

KEY SERVICES

Site Assessments:

Pre-Disturbance Assessments

- Aquatic Resource Inventories
- Ecological Site Description (ESD) Verification
- Erosion Potential Identification
- Noxious/Invasive Weed Inventories
- Soil Series Identification
- Soil Limiting Factors Identification
- Soil Texture Identification
- Topsoil-Suitable Subsoil Salvage Depth Determination
- Vegetation Community Identification
- Vegetation Qualitative Assessments & Quantitative Sampling
- Wildlife Baselines, Impact Analyses, and Compliance Monitoring

Post Disturbance Monitoring & Mitigation

- Aquatic Resource/Wetland Mitigation Monitoring
- Interim and Final Reclamation Monitoring
- Noxious/Invasive Weed Inventories and Management
- Pit Sampling
- Stormwater Pollution Prevention Monitoring
- Topsoil Viability Sampling
- Wildlife Conservation and Mitigation Plans, and Habitat Enhancement Plans

Permitting & Planning

- Biological Permitting (ESA, MBTA, and BGEPA)
- Integrated Pest Management Plans
- Interim and Final Reclamation Planning and Reporting
- Pesticide Use Permitting
- Seed Mix and Seeding Techniques Recommendations
- Section 404 Permitting
- Site Specific Reclamation Recommendations
- Soil Amendment Recommendations
- Stormwater Pollution Prevention Planning and Reporting

Oil and Gas—

Assessments, Planning, and Monitoring

BKS Environmental Associates, Inc. (BKS) has been providing natural resource services to the mineral extraction industry since 1981.

BKS has a robust safety plan and meets requirements set forth by Browz, ISNetwork, and PEC Premier.

SITE SPECIFIC RECLAMATION PLANNING

BKS has compiled numerous site specific reclamation designs for submittal to various federal and state agencies. The purpose of a site specific reclamation plan is to provide a pre-disturbance site characterization for each proposed well pad, access road, and/or pipeline including:

- **Soils Characteristics**
 - ◊ Identify varying topsoil-suitable subsoil salvage depths across each location to maximize reclamation potential
 - ◊ Identify various soil amendments to mitigate physical or chemical soil limiting factors
- **Vegetation Characteristics**
 - ◊ Map vegetation communities and/or ESDs
 - ◊ Identify plant species, including noxious/invasive species
- **Reclamation Suitability Criteria**
 - ◊ Identify and recommend BMPs that reduce and mitigate storm water runoff and sediment loss
- **Potential Site Specific Concerns**
 - ◊ Address concerns based on specific landscape variability, technology, and economic considerations
- **Poor Reclamation Success Characteristics**
 - ◊ Identify poor vegetation establishment, weed infestations, or soil limiting factors
 - ◊ Conduct assessments to determine cause and provide remediation recommendations



Client List

- Anadarko Petroleum Corporation
- Chesapeake Energy Corporation
- Denbury Resources, Inc.
- Devon Energy Corporation
- Ellwood Exploration
- Enbridge Energy Partners
- Encore Energy Partners Operating
- EOG Resources
- Foundation Energy
- Greencore Pipeline Company, LLC
- GRMR Oil & Gas
- Hiland Partners
- Linn Energy
- Newfield Exploration
- Petroleum Association of Wyoming
- QEP Energy Company
- Sabine Oil & Gas
- Samson Resources
- True Oil
- Vanguard Operating

BKS Environmental Associates, Inc. was established in 1981.

MONITORING

BKS will qualitatively or quantitatively monitor producing and/or plugged and abandoned well pads, access roads, and pipelines for annual interim or final reclamation, applicable storm water monitoring requirements, and applicable wildlife assessments. BKS will also inventory undisturbed areas to compare reclaimed area monitoring results. BKS will present the results of the field work and provide recommendations to the client to achieve their goals. Necessary reporting to state or federal agencies is also provided. The list below outlines typical data sets that are provided:

- Methods utilized latest acceptable to BLM
- Desktop analysis of baseline data
- Qualitative observations
- Quantitative measurements including % ground cover, % vegetation, and % desired vegetation cover
- Stage of reclamation each well site has achieved
- Specific recommendations to improve the well site or habitat enhancement
- Species list including any noxious or invasive weed species
- Wildlife baseline observations and compliance monitoring
- Maps of all existing infrastructure and data collected (e.g., sample locations, BMPs, and erosion concerns)
- Photographs and GIS of all data collected
- Survey and GIS data uploads to state or federal databases

FIELD ASSESSMENT

Vegetation

- Aquatic Resource Inventory Assessments and Sampling
- Daubenmire Frame Sampling
- Frequency Plot Sampling
- Point Line Intercept Sampling
- Production Plot Sampling
- HAF Analysis
- AIM
- Quadrat Sampling
- Qualitative Assessments
- Shrub Density Evaluation
- Vegetation and ESD Mapping

Soils

- Mechanical and Hand-held Soil Augers Capable of 1-10 Plus Foot and 40 Plus Foot Depths
- Soil Series and Topsoil Salvage Depth Mapping

Wildlife

- Wide variety of wildlife survey and monitoring methodologies (e.g., acoustical, aerial, trapping, and telemetry) for diverse wildlife taxa (big game, bats, rodents, all avian species, and herptiles)

GIS

- ArcPad Mobile GIS

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