

WISHBONE HILL
COAL EXPLORATION PERMIT RENEWAL APPLICATION
Permit Number 01-86-795

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PREFACE

Usibelli Coal Mine, Inc.'s (UCM) coal exploration permit for the Wishbone Hill project (Permit No. 01-86-795) is scheduled to expire on July 7, 2012. In response to the Division of Mining, Land, and Water's (DMLW) request, the following Notice of Intent to Explore and Exploration Application have been prepared to complete the renewal process. The following application addresses the regulatory requirements contained in 11 AAC 90.161 – 11 AAC 90.167 and describes exploration activities that may be conducted during the next two year permit term. A properly executed copy of DMLW's "Notice of Intent to Explore and Exploration Application" form is included in Part A of the application and provides a comprehensive checklist for the informational requirements. Where appropriate, the form references the specific section of the Application that contains the required information. Ownership and right of entry information is presented in Part B, and Part C contains information on environmental resources. Part D presents the exploration and reclamation methods and Part E addresses exploration on lands unsuitable for mining.

PART A – APPLICANT AND EXPLORATION AREA IDENTIFICATION

NOTICE OF INTENT TO EXPLORE AND EXPLORATION APPLICATION FORM

**ALASKA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINING LAND & WATER
COAL EXPLORATION**

Notice of Intent to Explore

and

Exploration Application

Notice of Intent

The Alaska Surface Coal Mining Control and Reclamation Act requires that any person who intends to conduct coal exploration which **will not** substantially disturb the natural land surface complete and file with the Department of Natural Resources a notice of intent to explore. **The completion of Parts A (including submission of the required permit fee), B, D, and E of this form will meet these requirements.** This form must be received at least thirty (30) days prior to commencement of the exploration.

The Act requires that any person who intends to conduct coal exploration which **will** substantially disturb the natural land surface must file a complete application for exploration. **The completion of Parts A (including submission of the required permit fee), C, D, and E of this form will meet the applicant's submission requirements.** The application should be submitted approximately three months prior to the anticipated commencement of exploration.

Substantial disturbance means an impact on land, water, or air resources by activities such as blasting; mechanical excavation (excluding the use of light, portable field equipment); drilling or enlarging coal or water exploratory holes or wells; and construction of roads, structures, trails, aircraft landing and marine docking areas.

Please submit one hard copy and one electronic copy of all application materials as specified by the Department.

Reference: Alaska Statute 27.21.200; 11 AAC 90.161 to 11 AAC 90.167.

PART A: GENERAL INFORMATION Ref: 11 AAC90.161; 11 AAC 90.163

- 1.1 Name of Applicant: Usibelli Coal Mine, Inc.
 Contact: Robert Brown
- 1.2 Address of Applicant: 634 S. Bailey St., Suite 204. Palmer, AK 99654
- 1.3 Telephone Number: (907) 745-6028
- 1.4 If applicable, provide the following information for the representative who will be present and responsible for the exploration activities.
- 1.5 Name of Representative: Robert Brown
- 1.6 Address of Representative: 634 S. Bailey St., Suite 204. Palmer, AK 99654
- 1.7 Telephone Number: (907) 745-6028
- 1.8 Email Address: rob@usibelli.com

2.0 Location of the Exploration

- 2.1 Legal Description (attach additional pages as needed):
 See Figure 1, and Exhibit A, Exploration Area.

Township	Range	Section	Aliquot Part	Meridian	Acres
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Township	Range	Section	Aliquot Part	Meridian	Acres
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- 2.2 Number of Acres in Exploration Area: 8,139.21

- 2.3 Number of Acres of Federal Land (if applicable): 0
- 2.4 USGS 1:250,000 or 1:63,360 Quadrangle Names: Anchorage C-6, Alaska
- 2.5 Distance and Direction to Nearest Community (in miles): Sutton 1 mile
- 2.6 Attach map of exploration site and adjacent area.

3.0 Period of Exploration

- 3.1 Begin (Month/Day/Year): July 7, 2012
- 3.2 End (Month/Day/Year): July 7, 2014

4.0 Ownership of Surface/Subsurface Mineral Estate

If the surface or the mineral estate is owned or leased by someone other than the applicant, answer 4.1 - 4.5, as appropriate (**attach additional pages as needed**).

- 4.1 Surface Owner
 - Name: See Part B, Section 1.0
 - Address: _____
 - Telephone Number: _____

- 4.2 Mineral Estate Owner
 - Name: _____
 - Address: _____
 - Telephone Number: _____

- 4.3 Surface Land Leaseholder
 - Lease #: _____
 - Name: _____
 - Address: _____
 - Telephone Number: _____

- 4.4 Mineral Estate Leaseholder
 - Lease #: _____
 - Name: _____
 - Address: _____
 - Telephone Number: _____

- 4.5 Adjacent Surface & Mineral Estate Leaseholders
 - Lease #: _____
 - Name: _____
 - Address: _____
 - Telephone Number: _____

- 4.6 Right to Enter: Provide a statement describing the basis by which the applicant claims the right to enter the land for the purposes of conducting exploration and reclamation, Reference relevant federal, state, and local government prospecting permits or lease documents. Attach copies of supporting documents, as appropriate.

5.0 Fees**Ref: 11 AAC 90.011**

- 5.1 Permit Fee \$500.00 _____ Attach receipt. (Refer to fee schedule below)
 Exploration - notice of intent \$100
 Exploration- substantial disturbance \$500 + cost of all public notices

PART B: NOTICE OF INTENT TO EXPLORE**Ref: 11 AAC 90.161****6.0 Intention to Explore**

- 6.1 Describe intended exploration activities, including major' pieces of equipment and their use.
- 6.2 Will exploration activities substantially disturb the natural surface of the land?
 YES NO
- If yes, proceed to Part C; if no, answer 6.3 and proceed to Part D. (See definition on page 1 of this form.)
- 6.3 Describe practices to be used to protect the environment from adverse impacts resulting from exploration activities.

PART C: EXPLORATION PERMIT APPLICATION**Ref: 11 AAC 90.163;
11 AAC 90.167****7.0 Exploration Area Description**

Note: all technical data in this application must be accompanied by:

- 1) names of persons and organizations who gathered and analyzed data;
- 2) dates of data collections and analysis;
- 3) description of procedures used; and
- 4) names, addresses and positions of officials of each agency consulted.

- 7.1 Indicate type(s) of surface disturbance: blasting. mechanical excavation Drilling, altering coal or water exploration holes and wells, road or trail construction or modification aircraft landing construction/modification marine docking facility construction/modification construction of structures placement of excavated material or debris on surface other, specify See Part D, Section 1.0
- 7.2 Provide a map of at least a scale of 1:63,360 enlarged 2.5 times (~1:25000), showing the following existing surface features:
- a. existing roads and trails;
 - b. occupied dwellings and other structures;
 - c. pipelines, airfields and marine docking facilities;
 - d. bodies of water; .
 - e. historic, archeological and cultural features;
 - f. topographic and drainage features; and

g. habitats of endangered or threatened species.

7.3 Using existing information, briefly describe, with cross references to the map in 7.2, the surface topography, geology, surface waters, predominant land use, and other physical features.

7.4 Using existing information, briefly describe, with cross references to the map in 7.2, vegetation cover and important habitats of fish, wildlife and plants.

7.5 Does the exploration area include critical habitat of threatened or endangered species; or species such as eagles, migratory birds or other animals protected by state or federal law; or habitats of unusually high value for fish and wildlife?

YES NO

If yes, describe impact, control measures, management techniques and monitoring methods to be utilized to protect these species and habitats.

7.6 Does the exploration area include known archeological resources; or districts, sites, structures or objects listed on the National Register of Historic Places?

YES NO

If yes, identify and describe, and describe protection measures to be implemented.

8.0 Exploration and Reclamation Methods

8.1 Provide a map of at least a scale of 1:63,360 enlarged 2.5 times, showing the following exploration and reclamation features (if appropriate, this may be combined with the map required under 7.2):

- a. the area to be disturbed by exploration and reclamation; .
- b. access routes, including new roads, trails or other transportation facilities to be constructed, and existing facilities to be used or modified;
- c. proposed excavations and trenches;
- d. water or coal exploratory holes to be drilled or altered;
- e. earth or debris disposal areas; f. sediment control measures, such as sediment ponds and structures for diverting overland flow, if required; and
- g. other exploration or reclamation features.

8.2 Provide a description of exploration and reclamation methods and a discussion of how the exploration will comply with the performance standards in 11 AAC 90.167. Cross-referencing the map in 8.1, describe, at a minimum, the following:

- a. types and uses of equipment;
- b. design, construction, maintenance and removal of any proposed new roads, trails or other transportation facilities;
- c. alteration and restoration of existing transportation facilities;
- d. blasting procedures;
- e. earth or debris disposal;
- f. backfilling and regrading of all excavations, artificial flat areas, embankments or other disturbed areas to their approximate original contour;
- g. topsoil removal, storage and redistribution;
- h. seed mix, application rates, seeding method and other procedures to be implemented in the establishment of a vegetative cover on all disturbed areas;
- i. procedures for plugging and abandoning exploration holes, boreholes, wells or other exposed underground openings;

- j. procedures and control practices to be implemented to minimize disturbance to the prevailing hydrologic balance, including, if necessary, sedimentation control;
 - k. handling and disposal of known acid-forming or toxic-forming materials, if any; and
 - l. removal of all facilities and equipment.
- 8.3 Provide a time table for each phase of exploration and reclamation including starting and ending date, type of disturbance, area of disturbance, and reclamation measures. **See Part D, Section 1.6**
- 8.4 Give an estimate of the quantity of coal to be removed during the exploration. Specify method used to measure quantity. **See Part D, Section 1.4**
- 8.5 Give a detailed estimate of the cost of reclamation of all areas to be affected by exploration activities. **See Part D, Section 1.7**

PART D: EXPLORATION ON LANDS UNSUITABLE FOR MINING

Ref: 11 AAC 90.165

9.1 Does the proposed exploration area include any area previously designated as unsuitable for all or certain types of mining by the Commissioner of Natural Resources?

YES NO

If yes, respond to 9.2 and 9.3. . .

9.2 Indicate petition name and number: N/A

9.3 Describe the basis for the designation of the area as unsuitable for mining and why exploration in the area is not incompatible with the values or features which led to the designation of the area.

PART E:

The applicant states to the best of his or her knowledge and belief that all statements made in the notice of intent to explore or in the application to explore are true and correct.

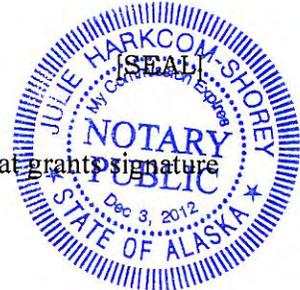
Applicant's Name: Alan E. Renshaw Title: Vice President

Address: Usibelli Coal Mine, Inc., PO Box 1000 Healy, AK 99743

Applicant's Signature: [Signature] Date: Mar. 23/12

Subscribed and sworn before me by Alan E Renshaw this the 23 day of March, 2012

Notary Public: Julie Harkcom Shorey My commission expires 12-3-2012



Note: Attach a copy of power of attorney, or resolution of Board of Directors that grants signature authority)

CERTIFICATE OF RESOLUTION

IT IS HEREBY RESOLVED: That the Board of Directors for USIBELLI COAL MINE, INC. authorizes Alan E. Renshaw, V.P. Operations, and Frederick W. Wallis, V.P. Engineering, authority to sign all documents relating to the Alaska Surface Mining Control and Reclamation Act (ASMCRA) on behalf of Usibelli Coal Mine, Inc.

I, A. Kirk Lanterman as secretary of USIBELLI COAL MINE, INC. hereby certify that the Board adopted this Resolution on the 3rd of May, 2010.



A. Kirk Lanterman, SECRETARY
USIBELLI COAL MINE, INC.

1.0 LOCATION OF EXPLORATION AREA

The exploration area encompasses UCM's coal lease holdings in the Wishbone Hill district of the Matanuska Coal Field. These lease holdings include eight State of Alaska coal leases and two coal lease areas with Cook Inlet Region, Inc. (CIRI). Exhibit A provides the legal description and acreage for each individual coal lease and also includes the total acreage within the exploration area. Figure 1, depicts the exploration area boundary and adjacent areas. Map 1A, Exploration Area East – Property Ownership and Map 1B, Exploration Area West – Property Ownership depict existing roads and trails, occupied dwellings and structures, tax parcels and owners of record, bodies of water and other topographic features within and adjacent to the exploration area boundary.

**EXHIBIT A
LEGAL DESCRIPTION OF THE EXPLORATION AREA**

Coal Lease No.	Legal Description	Acreage
ADL 32144	<u>Township 19 North, Range 2 East, S.M.</u> Section 22: S1/2 SW1/4, W1/2 SE1/4 Section 27: N1/2, N1/2 S1/2 Section 28: N1/2 SE1/4, SE1/4 NE1/4, S1/2 SW1/4 NE1/4, NW1/4 SW1/4 NE1/4	Total 790.00
ADL 309947	<u>Township 19 North, Range 2 East, S.M.</u> Section 22: E1/2 SE1/4 Section 23: NW1/4, W1/2 NE1/4, N1/2 SW1/4	Total 400.00
ADL 23803	<u>Township 19 North, Range 2 East, S.M.</u> Section 13: SW1/4 SW1/4, SW1/4 NW1/4 SW1/4 Section 14: S1/2 NE1/4 SE1/4, SE1/4 SE1/4, S1/2 SW1/4 SE1/4 Section 23: N1/2 NE1/4 NE1/4	Total 150.00
ADL 32136	<u>Township 19 North, Range 2 East, S.M.</u> Section 13: NE1/4 SW1/4, NW1/4 SE1/4, SW1/4 NE1/4, N1/2 NW1/4 SW1/4, SE1/4 NW1/4 SW1/4, S1/2 NW1/4	Total 230.00
ADL 501267	<u>Township 19 North, Range 2 East, S.M.</u> Section 13: Lots 1 & 2, SE1/4 SE1/4, Unsurveyed Fraction Section 23: SE1/4 NE1/4, S1/2 NE1/4 NE1/4 Section 24: All Section 25: N1/2 <u>Township 19 North, Range 3 East, S.M.</u> Section 18: Lot 4 Section 19: Lots 1, 2, & 4, NE1/4 SW1/4, NW1/4 SE1/4	Total 1354.13
ADL 501264	<u>Township 19 North, Range 2 East, S.M.</u> Section 13: NE1/4 SE1/4, SE1/4 NE1/4, N1/2 NE1/4 <u>Township 19 North, Range 3 East, S.M.</u> Section 7: All Section 8: All Section 17: N1/2 N1/2 Section 18: Lots 1 through 3, NE1/4 NE1/4, W1/2 NE1/4, E1/2 NW1/4	Total 1869.44

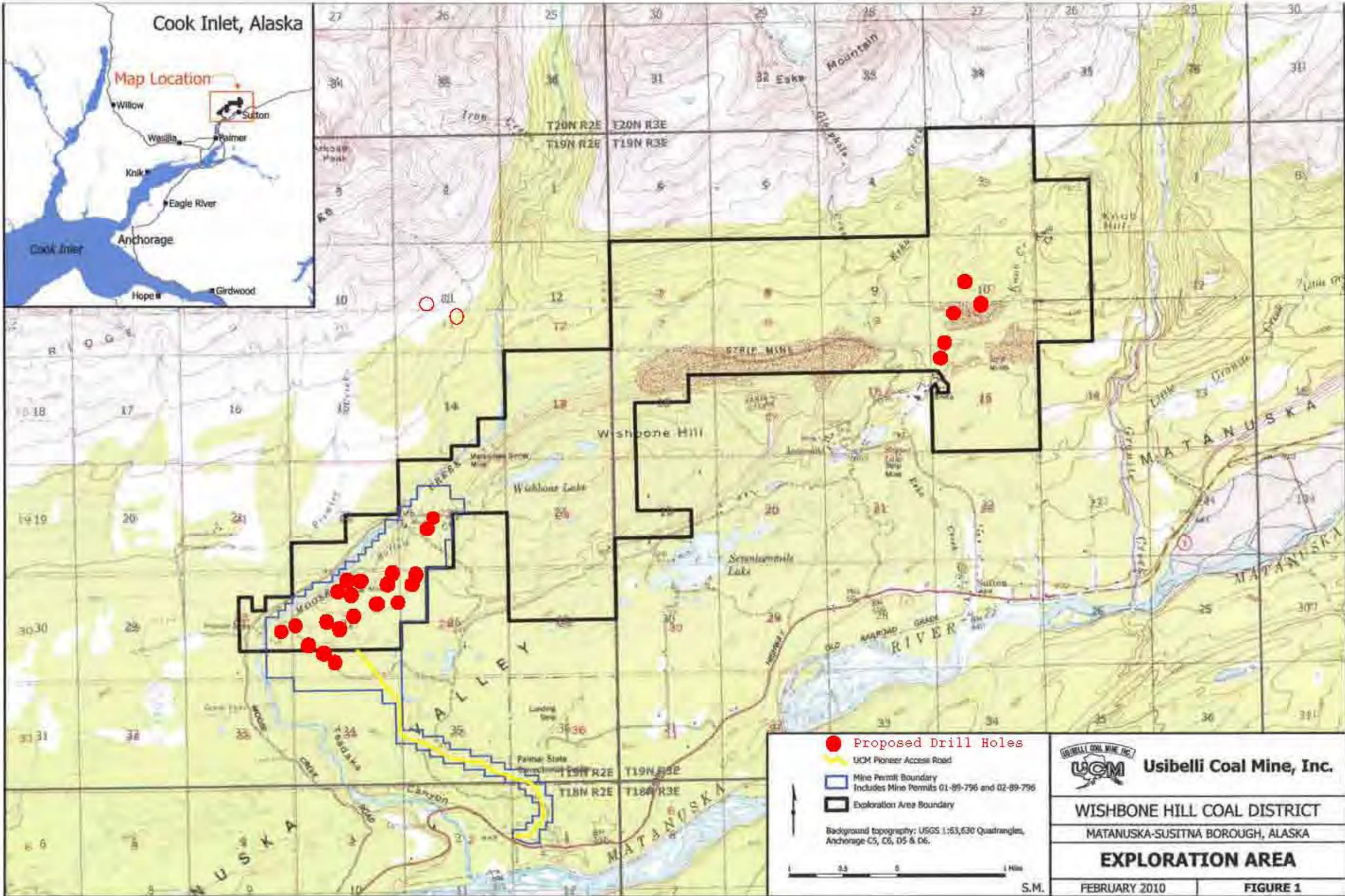
EXHIBIT A (Continued)

Coal Lease No.	Legal Description	Acreage
ADL 501265	<u>Township 19 North, Range 3 East, S.M.</u> Section 3: All Section 9: All Section 10: N1/2 SE1/4, SW1/4, N1/2 Section 16: N1/2 N1/2, Excluding Railroad Right-Of-Way	Total 1999.99
ADL 511534	<u>Township 19 North, Range 3 East, S.M.</u> Section 2: SW1/4 Section 10: S1/2 SE1/4 Section 11: W1/2 Section 15: N1/2 NE1/4	Total 640.00
CIRI West Tract	<u>Township 19 North, Range 2 East, S.M.</u> Section 23: S1/2 SW1/4 Section 26: W1/2 NW1/4	Total 160.00
CIRI East Tract	<u>Township 19 North, Range 3 East, S.M.</u> Section 15: S1/2 NE1/4, N1/2 NW1/4, SE1/4 NW1/4, S1/2, Tracts B, C, & D, ASLS 78-97	Total 545.65
	TOTAL EXPLORATION AREA	8139.21

FIGURE 1
EXPLORATION AREA

Cook Inlet, Alaska

Map Location



- Proposed Drill Holes
- UCM Pioneer Access Road
- Mine Permit Boundary
Includes Mine Permits 01-89-796 and 02-89-796
- Exploration Area Boundary

Background topography: USGS 1:63,630 Quadrangles, Anchorage C5, C6, D5 & D6.





Usibelli Coal Mine, Inc.

WISHBONE HILL COAL DISTRICT

MATANUSKA-SUSITNA BOROUGH, ALASKA

EXPLORATION AREA

FEBRUARY 2010

S.M.

FIGURE 1

MAP 1A
EXPLORATION AREA EAST – PROPERTY OWNERSHIP

USIBELLI COAL MINE
 USIBELLI COAL MINE
 USIBELLI COAL MINE

NOTE: Ownership data downloaded from the Alaska State Plane through GIS portal May 3, 2010. Information may have changed since the time.

The data depicted on the map is for informational purposes only. Parcel, road and permit area boundaries are representations only and should not be used for legal purposes.

The map is in the projection of Alaska State Plane, Zone 4, North American Datum 1983. Some data has been projected to match this projection.

Aerial photography is not georeferenced to Alaska State Plane.

Map Scale: 1:7,373
 1 inch = 0.1332 miles
 1 cm = 0.3822 kilometers

-  Exploration Area Boundary
-  Exploration Area 1/4 Mile Buffer
-  Rivers and Lake Boundaries
-  Roads
-  RS 2477 Trails

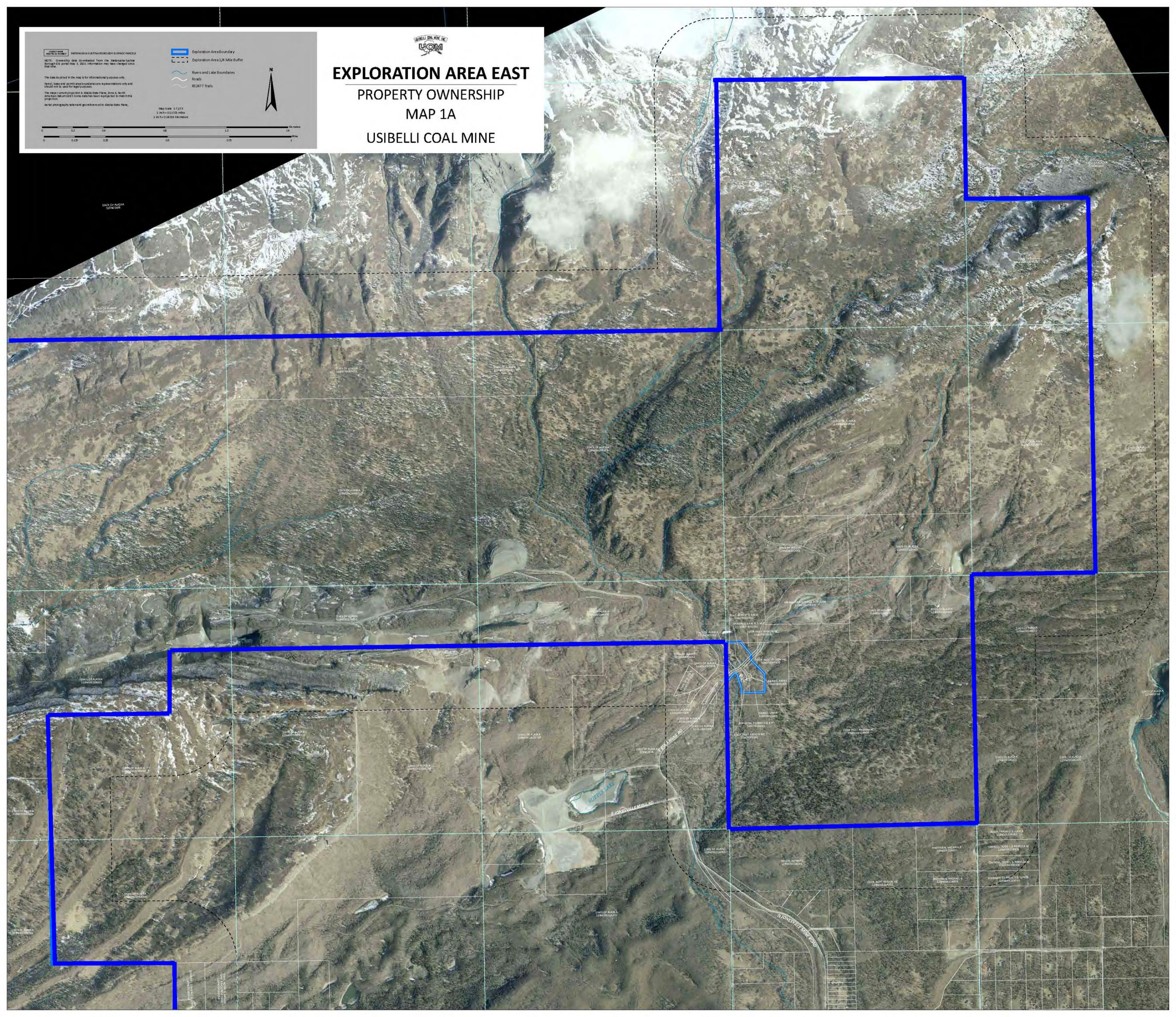


EXPLORATION AREA EAST

PROPERTY OWNERSHIP

MAP 1A

USIBELLI COAL MINE



MAP 1B
EXPLORATION AREA WEST – PROPERTY OWNERSHIP



EXPLORATION AREA WEST PROPERTY OWNERSHIP MAP 1B USIBELLI COAL MINE

USIBELLI COAL MINE UCM

NOTE: Ownership data was updated from the Alaska State Plane through GIS portal May 3, 2020. Information may have changed since that time.

The data depicted in the map is for informational purposes only. Parcel labels and owner names are representations only and should not be used for legal purposes.

The map's current projection is Alaska State Plane, Zone 4, North American Datum 1983. Some data has been reprojected to this projection.

Aerial photography is not georeferenced to Alaska State Plane.

Map Scale: 1:7,375
1 inch = 0.1333 miles
1 cm = 0.3937 kilometers

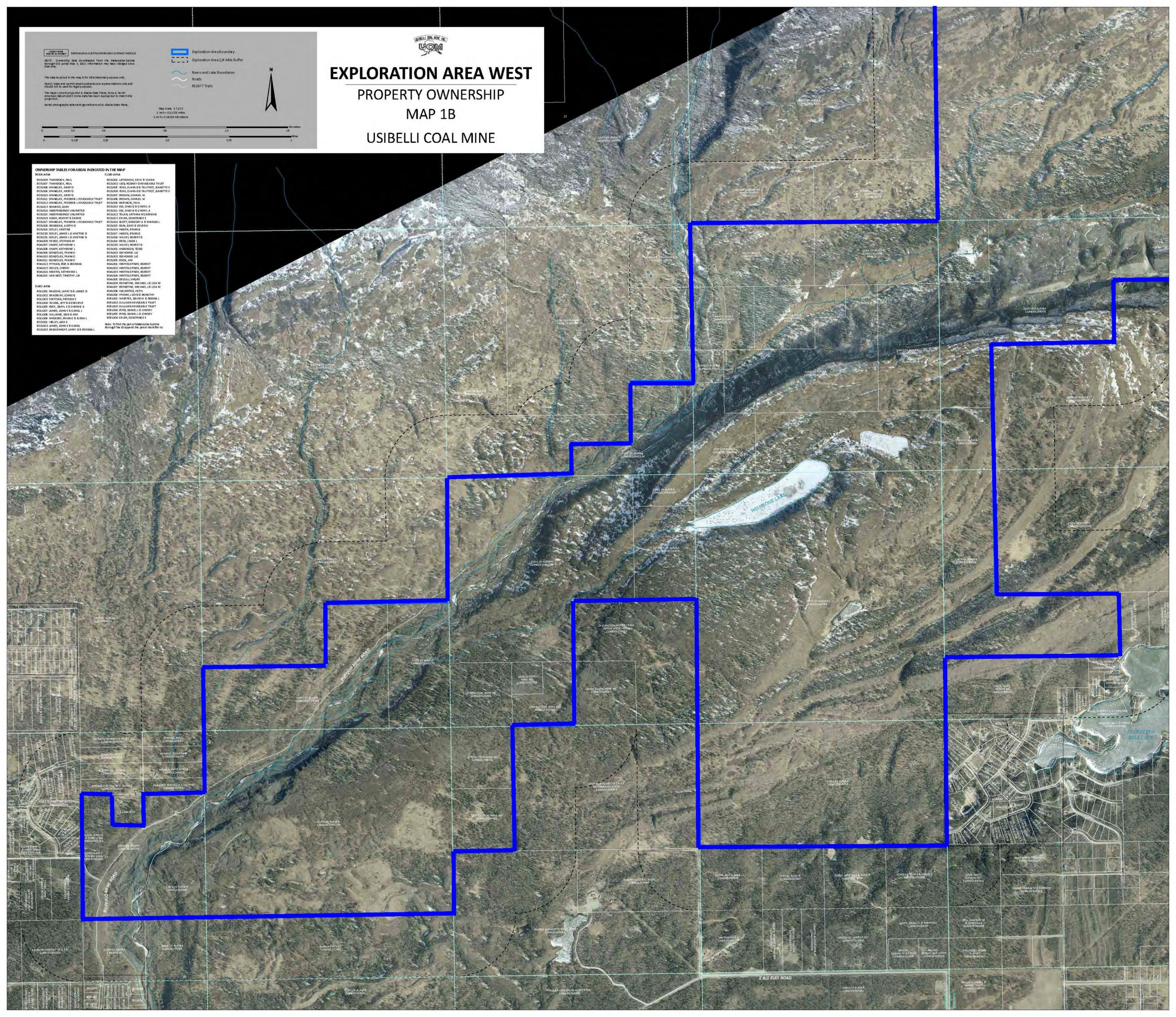
Legend:
 - Exploration Area Boundary (Blue outline)
 - Exploration Area 1/4 Mile Buffer (Dashed line)
 - Rivers and Lake Boundaries (Blue lines)
 - Roads (Grey lines)
 - RS 2477 Trails (Wavy lines)

Scale bar: 0 to 1.6 miles / 0 to 1.6 kilometers

OWNERSHIP TABLES FOR AREAS INDICATED IN THE MAP

BOOK AREA	SUBJECT AREA
BOOK 006	BOOK 006
BOOK 007	BOOK 007
BOOK 008	BOOK 008
BOOK 009	BOOK 009
BOOK 010	BOOK 010
BOOK 011	BOOK 011
BOOK 012	BOOK 012
BOOK 013	BOOK 013
BOOK 014	BOOK 014
BOOK 015	BOOK 015
BOOK 016	BOOK 016
BOOK 017	BOOK 017
BOOK 018	BOOK 018
BOOK 019	BOOK 019
BOOK 020	BOOK 020
BOOK 021	BOOK 021
BOOK 022	BOOK 022
BOOK 023	BOOK 023
BOOK 024	BOOK 024
BOOK 025	BOOK 025
BOOK 026	BOOK 026
BOOK 027	BOOK 027
BOOK 028	BOOK 028
BOOK 029	BOOK 029
BOOK 030	BOOK 030
BOOK 031	BOOK 031
BOOK 032	BOOK 032
BOOK 033	BOOK 033
BOOK 034	BOOK 034
BOOK 035	BOOK 035
BOOK 036	BOOK 036
BOOK 037	BOOK 037
BOOK 038	BOOK 038
BOOK 039	BOOK 039
BOOK 040	BOOK 040
BOOK 041	BOOK 041
BOOK 042	BOOK 042
BOOK 043	BOOK 043
BOOK 044	BOOK 044
BOOK 045	BOOK 045
BOOK 046	BOOK 046
BOOK 047	BOOK 047
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Note: To find the parcel of a specific owner, look for the owner's name in the table and then find the corresponding parcel number in the map.



PART B – OWNERSHIP AND RIGHT OF ENTRY INFORMATION

1.0 SURFACE/SUBSURFACE OWNERSHIP AND LEASEHOLDERS

Information relative to the surface owner, mineral estate owner, surface land leaseholder, and mineral estate leaseholder is provided for each of the coal leases within the exploration area. Figure 2, Coal Lease Tracts, depicts the location, as well as the surface and mineral ownership, for each of the coal lease tracts.

ADL 32144

Surface Owner – Entire Lease Area
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Mineral Estate Owner – That portion lying in Section 28, T19N, R2E, S.M
Mental Health Trust Land Office
718 L Street
Anchorage, Alaska 99501
(907) 269-8658

Mineral Estate Owner – Remaining Portion of Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Surface Leaseholder – Entire Lease
None

Mineral Estate Leaseholder – Entire Lease
Usibelli Coal Mine, Inc.
P. O. Box 1000
Healy, Alaska 99743
(907) 683-2226

ADL 309947

Surface Owner – Entire Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Mineral Estate Owner – Entire Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Surface Leaseholder – Entire Lease
None

Mineral Estate Leaseholder – Entire Lease
Usibelli Coal Mine, Inc.
P. O. Box 1000
Healy, Alaska 99743
(907) 683-2226

ADL 23803

Surface Owner – Entire Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Mineral Estate Owner – Entire Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Surface Leaseholder – Entire Lease
None

Mineral Estate Leaseholder – Entire Lease
Usibelli Coal Mine, Inc.
P. O. Box 1000
Healy, Alaska 99743
(907) 683-2226

ADL 32136

Surface Owner – Entire Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Mineral Estate Owner – Entire Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Surface Leaseholder – Entire Lease
None

Mineral Estate Leaseholder – Entire Lease
Usibelli Coal Mine, Inc.
P. O. Box 1000
Healy, Alaska 99743
(907) 683-2226

ADL 501267

Surface Owner – Entire lease tract excluding the SW1/4 NW1/4, N1/2 NW1/4, Section 13, T19N, R2E, S.M.
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Surface Owner - SW1/4 NW1/4, N1/2 NW1/4, Section 13, T19N, R2E, S.M.
Stephanie J. Nispel, Bailey & Randy Bailey
HC 31, Box 5152
Wasilla, Alaska 99654

Mineral Estate Owner – That portion lying in Sections 18 and 19, T19N, R3E, S.M
Mental Health Trust Land Office
718 L Street
Anchorage, Alaska 99501
(907) 269-8658

Mineral Estate Owner – Remaining Portion of Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Surface Leaseholder – Entire Lease
None

Mineral Estate Leaseholder – Entire Lease
Usibelli Coal Mine, Inc.

P. O. Box 1000
Healy, Alaska 99743
(907) 683-2226

ADL 501264

Surface Owner – Entire Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Mineral Estate Owner – That portion lying in Section 17 ,18 , and SW1/4 SE1/4,SE1/4
SW1/4 of Section 8, T19N, R3E, S.M
Mental Health Trust Land Office
718 L Street
Anchorage, Alaska 99501
(907) 269-8658

Mineral Estate Owner – Remaining Portion of Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Surface Leaseholder – Entire Lease
None

Mineral Estate Leaseholder – Entire Lease
Usibelli Coal Mine, Inc.
P. O. Box 1000
Healy, Alaska 99743
(907) 683-2226

ADL 501265

Surface Owner – Entire Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Mineral Estate Owner – That portion lying in Section 10, and E1/2, NW1/4, S1/2 S1/2
SW1/4 of Section 9, T19N, R3E, S.M
Mental Health Trust Land Office
718 L Street

Anchorage, Alaska 99501
(907) 269-8658

Mineral Estate Owner – Remaining Portion of Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Surface Leaseholder – Entire Lease
None

Mineral Estate Leaseholder – Entire Lease
Usibelli Coal Mine, Inc.
P. O. Box 1000
Healy, Alaska 99743
(907) 683-2226

ADL 511534

Surface Owner – Entire Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Mineral Estate Owner – That portion lying in Section 11, T19N, R3E, S.M
Mental Health Trust Land Office
718 L Street
Anchorage, Alaska 99501
(907) 269-8658

Mineral Estate Owner – Remaining Portion of Lease
State of Alaska
550 West 7th Ave, Suite 1070
Anchorage, Alaska 99501
(907) 269-8503

Surface Leaseholder – Entire Lease
None

Mineral Estate Leaseholder – Entire Lease
Usibelli Coal Mine, Inc.
P. O. Box 1000
Healy, Alaska 99743
(907) 683-2226

CIRI WEST TRACT

Surface Owner – S1/2 SW1/4, Section 23, W1/2 NW1/4, Section 26, T19N, R2E, S.M.
Usibelli Coal Mine, Inc.
P. O. Box 1000
Healy, Alaska 99743
(907) 683-2226

Mineral Estate Owner – Entire West Tract
Cook Inlet Region, Inc.
2525 C Street, Suite 500
Anchorage, Alaska 99509
(907) 274-8638

Surface Leaseholder – Entire West Tract
None

Mineral Estate Leaseholder – Entire West Tract
Usibelli Coal Mine, Inc.
P. O. Box 1000
Healy, Alaska 99743
(907) 683-2226

CIRI EAST TRACT

Surface Owner – Entire East Tract excluding the north 960 feet of the easterly 1815 feet of the NW1/4, Section 15, T19N, R3E, S.M.
Cook Inlet Region, Inc.
2525 C Street, P.O. Box 93330
Anchorage, Alaska 99509
(907) 274-8638

Surface Owner – The north 960 feet of the easterly 1815 feet of the NW1/4, Section 15, T19N, R3E, S.M.
Matanuska Susitna Borough
350 E. Dahlia Avenue
Palmer, Alaska 99645
(907) 745-4801

Mineral Estate Owner – Entire East Tract
Cook Inlet Region, Inc.
2525 C Street, Suite 500
Anchorage, Alaska 99509
(907) 274-8638

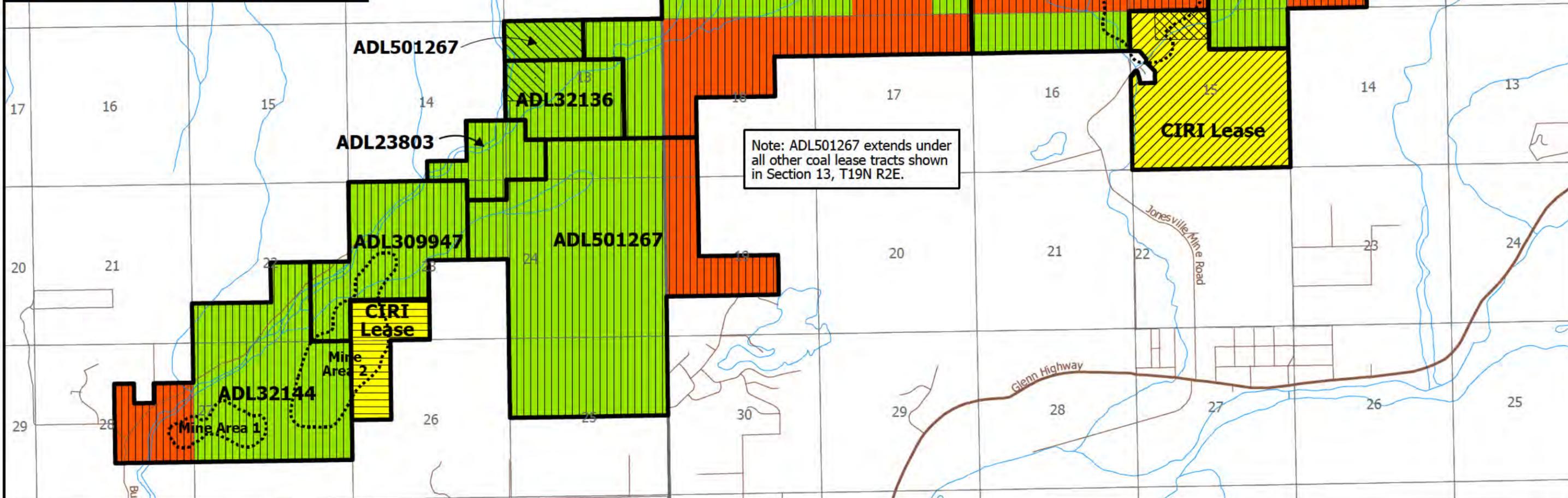
Surface Leaseholder – Entire East Tract
None

Mineral Estate Leaseholder – Entire East Tract
Usibelli Coal Mine, Inc.
P. O. Box 1000
Healy, Alaska 99743
(907) 683-2226

2.0 RIGHT OF ENTRY

UCM's state and private coal leases provide the right to enter the surface estate of the exploration area and conduct coal exploration activities. The only exceptions include a 40 acre parcel of land in the N1/2 NW1/4, Section 15, T19N, R3E, S.M. and another 120 acre parcel in the SW1/4 NW1/4, N1/2 NW1/4, Section 13, T19N, R2E, S.M. The surface rights for the 40 acre tract are owned by the Matanuska Susitna Borough and the surface estate of the 120 acre parcel is privately owned by the Baileys (see Figure 2, Coal Lease Tracts). Prior to conducting exploration activities on these parcels, permission to access the land will be obtained from the land owners and provided to the DMLW.

FIGURE 2
COAL LEASE TRACTS



Note: ADL501267 extends under all other coal lease tracts shown in Section 13, T19N R2E.

Rivers & Streams	Coal Lease Boundary	Mine Area Boundary (Approximate)
State Highway	LAND STATUS	SURFACE ESTATE
Road	Cook Inlet Region, Inc.	Matanuska-Susitna Borough
	Mental Health Trust	Cook Inlet Region, Inc.
	State of Alaska	State of Alaska
		Usibelli Coal Mine, Inc.
		Private

1 0.5 0 1 Miles

Usibelli Coal Mine, Inc.

WISHBONE HILL COAL DISTRICT

MATANUSKA-SUSITNA BOROUGH, ALASKA

COAL LEASE TRACTS

FEBRUARY 2010 **FIGURE 2**

T20N R2E T20N R3E
T19N R2E T19N R3E
T19N R2E T19N R3E
T18N R2E T18N R3E

PART C – ENVIRONMENTAL RESOURCE INFORMATION

1.0 EXISTING ENVIRONMENT

Pursuant to 11 AAC 90.163(a)(2) the following sections contain a brief description of the existing environment and are based on available information. The available information was derived from the environmental baseline reports contained in Part C of UCM's Surface Coal Mining Permit Application. These detailed reports contain references and also identify the parties that were responsible for data collection and report preparation. A hard copy of the surface coal mining permit application is on file with the DMLW in their Anchorage office.

1.1 TOPOGRAPHY

Wishbone Hill is the dominant topographic feature within the exploration area. This feature is a prominent conglomerate-capped hill that occupies the central portion of the Wishbone Hill coal district. Although there are steep slopes within the vicinity of Wishbone Hill, a large portion of the exploration area consists of rolling hills. Glaciation is responsible for the current topography including many of the glacial and sedimentary deposits found at lower elevations. Elevations within the exploration area range from approximately 800 to 2000 feet above sea level.

1.2 GEOLOGY

The present day Matanuska Valley is a narrow structural trough 5 to 10 miles wide and 50 miles long where upper Mesozoic and Tertiary sedimentary rocks have been down-dropped along faults and sharp flexures. Older and more resistant rocks of the Talkeetna and Chugach Mountains flank the valley on the north and south sides, respectively. The sedimentary rocks in the valley generally have been complexly faulted, tilted and folded. The Wishbone Hill coal district lies in the western or lower portion of the Matanuska Valley structural trough and typifies the valley's structurally complex geology.

The district is composed of moderately to highly deformed clastic rocks of Tertiary age. The Matanuska formation of upper Cretaceous age presumably underlies the district; however, it is only exposed in a few localities. The Tertiary system is comprised of three nonmarine

formations known in descending order as the Tsadaka, Wishbone, and Chickaloon formations. The Tsadaka formation consists of several hundred feet of coarse granite-cobble-rich conglomerate with occasional sandstone and siltstone lenses. Thick sequences of massive to poorly stratified conglomerate beds, lenticular sandstone and siltstone beds, and a few thin lenses of claystone make up the Wishbone formation. Within the district, the maximum thickness of this formation is 1,800 to 2,000 feet. The Chickaloon formation is comprised of approximately 5,000 feet of interbedded conglomerate, sandstone, siltstone, claystone, shale, and many coal beds.

The mineable coal beds of the Chickaloon formation are generally confined to the upper 1,400 to 1,800 feet of the formation and are situated in four rather well defined coal beds. The individual groups of coal beds are known in descending order as the Jonesville, Premier, Eska, and Burning Bed. Within a given group, the thickness and quality of individual beds may vary within relatively short distances because of the complex structure.

1.3 SURFACE WATER

Perennial streams, intersecting portions of the exploration area, include Moose and Eska Creeks. These streams are tributary to the Matanuska River and have watersheds that are steep and relatively long and narrow.

Typical stream flow is generated from precipitation, snowmelt, and glacial meltwater. Flows vary seasonally with peak flows occurring in spring and early summer due to snowmelt and breakup and in late summer and early autumn due to rainstorms. Periods of lowest flow occur in winter when precipitation falls as snow and when little surface runoff occurs. Mid-summer low flows are usually sustained by effluent ground water flows and melt water from the perennial snow pack.

The dominant erosion mechanisms within the basins are mass wasting and mechanical erosion processes associated with freeze/thaw activity acting on bare rock on high, steep, and unforested

mountain slopes. In the forested areas at lower elevations, erosion of surfacial soils by rainfall and snow melt runoff occurs.

The only natural lake within the exploration area is Wishbone Lake. During periods of high runoff, Wishbone Lake drains into Moose Creek via Buffalo Creek. Buffalo Creek is a small sub-basin within the Moose Creek watershed and only flows intermittently

1.4 VEGETATION

The majority of the vegetation on the exploration area has been affected by a variety of disturbances including but not limited to fire, timber management, wildlife habitat improvements, mining, and recreational activities. The dominant vegetation types include paper birch/aspen, paper birch/white spruce, young birch, poplar, alder/ willow, and lowland and upland meadows. Understory vegetation is very similar among the forest types and is dominated by grasses and forbs. The vegetation types are fairly common and most of the plant species occur throughout the state. Moose have heavily browsed most shrubs in the area and caused many of the birch trees to assume a shrub growth form.

1.5 SOILS

The Wishbone Hill area is a prominent topographic upland within the lower Matanuska Valley. It is separated from the Talkeetna Mountains to the north, by a broad valley drained by the tributaries of Moose and Eska Creeks. Sharply incised valleys of Moose and Eska Creeks comprise the west and east sides of Wishbone Hill. On the south, it is flanked by a broad undulating sand and gravel glacial outwash surface about 800 feet in elevation. The main Wishbone Hill upland is underlain by very gravelly, sandy loam glacial till. A surface mantle of wind deposited loess overlies both the glacial out wash and till surfaces. This loess material is derived primarily from fluvial deposits within the upper Matanuska River Valley. The surface mantle also contains a small admixture of volcanic ash. The convex upland position of Wishbone Hill and the very thick and coarse glacial deposits both contribute to well drained conditions on the exploration area.

A detailed Order 1-2 soil survey has been conducted on the area where exploration activities are planned. This survey includes a map delineating soil mapping units and a description of the mapping units and soil series as well as chemical and physical data. A complete copy of the report is contained in Chapter XI of UCM's Wishbone Hill Surface Coal Mining Permit Application.

1.6 FISH

As previously discussed in Section 5.3, the main bodies of water within the exploration area are Moose Creek, Wishbone Lake, and Eska Creek. Species of fish found in these waters include coho and chinook salmon, Dolly Varden, rainbow trout, and slimy sculpin. Chum and sockeye salmon are not known to spawn in the Creeks but have been seen holding in the mouth of the streams during their migration up the Matanuska River.

Fishing for chinook salmon is prohibited in Moose Creek and the numbers of other salmon species are too low to provide significant fishing opportunity. Sport fishing is primarily limited to catches of Dolly Varden .

Wishbone Lake is a popular fishery and is stocked annually with fingerling rainbow trout. It is currently regulated as a catch-and-release, fly fishing only area. The intent of the restrictions is to establish a high quality trophy fish area for use by a particular segment of the angling community.

1.7 WILDLIFE

Large mammals that are likely to occur within the exploration area include moose, brown bear, and black bear. Moose are clearly the most important species from the standpoint of human utilization. They also play a significant role in predator-prey relationships of species requiring large land areas for a habitat base. Black bears are very common throughout south central Alaska

and are tied closely to forested areas. Brown bears are very common in portions of the bordering Talkeetna Mountains.

Fur bearers potentially occurring within the exploration area include wolf, wolverine, fox, coyote, lynx, marten, mink, beaver, land otter, and weasels. Of these, wolves, wolverine, and coyote range widely in search of prey and would be expected to occasionally wander through the exploration area.

During the summer months, the most abundant migratory birds that are expected to frequent the exploration area include were the Dark-eyed Junco, Yellow-rumped warbler, Orange-crowned warbler, Blackpoll Warbler, Swainson's Thrush and Alder Flycatcher. Around the margin of water bodies, common goldeneyes and common mergansers are likely to occur.

Upland game birds that may occur on the exploration area include spruce grouse, ruffed grouse, and willow ptarmigan. Spruce grouse are generally found in open spruce and aspen shrub stands while willow ptarmigan and ruffed grouse frequently utilize tall shrub cover.

Two important species of raptors including the peregrine falcon, a classified endangered species (Endangered Species Act of 1973, as amended, 16 U.S.C. Sec. 1531, et seq.) and the bald eagle, a specially protected species (Bald Eagle Protection Act of 1940, as amended) and designated as an important species by the ADNR Commissioner, are seasonal visitors in the region. American peregrine falcons may occasionally be found in the area between mid-April and September. The Cook Inlet Region is within the southern fringe of their breeding range and nesting pairs may occasionally be present but no nests have been reported near the exploration area.

Bald eagle habitat occurs throughout the Cook Inlet area. Most nest sites are located in large trees in coastal areas, along rivers, or large lakes. Bald eagles in Alaska are not listed as an endangered species.

No bald eagle nests have been recorded within or immediately adjacent to the exploration area.

1.8 ARCHAEOLOGY

In March 1989, a cultural resource survey and inventory report was completed on the permit areas associated with surface coal mining permit numbers 01-89-796 and 02-89-796. This study did not identify any previously unknown cultural resource sites and further determined that three known historic sites (Buffalo, Premier, and Baxter Mines) within the current exploration area no longer possessed any significant data. The State Historic Preservation Officer (SHPO) agreed with the findings of the study and granted clearance to proceed with development work.

Concerning those portions of the exploration area that are outside the approved cultural resource survey area, no activities are planned that would require clearance from the SHPO.

1.9 THREATENED AND ENDANGERED SPECIES

Vegetation studies that have been conducted within and adjacent to the exploration area have not identified any threatened and endangered species on the Federal list. Past disturbance and the commonness of the vegetation types would make the possibility of finding any threatened or endangered species very low. The State of Alaska does not list plant species.

During previous aquatic baseline surveys of Moose and Buffalo Creeks, no threatened or endangered fish species were encountered. The Alaska Department of Fish & Game is not aware of any endangered fish in the streams on the exploration area.

The Federal list of threatened and endangered bird species includes: American peregrine falcon, Aleutian Canada goose, Short-tailed albatross, Eskimo curlew, Spectacled eider, and Steller's eider. Of these, the Eskimo curlew and Short-tailed albatross are on the Alaska State endangered species list. The American peregrine falcon, Aleutian Canada goose, and Spectacled eider are classified by the State as "species of special concern". Based on previous studies, the only species that may pass through the area is the American peregrine falcon.

1.10 LAND USE

Land uses that occurred within the exploration area between 1900 and 1970 were largely related to coal development. The first underground mine was developed near the western portion of the exploration area in 1916. As mining operations expanded in the vicinity of the eastern portion of the exploration area, the towns of Jonesville and Sutton resulted. Although there are no active coal mines or occupied structures within the exploration area today, there is still continued interest in exploration and coal mine development.

As land use plans developed, the state legislature designated a portion of the lower Matanuska Valley as the Matanuska Valley Moose Range (MVMR). This legislatively designated area was established in 1984 to “maintain, improve, and enhance moose populations and habitat and other wildlife resources of the area and to perpetuate public multiple use of the area including fishing, grazing, forest management, hunting, trapping, mineral and coal entry development, and other forms of public use”. The entire exploration area is situated within the boundaries of the MVMR.

Most of the exploration area is within state-owned public land that is either in an undisturbed natural condition or has been disturbed by past coal mining or more recent logging activities. Public access is available to the area by state-maintained roads including the Buffalo Mine Road in the west and the Jonesville Road in the east. Current land uses include commercial timber harvesting, personal use firewood cutting, Christmas tree cutting, coal exploration and development work, mined land reclamation, and recreational activities.

PART D – EXPLORATION AND RECLAMATION METHODS

1.0 METHODS AND PROCEDURES FOR EXPLORATION AND RECLAMATION

Coal exploration work will be performed to 1) better define the complex geology, 2) find additional recoverable coal reserves, 3) define surface mineable reserve areas, and 4) better understand the chemical and physical characteristics of the coal. The information obtained from the exploration programs will ultimately be used to determine the feasibility of developing the coal resources within the exploration area. Since geology is not an exact science, the scope of work for the exploration activities may vary and will be refined as data is collected and evaluated. The types of activities and methods that will be used to complete the exploration work are outlined in the following sections.

1.1 ACCESS

The Glenn Highway, a major year-round asphalt road connecting the Anchorage/Palmer Highway with the Richardson Highway, passes approximately 2 to 3 miles south of the exploration area. Access to the western portion of the area has been provided by the construction of an exploration trail along the corridor of the proposed mine access road that was authorized under surface mining permit numbers 01-89-796 and 02-89-796 (see Figure 1, Exploration Area). A gate has been constructed on the *improved* trail near the intersection with the Glenn Highway to control public access. In the eastern portion of the area, the Jonesville Road provides access and connects with the Glenn Highway at the town of Sutton.

Access within the exploration area itself is provided by a rather extensive network of roads and trails that resulted from past mining and exploration work, forestry activities, and recreational uses. In certain segments of these roads, minor grading may need to be performed to eliminate ruts created by recreational activities and forestry work. Encroaching vegetation may have to be trimmed in other segments to allow safe passage. To prevent potential trail degradation, low-ground-pressure tracked vehicles will be used to transport the drilling equipment to the exploration sites as necessary. Where trails and soil conditions are adequate then heavy equipment may be used for access.

In areas where access is limited, existing trails will be extended to reach the desired locations. A small dozer in the size range of a Cat D-4 or Komatsu D-37 will be used to clear a path approximately 8 to 10 feet wide. The vegetative mat and topsoil will be salvaged and reapplied when the trail extensions are reclaimed. Wherever possible, the vegetative root mat will be left in place to enhance the rapid reestablishment of native vegetation. The alignment will attempt to avoid large trees and other obstructions. If steeper hillsides are encountered, the trails will follow the contour wherever possible. No stream crossings will be required.

1.2 TYPES OF ACTIVITIES

The exploration program will involve two categories of activities: 1) activities that will not substantially disturb the land surface (11 AAC 90.161) and 2) activities that will substantially disturb the land surface (11 AAC 90.163). Specific activities that are being proposed under each of these categories are outlined below.

ACTIVITIES NOT SUBSTANTIALLY DISTURBING THE LAND SURFACE

- Geologic Mapping
- Use of existing trails/roads

ACTIVITIES SUBSTANTIALLY DISTURBING THE LAND SURFACE

- Access Trails
- Drill Sites
- Exploration Drilling

1.3 METHODS

1.3.1 Activities Not Substantially Disturbing the Land Surface

GEOLOGIC MAPPING – The surficial and structural geology of the exploration area may be mapped in the field using aerial photographs and topographic maps. Coal seam outcrops or other exposed geologic features identified during the mapping may be surveyed to provide more

precise locations. Vehicular travel will be limited to existing roads and trails. Most of the mapping and survey work will be done on foot.

1.3.2 Activities Substantially Disturbing the Land Surface

ACCESS TRAILS – The methods for constructing access trails within the exploration area were previously discussed in Section 1.1. As stated in this section, if grading is necessary, the vegetative mat and topsoil will be salvaged and reapplied when the trail extensions are reclaimed. **Any ruts created by tracked or wheeled vehicles that break the vegetated soil mat will be filled.**

DRILL SITES – An area roughly 50 feet long by 40 feet wide will be required to set up the drilling equipment. **Each drill site will be bonded for this 50'x 40' area. However, the estimated actual substantial disturbance of the topsoil layer is expected to be no greater than about 400 sq. feet per drill site on average.** Wherever possible, drill sites will be located on relatively flat terrain to avoid having to excavate a level area for the drilling equipment. Excess vegetation will be removed to provide an adequate working area. If leveling is required, a small dozer in the size range of a Komatsu D-37 will be used to create a useable area. Where ever possible, the vegetative root mat will be left in place to enhance the rapid reestablishment of native vegetation.

EXPLORATION DRILLING – To achieve the objectives outlined in Section 1.0, UCM anticipates drilling approximately **25** exploration holes within the exploration area (see Figure 1). If moved, or additional holes are required, the DMLW will be notified in advance of drilling.

A Schramm T64 or similar type drill rig will be used to drill the exploration holes. The surface gravels will be cased with 6 inch steel casing to protect the integrity of the hole during drilling and latter removed, if feasible. Beyond the gravels, reverse circulation drilling will be used to reach the top of the coal seam. The coal seams will be cored with an HQ size (2.4 inch O.D.) core barrel to obtain samples for laboratory testing. The maximum hole depth will be in the

range of 350 – 400 feet and the anticipated total drilling footage will be approximately **8,750 – 10,000** feet.

In some cases, drilling muds may be needed to provide lubrication for the drill bit and to enhance recovery of drill cuttings. The typical drilling fluid will contain water and a bentonite powder mix to create a wall cake inside the hole and help maintain circulation in zones where soft sediments occur. Material Safety Data Sheets (MSDS) for a number of different types of non-toxic material that may be used for drilling fluid are contained in Appendix A.

Regarding fueling and spill prevention plans, fuel will be purchased off-site on a daily basis and delivered to the site. Before a piece of equipment is refueled, a 4’x4’x8” high poly liner will be laid on the ground to catch any spills or drips that may occur. The liner will contain oil/fuel absorbent pads that will be collected and discarded off-site if fuel is spilled. Poly liners will also be placed under the drilling equipment to catch any oil that may potentially leak from the equipment during drilling operations.

Approximately 4,500 gallons per day of water will be required for the drilling activities. This relatively small quantity of water will be obtained under a Temporary Water Use Permit from the DMLW. The primary water take points are old abandoned mining pits within the exploration area and are discussed in the Application for Temporary Use of Water that is on file with the DMLW **(TWUP A2012-31)**.

If adverse down-hole problems are not encountered, drill holes may be geophysically logged by a properly licensed individual. Log data may include resistivity, gamma, density, and caliper.

Upon completion of the drilling work, each drill hole will be surveyed to provide accurate locations. In addition to coordinates, the surface elevation of each drill hole will also be determined.

1.4 COAL REMOVAL

Small amounts of coal may be taken from core samples and/or cuttings for quality analyses.

1.5 RECLAMATION PROCEDURES

Reclamation will be an integral part of the exploration program and will be implemented in a contemporaneous manner. The following sections describe the procedures that will be used to reclaim the disturbances resulting from the exploration activities.

1.5.1 Drill Hole Plugging

When a drill hole has been completed or a monitoring well is no longer needed, the surface casing (if present) will be cut off approximately three feet below the ground surface. The hole will be filled with dry cuttings or sand to within 12 feet of the surface. A mixture of 20% bentonite, 20% dry cement, and 60 % cuttings or sand will be used to fill the next 10 feet of hole. The top 2 feet will be filled with topsoil or overburden material. While filling the last 12 feet, a 4"x 4" x 4' piece of treated lumber will be placed in the hole to permanently mark the location. The post will be positioned so that approximately 6 inches protrudes above the surface. Each drill hole will be surveyed to establish coordinates for future reference.

1.5.2 Removal of Facilities and Equipment

Upon completion of the exploration activities, all equipment and supplies will be removed from the exploration area. No permanent or temporary field camps will be used. A conscientious effort will be made to avoid any littering and to clean up each site after drilling is completed.

1.5.3 Backfilling and Grading

In areas where clearing work was done, a backhoe will be used to regrade and level the site. The surface will be dressed with topsoil and graded to blend with the surrounding topography. If necessary, water bars or ditches may be established to provide adequate drainage.

1.5.4 Revegetation

All disturbed areas will be fertilized and seeded to ensure optimum revegetation. A 20/20/10 fertilizer will be applied to the graded areas with a manually operated spreader at a rate of 300 pounds per acre. Next a seed mixture containing 50% Arctared red fescue and 50% Nortran tufted hairgrass will be manually broadcasted at a rate of 50 pounds per acre. If Nortran is not available, then either Norcoast Bering hairgrass or Nugget bluegrass will be used instead. These revegetation procedures were developed in consultation with the University of Alaska, Agricultural and Forestry Experiment Station and the Division of Agriculture, Plant Materials Center and are intended to meet the objectives of the management plan for the Matanuska Valley Moose Range.

1.6 TIME FRAME

Pursuant to 11 AAC 90.165, the initial permit term will be two years. During each year, exploration activities may start as early as April 1 and extend through the end of November. For the 2012 program work should start around the first part of July and be completed by November 30, 2012. For the 2013 program work should start as early as May 1 and be completed by November 30, 2013. For the 2014 program work should start as early as April 1 and be completed by the end of the exploration permit term, or later depending on the permit renewal.

1.7 RECLAMATION COST ESTIMATE

Drill hole plugging and the reclamation of any disturbances associated with the drill sites and trail extensions will require two people and a backhoe working approximately 3 hours to reclaim each follows: drill hole location and trail extension. Thus, **25** drill sites will require 3 days of

work plus one half day for mobilization and demobilization. Therefore, the equipment and personnel cost for the drill holes are as follows:

<i>Item</i>	<i>\$/Hour</i>	<i>Hours</i>	<i>Cost</i>
<i>Operator</i>	<i>\$52.24</i>	<i>78</i>	<i>\$4,075</i>
<i>Laborer</i>	<i>\$45.39</i>	<i>78</i>	<i>\$3,540</i>
<i>Komatsu WB 150 Backhoe + Fuel</i>	<i>\$54.75</i>	<i>78</i>	<i>\$4,271</i>
		<i>Subtotal</i>	<i>\$11,886</i>

It is estimated that the work covered under the exploration permit will disturb approximately *1.8* acres or less. This figure assumes up to *1.2* acres for the drill sites, and up to *0.6* acres for potential trail extensions. Based on a seeding rate of 30 lbs/acre and a price of *\$11.53*/ pound the cost would be *\$346*/acre for seed. With an application rate of 300lbs per acre for fertilizer and a price of *\$.60*/pound, the cost would be *\$180*/acre for fertilizer. Based on the assumptions discussed above, the cost for seed and fertilizer are summarized below.

<i>Item</i>	<i>\$/Acre</i>	<i>Acres</i>	<i>Cost</i>
<i>Seed</i>	<i>\$346</i>	<i>1.8</i>	<i>\$623</i>
<i>Fertilizer</i>	<i>\$180</i>	<i>1.8</i>	<i>\$324</i>
		<i>Subtotal</i>	<i>\$947</i>

Miscellaneous supplies and equipment will include cement/bentonite and a pickup truck for transportation to and from the exploration area. It is assumed that the pickup will be required for *22* days at a cost of \$100/day and the cement/bentonite will cost *\$700, for a total of \$2,900.*

The total reclamation cost for the planned 2012-14 exploration activities is summarized below:

<i>Equipment and Personnel</i>	<i>\$11,886</i>
<i>Seed and Fertilizer</i>	<i>\$947</i>
<i>Miscellaneous Supplies and Equipment</i>	<i>\$2,900</i>
<i>TOTAL</i>	<i>\$15,733</i>

The total reclamation liability under Coal Exploration Permit Number 01-86-795 is summarized in Table 1. Outstanding liability includes the plugging and abandonment of 37 groundwater monitoring wells and the removal of fencing around two previously constructed vegetation test plots. The locations of the existing monitoring wells are shown on Plate IV-1 and Figure 1. The remaining disturbance from the 1999 trenching program is included under the 2012 reclamation cost estimate. The **40.5%** that is applied to the total cost estimate includes **25%** for contractor profit and overhead, **6%** management fee, and a contingency.

TABLE 1	
BONDING SUMMARY FOR COAL EXPLORATION PERMIT 01-86-795	
	Liability
<u>Outstanding Reclamation Liability</u>	
<i>Removal of Fences on Revegetation Test Plots</i>	<i>\$726</i>
<i>Labor – 16 Hrs X \$45.39/Hr</i>	
	<i>\$260</i>
<i>1998 Drilling Program</i>	
<i>Fertilizing & Seeding</i>	
<i>0.47 acres x \$550/acre</i>	<i>\$2,258</i>
<i>1999 Trenching Program</i>	
<i>Fertilizing & Seeding</i>	
<i>4.2 acres x \$25/acre</i>	
<i>Plug & Abandon Water Monitoring Wells</i>	
<i>37 Wells X \$400/Well</i>	<i>\$14,800</i>
<u>2012-14 Exploration Program</u>	
<i>Drilling Work</i>	<i>\$15,733</i>
<i>(Includes the remaining disturbance from the 1999 trenching program)</i>	
<i>Subtotal</i>	<i>\$33,777</i>
<i>40.5% for Contingency and Indirect Costs</i>	<i>\$13,680</i>
<i>TOTAL</i>	<i>\$47,457</i>

As shown on Table 1, the total reclamation liability under Coal Exploration Permit No. 01-86-795 is currently at **\$47,457**. Under a CD and UCM's Self-Bond and Indemnity Agreement, **\$39,293** is currently posted for Coal Exploration Permit number 01-86-795 thus leaving a

deficiency of **\$8,164**. Therefore, upon approval of this renewal application, UCM will move forward with the planned exploration activities with posting an additional **\$8,164** in bonding.

1.8 REPORTING

An annual report will be submitted to the DMLW by January 31st each year for exploration activities that occurred the previous year. This report will discuss the types of exploration activities performed during the previous year and will include a map depicting the location of any new access trails and completed drill holes. *The completion report will also show the TD, date, spud, and plugged, how the well was P&A'd, and if it was left for a monitoring well, how it was completed.*

PLATE IV-1
SITE PLAN AND WELL LOCATION MAP

APPENDIX A
MATERIAL SAFETY DATA SHEETS FOR POTENTIAL DRILLING FLUIDS

MATERIAL SAFETY DATA SHEET

Product Trade Name: **DEXTRID®**

Revision Date: 02-Jun-2007

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: DEXTRID®
Synonyms: None
Chemical Family: Modified Starch
Application: Fluid Loss Additive
Not for use in the United States

Manufacturer/Supplier: Baroid Fluid Services
Product Service Line of Halliburton
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000
Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Paraformaldehyde	30525-89-4	1 - 5%	Not applicable	Not applicable
Complex carbohydrate		60 - 100%	10 mg/m ³	15 mg/m ³

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye, skin, and respiratory irritation. May cause allergic skin and respiratory reaction. Airborne dust may be explosive.

4. FIRST AID MEASURES

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin: In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention.

Eyes: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion: Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician: Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential. Decomposition in fire may produce toxic gases.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 2, Flammability 1, Reactivity 0
HMS Ratings: Flammability 1, Reactivity 0, Health 2

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Avoid dust accumulations.

Storage Information Store away from oxidizers. Store in a dry location. Product has a shelf life of 12 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Dust/mist respirator. (95%)

Hand Protection Impervious rubber gloves.

Skin Protection Normal work coveralls.

Eye Protection Dust proof goggles.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Powder

Color: Off white

Odor: Pungent

9. PHYSICAL AND CHEMICAL PROPERTIES

pH:	Not Determined
Specific Gravity @ 20 C (Water=1):	1.5
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft3):	30-44
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Partially soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None known.
Incompatibility (Materials to Avoid)	Strong oxidizers. Strong acids. Strong alkalis. Amines.
Hazardous Decomposition Products	Formaldehyde. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	Causes severe respiratory irritation. May cause allergic respiratory reaction.
Skin Contact	May cause a rash and itching of the skin. May cause severe skin irritation. This product contains ingredients which may produce an allergic skin reaction. It should be treated as a skin sensitizer.
Eye Contact	May cause severe eye irritation.
Ingestion	Causes burns of the mouth, throat and stomach.
Aggravated Medical Conditions	Skin disorders. Eye ailments. Lung disorders.
Chronic Effects/Carcinogenicity	Paraformaldehyde may release formaldehyde monomer, a probable human carcinogen. Chronic exposures may cause cancer of the lung and nasal passages. Formaldehyde and possibly paraformaldehyde may react with hydrochloric acid to form bis-chloromethyl ether, a known human carcinogen.
Other Information	None known.
Toxicity Tests	

Oral Toxicity:	LD50: 800 mg/kg (Rat)
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity:	TLM96: 360 ppm (Oncorhynchus mykiss)
Acute Crustaceans Toxicity:	TLM96: 538,900 ppm (Mysidopsis bahia) SPP @ 10 ppb
Acute Algae Toxicity:	Not determined

Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard Chronic Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	EPA Reportable Spill Quantity is 25000 Pounds based on Paraformaldehyde (CAS: 30525-89-4).
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.
PA Right-to-Know Law	One or more components listed.
Canadian Regulations	
Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS

Not applicable

Additional Information For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

MATERIAL SAFETY DATA SHEET

Product Trade Name: EZ-MUD® PLUS

Revision Date: 03-Jan-2008

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: EZ-MUD® PLUS
Synonyms: None
Chemical Family: Blend
Application: Additive

Manufacturer/Supplier: Baroid Fluid Services
Product Service Line of Halliburton
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000
Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Hydrotreated light petroleum distillate	64742-47-8	10 - 30%	200 mg/m ³	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed.

4. FIRST AID MEASURES

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin: Wash with soap and water. Get medical attention if irritation persists. Remove contaminated shoes and discard.

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion: Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

Notes to Physician: Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Min: > 200
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Min: > 93
Autoignition Temperature (C):	PMCC
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards Decomposition in fire may produce toxic gases. Use water spray to cool fire exposed surfaces.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 2, Flammability 1, Reactivity 0
HMS Ratings: Flammability 1, Reactivity 0, Health 2

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from oxidizers. Keep container closed when not in use. Product has a shelf life of 12 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls A well ventilated area to control dust levels. Local exhaust ventilation should be used in areas without good cross ventilation.

Respiratory Protection Organic vapor respirator with a dust/mist filter.

Hand Protection Impervious rubber gloves.

Skin Protection Rubber apron.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	White to gray
Odor:	Mild hydrocarbon

9. PHYSICAL AND CHEMICAL PROPERTIES

pH:	Not Determined
Specific Gravity @ 20 C (Water=1):	1.0
Density @ 20 C (lbs./gallon):	8.3
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	347
Boiling Point/Range (C):	175
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	70
Evaporation Rate (Butyl Acetate=1):	< 1
Solubility in Water (g/100ml):	Partially soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Ammonia. Oxides of nitrogen. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Skin Contact	May cause skin irritation.
Eye Contact	May cause eye irritation.
Ingestion	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.
Aggravated Medical Conditions	Lung disorders.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.

Other Information None known.

Toxicity Tests

Oral Toxicity: Not determined

Dermal Toxicity: Not determined

Inhalation Toxicity: Not determined

Primary Irritation Effect: Not determined

Carcinogenicity Not determined

Genotoxicity: Not determined

**Reproductive /
Developmental Toxicity:** Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air) Not determined

Persistence/Degradability Not determined

Bio-accumulation Not Determined

Ecotoxicological Information

Acute Fish Toxicity: Not determined

Acute Crustaceans Toxicity: TLM48: 98 mg/l (Acartia tonsa)

Acute Algae Toxicity: EC50: 16.70 mg/l (Skeletonema costatum)

Chemical Fate Information Not determined

Other Information Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.

Canadian Regulations

Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS

Not applicable

Additional Information For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

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*****END OF MSDS*****



The Chemical Company

SAFETY DATA SHEET
FEB Hyseal No.1

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME	FEB Hyseal No.1
PRODUCT NO.	118338
SUPPLIER	BASF Construction Chemicals UK Limited Albany House Swinton Hall Road Swinton Manchester M274DT +44(0)161 794 7411
CONTACT PERSON	EHSQ Officer
EMERGENCY TELEPHONE	Telephone: 0161 794 7411. If outside normal working hours, please listen to answer machine message for emergency contact numbers.

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
Portland Cement	266-043-4	65997-15-1	30-60%	Xi;R38,R41.

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

Modified sand - cement mixture

3 HAZARDS IDENTIFICATION

Irritating to skin. Risk of serious damage to eyes.

CLASSIFICATION Xi;R38, R41.

4 FIRST-AID MEASURES

GENERAL INFORMATION

This product contains cement. Cement produces an alkaline reaction with moisture or gauging water and therefore splashes of mortar, slurry or gauging water may cause skin irritation and/or caustic burns to mucous membranes (e. g. eyes). Avoid contact with eyes and prolonged skin contact.

INHALATION

Fresh air. Get medical attention if any discomfort continues.

INGESTION

Rinse mouth thoroughly. Drink plenty of water. Get medical attention if any discomfort continues.

SKIN CONTACT

Wash the skin immediately with soap and water.

EYE CONTACT

Important! Immediately rinse with water for at least 15 minutes. Get medical attention promptly if symptoms occur after washing.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

The product is non-combustible.

PROTECTIVE MEASURES IN FIRE

No special measures required.

6 ACCIDENTAL RELEASE MEASURES

FEB Hyseal No.1

PERSONAL PRECAUTIONS

Avoid inhalation of dust.

ENVIRONMENTAL PRECAUTIONS

No special measures required.

SPILL CLEAN UP METHODS

Remove spillage with vacuum cleaner. If not possible, collect spillage with shovel, broom or the like.

7 HANDLING AND STORAGE

USAGE PRECAUTIONS

Avoid spread of dust.

STORAGE PRECAUTIONS

No specific storage precautions noted.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT COMMENTS

MAK: Lower toxic limit for cement 5 mg/m³. OES-LTEL: 4 R / 10 l mg/m³. Otherwise the product contains no relevant quantities of substances with workplace-related limit values.

ENGINEERING MEASURES

Not relevant.

RESPIRATORY EQUIPMENT

Wear respirator if there is dust formation.

HAND PROTECTION

Nitrile impregnated cotton-gloves. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

EYE PROTECTION

Wear goggles/face shield.

OTHER PROTECTION

The usual precautionary measures when handling chemicals should be adhered to. The product contains < 2 ppm Cr VI.

HYGIENE MEASURES

When using do not eat, drink or smoke. Wash hands after handling. Use appropriate skin cream to prevent drying of skin.

SKIN PROTECTION

Protection suit must be worn.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Powder, dust		
COLOUR	Grey		
ODOUR	Almost odourless		
SOLUBILITY	Miscible with water.		
BOILING POINT (°C)	not applicable	MELTING POINT (°C)	not determined
pH-VALUE, DILUTED SOLUTION	12 - 13	FLASH POINT (°C)	not applicable
SOLUBILITY VALUE (g/100g H ₂ O@20°C)	< 0,2		

10 STABILITY AND REACTIVITY

STABILITY

Stable when stored in a dry place.

HAZARDOUS DECOMPOSITION PRODUCTS

No hazardous decomposition products.

11 TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version: Irritant

FEB Hyseal No.1

GENERAL INFORMATION

When used and handled according to specifications, the product does not have any harmful effects in our experience and according to the information provided to us. The product does not contain asbestos or any other mineral fibres or inhalable fine quartz dust hazardous to health and causing silicosis. The product is chlorine-free and contains no formaldehyde.

SKIN CONTACT

Irritating to skin.

EYE CONTACT

Risk of serious damage to eyes.

HEALTH WARNINGS

The product is reduced in chromate (contains < 2 ppm Cr VI). Within the indicated storage time sensitization is not expected.

12 ECOLOGICAL INFORMATION

ECOTOXICITY

Do not allow product to reach ground water, water bodies or sewage system. No ecological studies are available. Harmful effects on man and environment are unknown and are not to be expected when application is in accordance with the instructions and the advice in this Safety Data Sheet. When handled properly and used as intended the product has no ecotoxic effects on the basis of our significant experience in ready-to-use cement mortars and chemical building materials and the information available to us.

WATER HAZARD CLASSIFICATION

WGK 1

13 DISPOSAL CONSIDERATIONS

GENERAL INFORMATION

Waste is classified as special waste. Disposal to licensed waste disposal site in accordance with the local Waste Disposal Authority. Smaller quantities can be disposed of with household waste.

DISPOSAL METHODS

Dispose of waste and residues in accordance with local authority requirements.

WASTE CLASS

EWC: 01 04 07 wastes containing dangerous substances from physical and chemical processing of non-metalliferous minerals.

14 TRANSPORT INFORMATION

GENERAL

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION

LABELLING



Irritant

CONTAINS

Portland Cement

RISK PHRASES

R38 Irritating to skin.
R41 Risk of serious damage to eyes.

SAFETY PHRASES

S2 Keep out of the reach of children
S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S27/28 After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap.
S37/39 Wear suitable gloves and eye/face protection.
S46 If swallowed, seek medical advice immediately and show this container or label.

EU DIRECTIVES

System of specific information relating to Dangerous Preparations. 2001/58/EEC.

16 OTHER INFORMATION

GENERAL INFORMATION

This data is based on our present knowledge. However, it shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

REVISION DATE 22/09/06

RISK PHRASES IN FULL

R38 Irritating to skin.

R41 Risk of serious damage to eyes.



FRANCIS DRILLING FLUIDS, LTD.

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Trade Name(s): Drispac Polymer (Regular, XT and Superlo)

Generic Name(s):

Chemical Name(s): Proprietary (Chemical family Cellulosic Polymer)

Francis Drilling Fluids, LTD.
P.O. Box 1694
Crowley, LA 70527-1694

Emergency/Telephone No.: 800-960-6610
337-783-8685
Hazardous Materials No.: 800-255-3924
Poison Control Center No.: 800-256-9822

II. HAZARDOUS INGREDIENTS

Ingredient	CAS No.	%	Hazard
This product does not meet the definition of a hazardous chemical given in 29 CFR Part 1910-1200 (OSHA). Information on this form is furnished as a customer service.			

III. NFPA/HMIS HAZARD IDENTIFICATION SYSTEM

0=LEAST 1=SLIGHT 2=MODERATE 3=HIGH 4 =EXTREME

Health: 0

Fire: 1

Reactivity: 0

IV. PHYSICAL DATA

Boiling Point (°F): NA	Specific Gravity (H ₂ O=1): 1.6
Vapor Pressure (mm. Hg): NA	Melting Point: ND
Vapor Density (Air = 1): NA	Evaporation Rate: NA
Solubility in Water: Complete	pH: (1%)
Density (at 20° C): ND	Odor: Odorless
Appearance: Light colored powder	Freezing Point: NA

V. FIRE AND EXPLOSION DATA

Flash Point: ND	Flammable Limits: LEL: ND UEL: ND
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Special Fire Fighting Procedures: Evacuate area of all unnecessary personnel. Use NIOSH/MSHA approved self-contained breathing apparatus (SCBA) and other protective equipment, if conditions warrant. Water fog or spray may be used to cool

DRISPAC POLYMER (REGULAR, XT AND SUPERLO)

exposed containers and equipment.

Unusual Fire and Explosion Hazards: Carbon oxides and various hydrocarbons formed when burned. If in a finely divided and suspended state, treat as a flammable dust.

Extinguishing Media: Dry chemical, foam or carbon dioxide, water spray or fog.

VI. REACTIVITY

Stability: Stable

Hazardous Polymerization: Will Not Occur

Incompatibility: ND

Hazardous Decomposition: ND

VII. HEALTH HAZARD INFORMATION

Routes of Exposure and Effects:

Skin: May produce slight irritation with prolonged contact with moistened product.

Eyes: Dust may produce mechanical irritation.

Inhalation: Non-irritating to mucous membranes, however, breathing high concentrations of the dust may cause mechanical irritation of the nose, throat, and upper respiratory tract.

Ingestion: Passes through relatively inert. May cause some gastrointestinal upset.

Permissible Exposure Limits: (for air contaminants)

OSHA PEL (8hr. TWA): Respirable - 5 mg/m³; Total dust - 15 mg/m³

ACGIH TLV: Respirable - ND; Total dust - 10 mg/m³

Carcinogenicity:

Listed By NTP: ND

Listed By: IARC: ND

Listed By OSHA: ND

Acute Oral LD50: >25 g/Kg (rats)

Acute Dermal LD50:

Aquatic Toxicology LC50:

Emergency and First Aid Procedures:

Skin: Wash skin with soap and water. If irritation or adverse symptoms develop, seek medical attention.

Eyes: Flush eyes with running water. If irritation or adverse symptoms develop, seek medical attention.

Ingestion: If illness or adverse symptoms develop, seek medical attention.

Inhalation: Remove from exposure. If illness or adverse symptoms develop, seek medical attention.

Additional Health Hazard Information: Subchronic and Chronic Effects of Overexposure - No adverse effects have been noted in chronic feeding studies using laboratory animals and humans. Sarcomas were exhibited at injection sites of animals receiving repeated massive subcutaneous injections of aqueous solutions of the material. The effects may have been the result of trauma.

Long term exposure to high dust concentrations may cause non-debilitating lung changes.

VIII. HANDLING AND USE PRECAUTIONS

Steps to be Taken if Material is Released or Spilled: Evacuate area if all unnecessary personnel. Contain spill. Sweep up spill and place in disposal container. If wet, material becomes very slippery. Wear protective equipment and or garments if

exposure conditions warrant. Keep out of water sources and sewers.

Waste Disposal Methods: (Insure Conformity with all Applicable Disposal Regulations): Manage in a permitted waste management facility. Prior to disposal, consult your environmental contact to determine if TCLP (Toxicity characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference 40 CFR Part 261.

Handling and Storage Precautions: Avoid contact with eyes, skin or clothing. Avoid breathing vapors, mist, fume or dust. Wear equipment and/or garments if exposure conditions warrant. Launder contaminated clothing before reuse. Wash thoroughly after handling Use with adequate ventilation.

Store in a well-ventilated area. Store in closed containers.

IX. INDUSTRIAL HYGIENE CONTROL MEASURES

Ventilation Requirements: Use adequate ventilation to control concentration below recommended exposure limits.

Respirator: Not generally required unless needed to prevent respiratory irritation. For concentrations exceeding the recommended exposure limit, use NIOSH/MSHA approved air purifying respirator.

Eye Protection: Use safety glasses with side shields

Gloves: Cotton gloves.

Other Protective Clothing or Equipment: Avoid unnecessary skin contamination with material. Personal protection information shown above is based on general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

X. SPECIAL PRECAUTIONS

Contact immediate supervisor for specific instruction before work is initiated. Wear protective equipment and/or garments if exposure conditions warrant.

XI. ENVIRONMENTAL/SAFETY REGULATION

SARA 313

As of the preparation date, this product did not contain a chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Environmental Toxicity

The 96-hour LC50 for Drispac Regular Polymer for freshwater trout was >32,000 ppm; for saltwater stickleback it was >56,000 ppm. The 96-hour LC50 for Drispac Superlo Polymer for freshwater trout was >21,000 ppm; for saltwater stickleback it was >56,000 ppm.

Environmental effects testing has been conducted using Drispac Polymer (both Regular and Superlo) in generic mud. The tests were conducted following the Environmental Protection Agency's (EPA), Region II drilling mud bioassay procedures.

The results of these tests classify Drispac Regular Polymer and Drispac Superlo Polymer as non-toxic drilling mud additives.

DEPARTMENT OF TRANSPORTATION

Shipping Name: NA

Hazard Class: NA

Hazardous Substance: NA

Cautionary Labeling: NA

NA=Not Applicable; ND=Not Determined or No Data

Date Prepared: June 14, 1995

File Name: drispac

DRISPAC POLYMER (REGULAR, XT AND SUPERLO)

The data presented is true and correct to the best of our knowledge and belief; however, neither seller nor preparer make any warranties, express or implied, concerning the information presented. The user is cautioned to perform his own hazard evaluation and to rely upon his own determinations.

PRO-CHEM, INC.

1475 BLUEGRASS LAKES PKWY.
ALPHARETTA, GA 30004
EMERGENCY/INFO # (800) 241-8180
ADDITIONAL EMERGENCY # INFO TRAC 1-800-535-5053

MATERIAL SAFETY DATA SHEET**QUICK SEAL / 3350****APRIL 2006****PAGE 1**

HEALTH	1
FIRE	0
REACTIVITY	0
P.P.E.	B

Complies With USDL Safety and Health Regulations, (29 CFR 1910.200)

SECTION 1 – Chemical and Company Identification

CHEMICAL FAMILY: Clay

SECTION 2 – Composition on Ingredients

CHEMICAL NAME	CAS #	OSHA PEL	ACGIH TLV	WT %
Bentonite Clay	1302-78-9	5 mg/m ³ respirable dust	5 mg/m ³ respirable dust	100
Crystalline Quartz	14808-60-7	0.1 mg/m ³	0.1 mg/m ³	<2

Contains no chemicals subject to the reporting requirements of SARA Title III Section 313.

SECTION 3 – Hazards Information

ROUTES OF EXPOSURE: Inhalation

HEALTH HAZARDS (ACUTE): Inhalation of dust may cause irritation of the nose, throat, and respiratory passages.

HEALTH HAZARDS (CHRONIC): Inhalation of dust may cause delayed respiratory disease over a prolonged period of time. Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling and sometimes fatal disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Respiratory diseases including asthma and bronchitis. Eye irritation.

IARC has determined that crystalline silica inhaled in the form quartz from occupational sources in carcinogenic to humans. NTP classifies respirable crystalline silica as reasonably anticipated to be a carcinogen.

SECTION 4 – First Aid Measures

EMERGENCY AND FIRST AID PROCEDURES:

- IF INHALED:** Remove person to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, administer artificial respiration. Seek prompt medical attention.
- SKIN CONTACT:** No first aid is required since this product does not affect the skin. Wash with soap and water to remove accumulated material from skin.
- EYE CONTACT:** Flush eyes immediately with large amounts of water while holding eyelids open. If irritation persists or material is imbedded, seek immediate medical attention.
- IF INGESTED:** DO NOT INDUCE VOMITING. If large quantities are swallowed, get immediate medical attention.

SECTION 5 – Fire Fighting Measures

FLASH POINT: N.A. FLAMMABILITY LIMITS: N.A.

AUTOIGNITION TEMPERATURE: N.A.

EXTINGUISHING MEDIA: N.A., Does not burn

SPECIAL FIREFIGHTING INSTRUCTIONS: Inorganic mineral/Non-flammable

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

SECTION 6 – Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS SPILLED OR RELEASED: Vacuum if possible to avoid generating airborne dust. Avoid breathing dust. Wear an approved respirator. Avoid adding water as material becomes slippery when wet.

SECTION 7 – Handling and Storage

PRECAUTIONS FOR STORAGE AND HANDLING: Do not breathe dust. Avoid creation of respirable dust. Use good housekeeping procedures to prevent accumulation of dust in work areas. Use with adequate ventilation and dust collection. Launder clothing that has become contaminated before it is reused.

SECTION 8 – Exposure Controls/Personal Protection

RESPIRATORY PROTECTION: FOR OUTDOOR USE ONLY. Use appropriate respiratory protection for particulates based upon airborne workplace concentration and duration from intended use. Refer to the most recent standards of ANSI (Z88.2), OSHA (29 CFR 1910.134), MSHA (30 CFR Parts 56 and 57), and NIOSH Respirator Decision Logic.

VENTILATION: FOR OUTDOOR USE ONLY. Use local exhaust as required to maintain exposure below occupational exposure limits.

EYE PROTECTION: Wear safety glasses or goggles

PROTECTIVE GLOVES: Recommended

PROTECTIVE CLOTHING: As appropriate for the work environment.

SECTION 9 – Physical and Chemical Properties

BOILING POINT (°F):	N.A.	MELTING POINT:	N.A.
SPECIFIC GRAVITY:	2.5	EVAPORATION RATE (BUAC=1):	N.A.
VAPOR PRESSURE:	N.A.	VAPOR DENSITY:	N.A.
% VOLATILE BY VOL:	0	SOLUBILITY, WATER:	Insoluble
pH:	N.A.	APPEARANCE/ODOR:	Pale gray to buff powder or granules, no odor

SECTION 10 – Stability and Reactivity

STABILITY: Stable

CONDITIONS TO AVOID: None known.

INCOMPATIBILITY: None known.

HAZARDOUS DECOMPOSITION BYPRODUCTS: None known.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 – Toxicological Information

No Data Available

SECTION 12 – Ecological Information

No Data Available

SECTION 13 – Disposal Consideration

WASTE DISPOSAL: Dispose of material in accordance with applicable Federal, State and local regulations for disposal of solid waste.

SECTION 14 – Transport Information

DOT PROPER SHIPPING NAME: Not regulated

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HEALTH	1
FIRE	0
REACTIVITY	0
P.P.E.	B

Complies With USDL Safety and Health Regulations, (29 CFR 1910.200)

SECTION 15 – Regulatory Information**ABBREVIATIONS:** NA = Not Applicable ND = Not Determined NE = Not Established**NFPA:** HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0**VOC CONTENT:** N.A.**CALIFORNIA PROPOSITION 65:** WARNING: This product contains a chemical known to the State of California to cause cancer.**SECTION 16 – Other Information**

The information contained herein is believed to be accurate and complete to the best of Pro Chem, Inc.'s knowledge at the time of issuance. Pro Chem, Inc. does not warranty the accuracy of this data and shall not be liable for any loss or damage from the use thereof.

PART E – EXPLORATION ON LANDS UNSUITABLE FOR MINING

1.0 AREAS UNSUITABLE FOR MINING

No lands within the exploration area are designated, or under study for designation, as unsuitable for mining.