Oil & Gas Stakeholder Meeting General Approval Order

Utah Division of Air Quality

December 3rd & 5th, 2013

R307-401-19 General Approval Order

- Rule adopted by Air Quality Board on November 6, 2013
  - Provides authority for a new type of approval order
  - Can be used for a category of sources that are small, have similar equipment, and would receive similar requirements through the regular AO process
    - Limited to minor sources
    - Limited to sources that do not require individual modeling under current rules
  - Standard applicability requirements and exemptions in R307-401 still apply
  - GAO provides some of the work up front (i.e., BACT analysis) so that the application and permitting process is streamlined
  - Greater certainty for sources because application is standardized and control requirements are known
  - Level playing field for sources because requirements are consistent for all sources covered by the GAO
  - Any GAO must be reviewed at least every 3 years

R307-401-19 General Approval Order

- Must meet the same conditions as an individual approval order as established in R307-401-8
  - The degree of pollution control is at least BACT
  - Major sources do not qualify for a GAO (PSD, visibility, NAA NSR, modeling)
  - New Source Performance Standards (NSPS)
  - National Ambient Air Quality Standards (NAAQS)
  - National Emission Standards for Hazardous Air Pollutants (NESHAP)
  - State Implementation Plan (SIP)
  - All other provisions of R307
- All pollution control equipment must be properly operated and adequately maintained
- Receipt of a GAO does not relieve the owner or operator of the responsibility to comply with other applicable rules

General Approval Order Process

- DAQ works with stakeholders to have early input for a potential new GAO
  - Not needed for all categories
- DAQ proposes GAO and supporting documentation for a 30–day public review
- After considering all public comments received, DAQ issues a final GAO
  - Each GAO will have a version number because the GAO may be modified over time
  - Each GAO will have a standard application form
- Individual sources apply to be covered under the GAO
  - Applicability determination based on criteria specified in the GAO
  - No additional comment period
  - DAQ will maintain a registry of all sources that are covered under the GAO
- If the GAO is revised in the future, the new version will apply to new applicants and will not be retroactive

Permitting Purpose

Public Health & Welfare

National Parks

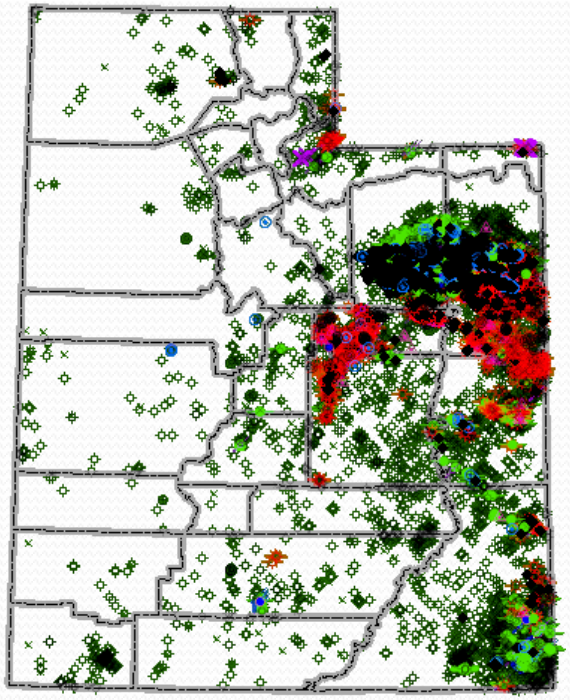
Economic Growth

General Permit Purpose

- Same as Regular Process, plus
- Alleviate Administrative Burdens

Permitting Evaluation

- DAQ issues ~200 – 300 permits/year
- DOGM issues ~1,000 – 2,000 permits/year
- DAQ permits could double



Regular Permitting Process

- Notice of Intent
- DAQ Review
  - Rules, BACT, Impact Analysis, etc.
  - Site-by-Site Review
- Public Comment Period
- Permit Issued
- Commence Construction

General Permitting Process

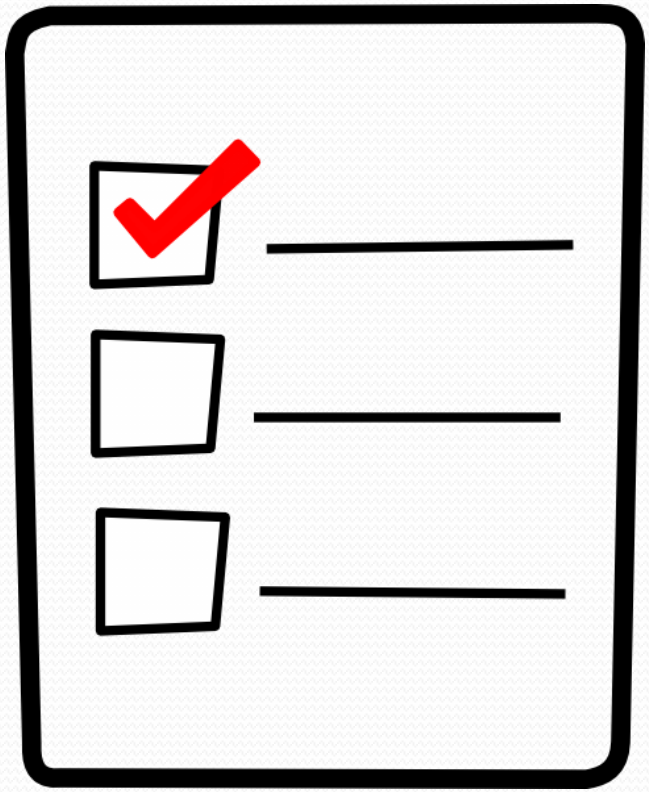
- DAQ Review
  - Rules, BACT, Impact Analysis, etc.
  - Category Review
- Public Comment Period
- Permit Issued
- Coverage Request
- Coverage Letter Issued
- Commence Construction

Coverage Request

- General Information
  - Company Information
  - Site Information
- GAO Specific Information
- General Permit Number
- Applicability Validation

NOI Requirements

- General Information
- Site/Process Description
- Equipment Details
- Emission Estimates
- BACT Analysis
- Emissions Impact Analysis



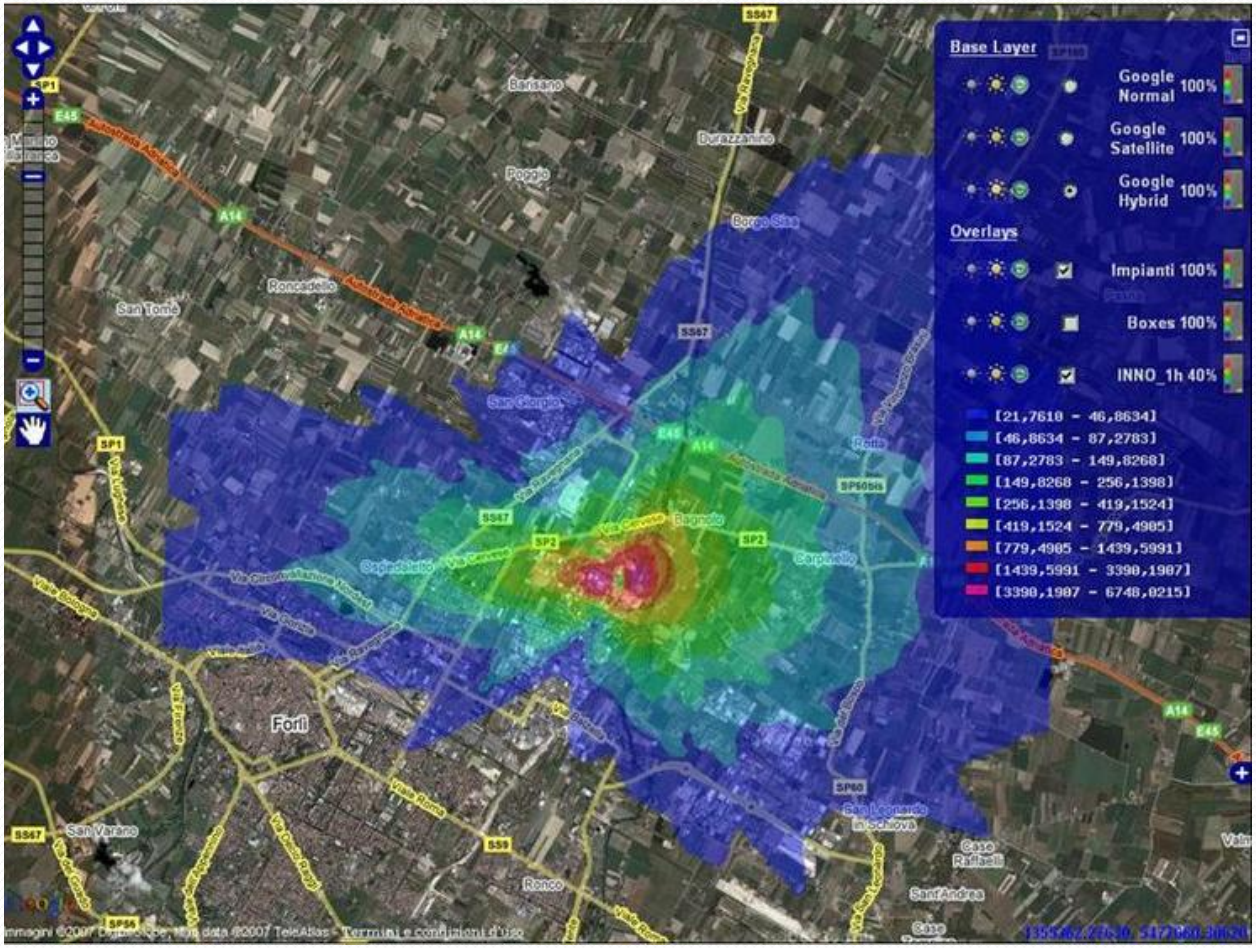
Best Available Control Technology

Energy

Economic

Environmental

Air Quality Demonstration



Ozone Demonstration

- State-Wide
  - Monitoring Data
- Uintah & Duchesne Counties
  - DAQ Analysis

Future Energy Landscape

- Growth within the Uintah Basin
  - U.S. Energy Information Administration (EIA) Data
    - How much will production increase over the 6 years?
    - How many new wells will be coming online in the next 6 years?
- How will the production from existing wells change?
  - Decline Curve Analysis
    - How much will the production from existing wells decline over the next 6 years?

Contribution of New Wells

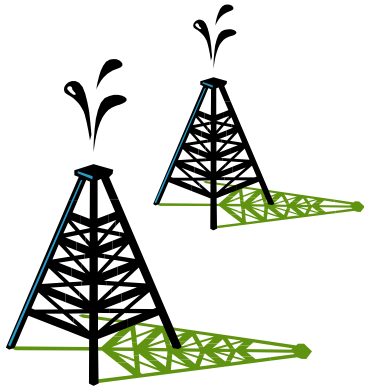
Estimation of Growth Rate

- EIA Data: Projected production growth in the Rocky Mountain Region over next several years.
  - Crude oil
- Current production trend for the Uintah Basin
  - Historic data from Utah Division of Oil, Gas, and Mining (DOGM)

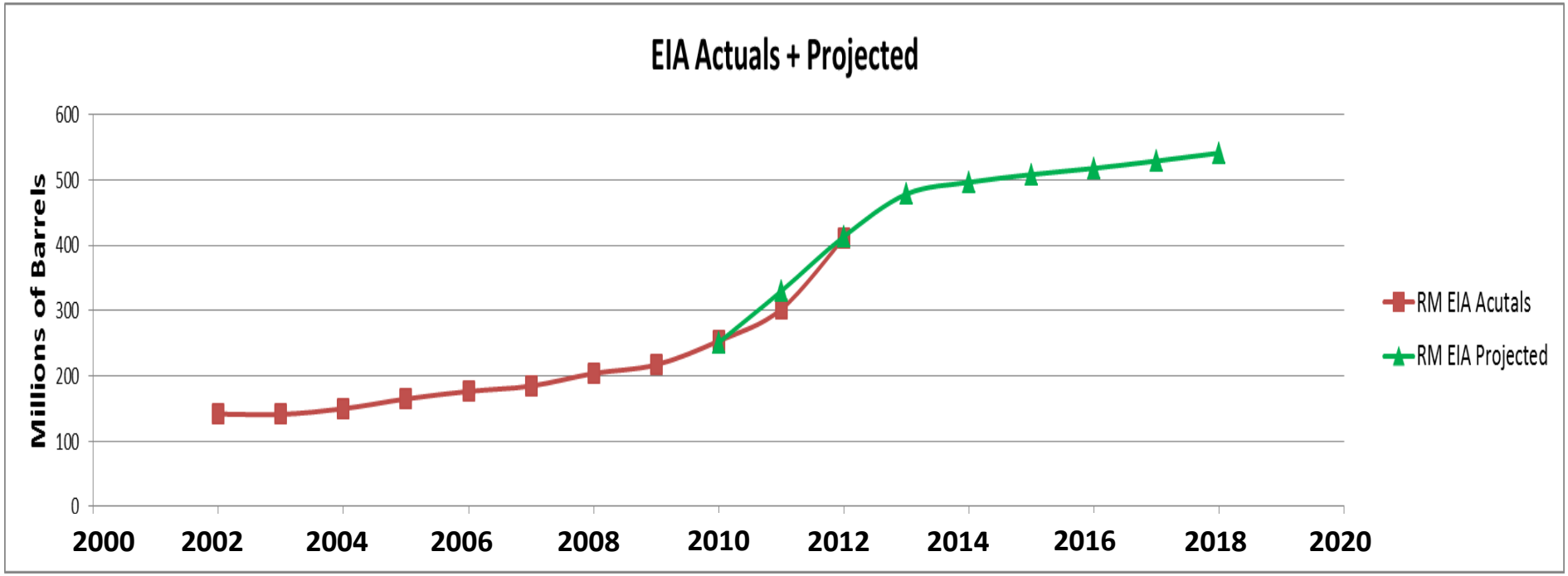
Contribution of New Wells

Application of Growth Rate

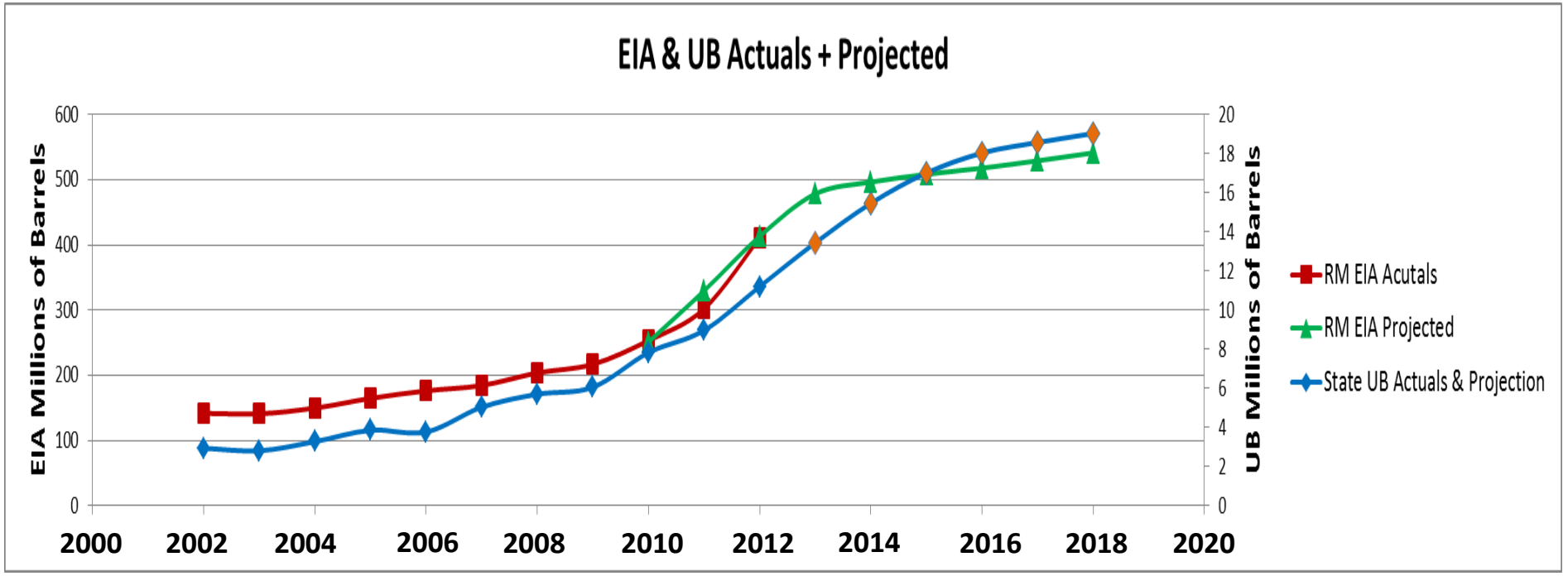
- Estimate future production: apply EIA projection to Uintah Basin production
  - extent to which production will increase.
- Determine # new wells likely to come online each year



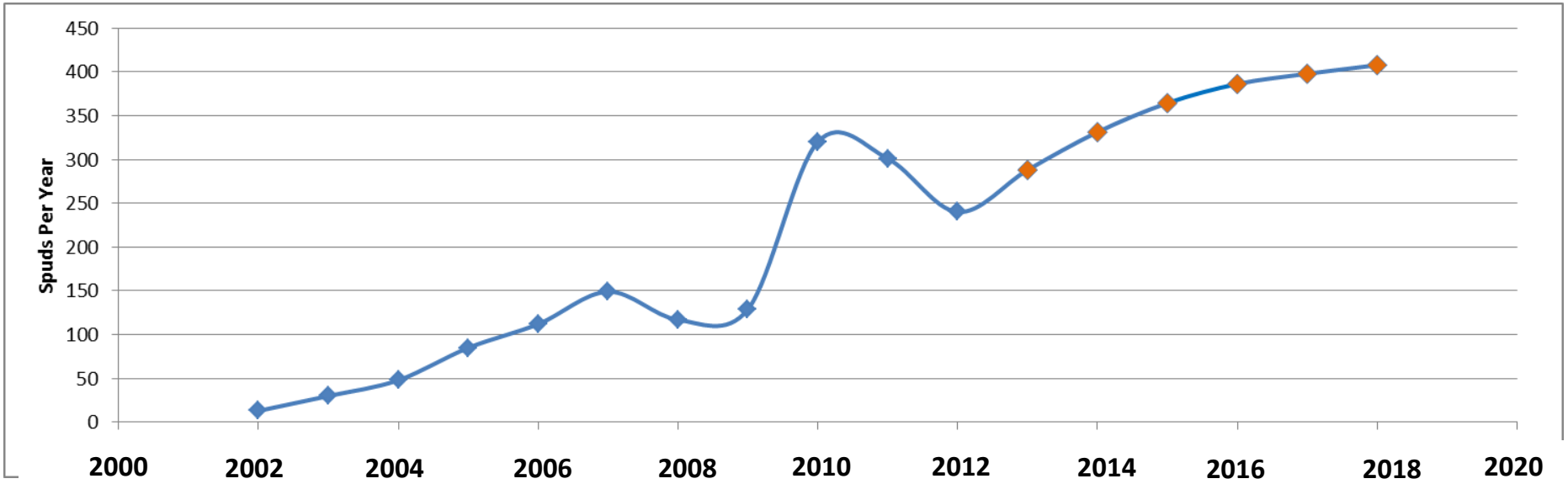
EIA Production Estimate



Our Production Estimate



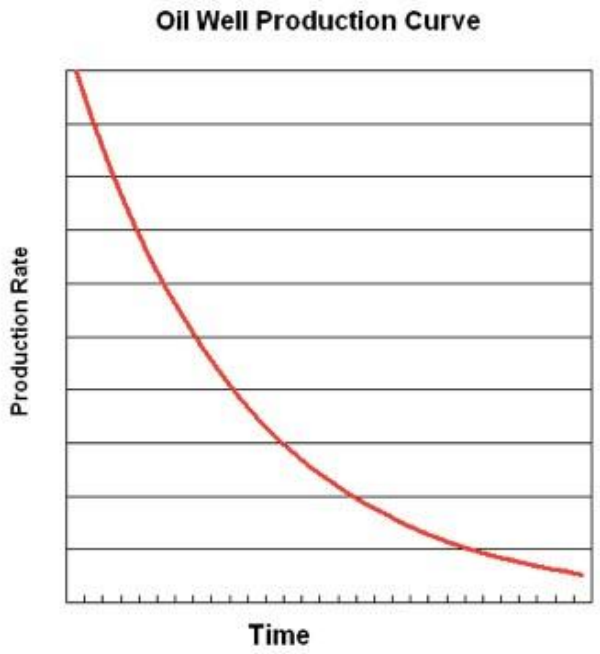
Spud Estimates



2002-2012 are actual spud numbers

Contribution of Existing Wells

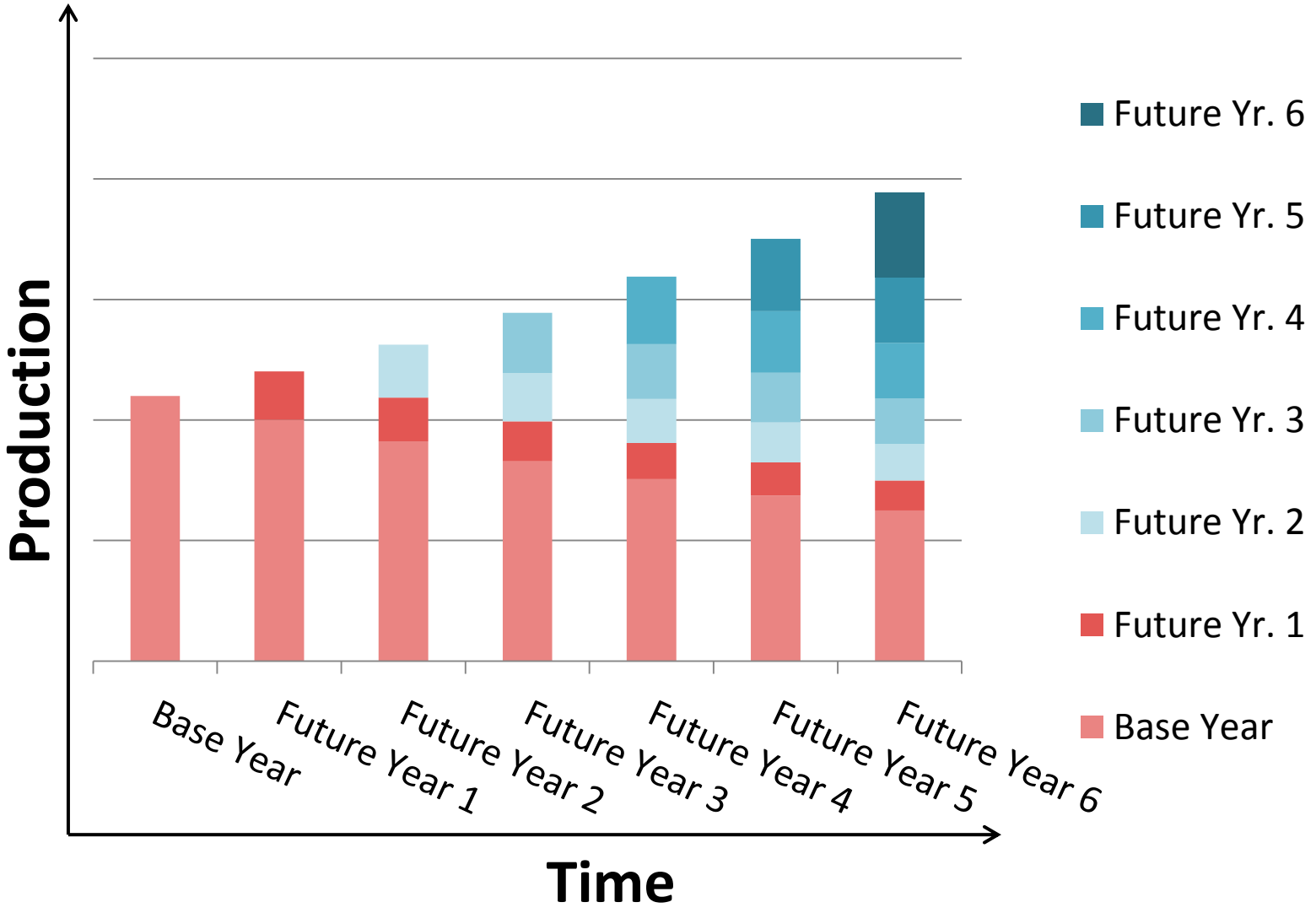
- Oil and gas production rates decline as a function of time.
- Decline curve analysis is a traditional means of predicting future well performance and life based on real production data.



Contribution of Existing Wells

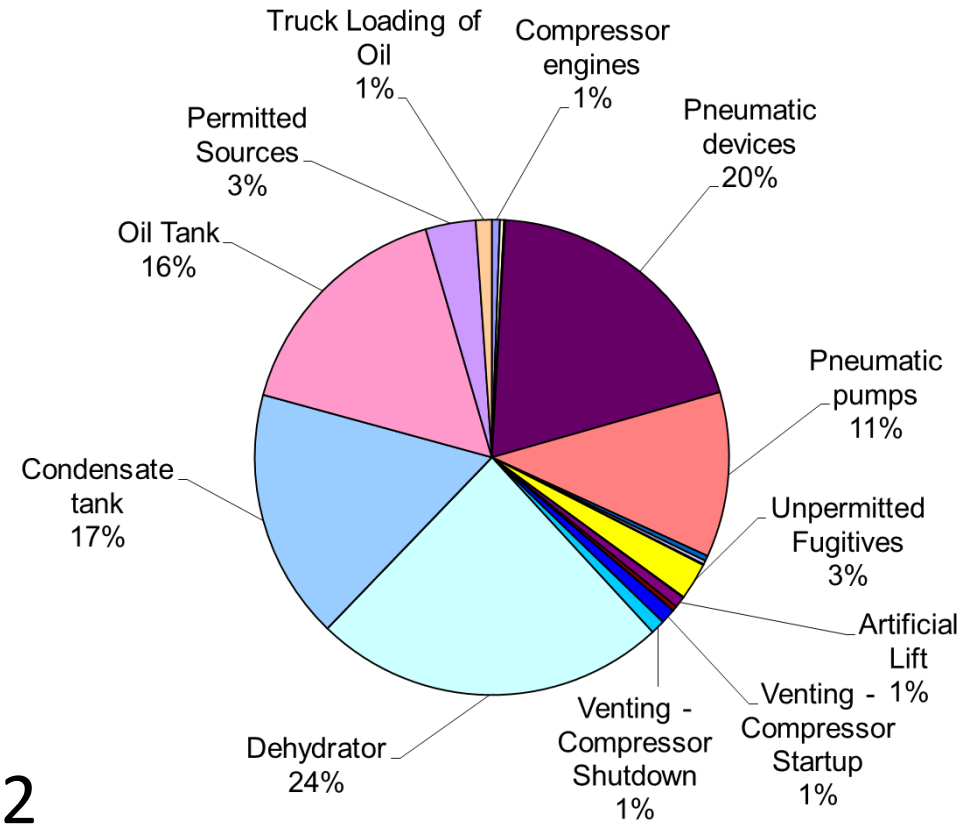
- 2012 = base year
- Historical production data from DOGM
  - 2003-2012, OW, Uintah and Duchesne Counties, state jurisdiction
- Standard analysis method to determine decline rate
  - exponential, harmonic, hyperbolic
- Model output can be used to estimate production decline.

Application of Decline Factor



Production to VOC Emissions

- 2006 WRAP Phase III emissions inventory (EI)
  - Currently best available inventory for the Uintah Basin
  - Utilized production data from 2006 and 2012
  - Projected 2006 EI to 2012



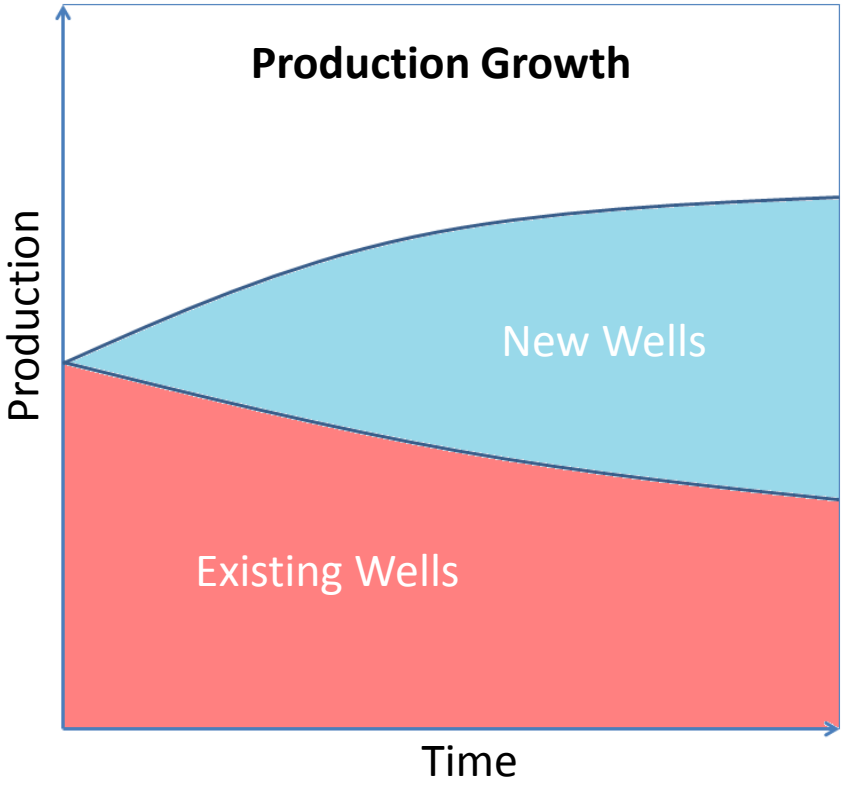
Production to Emissions

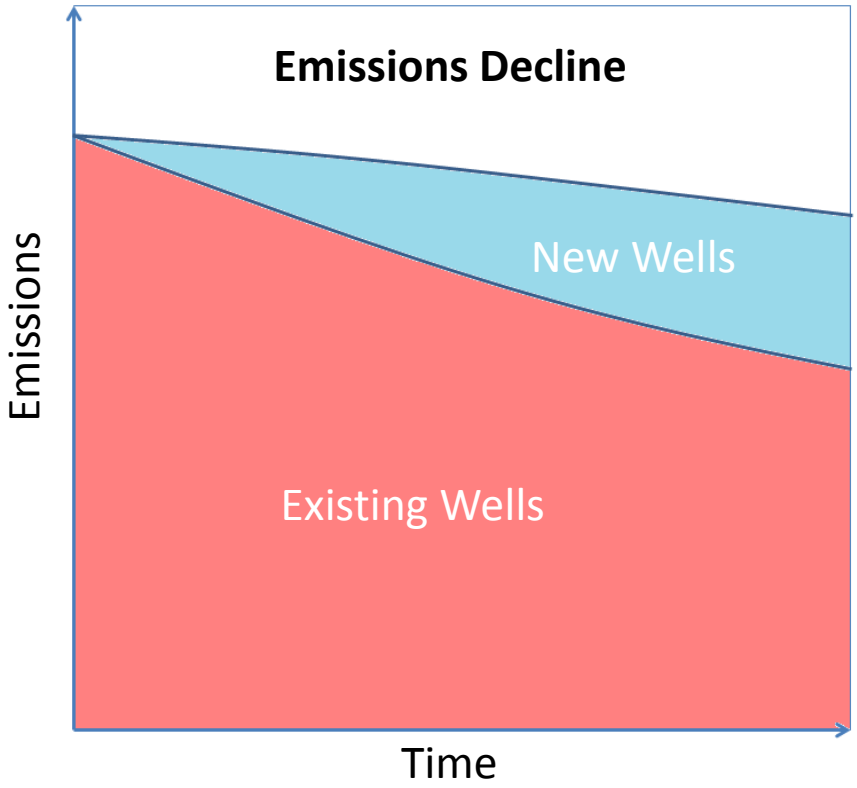
- Emissions factor determination
  - 2012 Projection: Cumulative TPY VOC/Cumulative production
  - Determine amount of VOC emissions for each unit of production
    - 1 BBL oil = X TPY VOC

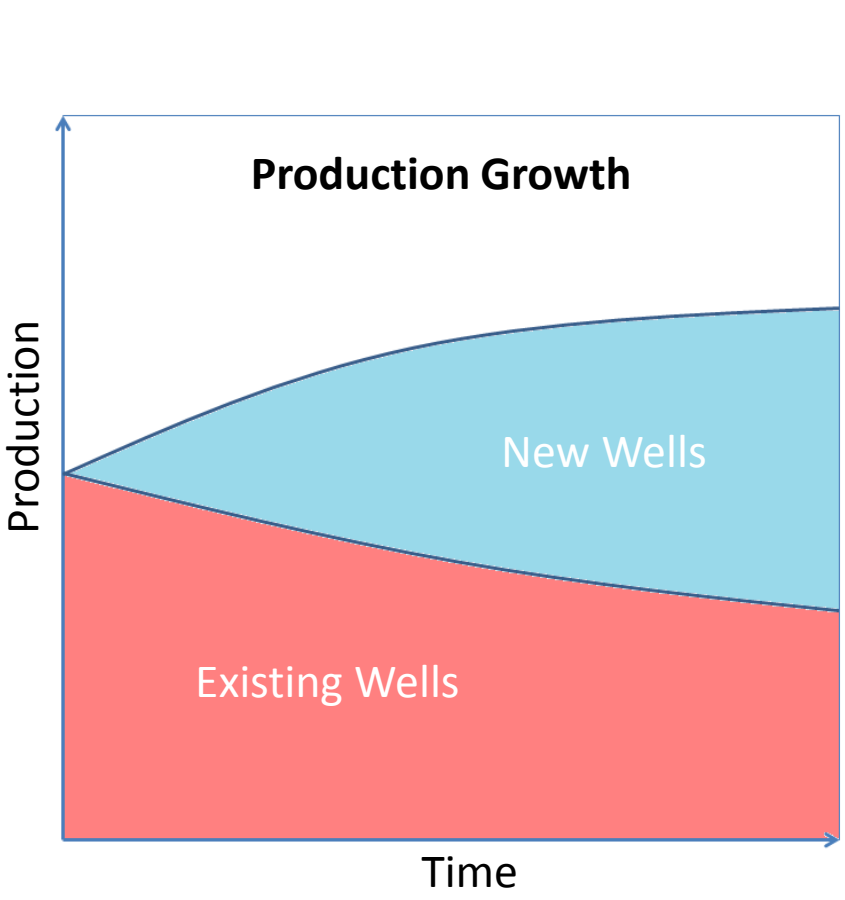
      1 MCF nat. gas = Y TPY VOC
    - Factor will vary depending on source category

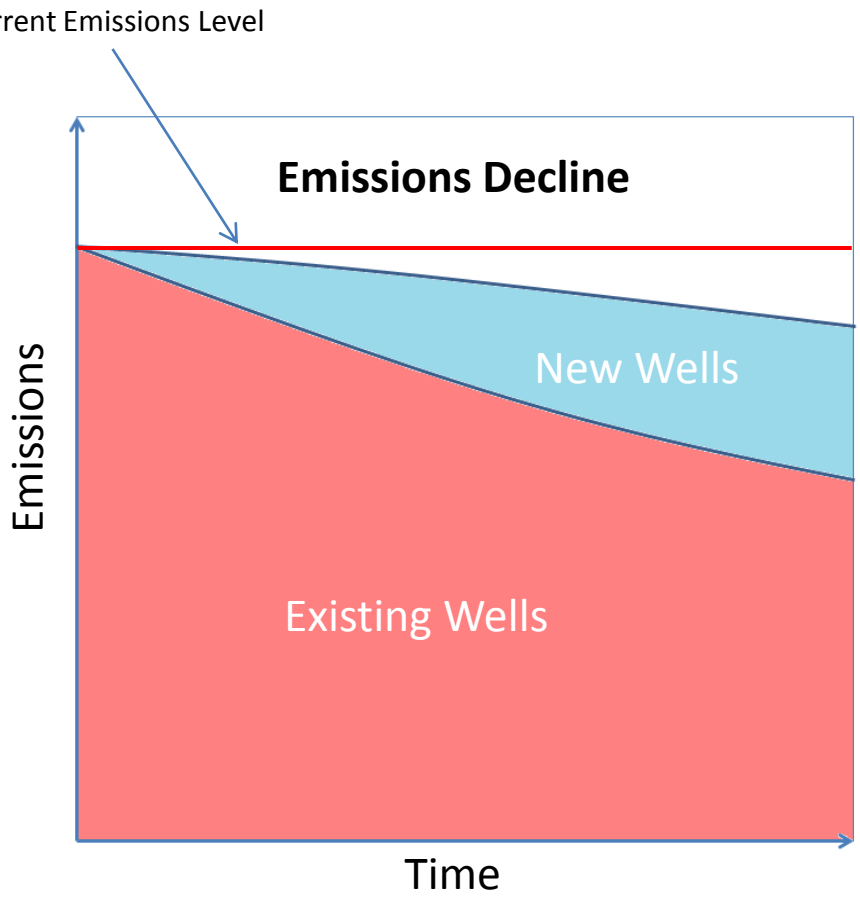
Controls – New vs. Old

- Many new controls are beginning to be implemented.
  - NSPS, NESHAP, AO (GAO)
- Impact new sources but not old sources.
- Proportion of production associated with existing wells vs. new wells is shifting.
- Result: larger proportion of production will be impacted by new stronger controls.


Production Growth
Production
New Wells
Existing Wells
Time


Emissions Decline
Emissions
New Wells
Existing Wells
Time


Production Growth
Production
New Wells
Existing Wells
Time


Current Emissions Level
Emissions Decline
Emissions
New Wells
Existing Wells
Time

General Permit:
Oil & Gas Tank Battery

Keys to Remember

- Applicable State Wide
- Not Required (Optional)
- Permitting Rules Must Be Followed
- Public Process
- <u>Still in Draft Form</u>

General Requirements

- Definitions
- Compliance
- Modifications
- Records (Retain for 2 years)
- Maintenance
- Breakdowns
- Inventory, Testing, Monitoring

Applicability

- ≤ 50,000 Barrels of Crude Oil/Condensate
- Produced Gas is Captured
- Property Boundary Impacts

Equipment: Tanks

- Contents: Oil, Condensate, or Produced Water
- Individual Tank Capacity: 550 barrels
- Site-Wide Tank Capacity: 2,200 barrels

Tank Requirements

- Reduce VOC emissions
  - Recovered, Recycled, Used as Fuel, or
  - Controlled with a VOC Control Device
- Inspect the Thief Hatches Monthly
  - Recordkeeping

Equipment: Dehydrator

- Maximum Capacity:
- 1.0 Million Standard Cubic Feet per Day

Dehydrator Requirements

- Reduce VOC emissions
  - Recovered, Recycled, Used as Fuel, or
  - Controlled with a VOC Control Device

Equipment: VOC Control Device

- ≥ 98% Control Efficiency

VOC Control Device Requirements

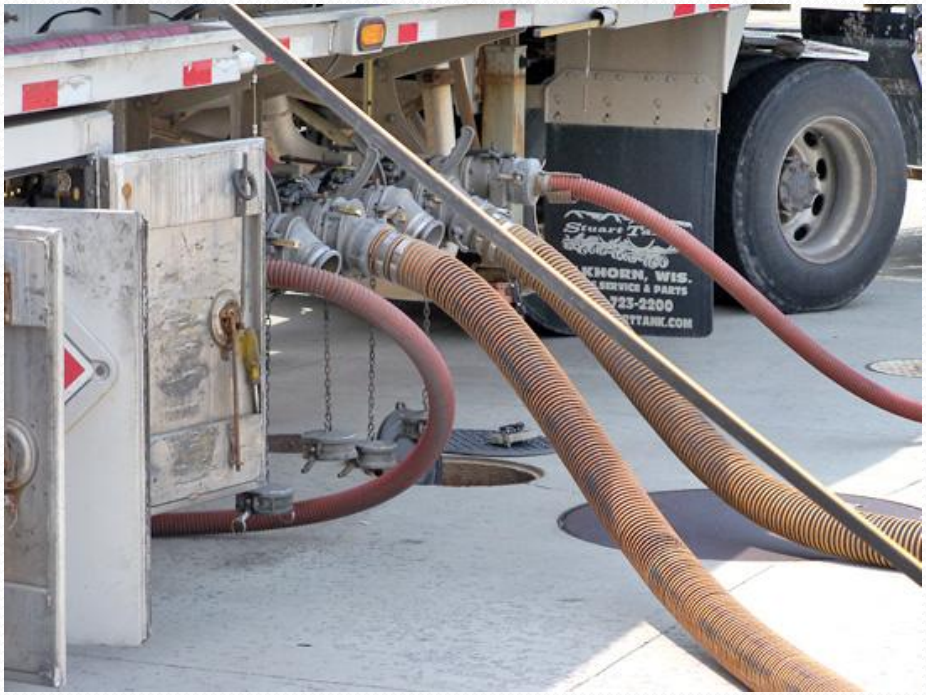
- Manufacturer Guaranteed Control Efficiency
  - Records
- Maintenance according to the Manufacturer
  - Records
- No Visible Emissions
- Minimum Stack Height

Pneumatic Requirements

- Reduce VOC Emissions
  - Bleed rate is ≤ 6 standard cubic feet per hour, or
  - VOC Emissions are Controlled
    - Recovered, Recycled, Used as Fuel, or
    - Controlled with a VOC Control Device

Truck Loading Requirements

- Submerged/Bottom-Fill Loading



Equipment: Engines

- Rating ≤ 100 Horsepower
- Fuel: Natural Gas or LPG

Engine Requirements

- Must Meet Current Engine Emission Standards
  - NSPS Subpart JJJJ
  - Manufacturer Guarantee
    - Records
  - Proper Maintenance
    - Records
- Minimum Stack Height
- Property Boundary Impacts

Boiler/Heater Requirements

- Rating ≤ 10.0 MMBtu/hr
- Fuel: Natural Gas or LPG

Equipment: Boiler/Heaters

- Minimum Stack Height

Leaks Detection & Repair

- Infrared Camera Inspections every six months
  - Repair Leaks, or
  - Analyze Leaks
    - Leaks measuring ≥ 500 ppm must be repaired
  - Records of Inspections & Repairs

Other Equipment

- Methanol & Glycol Storage Tanks
  - Site-Wide Capacity ≤ 500 gallons
- Emergency Overflow Tank
  - Capacity 550 barrels
- Compressors & Pumps
- Heater Treaters

Other Requirements

- Throughput Recordkeeping
- 10% Opacity Limit
- 18-month Construction Notification
- Start-up Notification
- Initial & Annual Inventory
  - Equipment
  - Emissions

Preliminary Schedule

- January 2, 2014 – Authority
- January – Public Comment Period Starts
- February – Public Comment Period Ends
- February-March – Evaluate & Respond to Comments
- March – GAO is Issued

Review Documents

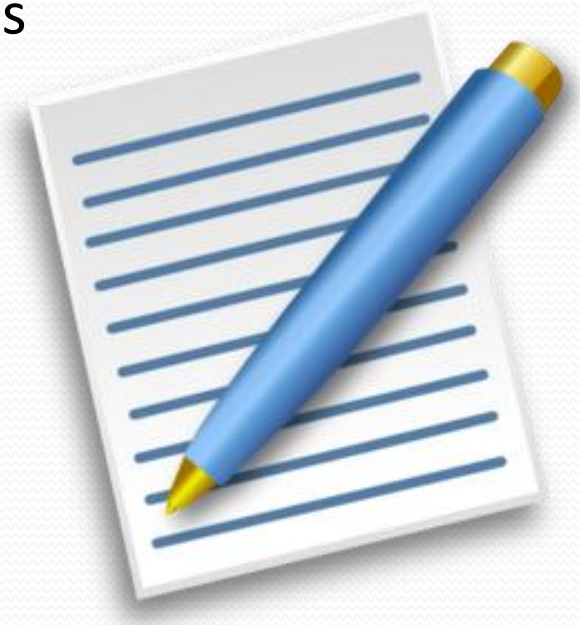
- Engineering Review
  - Decisions & Justification
  - BACT Review
  - Summary of Impact Analysis
  - Equipment
  - Conditions

Other Documents

- Emission Calculations
- Detailed Impact Analysis
- Application Forms
- Draft Permit

Application Form

- Company Information
  - Name, Address, Phone Number
- Site Information
  - Address, Coordinates, Driving Directions
  - Description
- API #’s Associated with Site
- General Permit Number
- Applicability Validation



Involvement

- Preliminary Input
  - Suggestions/Advise
- Comment Period
  - Technical Comments
    - Rules
    - BACT
    - Impact Analysis
  - Legal Justification
    - How & Why

Questions