



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

In the Matter of
CROW BUTTE RESOURCES, INC.
(Marsland Expansion Area)

Docket No. 40-8943-MLA-2
ASLBP No. 13-926-01-MLA-BD01

Hearing Exhibit

Exhibit Number:

Exhibit Title:

September 7, 2018

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NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:)	
)	Docket No. 40-8943-MLA-2
CROW BUTTE RESOURCES, INC.)	
)	ASLBP No. 08-867-02-OLA-BD01
(Marsland Expansion Area))	

AFFIDAVIT OF JAMES STRIVER

I, James Striver, do hereby state as follows:

1. I am employed by Cameco Resources as the Senior Geologist at Smith Ranch-Highland facility in Douglas, Wyoming. A statement of my professional qualifications is attached.
2. I am responsible for the paragraphs in the rebuttal testimony on Contention 2 that are marked with my initials.
3. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding.
4. I hereby certify under penalty of perjury that the forgoing is true and complete to the best of my knowledge, information, and belief.

Executed in accord with 10 C.F.R. § 2.304(d),

signed electronically by James Striver
James Shriver
Senior Geologist
Cameco Resources, Smith Ranch-Highland
Operation
762 Ross Road
Douglas, WY 82633

Dated at Douglas, Wyoming
this 7th day of September 2018

James E. Shriver, P.G.
Cameco Resources
Smith Ranch-Highland Operation
762 Ross Road
Douglas, WY 82633

PROFESSIONAL REGISTRATION and AFFILIATIONS:

Registered Professional Geologist (#PG-1506), State of Wyoming
Licensed Water Well Drilling Supervisor (#49116), State of Nebraska
Member of Society of Mining, Metallurgy and Exploration and SME Wyoming Chapter

Member of Wyoming Geological Association
Member of AAPG

EDUCATION:

B.S. Geology, University of Wyoming
A.S. Geology, Casper College

PROFESSIONAL EXPERIENCE:

Cameco Resources (2011- Present) Staff Geologist, Project Geologist, Senior Geologist,
Responsibilities and project experience:

Several uranium exploration drilling projects including planning, implementation, supervision, report writing, communication with regulatory agencies, field visits with regulators and project reporting to the Wyoming Department of Environmental Quality (WDEQ) and Nebraska Department of Environmental Quality (NDEQ); Roll front mapping and resource estimations, borehole data evaluations and cross-section construction; Geologic prospect evaluation and report writing; Responsible for inventory of company geologic data archive; Geologic review of company held properties including mineral economic evaluations; Wellfield bleed and excursion control and well selection based on geologic analysis; Geologic analysis of Smith Ranch-Highland Mine Unit 1 as part of ACL application; Contractor oversight of deep disposal well MITs; Land retention reports with geologic recommendations; Oversight of well completing and decommissioning and coring projects at Crow Butte facility; Site visits with WDEQ and NDEQ for drilling project/ permit related inspections; Geologic support in NRC license renewal requests for information; Geologic support to Smith Ranch-Highland, North Butte and Crow Butte operations.

TREC, Inc. (2008-2011) Geologist/Project Manager, Project Experience includes:

Mineral Resource Estimations – Developed uranium mineral resource estimates for Canadian National Instrument 43-101 compliant technical reports for three potential ISR mining areas in the Powder River Basin, Wyoming. Historic and modern data were evaluated including geophysical and lithologic drill hole logs, mineralization intercept data, drill hole maps and geologic cross sections. Grade-Thickness (GT) contour maps of the ore bodies were developed in ArcGIS to determine estimations of measured, indicated and inferred uranium resources for the multi-million pound mineral properties.

Proposed ISR Uranium Mine – Constructed isopach maps for the stratigraphic analysis of the targeted mineralized producing units, the overlying and underlying aquifers and confining units in

conformance with state mining permit requirements. The process involved the evaluation and geologic interpretation and correlation of several hundred geophysical and lithologic logs from within the proposed mine permit area.

Evaluation of Potential ISR Uranium Mine Resource – Conducted an evaluation of data to validate previously reported mineral resource estimates for use in a NI 43-101 compliant Preliminary Feasibility Study. The evaluation included review of drill logs, geophysical logs, log data mineralization calculations, drill hole maps, mineralization intercept data tables, selected cross-sections and GT contour and mine unit maps. Evaluation of spreadsheets and calculations used in the resource estimate determinations, and of the digital geospatial database: geographic drill hole locations, mineralization intercept data, and polygon blocks used to determine mineralization areas of influence (AOI). The proposed ISR mine is located in northeast Wyoming.

Federal License and State Mining Permit Applications and Revisions for ISR Uranium Mine – Coordinated the development of the Technical and Environmental Reports of the Source Material License application to the Nuclear Regulatory Commission and a Permit to Mine Application to the WDEQ for an ISR project in Converse County, Wyoming. Information included baseline geologic, hydrologic, resource and site characterization, mining plan and environmental impacts. Additionally coordinated the application revisions in response to comments by federal and state regulating agencies for a Wyoming uranium property Permit to Mine (state of Wyoming) and NRC Source Material License applications.

Uranium Energy Corp. (2007-2008) Staff Geologist, Project Experience included:

Uranium Prospect Evaluation and Exploration Program - Prepared prospect evaluations of uranium company-owned properties in the Wind River and Powder River Basins of Wyoming. Project involved development of a drilling program based on research and review of historical drilling reports, mineralization data files, geophysical logs, drill logs, drill hole maps, geological cross-sections and geologic maps. Generated geologic maps and land maps, roll front maps, uranium drill log intercept data maps, and proposed drill hole location maps in ArcGIS; produced cross-sections and developed a uranium mineral resource estimate of the prospect areas.

Cave Creek Consulting, LLC and Associated Energy Consultants, LLC (2005-2007) Consulting Geologist, Project Experience included:

Development of Coalbed Methane Field, Powder River Basin, Wyoming – Lead field geologist for two multi-well multi-drill rig projects in 2005 and 2006. Supervised junior geologists and drilling rigs for drilling through target zones, determined coalbed formation tops and bases, generated formation structure maps and well prognoses. Logged detailed drill cuttings sample descriptions, supervised geophysical wireline logging of wells, produced integrated geophysical and lithologic logs, wrote well reports.

Core Laboratories (1984-1995) various positions progressing from Core Analyst I to Manager of Rock Properties Dept., including:

Formation Evaluation Specialist - Significantly contributed to the development and operation of core fracture analysis and coalbed methane core services (field and lab) in the region including the coordination of two extensive field/lab projects. Provided clients with interpretive reports of basic core analysis including potential for productivity, core-well log integration, core fracture studies and coalbed core analysis; performed duties as Supervisor of U.S. labs core fracture/structure studies including data analysis, report writing and reviews, arranged and instructed in-house core fracture analysis training courses (2 to 5 day course); responsible for client contacts and service presentations,

core analyst training, report reviews and QC, equipment and software development.

Project experience included:

Formation Evaluation Project, San Juan Basin, New Mexico – A multi-well project designed to evaluate the properties of the Fruitland Coal formation in the Four Corners area in northwest New Mexico. Constructed whole core gas desorption equipment for on-site measurements. Laboratory program included coal gas content determination, bulk density, spectral core gamma analysis, detailed fracture and cleat analysis and orientation, gas composition, geologic description, compositional analysis and coal adsorption/desorption isotherm testing and report generation. The resulting information was used for geologic and reservoir modeling of the field.

Petrophysical and Geological Evaluation of Cusiana Oil Field Discovery, Llanos Foothills, Colombia, S.A. –BP Exploration was conducting a large multi-well coring project in the recently discovered Cusiana Field. The petrophysical program included on-site activities and laboratory analysis including porosity and un-steady state permeability at varying confining stresses, profile permeability measurements and correlation with geophysical logs, spectral gamma logging, core orientation with bedding dip and fracture studies, electrical properties and fluid saturations, and interpretive report writing. Received an Excellence in Service award from BP Exploration during the project.

Petrophysical and Geologic Evaluation, Yacheng Gas Field, Offshore Hainan Island, China – Supervised a project designed to provide ARCO Oil and Gas information to accurately calculate reserve estimates of the recently discovered Yacheng Gas Field, via low invasion oil-based coring and core analysis; performed data analysis and QC of all core analytical data and reports generated.

Other relative experience:

Resource Evaluation Program, Wind River, Powder River and Great Divide Basins, Wyoming - Provided field technical support to U.S. BLM in a drilling project designed to evaluate the resource potential of sub surface coal seams. Multi-basin, multi-well program included drill rig operations, geophysical logging and water well completions. Performed sample descriptions and geophysical well logging operations and log interpretations as needed.

Ruth Pilot ISR Project, Wyoming – during college summer break, assisted in the construction / development of the in-situ recovery uranium pilot project for Uranerz, USA.

Recent Continuing Education & Training:

Shallow Exploration Drillers Clinic, April, 2018, 12 credit hours

Cameco Leadership Essentials Program

Geographic Information Systems (GIS) Management and Implementation, one semester, 4 credit college course;

Introduction to GIS, one semester, 4 credit college course;

Uranium Exploration Concepts, one semester, 3 credit college course.