Wetlands, all streams, and stream crossings not noted or incorrect
- Incorrect maps
  - Boundaries as correct as possible
- Not signed

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Common Application Deficiencies, cont.

- PAP Plan
  - Too generic; not site specific
  - Missing designs and calculations
  - If changes needed from plans, PAP Plan must be updated
- Receiving streams classifications
- Missing fees
- *Review your application and plans!*

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PAP Plan Summary

XXI. POLLUTION ABATEMENT & PREVENTION (PAP) PLAN SUMMARY (must be completed for all outfalls)

Y	N	N/A	Outfall(s):
			Runoff from all areas of disturbance is controlled
			Drainage from pit area, stockpiles, and spoil areas directed to a sedimentation pond
			Sedimentation basin at least 0.25 acre/feet for every acre of disturbed drainage
			Sedimentation basin cleaned out when sediment accumulation is 60% of design capacity
			Trees, boulders, and other obstructions removed from pond during initial construction
			Width of top of dam greater than 12'
			Side slopes of dam no steeper than 3:1
			Side slopes of cutoff trench no less than 1:1
			Cutoff trench located along the centerline of the dam
			Cutoff trench extends at least 2' into bedrock or impervious soil
			Cutoff trench filled with impervious material
			Embankments and cutoff trench 95% compaction standard proctor ASTM
			Embankment free of roots, tree debris, stones >6" diameter, etc.
			Spillpipe sized to carry peak flow from a one year storm event
			Spillpipe will not chemically react with effluent
			Subsurface withdrawal
			Anti-seep collars extend radially at least 2' from each joint in spillpipe
			Splashpad at the end of the spillpipe
			Emergency spillway sized for peak flow from 25-yr 24-hr event if discharge not into PWS classified stream
			Emergency spillway sized for peak flow from 50-yr 24-hr event if discharge is into PWS classified stream
			Emergency overflow at least 20' long
			Side slopes of emergency spillway no steeper than 2:1
			Emergency spillway lined with riprap or concrete
			Minimum of 1.5' of freeboard between normal overflow and emergency overflow
			Minimum of 1.5' of freeboard between max. design flow of emergency spillway and top of dam
			All emergency overflows are sized to handle entire drainage area for ponds in series
			Dam stabilized with permanent vegetation
			Sustained grade of haul road <10%
			Maximum grade of haul road <15% for no more than 300'
			Outer slopes of haul road no steeper than 2:1
			Detail drawings supplied for all stream crossings
			Short-Term Stabilization/Grading And Temporary Vegetative Cover Plans
			Long-Term Stabilization/Grading And Permanent Reclamation or Water Quality Remediation Plans

IDENTIFY AND PROVIDE DETAILED EXPLANATION FOR ANY "N" OR "N/A" RESPONSE(s):

PAP Plan Checklist

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XXII. POLLUTION ABATEMENT & PREVENTION (PAP) PLAN REVIEW CHECKLIST

Y	N	N/A	
			PE Seal with License #
			Name and Address of Operator
			Legal Description of Facility

General Information:

			Name of Company
			Number of Employees
			Products to be Mined
			Hours of Operation
			Water Supply and Disposition

Maps:

			Topographic Map including Information from Part XIII (a) – (o) of this Application
			1" – 500' or Equivalent Facility Map including Information from Part XIV of this Application

Detailed Design Diagrams:

			Plan Views
			Cross-section Views

Line Drawing of Water Flow through Facility with Water Balance or Pictorial Description of Water Flow

Narrative of Operations:

			Raw Materials Defined
			Processes Defined
			Products Defined

Schematic Diagram:

			Points of Waste Origin
			Collection System
			Disposal System

Post Treatment Quantity and Quality of Effluent:

			Flow
			Suspended Solids
			Iron Concentration
			pH

Description of Waste Treatment Facility:

			Pre-Treatment Measures
			Recovery System

Measures for Ensuring Access to All Treatment Structures and Related Appurtenances including Outfall Locations

Other:

			Precipitation/Volume Calculations/Diagram Attached
			BMP Plan for Haul Roads

Measures for Ensuring Appropriate Setbacks are Maintained at All Times

If Chemical Treatment Used, Methods for Ensuring Appropriate Dosage

PE Rationale(s) For Alternate Standards, Designs or Plans

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Spill Prevention, Control, and/or Countermeasures Plan

- SPCC Plan must be prepared, implemented, and maintained for all onsite petroleum or other chemical storage containers
- Secondary containment at least 110% of largest tank
- Lists materials for cleaning spills and leaks
  - Materials should be readily available
- Contaminated soil cleaned up and disposed of appropriately

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Receipt of Final Permit

- No surface mining (including prep work) until a final permit is received
- Construction must begin within 18 months or permit expires
- Outfall must be certified before discharge
- BMPs should be utilized while construction is ongoing (and after)

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Permit Requirements

- *Read your permit!*
- *Discharge limitations*
  - *pH = 6.0 – 8.5 s.u.*
  - *Total Suspended Solids (TSS) = 35.0 mg/L and 70.0 mg/L*
  - *Flow measurement*
    - *EPA approved methods*

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Permit Requirements, cont.

- *Read your permit!*
- Reapplying
  - Within 6 months of expiration for IP
  - Within 90 days of expiration for GP
- All surface drainage and stormwater runoff which originates within or enters the site must be discharged from a permitted point source (outfalls)

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Permit Requirements, cont.

- Monitoring
  - Any 2 days of discharge in the month
  - pH sampling should be done within 15 minutes
  - Record retention for 3 years
    - Inspection documentation
    - pH calibration logs
    - Chains of custody
    - Lab sheets
  - Reporting discharge analysis through eDMR quarterly

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Permit Requirements, cont.

- Files onsite
  - Permit
  - SPCC Plan
    - Inspection logs
  - PAP Plan
    - Inspection logs
  - Lab sheets/chains of custody/pH calibration log
  - Copies of DMRs (or access to eDMR)

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Permit Requirements, Routine Inspection by Permittee

- Routine Inspection by Permittee
  - Inspection of all permitted point sources and all treatment or control facilities or systems used by the Permittee to achieve compliance with the terms and conditions of this Permit
  - At least as often as the sampling frequency of the Permit (twice per month).
  - Logs must be kept documenting inspections

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Permit Requirements, Routine Inspection by Permittee, cont.

- Written inspection logs for each point source recording:
  - The date and time the point source and any associated treatment or control facilities or systems were inspected;
  - Whether there was a discharge at the time of inspection;
  - Whether a sample of the discharge was collected at the time of inspection;
  - Whether all associated treatment or control facilities or systems appeared to be in good working order and operating as efficiently as possible, and if not, a description of the problems or deficiencies; and
  - The name and signature of the person performing the inspection.

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Permit Requirements, Recording of Results

- Additional samples may be taken, but all must be reported
- Recording of Results – for all measurements, must log:
  - The facility name and location, point source number (outfall), date, time, and exact place of sampling or measurements;
  - The name(s) of person(s) who obtained the samples or measurements;
  - The dates and times the analyses were performed;
  - The name(s) of the person(s) who performed the analyses;
  - The analytical techniques or methods used including source of method and method number; and
  - The results of all required analyses.

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Permit Requirements, Discharge Monitoring Reports (DMRs)

- Monitoring results must be summarized for each month on a DMR and submitted electronically
  - Should include all data obtained during the month (if more than the required 2 samples were taken)
  - Previous 3 months due quarterly
  - Due January 28th, April 28th, July 28th, and October 28th

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Permit Requirements, Noncompliance Notification

- Must notify ADEM verbally within 24 hours if:
  - Potentially threatens human health or welfare;
  - Potentially threatens fish or aquatic life;
  - Causes an in-stream water quality violation;
  - Is toxic or hazardous;
  - Is an unauthorized discharge; or
  - Exceeds limitations as a result of a bypass or upset.
- Must follow-up with written report within 5 days

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Permit Requirements, Noncompliance Notification, cont.

- If there is an exceedance of the limitations that do not otherwise require 24 hour notification, a written Noncompliance Notification Form must be submitted with next DMR
  - A description of the discharge and cause of noncompliance
  - Period of noncompliance
  - Description of the steps taken or planned to eliminate the noncompliance and prevent a recurrence

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Common Compliance Issues

- Facility ID
  - Permittee
  - Permit No.
  - Site Name
  - Other
- Accessibility
  - If you can’t access it, you can’t inspect it

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Common Compliance Issues, cont.

- Setbacks
  - 50 feet from streams and property lines
  - Anticipate the natural movement and erosion of the streams
  - Should provide training to your operators to understand the importance of the setbacks
  - Should provide a visible means of demarcating setbacks

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Common Compliance Issues, cont.

- Failing to sample/report discharges
  - Departmental inspection shows discharges, yet DMR shows “no discharge” for month of inspection
  - Departmental inspection shows evidence of recent or regular discharges, yet DMRs always indicate “no discharge” for all months

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Common Compliance Issues, cont.

- Flow Measurements
  - Must use EPA approved methods
  - Should not “eyeball it”
- Pond Construction Should Match Plans
  - Dams
  - Spillways
  - Outfall structures

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Common Compliance Issues, cont.

- Chemical Treatment Provided in Wrong Location
  - Not enough retention time
  - Short-circuiting resulting in a discharge of chemical

- Regulated Activities Onsite Not Authorized by Permit
  - Solid waste landfill
  - Scrap yard

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Common Compliance Issues, cont.

- **INSTREAM MINING!**
  - Instream mining is NOT authorized by these NPDES permits
  - The Department does not issue permits for instream mining
  - Instream mining violates the setbacks rule
  - Instream mining causes serious harm to our aquatic environment
  - Instream mining may result in enforcement action which could include significant civil penalties

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Departmental Inspections

- Inspections – the Permits require that the Permittee shall allow an ADEM representative, upon the presentation of credentials:
  - Enter upon the premises where a regulated activity is conducted or where records are kept
  - Have access to and copy any records kept for the permit
  - Inspect at reasonable times any facilities, equipment, practices, or operations
  - Sample or monitor for the purposes of assuring permit compliance

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Enforcement Actions

- Phone Call
- Warning Letter
- Notice of Violation
- Administrative Orders
  - Consent Orders
  - Unilateral Orders
- Litigation

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Enforcement Actions

- The Permit requires the Permittee to furnish to the Department upon request within a reasonable time, any information to determine whether cause exists for modifying, revoking and reissuing, suspending, or terminating the Permit, or to determine compliance with the Permit.
- Failure to respond to enforcement requiring a response is itself a violation

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Takeaways

- READ THE PERMIT!
- Maintain at least 50 ft setbacks
- Do not mine in/through any Waters of the State/US
- If there should not be visible impacts to a stream or to your neighbor's property…if there is, you have a compliance problem

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ADEM Inspections

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Inspections

- Reason for Inspection
  - Regularly scheduled (at least once every 5 years)
  - Complaint received
  - Compliance Review
- May or may not be notified in advance
- You may have someone attend the inspection

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Records

- Permit
- PAP Plan
- SPCC Plan
- pH Calibration Log
- Expiration Date of Buffer Solutions
- SPCC Inspection Logs
- PAP Inspection Logs
- Discharge Sample Sheets
- Flow Calculations

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Fuel Storage

- Double Walled Tank
- Secondary Containment
  - 110% Capacity
- Fuel/Oil Spills

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Haul Roads

- Vehicle Tracking
- Is all drainage routed back into the facility or to a permitted outfall
- Are there adequate BMPs for drainage that cannot be feasibly routed to an outfall or back into the facility
- Dust Suppression

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Vehicle Tracking

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Haul Roads

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Outfalls

- Outfalls
  - Are they built according to the PAP Plan
  - Discharges
  - Erosion of the dam
  - Sources of Pollutants
- Internal Ponds
  - Does it discharge
  - Are there any seeps
  - Does it flow to an outfall
  - Sources of Pollutants

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Outfalls

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Internal Ponds

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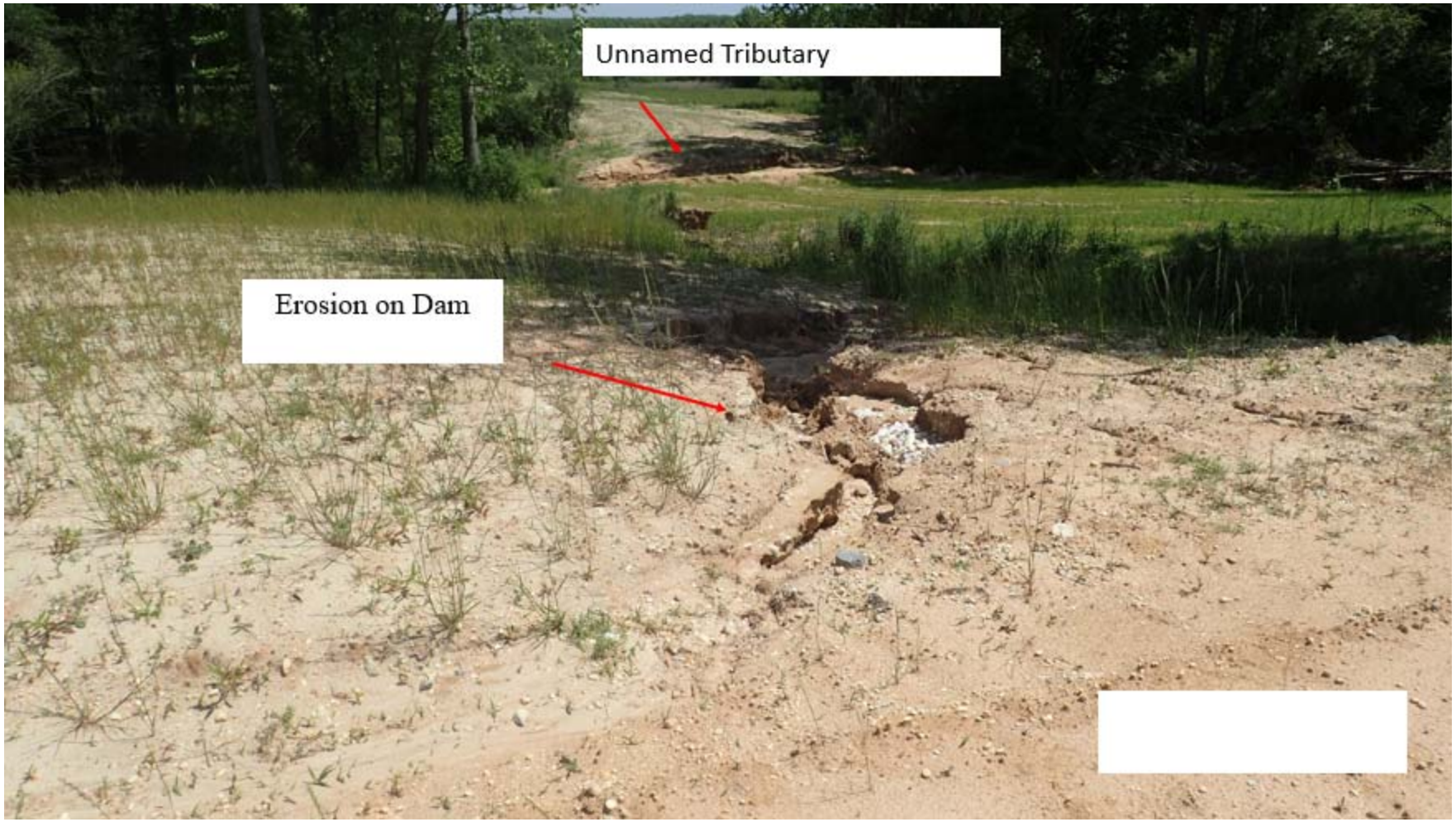
Outfalls



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Perimeter of Facility

- Mining progression
- Runoff not directed back into the facility
- Berms stabilized
- 50ft buffer with adjacent property owner

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Facility Perimeter

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Facility Perimeter

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Receiving Streams

- Upstream and downstream conditions
- 50ft Setback
- Visible plume
- Sediment

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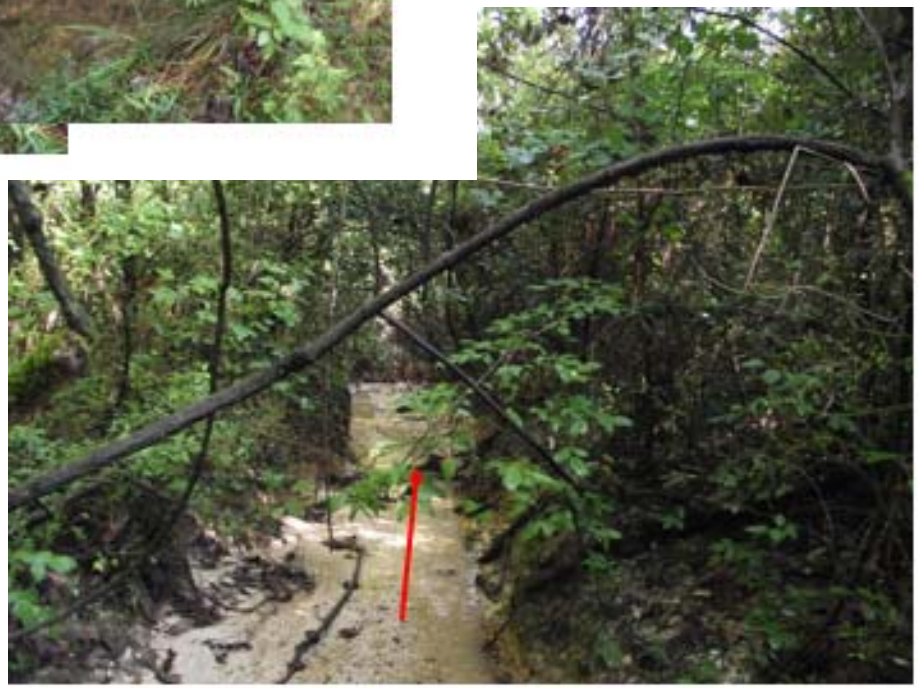
Upstream/Downstream

Upstream

Downstream



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Visible Plume

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Visible Plume

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Setbacks

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