



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Solicitation

NUMBER
DEP16455

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
FRANK WHITTAKER 304-558-2316

VENDOR

RFQ COPY
 TYPE NAME/ADDRESS HERE
CBC Engineers & Associates, Ltd.
 125 Westpark Road
 Centerville, Ohio 45459

SHIP TO

ENVIRONMENTAL PROTECTION
 DEPARTMENT OF
 OFFICE OF AML&R
 601 57TH STREET SE
 CHARLESTON, WV
 25304 304-926-0499

DATE PRINTED
12/13/2013

BID OPENING DATE: 01/15/2014 BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		906-29		
				RIDGEVIEW (DUNLAP) PORTALS DESIGN		
				EXPRESSION OF INTEREST		
				THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING EXPRESSIONS OF INTEREST FOR PROFESSIONAL ENGINEERING DESIGN SERVICES AND CONSTRUCTION MONITORING SERVICES AT THE RIDGEVIEW (DUNLAP) PORTALS PROJECT IN BOONE COUNTY, WEST VIRGINIA PER THE FOLLOWING BID REQUIREMENTS AND ATTACHED SPECIFICATIONS.		
				01/14/14 11:47:00AM West Virginia Purchasing Division		
				***** THIS IS THE END OF RFQ DEP16455 ***** TOTAL:		

SIGNATURE <i>W. H. Hahn</i>	TELEPHONE 937-428-6150	DATE JANUARY 15, 2014
TITLE Chief Engineer & U.P.	FEIN 31-144 3075	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

Expression of Interest

Engineering Design and Construction Monitoring
Services at the Ridgeview (Dunlap) Portals
Boone County, West Virginia
DEP16455

CBC Quotation No. 14-007-01WV

January 15, 2014

Issuing Office:

West Virginia Department of Environmental Protection
Office of Abandoned Mine Lands and Reclamation
601 57th Street, S.E.
Charleston, West Virginia 25304

Submitted By:

Charleston, West Virginia Office
CBC Engineers & Associates, Ltd.
3729 Teays Valley Road
Hurricane, West Virginia 25526
(304) 760-1009

Primary Office
125 Westpark Road
Centerville, Ohio 45459

January 15, 2014

CBC Quotation No. 14-007-01WV
West Virginia Department of Environmental Protection
Office of Abandoned Mine Lands and Reclamation
601 57th Street, S.E.
Charleston, West Virginia 25304

Expression of Interest
Engineering Design and Construction Monitoring
Services at the Ridgeview (Dunlap) Portals
Boone County, West Virginia
DEP16455

Gentlemen:

CBC Engineers & Associates, Ltd (CBC) appreciates the opportunity to submit our proposal in response to your Request for Expression of Interest DEP16455 to provide professional engineering and construction monitoring services. These services will result in the development of mapping, engineering drawings, contract specifications, and other contract documents required for the **Ridgeview (Dunlap) Portals** project in Boone County, West Virginia.

CBC is particularly well qualified to provide the State with the above referenced services offered at the most satisfactory terms, from both a technical and cost standpoint. The work under this contract will be performed both in our Dayton, Ohio and Charleston, West Virginia offices. **CBC has provided the mining industry with quality engineering services since 1995**, and based on CBC's experience and knowledge of the current regulatory laws, regulations, procedures, interpretations and requirements, our firm is well suited to perform all referenced services.

CBC welcomes you to visit our facility located at 3729 Teays Valley Road, Hurricane, WV 25526.

CBC has:

- On staff three (3) West Virginia registered civil and mining engineers who will review, stamp, and sign all work and contract documents.
- Available staff of geotechnical, civil and mining engineers, CADD operators, surveyors, and biologists with extensive expertise in reclamation engineering, hydrology, and geology: and
- Extensive experience in surface and underground coal mining, environmental, ecological principals, stream restoration and mitigation, and contract administration.

We look forward to building a strong relationship with the WVDEP-AML.

Sincerely,
CBC Engineers & Associates, Ltd.



Mitchell T. Hardert, PE
Chief Engineer and Vice President

Expression of Interest

Engineering Design and Construction Monitoring Services

at the

Ridgeview (Dunlap) Portals

Boone County, West Virginia

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1.0 Introduction

CBC Engineers & Associates, Ltd. (CBC) proposes to provide engineering and construction monitoring services to the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation (WVDEP-AML). These services will result in the development of mapping, engineering drawings, contract specifications, and other contract documents as may be required for the Ridgeview (Dunlap) Portals project in Boone County, West Virginia. The project will consist of:

- Erosion and sediment control,
- Design of drainage conveyances,
- Construction/upgrade of access roads,
- Subsurface investigation,
- Installation/rehabilitation of mine seals,
- Demolition of structures,
- Refuse regarding/reclamation,
- Streambank restoration,
- Re-vegetation of disturbed areas.

CBC is extremely well qualified to provide the State with the above referenced services. CBC has **Three (3)** West Virginia registered Professional Engineers, **Three (3)** professional Surveyors, and a team of geologists, environmental scientists, biologists, technicians, CADD operators, word processor operators, secretaries, and draftspersons. CBC has served the West Virginia Mining Industry for over **19 years**. These projects include:

- Subsidence evaluations, breakthrough analysis and Pillar design & stability,
- Coal refuse pile reclamation and design, including impoundment structures,
- Stream design, restoration, and mitigation,
- Acid mine drainage (AMD) evaluation and treatment,
- Mine portal reclamation,
- Wetlands replacement and development,
- Environmental liability assessments,
- Hydrologic/hydraulic design of erosion and sediment control structures,
- Soil analysis and re-vegetation plans,
- Construction monitoring services, surveying and inspection,
- Design of excess overburden disposal fills,
- Detailed reclamation plans,
- Detailed subsurface/geotechnical investigations for foundation, subsidence, and slope stability,
- Mine closure plans/post-reclamation land use,
- Permitting for deep and surface mine applications (NPDES, Nationwide Permits, U.S Army Corps of Engineers Section 404 permits, etc.),
- Probable hydrologic consequences (PHC) statement preparation,
- Phase I & II Environmental Site Assessments, and

- Assessment of contamination (e.g. PCB's, asbestos, lead)

CBC will not require any sub-consultants to be utilized on this project, accept where mentioned in section 2.3 below. CBC will provide the required expertise to complete reclamation projects in a timely, economical, and efficient manner.

2.0 Corporate History and Experience

CBC Engineers & Associates, Ltd. is a multi-disciplinary geotechnical, civil, environmental, and mining engineering firm headquartered in Dayton, Ohio, with offices in Charleston, West Virginia; Lexington and Hazard, Kentucky; and Harrisburg, Illinois. Established in 1995, CBC employs over 45 engineers, scientists, and support personnel. Our 8 registered professional engineers have over 250 years of combined experience, offering a wide range of interdisciplinary skills, and are supported by a large group of experienced engineers, designers, surveyors, and technicians. Our firm has a diversified practice covering engineering (civil, mining, geotechnical, and environmental), permitting, site characterization and remediation, and general environmental consulting.

Our clients include state, local and federal government agencies, mining companies, manufactures, utility companies, commercial, residential, industrial and institutional clients, as well as local and national chain land developers.

CBC maintains company owned drill rigs and laboratory testing facilities in many principle locations that can provide all necessary geotechnical assessments and foundation support, along with in-house surveying and construction management services.

CBC has completed several projects similar to a WVDEP AML&R type project. These include construction management and observation, design and permitting of refuse piles and slurry impoundments, evaluating mine drainage from pre-SMCRA sites, reclamation design and monitoring, landslides, stream monitoring, grading plans, watershed assessments, wetland studies, and detention pond design.

From the analysis stage to project implementation, the professional staff of CBC provides clients with cost-effective engineering and planning solutions for their environmental problems. CBC's outstanding reputation is based upon dedicated service to clients and demonstrated technical abilities.

CBC proposes to utilize primarily our staff in the Charleston, and Dayton offices, with technical support and surveying by our Hazard and Lexington offices as required.

2.1 Design Engineering and Contract Document Preparation

CBC has extensive experience in design engineering and the preparation of documents for reclamation and related projects. CBC takes pride in in staying creative and finding innovative approaches to difficult problems. Our 19 years of experience in the mining and related industries will ensure quality engineering for this and all future AML projects.

All five of our Offices are involved in the coal and mining industries and have developed many professional relationships with state and federal agencies including MSHA, Corps of Engineers, and multi-state regulatory agencies. CBC is vastly familiar with WVDEP's guidelines for preparing drawings, technical specifications, and supporting documents.

During the design engineering phase of our projects, CBC evaluates alternative analysis and works closely with WVDEP and all regulatory agencies involved to review options and select the most practicable plan. CBC engineers and technical staff work together to review all aspects of each construction package to ensure the most feasible and economically sounds methods are applied.

2.2 Surveying and Mapping

Surveying will be performed by CBC's in-house surveyors to provide the most cost efficient and timely services. CBC has **three (3)** licensed professional surveyors with over 75 years of combined surveying experience. Our surveyors are experienced in all aspects of surveying such as topographic mapping, boundary and property surveys, and construction surveys for layout of work, record drawings, quantity measurements, and environmental sampling and monitoring.

CBC's survey crew utilizes state-of-the-art "Field to Finish" equipment and software such as, Total Stations and GPS surveying equipment, Autocad 2014 software, and a Hewlett Packard Designjet 1050c Plus. Technicians use this information to generate plan views, profiles, cross sections and other engineering drawings.

All surveys conducted by CBC are completed under the supervision of a licensed land surveyor and will be performed under the general direction of a West Virginia registered professional engineer, the CBC project engineer and the project manager. All surveys and mapping are completed to the standards as outlined by the National Map Standards, as well as other applicable quality standards to include AML specifications.

Additional information on CBC's corporate history and experience is included in the AML Consultant Confidential Qualification Questionnaire included in **APPENDIX E**.

2.3 Subsurface Investigation

CBC maintains company-owned drill rigs and a laboratory testing facility that can provide all aspects of geotechnical engineering investigations. Each geotechnical report contains written recommendations and construction procedures to obtain desired results. CBC's engineers are experienced in making sound judgments and advising owners on the structural and economic feasibility of any given project; starting with the evaluation of subsurface conditions, and ending with the determination of the physical and engineering characteristics of the soil/rock, and their probable behavior under stress.

In some situations it is not economically feasible to move our drilling fleet to a project location, so CBC has developed relationships with several drilling firms in order to ensure the most cost efficient options are employed. Should timing and cost dictate, CBC may choose to sub-contract drilling work out as necessary, under the supervision of the principle-in-charge and project manager.

2.4 Laboratory Services

CBC operates full-service soils and laboratories in several offices.

CBC offers a wide range of special inspection and materials testing services; performed by our certified field staff using the most modern and up-to-date testing equipment and procedures. Our testing facilities have the capability to analyze natural materials such as soil and rock, and manufactured materials such as concrete and steel. The soils analysis capabilities include classification and compaction, proctor, and specific gravity. CBC also maintains several nuclear densometer testing gauges to monitor field compaction.

Based upon the information provided in the Expression of Interest, CBC is not proposing the use of any other laboratory services.

3.0 Qualifications of Personnel

CBC is a privately owned company that is dedicated to staying lean, innovative, and current on engineering practices, technologies and regulations. CBC strives to deliver high quality, cost effective engineering solutions and services on schedule and on budget by supporting the motivated, flexible, and focused teams of experienced employees. CBC values the importance of client relationships and will strive to continue to offer the best client-consultant experience in the business.

Mr. Mitchell T. Hardert, P.E. will serve as the principle-in-charge. Mr. Hardert is registered in 48 U.S. states, and the District of Columbia. He has **eighteen (18)** years of experience in refuse, impoundment, and dam design; geotechnical investigations; foundation engineering; stability analysis; buried structure design; and remediation. Mr. Hardert has a good working relationship with federal, state, and local regulatory agencies.

Roger W. Cornett, P.E., PLS will serve as a project engineer. Mr. Cornett has over **thirty-five (35)** years of experience in surface and underground coal mining design and permitting, environmental impact statements, mine feasibility and planning, and acting as liaison between coal companies and state and federal regulatory agencies.

Eugene D. Highlander, P.E. will serve as a project engineer. Mr. Highlander has over **forty-six (46)** years of experience in the coal mining industry and has worked on multiple projects involving the reclamation of acid-producing refuse piles.

John Corda, P.E. will serve as a project geotechnical engineer. Mr. Corda has over **forty-eight (48)** years of experience and has participated in the design of nearly 400 projects for dams, foundations, and coal impoundments. He has extensive experience in slope stability analysis, liquefaction, internal and surface drainage calculations, seepage and dams break analysis, as well as reclamation of strip mine areas. Mr. Corda has authored or co-authored 25 paper and 40 professional reports in the geotechnical and civil engineering fields.

Deepa Nair, P.E. will serve as a project geotechnical engineer. Ms. Nair has over **seven (7)** years of experience. She will serve as the primary internal consultant for geotechnical investigations. Ms. Nair will be involved in stability analysis, soils classifications, and boring log analysis.

Tony Bowling, P.E., PLS will serve as a project surveyor. Mr. Bowling has over **thirty (30)** years of surveying experience. He has managed surveying and engineering activities for The Kentucky Transportation Cabinet for over twenty (20) years and has lead CBC's surveying activities in our Hazard office for nearly ten (10) years. Mr. Bowling is responsible for the management of all worked performed by our Hazard office and ensures that any required surveying is performed correctly and on time.

Michael L Cross will serve as a project manager. Mr. Cross has over **thirty-two (32)** years of experience in the mining industry, including reclamation liabilities studies, seepage studies, and implemented water treatment facilities for acid mine drainage. Mr. Cross has vast experience with US Army Corps of Engineers permitting and has overseen and monitored stream restoration and creation projects.

Chad Reed will serve as a project manager and has over **fifteen (15)** years' experience in the mining industry. He is involved in overseeing CBC's impoundment inspection and certification department, all aspects of permitting, design, evaluation, and geological modeling. Mr. Reed is experienced with state and federal regulations in WV, KY and OH.

S. Mark Summers, PLS and Bill Robertson will serve as Technical Specialists. Mr. Summers is a senior project manager with an extensive background in reclamation inspection and has over **thirty-seven (37)** years of experience in the mining industry. Mr. Robertson is our Director of Field Services who coordinates all construction observation and geotechnical drilling services.

Edward. G. Galaska, Erika Dunham, and Meredith Coll-Atkins will serve as environmental scientists. Mr. Galaska supervises our Environmental department and has over **twenty-seven (27)** years of experience in the environmental and biological fields. Mr. Galaska brings experience across many sectors including Mining, Airports, Hospitals, Schools and Commercial Real Estate and will oversee the activities of Ms. Dunham and Ms. Coll-Adkins on this project.

Ms. Dunham has over **seventeen (17)** years in Phase I & II Environmental Site Assessments, Asbestos Inspections, and Environmental Audits. Ms. Dunham coordinates all field activities, inspections, testing and reporting on all work performed by CBC. Ms. Dunham will coordinate and execute any related field activities on this project.

Ms. Coll-Atkins is the lead environmental scientist in our Charleston, WV office with **twelve (12)** experience. Meredith's duties and responsibilities have included preparation of all WVDEP permitting, Environmental Mitigation Strategies, U.S. Fish and Wildlife Protection and Enhancement Plans, phase release applications, planting plans, selenium treatment, water and soils analysis, drainage design, and stream delineation. She has experience in managing surface mine and deep mine permitting and reclamation projects and has coordinated pre-submittal and reclamation inspections with West Virginia Department of Environmental Protection (DEP). She is well respected among the staff of WVDEP Charleston, Oak Hill and Logan offices.

All of CBC's engineers have direct experience with mine reclamation, grading/drainage, feasibility studies, water study and design, stream restoration, and preparation of construction documents.

CBC's project managers will be supported by a team of staff engineers, geologists, environmental scientists, biologists, technicians, CADD operators, word processor operators, secretaries, and draftspersons, who will provide the expertise and manpower to complete the project.

4.0 Management Plan

CBC's proposed management organization is presented in **Figure 1 (Appendix G)**. The work will be performed by CBC's Dayton, Ohio and Charleston, West Virginia offices, which will allow ready access to the project area. Our Charleston office is convenient with respect to the WVDEP Charleston office. Assistance, if and when needed, will be provided by staff located in the Kentucky offices.

CBC's professional, technical and support staff have extensive experience on AML and related projects and are extremely well qualified to serve the WVDEP on this contract. CBC is ready to commit the personnel and resources required to complete the project in a timely, technically sound and cost efficient manner.

Project Management will be provided by Mr. Mitchell T. Hardert, P.E. or Michael L. Cross as shown in Figure 1. Mr. Hardert will be the principle-in-charge, responsible for contract management and overall performance of the project. He will review the proposed project, assign a project manager, assemble a project team and appoint key staff to develop a proposed scope of work. The principle-in-charge and the project manager will visit the site with the WVDEP-AML to review site conditions and the proposed services to be completed and guide the preparation of a detailed proposal and cost estimate. The detailed scope of work along with cost estimate and man house will then be submitted to the WVDEP-AML for review. Upon WVDEP-AML approval of the proposal, the project manager will arrange for start of project activities. The principle-in-charge will review the project budget and schedule during performance of the project and will provide a final QA/QC review of the documents prior to submittal to the WVDEP-AML. The Project Manager will generally supervise the work in progress and review work products at intermediate points and finally prior to submittal to the WVDEP, and will be responsible for maintaining liaison with the WVDEP Project Manager including project status report, as required.

Day-to-day project activities will be performed under the direction of the Project Manager by one of the Project Engineers or Project Technicians (Michael L. Cross, Deepa Nair, M.S., P.E., I. John Corda, M.S., P.E., Roger Cornett, P.E., PLS, Chad Reed, Tony Bowling, P.E., PLS, S. Mark Summers, PLS and Bill Robertson) as shown in **Figure 1 (Appendix G)**. Their main activities will include development of detailed step-by-step project work plans to ensure the project activities are completed on-budget and on-time, review the work products at intermediate points and at project completion, providing guidance and direction to project staff, as well as engineering and design work.

Mr. Edward G. Galaska will oversee all environmental services performed by CBC. Field and technical analysis will be performed by Ms. Meredith Coll-Atkins and Ms. Erika Dunham. Surveys, reports, and documents will be reviewed by Mr. Galaska for QA/QC prior to submittal.

CBC's experienced staff in multiple locations allows for quick response time, provides flexibility, and permits for quality input from in-house experts. CBC's project management plan is to build small teams of highly qualified personnel, which ensures clients budget conscious, quality work.

WVDEP-AML has indicated that 60 days are required for submittal of deliverables for the Engineering Design and Construction Monitoring Services at the Ridgeview (Dunlap) Portals Project. CBC stands ready to meet your timeframe.

4.1 Project Budget Control

The project manager will be responsible for monitoring the project budget and keeping the principle-in-charge informed of its status. CBC's staff submits time sheets on a weekly basis. All charges including labor hours and other project expenses are compiled and reported to the project manager by Tuesday of the following week. A detailed description of project expenses is available upon request.

4.2 Schedule Control

Direct responsibility for the schedule control lies with the project manager. Initially, the Project Manager will review the work directive schedule requirements (understood to be 60 days for submittal for preliminary design documents) to see how they can be achieved with the anticipated scope of work. As the project progresses, the Project Manager will monitor progress and compare it with the established schedule on a weekly basis, keeping the principle-in-charge aware of the schedule's status. In this manner, the principle-in-charge can make staff adjustments to maintain the project schedule. If circumstances develop that make it impossible to maintain the project schedule, the Project Manager will contact the WVDEP Project Manager to develop mutually acceptable adjustment to the schedule.

4.3 Quality Assurance/ Quality Control

Submittals to the WVDEP-AML will be reviewed and commented on by the project manager and principle-in-charge prior to submittal to the WVDEP-AML. CBC uses standard Quality Assurance/ Quality Control (QA/QC)

5.0 Closing

We look forward to serving WVDEP-AML on the Ridgeview (Dunlap) Portals Project and bringing it to completion. Our commitment is to provide quality, cost effective and timely service, as well as exceed your expectations. We believe our track record of our professionals demonstrates our ability and commitment.

Appendix A



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
11/5/2013

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER The James B. Oswald Company 1100 Superior Avenue, Suite 1500 Cleveland OH 44114		CONTACT NAME: Patricia Cholewa PHONE (A/C, No, Ext): 216-839-2807 FAX (A/C, No): 216-839-2815 E-MAIL ADDRESS: PCholewa@oswaldcompanies.com	
INSURED CBCEN-1 CBC Engineers & Associates Ltd 125 Westpark Road Centerville OH 45459		INSURER(S) AFFORDING COVERAGE	
		INSURER A :Charter Oak Fire Insurance Co	NAIC # 25615
		INSURER B :Travelers Indemnity Company	25658
		INSURER C :Hudson Specialty Insurance Co.	25054
		INSURER D :	
		INSURER E :	
		INSURER F :	

COVERAGES CERTIFICATE NUMBER: 648789632 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> AI Primary & <input checked="" type="checkbox"/> Non-Contributory GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input checked="" type="checkbox"/> LOC	Y	Y	8806108L13513	11/15/2013	11/15/2014	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000 \$
	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS <input checked="" type="checkbox"/> AI Primary	Y	Y	BA6080L18313	11/15/2013	11/15/2014	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$10,000	Y	Y	CUP7686Y30913	11/15/2013	11/15/2014	EACH OCCURRENCE \$1,000,000 AGGREGATE \$1,000,000 Excludes Professional \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory In NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	UB8069Y63113-KY	11/15/2013	11/15/2014	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input checked="" type="checkbox"/> OTHER OH Stop Gap E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000
C	Professional Liability Claims Made Retro Date: 9/15/1995	N	Y	AEE7269502	11/15/2013	11/15/2014	Each Claim \$1,000,000 Aggregate \$1,000,000 Pollution & Envir. Liab. Included

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Additional Insured and Waiver of Subrogation as designated above is provided when required of the Named Insured by written contract or agreement.

CERTIFICATE HOLDER

Specimen-OH
 For Purposes of Evidencing
 Coverage Only OH 45459

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Patricia A Cholewa



Bureau of Workers' Compensation

30 W. Spring St.
Columbus, OH 43215

Certificate of Premium Payment

This certifies the employer listed below has paid into the Ohio State Insurance Fund as required by law. Therefore, the employer is entitled to the rights and benefits of the fund for the period specified. For more information, call 1-800-OHIOBWC.

This certificate must be conspicuously posted.

Policy No. and Employer

Period Specified Below

1172826

07/01/2013 Thru 02/28/2014

COWHERD ENGINEERS & ASSOCIATES LTD
CBC ENGINEERS & ASSOCIATES LTD.
125 WESTPARK RD
CENTERVILLE, OH 45459-4814



ohioBWC.com

Stephen Bucher
Administrator/CEO

You can reproduce this certificate as needed.

Ohio Bureau of Workers' Compensation

Required Posting

Effective Oct. 13, 2004, Section 4123.54 of the Ohio Revised Code requires notice of rebuttable presumption. Rebuttable presumption means an employee may dispute or prove untrue the presumption (or belief) that alcohol or a controlled substance not prescribed by the employee's physician is the proximate cause (main reason) of the work-related injury.

The burden of proof is on the employee to prove the presence of alcohol or a controlled substance was not the proximate cause of the work-related injury. An employee who tests positive or refuses to submit to chemical testing may be disqualified for compensation and benefits under the Workers' Compensation Act.



Bureau of Workers' Compensation

You must post this language with the certificate of premium payment.

DP-29 BWC-1629 7/7/08



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DATE (MM/DD/YYYY)
11/5/2013

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IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER The James B. Oswald Company 1100 Superior Avenue, Suite 1500 Cleveland OH 44114		CONTACT NAME: Patricia Cholewa PHONE (A/C, No, Ext): 216-839-2807 FAX (A/C, No): 216-839-2815 E-MAIL ADDRESS: PCholewa@oswaldcompanies.com	
INSURED CBCEN-1 CBC Engineers & Associates Ltd; Cowherd, Banner & Carlson Engineers & Associates, Ltd.; Cowherd Engineers 3860 Teays Valley Rd. Hurricane WV 25526		INSURER(S) AFFORDING COVERAGE	
		INSURER A: Charter Oak Fire Insurance Co	NAIC # 25615
		INSURER B: Travelers Indemnity Company	NAIC # 25658
		INSURER C: Standard Fire Insurance Co	NAIC # 19070
		INSURER D: Hudson Specialty Insurance Co.	NAIC # 25054
		INSURER E:	
		INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** 1447940095 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> AI Primary & <input checked="" type="checkbox"/> Non-Contributory GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC	Y	Y	6806108L13513	11/15/2013	11/15/2014	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000 \$
	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS <input checked="" type="checkbox"/> AI Primary	Y	Y	BA6080L18313	11/15/2013	11/15/2014	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 10,000	Y	Y	CUP7686Y30913	11/15/2013	11/15/2014	EACH OCCURRENCE \$2,000,000 AGGREGATE \$2,000,000 Excludes Professional \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory In NH) If yes, describe under DESCRIPTION OF OPERATIONS below		Y/N N	UB1825T57913	11/15/2013	11/15/2014	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000
D	Professional Liability Claims Made Retro Date: 9/15/1995	N	Y	AEE7269502	11/15/2013	11/15/2014	Each Claim \$3,000,000 Aggregate \$3,000,000 Pollution & Envir. Lib. Included

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Additional Insured and Waiver of Subrogation as designated above is provided when required of the Named Insured by written contract or agreement.

CERTIFICATE HOLDER

CANCELLATION

Specimen-WV For Purposes of Evidencing Coverage Only WV 25526	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE <i>Patricia A Cholewa</i>

Appendix B

RFQ No. DEP 16455

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: CBC ENGINEERS & ASSOCIATES, Ltd.

Authorized Signature: [Signature] Date: JANUARY 15, 2014

State of Ohio

County of Montgomery, to-wit:

Taken, subscribed, and sworn to before me this 15 day of January, 2014.

My Commission expires September 2, 2015.



NOTARY PUBLIC [Signature]
Purchasing Affidavit (Revised 07/01/2012)

LAURA E. BARKSDALE, Notary Public
In and for the State of Ohio
My Commission Expires Sept. 2, 2015

Appendix C

CERTIFICATION AND SIGNATURE PAGE

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

CBC ENGINEERS & ASSOCIATES, LTD.

(Company)

Mitchell Hardert

(Authorized Signature)

MITCHELL T. HAROERT, CHIEF ENGINEER & VICE PRESIDENT

(Representative Name, Title)

937-428-6150 937-428-6154

(Phone Number)

(Fax Number)

JANUARY 15, 2014

(Date)

Appendix D

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: DEP16455



Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

- | | |
|---|--|
| <input type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

CBC ENGINEERS & ASSOCIATES, Ltd.
Company

Michael H. Hult
Authorized Signature

JANUARY 15, 2014
Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

Appendix E

**WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
AML CONSULTANT QUALIFICATION QUESTIONNAIRE**

Attachment "B"

PROJECT NAME Ridgeview (Dunlap) Portals	DATE (DAY, MONTH, YEAR) 01-15-2014	FEIN 31-1443075
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1. FIRM NAME CBC Engineers & Associates, Ltd.	2. HOME OFFICE BUSINESS ADDRESS 125 Westpark Road, Centerville, Ohio 45459	3. FORMER FIRM NAME N/A
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4. HOME OFFICE TELEPHONE (937) 428-6150	5. ESTABLISHED (YEAR) 1995	6. TYPE OWNERSHIP Partnership	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) NO
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7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE
 125 Westpark Road, Centerville, Ohio 45459/ 937-428-6150/ Mitchell Hardert/ 6 Dayton, 4 Charleston, 4 Lexington
 3 Hazard, 3 Harrisburg

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM Al Banner, President & COO Mitchell Hardert, Chief Engineer & Vice President	8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS Joe Dennis, Director (937) 428-6150 Edward Galaska, Director (937) 428-6150
--	--

9. PERSONNEL BY DISCIPLINE

<u>7</u> ADMINISTRATIVE <u>3</u> ARCHITECTS <u>5</u> BIOLOGIST <u>5</u> CADD OPERATORS <u>7</u> CHEMICAL ENGINEERS <u>12</u> CIVIL ENGINEERS CONSTRUCTION INSPECTORS DESIGNERS DRAFTSMEN	— ECOLOGISTS — ECONOMISTS — ELECTRICAL ENGINEERS — ENVIRONMENTALISTS — ESTIMATORS <u>1</u> GEOLOGISTS — HISTORIANS — HYDROLOGISTS	— LANDSCAPE ARCHITECTS — MECHANICAL ENGINEERS <u>5</u> MINING ENGINEERS — PHOTOGRAMMETRISTS — PLANNERS: URBAN/REGIONAL — SANITARY ENGINEERS — SOILS ENGINEERS — SPECIFICATION WRITERS	<u>2</u> STRUCTURAL ENGINEERS <u>2</u> SURVEYORS <u>4</u> TRAFFIC ENGINEERS OTHER 46 TOTAL PERSONNEL
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TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 2
 *RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.

10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? YES NO

11. OUTSIDE KEY CONSULTANTS/SUB-CONSULTANTS ANTICIPATED TO BE USED. Attach "AML Consultant Qualification Questionnaire".

<p>NAME AND ADDRESS: Horn & Associates 216 N. Main Street Winchester, KY 40391</p>	<p>SPECIALTY: Soil Drilling</p>	<p>WORKED WITH BEFORE ___X___ Yes _____ No</p>
<p>NAME AND ADDRESS: F Moore Drilling Service, Inc. 10585 Flagg Springs Pike California, KY 41007</p>	<p>SPECIALTY: Soil Drilling</p>	<p>WORKED WITH BEFORE ___X___ Yes _____ No</p>
<p>NAME AND ADDRESS: Central Star Drilling 288 Heron Road Peebles, Ohio 45660</p>	<p>SPECIALTY: Soil Drilling</p>	<p>WORKED WITH BEFORE ___X___ Yes _____ No</p>
<p>NAME AND ADDRESS: Bowser Morner, Inc. 4518 Taylorsville Road Dayton, Ohio 45424</p>	<p>SPECIALTY: Soil Testing</p>	<p>WORKED WITH BEFORE ___X___ Yes _____ No</p>
<p>NAME AND ADDRESS: REI Consultants, Inc. PO Box 286 Beaver, WV 25813</p>	<p>SPECIALTY: Water Testing</p>	<p>WORKED WITH BEFORE ___X___ Yes _____ No</p>
<p>NAME AND ADDRESS: Jackson Environmental 1586 Boonsborough Road Richmond, KY40475</p>	<p>SPECIALTY: Archeological/ Bat Survey/ Cultural Survey</p>	<p>WORKED WITH BEFORE ___X___ Yes _____ No</p>
<p>NAME AND ADDRESS: Sturm Environmental Services 321 4th Ave. South Charleston, WV 25303</p>	<p>SPECIALTY: Soils Testing/ ABA Testing</p>	<p>WORKED WITH BEFORE ___X___ Yes _____ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE _____ Yes _____ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE _____ Yes _____ No</p>

12. A. Are your firm's personnel experienced in Abandoned Mine Lands Remediation/Mine Reclamation Engineering?

YES

Description and Number of Projects:

WVDEP Surface Mine applications (SMA) and NPDES applications, 404 USACE permit application and associated 401 State Certification (if required due to impacts to jurisdictional waters of the US) and MSHA refuse design prepared and permitted by CBC contain plans for mine reclamation including but not limited to mining and reclamation, backfilling and grading, excess spoil disposal, drainage and sediment control, blasting, refuse disposal plans, and water monitoring water monitoring. CBC has designed and permitted over 50 refuse areas and over 140 surface mines and deep mines.

CBC personnel have field experience in the coal industry as a Reclamation/Site Superintendent. The personnel were directly responsible for all reclamation work and oversaw several multi-million dollar projects.

B. Are your firm's personnel experienced in Soil Analysis?

YES

Description and Number of Projects:

CBC performs a geotechnical investigation for the refuse areas that it designs and permits. Soil analyses are part of investigation. Soil analysis are required for most surface and deep mine SMA's. CBC completes most soil investigations in-house but has used some sub-contractors depending on the type of soil analysis required.

C. Are your firm's personnel experienced in hydrology and hydraulics?

YES

Description and Number of Projects:

WVDEP SMA's, NPDES applications and MSHA refuse areas designed and permitted by CBC contain detailed Storm Water Run-off Analysis (SWROA's), sediment control structures designs, conveyance channels designs and road designs including bridge, culverts, ditch designs.

D. Does your firm produce its own Aerial Photography and Develop Contour Mapping?

YES

Description and Number of Projects:

CBC has developed contour mapping based on field survey work related to coal refuse work. CBC does not own its own Aerial Photography service.

E. Are your firm's personnel experienced in domestic waterline design? (Include any experience in evaluation of aquifer degradation as a result of mining.)

YES Description and Number of Projects:

CBC performs a ground water evaluation as part of WVDEP SMA's and NPDES application, 404 USACE permit application and associated 401 State Certification.

NO CBC does not have experience with domestic waterline design

F. Are your firm's personnel experienced in Acid Mine Drainage Evaluation and Abatement Design?

YES Description and Number of Projects:

CBC performs an AMD evaluation as part of a WVDEP SMA and NPDES application, 404 USACE permit application and associated 401 State Certification. CBC designed refuse areas are evaluated to determine if an alkaline amendment is required. CBC develops toxic materials handling plan as part of SMA/NPDES applications. CBC personnel have assisted with a post mining alkaline injection system to neutralize AMD.

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Hardert, Mitchell, T. Chief Engineer & Vice President		18 Years	

Brief Explanation of Responsibilities

Mr. Hardert will serve as principle-in-charge and will be responsible for the day-to-day project activities and guidance of the CBC staff. His main activities will include development of detailed project work plans to ensure the project activities are completed on time and on budget, and that the personnel required to efficiently complete this project will be identified. He will review the project at intermediate points and at project completion, as well as engineering and design work. Mr. Hardert will be responsible for technical specifications, oversight of construction drawings, calculations and cost estimates. He will oversee the geotechnical aspects of the project, including but not limited to subsurface exploration, foundation and embankment design, and slope stability. He will coordinate contract issues with the State of West Virginia.

EDUCATION (Degree, Year, Specialization)
 B.S. Civil Engineering, 1998, University of Dayton
 MSHA Certified Impoundment Instructor and Inspector

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
ASCE	46 Other States P.E, 2004, West Virginia P.E., 2003, Ohio

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Cross, Michael, L Project Manager		32 Years	

Brief Explanation of Responsibilities

Mr. Cross will serve as the project manager. He is responsible for the day-to-day operations of the office, staff management, project management and business development. Mr. Cross has over 30 years' of experience in the mining industries including all aspects of the exploration, design, development, implementation, closure and reclamation of surface mines, deep mines, preparation plants and refuse disposal areas. He has developed an impeccable working relationship with the governmental agencies including but not limited to the WVDEP, USACE, MSHA, USEPA, and WVOMHST.

Mr. Cross will coordinate all engineering activities with CBC's primary office and manage all related engineering work performed by CBC's Charleston, WV office. He will be responsible for day-to-day project activities. Mr. Cross will oversee hydraulic/hydrologic aspects of the project, including but not limited to stormwater management, stream bank protection, erosion and sediment control, and mine discharge; oversee all construction inspections and field work; and assist with the geotechnical aspects of the project, including but not limited to subsurface exploration, foundation and embankment design, and slope stability.

EDUCATION (Degree, Year, Specialization)
B.S. Mining Engineering, 1980, West Virginia University
MSHA Certified Impoundment Inspector

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)

YEARS OF EXPERIENCE

Cornett, Roger, W.
Project Engineer

YEARS OF AML DESIGN EXPERIENCE:

YEARS OF AML RELATED DESIGN
EXPERIENCE:
35 Years

YEARS OF DOMESTIC
WATERLINE DESIGN
EXPERIENCE:

Brief Explanation of Responsibilities

Mr. Cornett will serve as a project engineer, including field work, design, preparation of construction drawings, technical specifications, calculations and cost estimates. He will oversee hydraulic/hydrology aspects of the project, including but not limited to stormwater management, erosion, sediment control, and mine discharge. Mr. Cornett has served as project manager responsible for surface and underground mining permitting, design, and reclamation.

EDUCATION (Degree, Year, Specialization)
B.S. Physics & Mathematics, 1977, Morehead State University
M.S Civil Engineering, 1980, University of Tennessee

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State) 2 Other States
P.E., 2010, West Virginia PLS, 1987, Kentucky
P.E., 1981, Kentucky

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)

YEARS OF EXPERIENCE

Corda, Ioan, John
Project Engineer

YEARS OF AML DESIGN EXPERIENCE:

YEARS OF AML RELATED DESIGN
EXPERIENCE:
48 Years

YEARS OF DOMESTIC
WATERLINE DESIGN
EXPERIENCE:

Brief Explanation of Responsibilities

Mr. Corda will serve as a project engineer, including develop grading plans, seepage analysis, seismic stability analysis, evaluate soil borrow areas, perform hydrologic and hydraulic design calculations, reclamation, and develop contract drawings and specifications.

EDUCATION (Degree, Year, Specialization)
B.S. Civil Engineering, 1964, Construction Institute of Bucharest, Romania
M.S. Civil Engineering, 1977, Polytechnical Institute of Bucharest, Romania

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)
P.E., 1997, Ohio

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Nair, Deepa Project Engineer		8 Years	

Brief Explanation of Responsibilities

Ms. Nair will serve as a project engineer. Her responsibilities will include hydraulic calculations, layout, drawing preparation, design, technical specifications, cost estimates, and field work. She will serve as the primary internal consultant for geotechnical investigations. Ms. Nair will be involved in stability analysis, soils classifications, and boring log analysis.

EDUCATION (Degree, Year, Specialization)

B.S. Technology, 2002, University of Kerala, India
M.S. Civil Engineering, 2005, Purdue University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)
P.E., 2011, Ohio

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Dunham, Erika Environmental Scientist		17 Years	

Brief Explanation of Responsibilities

Ms. Dunham will serve as environmental scientist for the project. She will coordinate required environmental support services for the completion of this reclamation design. Ms. Dunham will supervise environmental field crews and evaluate all analytical analysis.

EDUCATION (Degree, Year, Specialization)

B.S. Ecological Engineering, 1995, Universidad Poplar Autonoma del Estado de Puebla (UPAEP)

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Bowling, Tony Project Surveyor		30 Years	

Brief Explanation of Responsibilities

Mr. Bowling will serve as Project Surveyor. He will coordinate required surveying for mapping if needed, establish construction benchmarks, topographic surveys, boundary surveys and/or property and deed research, survey of boring locations and profiling significant existing drainage courses. Mr. Bowling will oversee all survey crews and will provide QA/QC services for the project.

EDUCATION (Degree, Year, Specialization)

B.S Civil Engineering, 1983, University of Kentucky

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)

P.E., 1985, Kentucky
PLS, 1984, Kentucky

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Summers, S., Mark Project Surveyor/ Technical Advisor		37 Years	

Brief Explanation of Responsibilities

Mr. Summers will serve as Project Surveyor. He will coordinate required surveying for mapping if needed, establish construction benchmarks, topographic surveys, boundary surveys and/or property and deed research, survey of boring locations and profiling significant existing drainage courses.

EDUCATION (Degree, Year, Specialization)

B.S. Forestry, 1975, University of Kentucky

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)

PLS, 1985, Kentucky

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Highlander, Eugene, D. Field Engineer		46 Years	

Brief Explanation of Responsibilities

Mr. Highlander will serve as a field engineer. He will coordinate the drilling and geotechnical analysis for slope stability design, identification of borrow site for soil cover, and investigation and design of solutions for subsurface hydrogeology within the deep mines and recommendations for mine seals.

EDUCATION (Degree, Year, Specialization)
B.S. Civil Engineering, 1966, West Virginia Institute of Technology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State) P.E., 1973, West Virginia
--	---

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Reed, Chad Construction Engineer		15 Years	

Brief Explanation of Responsibilities

Mr. Reed will serve as construction engineer. He will coordinate the drilling and geotechnical analysis for slope stability design, identification of borrow site for soil cover, field verify mapping, and investigation and design of solutions for subsurface hydrogeology within the deep mines and recommendations for mine seals.

EDUCATION (Degree, Year, Specialization)
B.S. Civil Engineering, 1997, West Virginia University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
--	----------------------------------

14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE AML DESIGN SERVICES

Equipment:	Software:	
Plotters	AutoCAD/ Civil 3D	Pile Buck
Digital Cameras	MicroStation	HY-B
Photocopiers/Printers/Scanners	Microsoft Office Suites	Cande
Surveying Stations	Sewer CAD	Retain Pro
GPS Units	Water CAD	Scour
Trucks	Hydrocalc Hydraulics	Brass Culvert
ATV	TR-55	Math CAD
Drill Rigs	Numerous Hydrology/Hydraulic Models	Multspan
Nuclear Density Gage	Maptech (Professional)	BRG Abut
Soils & Material Lab	REAME	L-Pile
	GeoPack Design	GeoSlope
	ARCH Gis	Key WA-II
	Adobe	MSE WA-II
	Carlson	PC Stable
	HEC-Raz	
	Geomotions	
	SedCad	

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
<i>CBC Engineers WV refuse related experience - Design & permitting projects</i>				
Roaring Creek Refuse Area, O-2022-10, Refuse Impoundment / Coarse Refuse Fill, Brook Run, Randolph Co., WV	Roaring Creek Coal Co., LLC, 109 Appalachian Dr., Beckley, WV 25801	Design and obtain approvals from MSHA, WVDEP - SMA, NPDES, Dam, 401 Certification & USACE 404 Individual Permits	NA. New facility	MSHA - 95% WVDEP SMA/Dam - 100% complete - waiting on final approval from WVDEP headquarters, NPDES 85%, 401 - 97%, 404 - 75%
Payne Branch Refuse Impoundment, S-4003-99, Payne Branch, Wyoming Co., WV	Bluestone Coal Corp., 100 Cranberry Creek, Beckley, WV 25801	Design and obtain MSHA, WVDEP - SMA, NPDES, Dam permit	NA. New facility	MSHA - approved WVDEP SMA - 86%, NPDES - 71%, DAM 37%
Nufac Combined Refuse Fill, S-4025-86, Little White Oak Creek of Pinnacle Creek	Bluestone Coal Corp., 100 Cranberry Creek, Beckley, WV 25801	Design and obtain MSHA, WVDEP - SMA, NPDES,	NA. New facility	MSHA - 75% WVDEP SMA 61%, NPDES 57%
TOTAL NUMBER OF PROJECTS:			TOTAL ESTIMATED CONSTRUCTION COSTS: \$	

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
<i>CBC Engineers WV refuse related experience - Construction Monitoring</i>				
Tinsley Branch Impoundment, O-5032-99	Bandmill Coal Corp., County Route 14, Rum Creek Road Yolyn, WV 25654	Conduct seven day inspections, prepare & submit quarterly certifications to WVDEP and annual certifications to MSHA	NA	On going
Monclo Impoundment, O-51-85	Mingo Logan Coal Company, 1000 Mingo Logan Avenue, Wharncliffe, WV 25651	Conduct seven day inspections, prepare & submit quarterly certifications to WVDEP and annual certifications to MSHA	NA	On going
Holden 22 Impoundment/Slurry Cells, P-606	Coal-Mac, Inc., PO Box 1050 Holden, WV 25625	Conduct seven day inspections, prepare & submit quarterly certifications to WVDEP and annual certifications to MSHA	NA	On going
Lower Big Branch Impoundment/Capped, O-48-82	Performance Coal, PO Box 69, Naoma, WV 25140	Conduct seven day inspections, prepare & submit quarterly certifications to WVDEP and annual certifications to MSHA	NA	On going
Slippery Gut Impoundment, O-6-81	Hobet Mining, LLC PO Box 305 Madison, WV 25130	Conduct seven day inspections, prepare & submit quarterly certifications to WVDEP and annual certifications to MSHA	NA	On going
Bragg Fork Impoundment, S-128-78	Hobet Mining, LLC PO Box 305 Madison, WV 25130	Conduct seven day inspections, prepare & submit quarterly certifications to WVDEP and annual certifications to MSHA	NA	On going

TOTAL NUMBER OF PROJECTS:

TOTAL ESTIMATED CONSTRUCTION COSTS: \$

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
<i>CBC Engineers WV refuse related experience - Construction Monitoring</i>				
Delbarton Impoundment, O-5081-91	Delbarton Mining Company, State Route 65, Thunder Ridge Road Delbarton, WV 25670	Conduct seven day inspections, prepare & submit quarterly certifications to WVDEP and annual certifications to MSHA	NA	On going
Rockhouse Impoundment, O-44-84	Stirrat Coal Co., Route 44 South Stirrat, WV 25638	Conduct seven day inspections, prepare & submit quarterly certifications to WVDEP and annual certifications to MSHA	NA	On going
Superior Sediment Pond #4, S-5017-98	Stirrat Coal Co., Route 44 South Stirrat, WV 25638	Conduct seven day inspections, prepare & submit quarterly certifications to WVDEP and annual certifications to MSHA	NA	On going
Ragland Holden 25 Impoundment, P-609	Coal-Mac, Inc., PO Box 1050 Holden, WV 25625	Conduct seven day inspections, prepare & submit quarterly certifications to WVDEP and annual certifications to MSHA	NA	On going
Brushy Fork Impoundment, O-3010-95	Marfork Coal Company, Inc Route 3 Over 1 Pettus, WV 25209	Conduct seven day - Bi-weekly inspections	NA	On going
Ellis Creek Dry Refuse Pile, O-3017-91	Performance Coal, PO Box 69, Naoma, WV 25140	Conduct monthly inspections, prepare & submit quarterly certifications to WVDEP	NA	On going
River Fork Dry Refuse Pile, U-13-83	Performance Coal, PO Box 69, Naoma, WV 25140	Conduct monthly inspections, prepare & submit quarterly certifications to WVDEP	NA	On going
TOTAL NUMBER OF PROJECTS:			TOTAL ESTIMATED CONSTRUCTION COSTS: \$	

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
<i>CBC Engineers WV refuse related experience - Construction Monitoring</i>				
Low Gap Dry Refuse Pile, O-3005-94	Marfork Coal Company, Inc Route 3 Over 1 Pettus, WV 25209	Conduct monthly inspections, prepare & submit quarterly certifications to WVDEP	NA	On going
Little Horse Creek Dry Refuse Pile, S-106-77	Hobet Mining, LLC PO Box 305 Madison, WV 25130	Visual Inspections	NA	On going
TOTAL NUMBER OF PROJECTS:			TOTAL ESTIMATED CONSTRUCTION COSTS: \$	

17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
<i>CBC Engineers WV refuse/impoundment related experience - Design & permitting projects</i>				
Tunnel Ridge Refuse Area, Structural Slurry Cells, Short Creek, Ohio Co., WV The scope of work included obtaining a SMA /NPDES from the WVDEP. Approval obtained from the WVDEP.	Tunnel Ridge, LLC, 771 Corporate Dr., Suite 1000, Lexington, KY 40503	NA.	2010	Under construction
Holden 22 Slurry Cells, Holden, WV The scope of work included the design of additional slurry cell stages, sediment structures, conveyance channels, an abandonment plan and a revegetation plan. Approval obtained from MSHA.	Coal-Mac, Inc., PO Box 1050 Holden, WV 25625	NA.	2013	Under construction
Nufac Slurry Cells, S-4025-86, Little White Oak Creek of Pinnacle Creek, Wyoming Co., WV The scope of work included the design of slurry cells, sediment control structures, conveyance channels, an abandonment plan and a revegetation plan. Approval obtained from the WVDEP and MSHA.	Bluestone Coal Corp., 100 Cranberry Creek, Beckley, WV 25801	NA.	2011	Yes
Five Mile Hollow Impoundment, S-3033-07 The scope of work included obtaining a SMA/NPDES permit. Complete design for a slurry impoundment including sediment structures, conveyance channels, a toxic material handling plan, an abandonment plan and a revegetation plan.	Coyote Coal Co., LLC, 500 Lee St. East, Suite 900, Charleston, WV, 25301	NA	2013	No
Five Mile Combined Refuse Fill, S-3033-07 The scope of work included obtaining a SMA/NPDES permit. Complete design for a slurry impoundment including sediment structures, conveyance channels, a toxic material handling plan, an abandonment plan and a revegetation plan. Design included conversion of a slurry impoundment to a combined refuse fill.	Coyote Coal Co., LLC, 500 Lee St. East, Suite 900, Charleston, WV, 25301	NA	2013	No

18. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM HAS BEEN A SUB-CONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK FOR WHICH YOUR FIRM WAS RESPONSIBLE)

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH

19. Use this space to provide any additional information or description of resources supporting your firm's qualifications to perform work for the West Virginia Abandoned Mine Lands Program.

20. The foregoing is a statement of facts.

Signature: Mitchell T. Hardert Title: CHIEF ENGINEER & VICE PRESIDENT Date: JANUARY 15, 2014

Printed Name: MITCHELL T. HARDELT

Appendix F

AML and RELATED PROJECT EXPERIENCE MATRIX

PROJECT	Exp. Basis C=Corp. P=Personal	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS														PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional					
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Nitigation/Replacement	Construction Inspection/Management	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Mitch Hardert, PE	John Corda	Chad Reed	Mike Cross	Roger Cornett, PE
Tinsley Branch Impoundment O-5032-99	C/P	1				X				X		X				X	P/M	P/M	M			
Monclo Impoundment O-51-85	C/P	1				X				X		X				X	P/M	P/M	M			
Holden 22 Impoundment P-606	C/P	1				X				X		X				X	P/M	P/M	M		P/M	M
Holden 22 Slurry Cells P-606	C/P	1				X				X		X				X	P/M	P/M	M		P/M	M
Lower Big Branch Impoundment O-48-82	C/P	1				X				X		X				X	P/M	P/M	M			
Slippery Gut Impoundment O-6-81	C/P	1				X				X		X				X	P/M	P/M	M			
Bragg Fork Impoundment S-128-78	C/P	1				X				X		X				X	P/M	P/M	M			
Delbarton Impoundment O-5080-91	C/P	1				X				X		X				X	P/M	P/M	M			
Rockhouse Impoundment O-44-84	C/P	1				X				X		X				X	P/M	P/M	M			
Superior Sed Pond #4 S-5017-98	C/P	1				X				X		X				X	P/M	P/M	M			
Ragland Holden 25 Impoundment P-609	C/P	1				X				X		X				X	P/M	P/M	M			
Brush Fork Impoundment O-3010-95	C/P	1				X				X		X				X	P/M	P/M	M			
Ellis Creek Dry Refuse Pile O-3017-91	C/P	1				X				X		X				X	P/M	P/M	M			

- * List whether project experience is corporate or personnel based or both.
- ** Use this area to provide specific sections or pages if needed for reference.
- *** List Primary Design personnel and their functional capacity for the projects listed.

Attachment "C"

1 WV refuse projects

AML and RELATED PROJECT EXPERIENCE MATRIX

PROJECT	Exp. Basis C=Corp. P=Personal	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS														PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional											
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Mitigation/Replacement	Construction Inspection/Management	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Mitch Hardert, PE	John Corda, PE	Chad Reed	Mike Cross							
River Fork Dry Refuse Pile U-13-83	C/P	1				X											X				P/M	P/M	M					
Low Gap Dry Refuse Pile O-3005-94	C/P	1				X											X				P/M	P/M	M					
Little Horse Creek Refuse Pile S-106-77	C/P	1				X											X				P/M	P/M	M					
Blue Branch Refuse Area O-10-83	C/P	1				X				X	X	X	X				X	X			P/M	P/M		M				
Tunnel Ridge Structural Slurry Cells O-2016-08	C/P	1				X				X	X	X	X					X			P/M	P/M		M				
Campbells Creek Slurry Cells S-6027-88	C/P	1				X				X	X	X						X			P/M	P/M	M					
5 Mile Hollow Impoundment S-3033-07	C/P	1				X				X	X	X	X					X			P/M	P/M		M				
5 Mile Hollow Combined Fill S-3033-07	C/P	1				X				X	X	X	X					X			P/M	P/M		M				
Bluestone Slurry Cells S-4025-86	C/P	1				X				X	X	X	X					X			P/M	P/M	M	M				
Nufac Combined Refuse Fill S-4025-86	C/P	1				X				X	X	X	X					X			P/M	P/M		M				
Payne Branch Impoundment S-4003-99	C/P	1				X				X	X	X	X					X			P/M	P/M		M				
Roaring Creek Impoundment O-2022-10	C/P	1				X				X	X	X	X					X	X		P/M	P/M		M				
Elk Run Freshwater Impoundment O-2012-96	C/P	1				X				X			X					X			P/M			M				

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AML and RELATED PROJECT EXPERIENCE MATRIX

PROJECT	Exp. Basis C=Corp. P=Personal	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS														PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional				
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Mitigation/ Replacement	Construction Inspection/Managem ent	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Mitch Harder, PE	John Corda, PE	Chad Reed	Mike Cross
Roaring Creek Deep Mine U-2016-10	C/P	2				X			X	X	X	X				X	P			M	
Roaring Creek Prep Plant O-2020-10	C/P	2				X			X	X	X	X				X	P			M	
Mettiki E Mine U-2001-04	C/P	2				X			X		X	X					P			M	
Slabcamp Stockton Deep Mine U-3010-02	C/P	2				X			X	X	X	X			X	X				M	
Enduring Freedom Surface Mine S-3013-08	C/P	2									X									M	
Hatchet Surface Mine S-3007-06	C/P	2				X	X		X	X	X	X				X				M	
PGM Surface Mine S-3014-05	C/P	2				X					X									M	
Federal Surace Mine S-3011-07	C/P	2				X			X		X									M	
Kayford No. 5 Surface Mine S-3005-99	C/P	2									X									M	
Skitter Creek No.2 Mine S-3011-99	C/P	2									X				X					M	
Lilly Fork Surface Mine S-3021-93	C/P	2									X									M	
Hughes Creek Surface Mine S-3014-91	C/P	2									X									M	

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Attachment "C"

2 WV deep mine, surface mine, prep plant projects

AML and RELATED PROJECT EXPERIENCE MATRIX

PROJECT	Exp. Basis C=Corp. P=Personal	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS														PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional					
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Mitigation/ Replacement	Construction Inspection/Managem ent	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Mitch Hardert, PE	John Corda, PE	Chad Reed	Roger Cornett, PE	David Hinkle
Left Fork Combined Refuse Fill 848-9023	C/P	3				X				X					X	P/M	P/M		P/M	M	M	
Right Fork Impoundment 848-9023	C/P	3				X			X	X					X	P/M	P/M		P/M	M	M	
Lovely Branch Impoundment 866-5152	C/P	3				X				X					X	P/M	P/M		P/M	M	M	
Puckett Impoundment 833-9055	C/P	3				X			X	X					X	P/M	P/M		P/M	M	M	
Fourseam Impoundment 897-9005	C/P	3				X			X	X					X	P/M	P/M		P/M	M	M	
Bloss Branch Impoundment 826-8036	C/P	3				X				X					X	P/M	P/M		P/M	M	M	
Little Camp Branch Impoundment 807-0298	C/P	3				X			X	X					X	P/M	P/M		P/M	M	M	
Buckeye Creek Impoundment 897-0287	C/P	3				X				X					X	P/M	P/M		P/M	M	M	
Right Fork Impoundment 897-9004	C/P	3				X				X					X	P/M	P/M		P/M	M	M	
Beech Fork Slurry Cells 897-8039	C/P	3				X				X					X	P/M	P/M		P/M	M	M	
Stonecoal Impoundment / Coarse Refuse 897-0339	C/P	3				X				X					X	P/M	P/M		P/M	M	M	
Guthrie Impoundment 897-5048	C/P	3				X				X					X	P/M	P/M		P/M	M	M	
Big Branch Impoundment/ Coase Refuse Fill 680-8002	C/P	3				X			X	X					X	P/M	P/M		P/M	M	M	

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 *** List Primary Design personnel and their functional capacity for the projects listed.

Attachment "C"

3 Kentucky refuse projects

AML and RELATED PROJECT EXPERIENCE MATRIX

PROJECT	Exp. Basis C=Corp. P=Personal	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS													PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional						
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Mitigation/Replacement	Construction Inspection/Management	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Mitch Harder, PE	John Corda, PE	Chad Reed	Roger Cornell, PE	David Hinkle
Halfmile Impoundment 866-8008	C/P	3				X			X		X					X	P/M	P/M		P/M	M	M
Britton Br. Coarse Refuse Fill 866-0236	C/P	3				X					X					X	P/M	P/M		P/M	M	M
Adams Fork Impoundment 866-9001	C/P	3				X					X					X	P/M	P/M		P/M	M	M
Right Fork Coarse Refuse Fill 866-9002	C/P	3				X					X					X	P/M	P/M		P/M	M	M
Whitesburg Slurry Cells 826-0683	C/P	3				X					X					X	P/M	P/M		P/M	M	M
Manchester Plant Slurry Cells 826-8040	C/P	3				X					X					X	P/M	P/M		P/M	M	M
Stoney Fork Impoundment 807-8060	C/P	3				X					X					X	P/M	P/M		P/M	M	M
Flint Ridge Impoundment / Coarse Refuse 813-8018	C/P	3				X					X					X	P/M	P/M		P/M	M	M
Minuteman Impoundment 889-8006	C/P	3				X			X		X					X	P/M	P/M		P/M	M	M
Webb Br. Impoundment 836-8066	C/P	3				X			X		X					X	P/M	P/M		P/M	M	M
Harris Br. Impoundment 897-8048	C/P	3				X			X		X					X	P/M	P/M		P/M	M	M
Lick Br. Impoundment 860-9014	C/P	3				X					X					X	P/M	P/M		P/M	M	M
Hurricane Br. Refuse / Slurry Cells 860-0467	C/P	3				X					X					X	P/M	P/M		P/M	M	M
Cow Branch Impoundment 898-9012	C/P	3				X					X					X	P/M	P/M		P/M	M	M

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** Use this area to provide specific sections or pages if needed for reference.

*** List Primary Design personnel and their functional capacity for the projects listed.

Attachment "C"

3 Kentucky refuse projects

AML and RELATED PROJECT EXPERIENCE MATRIX

PROJECT	Exp. Basis C=Corp. P=Personal	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS														PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional					
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Mitigation/ Replacement	Construction Inspection/Management	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Mitch Hardert, PE	John Corda, PE	Chad Reed	Mike Cross	Gerald Deneal
Sugar Camp East Refuse Area	C/P	5				X			X	X	X	X			X	X	P	P		M	M	M
Sugar Camp Northwest Refuse Area	C/P	5				X			X	X	X	X			X	X	P	P		M	M	M
Sugar Camp Longwall #3 Refuse Area	C/P	5				X			X	X	X	X			X	X	P	P			M	M

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AML and RELATED PROJECT EXPERIENCE MATRIX

PROJECT	Exp. Basis C=Corp. P=Personal	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS														PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional					
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Mitigation/Replacement	Construction Inspection/Management	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Mitch Hardert, PE	John Corda, PE	Chad Reed	Mike Cross	
Magnet Surface Mine 88-80	P	A				X			X	X	X					X				M		
Countour Surface Mine 5041-86	S-P	B				X				X	X					X				M		
Countour Surface Mine 5042-88	S-P	B				X				X	X					X				M		
Countour Surface Mine 5062-88	S-P	B				X				X	X					X				M		
Island Creek Deep Mine U-5061-88	P				X	X				X	X			X		X				M		
Island Creek Deep Mine U-5060-88	P				X	X				X	X			X		X				M		
Magnet Surface Mine 64-82	S-P					X					X					X				M		
Island Creek Surface Mine S-5013-95	P					X					X					X				M		
Island Creek Surface Mine S-123-78	P					X					X					X				M		
Island Creek Surface Mine S-5084-86	P					X					X					X				M		
Island Creek Surface Mine 5-80	P					X					X					X				M		
Island Creek Refuse Impoundment O-37-85	P					X					X	X			X		X			M		
Island Creek Prep Plant 27-82	O-P					X					X	X			X		X			M		

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Attachment "C"

- A Island Creek projects - \$5 million reclamation project to abated outstanding NOV's
- B Island Creek projects - \$2.2 million reclamation project to abated outstanding NOV's

Appendix G

West Virginia Department of Environmental Protection
Office of Abandoned Mine Lands & Reclamation

Principle-in-charge

Mitchell T. Hardert, P.E.—18 yrs.

Project Manager

Michael L. Cross—32 yrs.

Soils, Geological, and Hydrological Evaluations

Roger Cornett, P.E, PLS — 35 yrs.
John Corda, P.E.— 48 yrs.
Deepa Nair, P.E.— 8 yrs.
Erika Dunham— 17 yrs.

Surveying

Tony Bowling, P.E. PLS.—30 yrs.
Mark Summers, PLS—37 yrs.

Construction Monitoring

Gene Highlander, P.E— 46 yrs.
Chad Reed—15 yrs.
Bill Robertson—13 yrs.

CAD Designers

David Hunt—18 yrs.
Meredith Coll-Atkins—8 yrs.

Environmental Scientists

Edward G. Galaska—27 yrs.
Meredith Coll-Atkins—12 yrs.
Erika Dunham—17 yrs.

Appendix H

CBC Engineers & Associates, Ltd.

Location

Randolph County,
West Virginia

Client

Roaring Creek Coal
Company

Services

Mapping
Drainage Design
Excess Spoil Design
Sediment pond Design
Surface and Ground-
water Monitoring
Blasting Design
Geotechnical Investi-
gation
Transportation Plans
Planting Plans
Toxic Materials Han-
dling Plans
Slope Stability
Refuse Disposal

ROARING CREEK COMPLEX, DESIGN AND PERMIT APPLICATIONS

Roaring Creek Coal Company, LLC
Randolph County, West Virginia

CBC Engineers & Associates, Ltd. Inc. (CBC) was retained by Roaring Creek Coal Company, LLC to design and permit its Roaring Creek Complex. The complex consisted of a deep mine preparation plant and a coal refuse disposal area.

CBC submitted separate Surface Mine Applications (SMA's) and NPDES applications to the WVDEP for the deep mine, prep plant and refuse area. CBC submitted the refuse designs to MSHA. The refuse area consists of a coarse refuse embankment (slurry impoundment) and a coarse refuse fill (dry pile). The refuse facility will provide approximately 18.25 years of refuse storage.

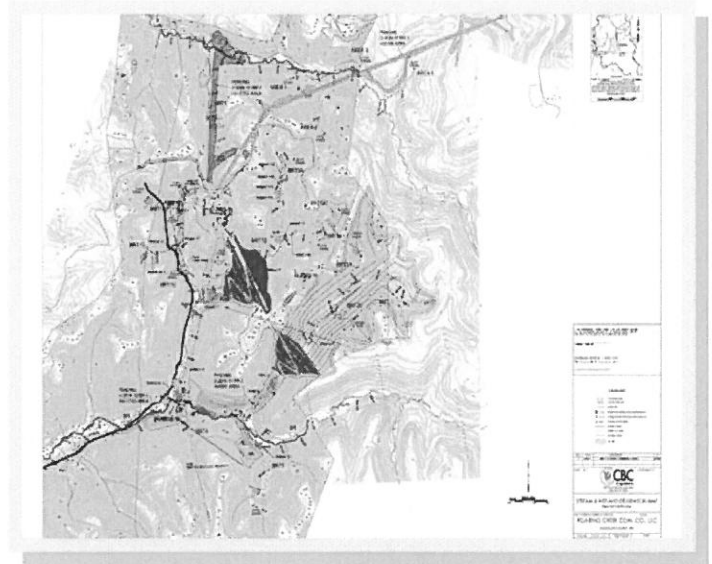
Due to its height and storage capacity, the slurry impoundment was classified as a Class C, High Hazard Structure.

The WVDEP applications prepared by CBC contain plans for mine reclamation including but not limited to mining and reclamation, backfilling and grading, mine sealing/management, excess spoil disposal, slope stability, toxic materials handlings, planting/revegetation, drainage and sediment control, transportation, subsidence, blasting, refuse disposal, and water monitoring.

CBC evaluated the mining area to determine the Probable Hydrologic Consequences (PHC) of the mining operation, with respect to the hydrologic balance, on the permit area, adjacent areas, and over the proposed mineral extraction area. CBC developed a hydrologic reclamation plan to minimize disturbances to the hydrologic balance within the permit and adjacent areas; to prevent material damage outside the permit area; to meet applicable federal and state water quality laws and regulations; and to protect the rights of present water users.

CBC conducted an extensive geotechnical evaluation of the refuse site including the collection of soil, geological, and hydrological data. CBC's engineering design included; 1) a hydrologic evaluation of the embankment, 2) an evaluation of hydraulic control structures, 3) the preparation of construction drawings and specifications, 4) the preparation of material specifications, compaction, and material qualities, 5) a slope stability analysis, 6) a seepage analysis, 7) a deep mine subsidence and breakthrough potential analysis, and 8) an access road designs.

Work on the deep mine and prep plant sites has started. Work on the refuse area will commence once the remaining permit approvals are obtained.



CBC Engineers & Associates, Ltd.

Location

Nicholas County,
West Virginia

Client

Green Valley Coal
Company

Services

Mapping
Surface and Ground-
water Analysis
Benthic Surveys
Alternative Analysis
Cumulative Impact
Analysis
Stream & Wetland
Compensatory Mitiga-
tion Plans
Jurisdictional Determi-
nation
NEPA Public Interest
Factors
Impact Analysis

BLUE BRANCH REFUSE AREA, 404 CORPS INDIVIDUAL PERMIT AND STATE 401 CERTIFICA- TION

Green Valley Coal Company
Nicholas County, West Virginia



CBC Engineers & Associates, Ltd. Inc. (CBC) was retained by Green Valley Coal Company, LLC to obtain a 404 Corps Individual Permit and State 401 Certification for the expansion of their existing Blue branch Refuse Area.

CBC coordinated a stream and wetland delineation to determine the projected impacts to jurisdictional waters of the U.S. CBC prepared and submitted a jurisdictional determination to the US Army Corps of Engineers to verify jurisdictional waters of the U.S.

CBC prepared an Environmental Information Document (EID) for submittal to the Corps which contained an extensive alternative analysis to determine the least environmental damaging practicable alternative. As part of the evaluation of the project area, consideration was given to avoiding impacts to the aquatic ecosystem. If the impacts cannot be avoided, they must be minimized. CBC minimized the impacts. The EID also contained a determination of the cumulative effects on the aquatic ecosystem and addressed the NEPA Public Interest factors.

CBC coordinated the development and implementation of Stream Compensatory Mitigation Plan and development of the Wetland Compensatory Mitigation Plan. Final approvals of the 404 Corps IP and the State 401 Certification were obtained by CBC.



CBC Engineers & Associates, Ltd.

Location

Boone County,
West Virginia

Client

Hobet Mining, LLC

Services

Mapping
Drainage Design
Sediment Pond Design
Surface and Ground-
water Monitoring
Blasting Design
Geotechnical Investi-
gation
Transportation Plans
Planting Plans
Toxic Materials Han-
dling Plans
Slope Stability
Refuse Disposal

BRAGG FORK REFUSE AREA, DESIGN AND PERMIT APPLICATION / CONSTRUCTION INSPEC- TION

Hobet Mining, LLC
Boone County, West Virginia

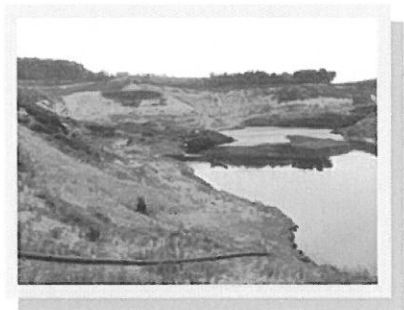
CBC Engineers & Associates, Ltd. Inc. (CBC) was retained by Hobet Mining, LLC to design and permit a coal refuse disposal system for the Beth Station #79 preparation plant's refuse production. This new disposal facility was required due to the adjacent Slippery Gut Impoundment nearing completion.

CBC conducted a stream and wetland delineation and submitted a jurisdictional determination to the US Army Corps of Engineers to verify jurisdictional waters of the U.S. The least environmental damaging practicable alternative was selected for the location of the new refuse site; on top of an existing valley fill.



CBC conducted an extensive geotechnical evaluation of the site including the collection of soil, geological, and hydrological data. CBC's engineering design included; 1) hydrologic evaluation of the embankment, 2) evaluation of hydraulic control structures, 3) preparation of construction drawings and specifications, 4) preparation of material specifications, compaction, and material qualities, 5) slope stability analysis, 6) seepage analysis, and 7) access road designs.

The new refuse facility will provide approximately 21.2 years of refuse storage. Because of its height and storage capacity, the structure was classified as a Class C, High Hazard Structure. CBC submitted the refuse design to MSHA and the WVDEP. The WVDEP application consisted of an Incidental Boundary Revision (IBR), an NPDES modification and a dam control application.



CBC is currently performing seven day observation/ construction inspections for the refuse project. These inspections include refuse density testing to ensure proper compaction of the refuse material. CBC is responsible for the submittal of quarterly certifications to WVDEP and annual certifications to MSHA.

Construction of the refuse facility began in September 2011.



CBC Engineers & Associates, Ltd.

HATCHET SURFACE MINE DESIGN AND PERMIT APPLICATIONS

Location

Nicholas County,
West Virginia

Client

Alex Energy, Inc.

Services

Mapping
Drainage Design
Excess Spoil Design
Sediment pond Design
Surface and Ground-
water Monitoring
Blasting Design
Transportation Plans
Planting Plans
Toxic Materials Han-
dling Plans
Slope Stability

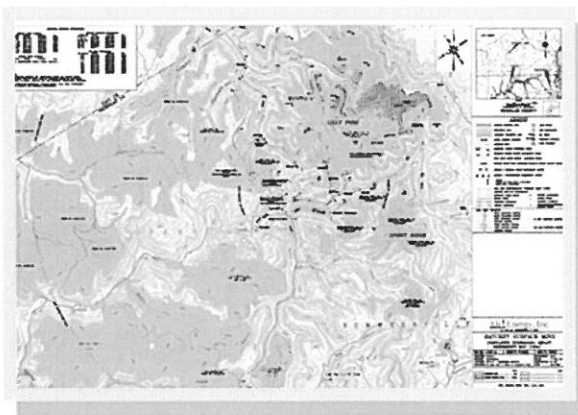
Alex Energy, Inc.
Nicholas County, West Virginia

CBC Engineers & Associates, Ltd. Inc. (CBC) was retained by Alex Energy, Inc. to design and permit a surface and highwall miner mine. CBC submitted a Surface Mine Applications (SMA's) and NPDES application to the WVDEP.

CBC conducted a stream delineation to determine if any jurisdictional waters of the U.S. would be impacted by the surface mine. No fills, sediment control facilities or ponds were located in any jurisdictional waters, therefore a Corps 404 permit and a State 401 Certification were not required.

The SMA and NPDES applications contain plans for mine reclamation including but not limited to mining and reclamation, backfilling and grading, mine sealing/management, excess spoil disposal, slope stability, toxic materials handlings, planting/revegetation, drainage and sediment control, transportation, subsidence, blasting, and water monitoring.

CBC evaluated the mining area to determine the Probable Hydrologic Consequences (PHC) of the mining operation, with respect to the hydrologic balance, on the permit area, adjacent areas, and over the proposed mineral extraction area. CBC developed a hydrologic reclamation plan to minimize disturbances to the hydrologic balance within the permit and adjacent areas; to prevent material damage outside the permit area; to meet applicable federal and state water quality laws and regulations; and to protect the rights of present water use.



CBC also prepared and submitted a Community Impact Statement to the WV Office of Coalfield Community Development for the surface mining operations describing the location, extent, duration and impact of the mine on the surrounding area.

The SMA and NPDES applications were issued in 2006. Mining has been completed and the site has been reclaimed.



CBC Engineers & Associates, Ltd.

ROARING CREEK COMPLEX, CORPS 404 INDIVIDUAL PERMIT AND STATE 401 CERTIFICATION

Location

Randolph County,
West Virginia

Client

Roaring Creek Coal
Company

Services

Mapping
Surface and Ground-
water Analysis
Benthic Surveys
Alternative Analysis
Cumulative Impact
Analysis
Stream & Wetland
Compensatory Mitiga-
tion Plans
Jurisdictional Determi-
nation
NEPA Public Interest
Factors
Impact Analysis

Roaring Creek Coal Company, LLC
Randolph County, West Virginia

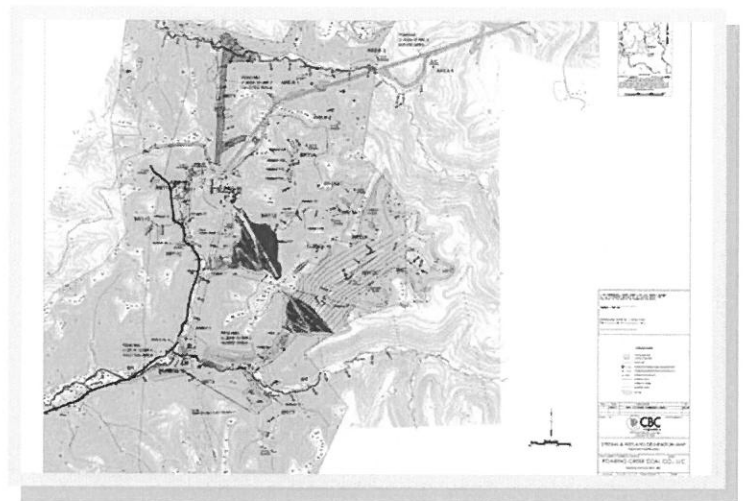
CBC Engineers & Associates, Ltd. Inc. (CBC) was retained by Roaring Creek Coal Company, LLC to design and permit its Roaring Creek Complex. The complex consisted of a deep mine preparation plant and a coal refuse disposal area.

CBC submitted separate Surface Mine Applications (SMA's) and NPDES applications to the WVDEP for the deep mine, prep plant and refuse area. CBC submitted the refuse designs to MSHA. The refuse area consists of a coarse refuse embankment (slurry impoundment) and a coarse refuse fill (dry pile).

Due to the projected impacts to jurisdictional waters of the U.S., CBC prepared a 404 Individual Permit for submittal to the U.S. Army Corps of Engineers and a State 401 Certification to the WVDEP.

CBC prepared an Environmental Information Document (EID) for submittal to the Corps which contained an extensive alternative analysis to determine the least environmental damaging practicable alternative. As part of the evaluation of the project area, consideration was given to avoiding impacts to the aquatic ecosystem. If the impacts cannot be avoided, they must be minimized. CBC minimized the impacts. The EID also contained a determination of the cumulative effects on the aquatic ecosystem and addressed the NEPA Public Interest factors. CBC assisted with the development of Stream and Wetland Compensatory Mitigation Plan.

Work on the deep mine and prep plant sites has started. Work on the refuse area will commence once the remaining permit approvals are obtained.



CBC Engineers & Associates, Ltd.

Location

Mingo County,
West Virginia

Client

Delbarton Coal Company

Services

Mapping

Surface and Groundwater Analysis

Benthic Surveys

Alternative Analysis
Cumulative Impact Analysis

Stream & Wetland Compensatory Mitigation Plans

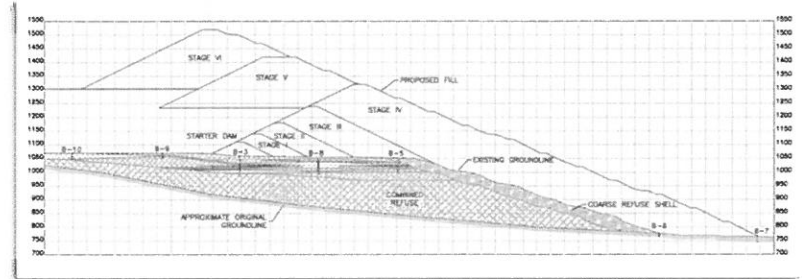
Jurisdictional Determination

NEPA Public Interest Factors

Impact Analysis

*More Than
Geotechnical
Engineering*

Impoundment Design Mingo County, West Virginia



This project encompassed the design of an impoundment for disposal of coarse refuse and slurry near Bias in Mingo County, West Virginia. The site is located at 37° 45' 00" North latitude and 83° 12' 03" West longitude and can be found on the Delbarton and Myrtle West Virginia 7.5 minute quadrangle maps of the U.S. Geological Survey series. The design includes a structure to be constructed atop the existing refuse disposal area with a final crest elevation of 1520 feet, providing approximately 26 years of slurry and coarse refuse disposal. Slurry will be disposed in the reservoir created by the embankment.



Downstream - Post Stage III Construction



Upstream - Post Stage III Construction

The overall concept for this project calls for construction of a starter dam and six (6) stages, the starter dam and four (4) stages are to be constructed in a downstream manner above the existing refuse disposal embankment by extending that embankment up to elevation 1320 feet, and two (2) upstream stages will be constructed to extend the crest to a final elevation of 1520 feet. The main portion of the embankment for this project is to be constructed in a downstream manner, with two (2) upstream stages being provided to maximize the disposal volume for both coarse and fine refuse. The embankment will have a decant pipe which will provide storm water passage and decant of the pool for each stage. The pipe will pass the design storm with three (3) feet of freeboard or greater for each stage. The decant pipe will evacuate 90% of the stored storm water in less than 7 days for all stages.

The embankment will be constructed with an initial starter dam embankment being constructed of coarse refuse excavated from within the impoundment, overburden, or plan run refuse. The remainder of the embankment will be constructed from coarse refuse once the plant begins operation. The embankment has a total of seven stages including the starter dam.

