

Land Quality Division



Land Quality



W Wyoming Dept of Environmental Quality

- n Land Quality
- n Air Quality
- n Solid & Hazardous Waste
- n Abandoned Mine Lands
- n Water Quality
- n Industrial Siting
- n Administration Services



Land Quality: Mining Permits

- Issued for uranium, coal, bentonite, trona, gravel, etc
- Certifies a project area may be mined in conformance with an approved mining & reclamation plan
- Require reclamation to pre-mine use
- Opportunity for public comment prior to permit issuance



Land Quality Uranium Mining

W Open pit

- n 11 permitted
- n 4 pre-DEQ

W Underground

- n 2 permitted
- n 1 pre-DEQ

W Insitu

- n 7 permitted



Land Quality: Other Agencies Involved

- W Game & Fish (sage grouse)
- W Fish & Wildlife Service (endangered species)
- W State Historic Preservation Office (cultural)
- W Water Quality Division (gw classification)
- W State Engineer (ponds, potable water, water rights)
- W EPA (approve minor program revisions aquifer exemption)
- W Nuclear Regulatory Commission (federal license)
- W BLM (federal mineral and /or surface manager)



Land Quality

What's in an application?

Permit Application Sections

Adjudication: land ownership, reclamation bond, surface owner consent

Cultural Resource: fossils, historical sites, SHPO consultation

Geology: regional & local descriptions, ore zone characteristics, confining zones

Hydrology: baseline quality/quantity, pump tests, excursion levels

Soils: soil units, topsoil volume, chemical analyses, protection measures

Vegetation: species diversity, vegetative cover

Wildlife: species, migration routes, mitigation, G&F/USFWS consultation

Mine Plan: production sequence & schedule, injection rates & pressures, fluids, well construction & completion, monitor well network, monitoring plan, capacity of disposal systems

Reclamation Plan: aquifer restoration, surface reclamation, schedule, concurrent production & restoration, adequate disposal capacity, final water quality

Land Quality Risk Assessment



w September, 2009 Uranium Conference

w LQD statutes/rules

w LQD managing risk



Land Quality Managing Risk

- | Baseline data collection to assess pre-mine quality
- | Well construction, completion, integrity (MIT)
- | Pump tests to confirm lateral communication in the ore zone, confinement in layers above & below the ore zone, and identify problem drill holes
- | Assessment of impacts expected & mitigation
- | Maintenance plan for wells & monitoring equipment
- | Installation of monitor wells to identify excursions
- | Excursion protocol & operator plan
- | Reclamation bond until restoration complete



Land Quality Example Mitigation

- w Baseline private or livestock wells
- w Baseline regional monitor wells
- w If impacts to surrounding project well:
 - n Lower pump level in well if possible
 - n Deepen the well if possible
 - n Replace the well with new well in deeper aquifer not impacted by insitu operation



Land Quality Effectiveness

- w Restoration: Bison Basin, Irigaray, Smith
- w Wells: higher quality materials & methods
- w Well casing integrity: lower MIT failures
- w Historical drill holes: finding & plugging
- w Current plugging practices: improved
- w Spills: monitoring, materials, incidents down
- w Impact mitigation: better commitments

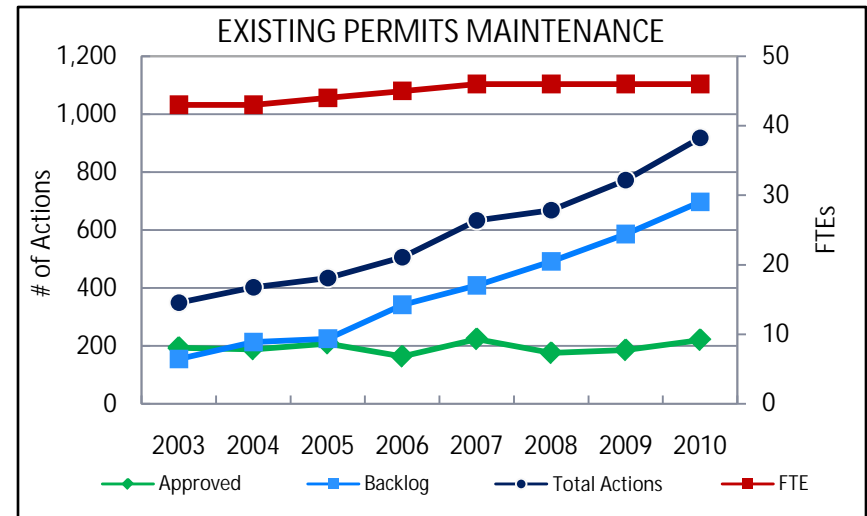
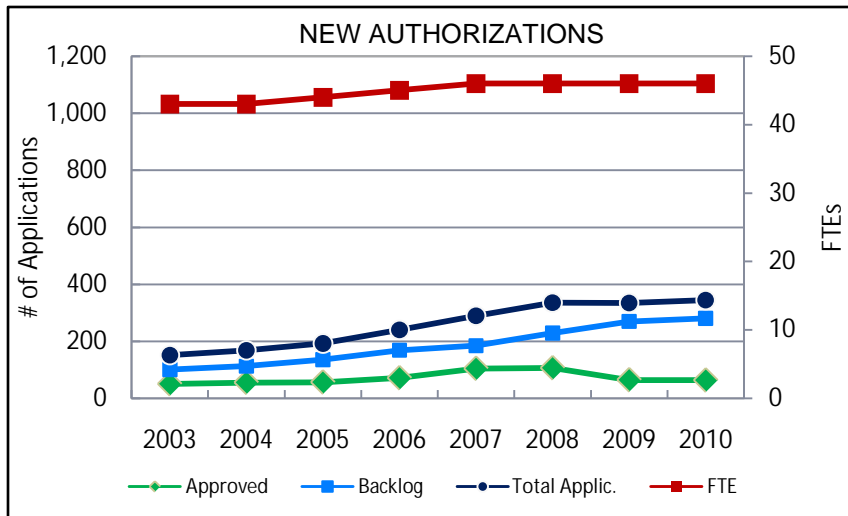
Land Quality Current/Proposed Activity



- n One active production facility (2 permits)
 - | LQD averages monthly inspections
- n Overall exploration has dropped off since 2009
- n Two start-ups of previously permitted sites submitted
 - | Christensen, Gas Hills
- n Five instu applications received
 - | Lost Creek, JAB/Antelope, Nichols, Moore, Ludeman
- n Several others insitu projects proposed



Land Quality Overall Workload



- Includes permits, exploration, licensing, and limited mining operations
- Nature of application is changing

- Includes monitoring, baseline collection, revisions, amendments transfers, exploration and bonding
- Rise since 2005 primarily due to amendment, non-significant revisions, self bonding, exploration & limited mining operation increases



Land Quality Additional Issues

§New coal oversight, rule initiatives, and proposed 15% cut in grant

§Implement sage grouse stipulations

§Federal coal leasing slow down/pinch point

§Required inspections & compliance grow as permits grow

§Increased interest uranium, underground coal gasification, coal farming

§Increased public involvement and citizen complaints

Land Quality Actions



§Steps Taken to Address Increased Workload

§Rotated staff time to address uranium 2006-2010

§E-permit process development 2008-2010

§Standardized smaller mine inspection reports 2008

§Shifted open positions in Cheyenne to district offices in 2008-2009

§Held “lean government” event for coal annual reports in September 2009

§Filled new uranium position in Sheridan Office November 2009

§Expanding hydrology database 2010

§Submitting position needs to Minerals Committee in September, 2010

Land Quality

