Geological, Rock and Soil Geochemical Survey
and Regional Reconnaissance Prospecting
White Bull Mineral Claims
Laird Mining Division
Turnagain River Area, B.C.
NTS Map Sheet 94 L/13
Latitude: 58°54'N, Longitude: 127°55'W

February 2, 1996 **by Paul Kallock**

24,414

Geological Mapping, Rock Geochemical Survey and Regional Reconnaissance Prospecting White Bull 1 and 2 Mineral Claims Liard Mining Division Turnagain River Area, B.C. NTS Map Sheet 94L/13 Latitude 58° 54' N, Longitude 127° 55' W

Prepared for Atna Resources Ltd.

Paul Kallock
Consulting Geologist

February 2, 1996

WHITE BULL PROPERTY
Statement of Expenditures
July 10, 1995 - February 23, 1996

PROFESSIONAL FEES AND WAGES :			
Peter R. DeLancey, P. Eng.			
3 days @$300.00/day		$ 900.00	
Paul Kallock, F.G.A.C.			
38.5 days @$350.00/day		13,475.00	
John Richmond, Geologist			
1 day @$100.00/day		100.00	
William Kahlert, Field Assistant			
26 days @$156/day		4,056.00	$ 18,531.00
EXPENSES (expenses prorated) :			
Assays		2,686.31	
Camp			
Groceries	896.76		
Supplies	530.84	1,427.60	
Courier		98.90	
Drafting & Maps		2,603.74	
Equipment Rental			
Chain Saw	16.00		
2 days @$8.00/day			
Field Equipment	875.00		
25 days @$35.00/day			
Generator	350.00		
35 days @$10.00/day			
Radio Telephone	140.00		
14 days @$10.00/day			
VHF Radios (3 units)			
35 days @$3.50/u-day	367.50		
VLF Instrument			
4 months @$520/month	2,080.00	3,828.50	
Helicopters			
Charter			
8.1 hrs @$700.00/hour	5,670.00		
Fuel & Oil	1,109.88		
YIG	1,647.50	8,427.38	
Miscellaneous		333.53	
Travel			
Airfares	2,749.86		
Boards & Rooms	1,107.72		
Fuel	170.70		
Meals	286.72		
Transportation	79.55	4,394.55	
Vehicle Rental, Suburban 4WD			
35 days @$60.00/day		2,100.00	25,900.51
TOTAL EXPENSES			$ 44,431.51

Summary

The White Bull Project area is located in the Cassiar Mtns. near the junction of the Turnagain and Major Hart Rivers in north-central B.C. The property consists of 24 units covering 600 hectares which are owned by Atna Resources Ltd.

Fieldwork completed in 1995 included detailed geological mapping, a rock geochemical survey of the central part of the claims, and a prospecting reconnaissance program. Rock, soil and stream sediment sampling surveys were undertaken in a 14 km long belt extending southeast of the property.

The claims are underlain by variably deformed Middle Cambrian to Middle Silurian sediments, tuffaceous volcanics, carbonates and schists of the Road River or Kechika Groups. A siliceous, high potassium intrusive sill occurs above acid leached zones (vegetable kill zones) in the center of the claims. A sedimentary exhalite horizon exemplified by barite/chert and residual elevated lead geochemical values (up to 0.9% Pb), is exposed within the western acid leached zone. The horizon is 0.5 m wide and 50 m long and appears to be located stratigraphically above a zone of sericitic phyllite, pyroclastic sericitic tuff breccia and interbedded siliceous argillite. Semi-massive to massive pyrite occurs within this volcanic (?) sequence. However, strong surficial oxidation and leaching of sulfides has occurred across much of the property. As a result, extensive zones of silicate boxwork structures and sulphate crusts have developed. Massive sulfide potential exists at depth below these oxidized zones which are exposed discontinuously along a strike length of 1800 m, varying in width from 100-300 m.

Another area of similar silicate boxwork development is located at the southern margin of the western acid leached zone near the underlying dolomite contact. Here, initial rock sampling has detected values up to 960 ppb (parts per billion) gold, 4.1 ppm silver and 652 ppm lead. Silicate boxwork structures are discontinuously exposed along 100 m of length and locally 10 m in width.

A regional reconnaissance prospecting program has been successful in delineating a 3.5 km long belt of argillites and altered volcanic rocks lithologically similar to the White Bull Prospect. Several massive pyrite occurrences up to 2.8 m in width were found within the belt. They locally contain up to 0.2% copper (2132 ppm), 0.7 oz.silver/ton (23.7 ppm), 0.5% lead (4706 ppm), and 23.7 ppm mercury. The belt is located on the east side of the Turnagain River, 9 km southeast of the White Bull claims. Elevated copper values and the presence of massive pyrite in sericite schist may, in part, be related to volcanic centres and suggest the possibility of volcanogenic-type massive sulfides.

Claims should be staked to cover the 3.5 km belt of altered volcanic and sedimentary rocks in which massive sulfides have been found. A program of detailed geological mapping and rock geochemical sampling should be undertaken.

At the White Bull claims a diamond drilling program should test the barite/chert exhalite horizon and eastward extensions of silicate boxwork structures which may overlie sulfides. Detailed geological mapping and rock geochemical survey are needed to further define drill targets near the dolomite contact, where base and precious metal values were encountered in 1995.

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INTRODUCTION

This report includes description of the geological mapping and rock geochemistry of the White Bull Claims including detailed investigation of vegetable kill zones (acid leached zones). Reconnaissance geological mapping, stream sediment, soil and rock geochemical surveys were also carried out in a 14 km long belt of geolocially similar rocks to the southeast where additional acid leached zones associated with massive sulfides were discovered.

Property, Location, Access

The White Bull Mineral Claim Group, 100% owned by Atna Resources Ltd., consists of 24 units totalling 600 hectares, listed as follows:

Claim Name	*Units*	*Record Date*	*Tag Number*
White Bull 1	12	June 19, 1995	213940
White Bull 2	12	June 19, 1995	213941

The White Bull claims are located 130 km northeast of Dease Lake, B.C. and 145 km southeast of Watson Lake, Yukon Territory. The property lies on the west side of the Turnagain River Valley near its confluence with of Sheep Creek. Elevation ranges from 690 m at the valley floor to 1440 m at the north central part of the claim group. Coordinates at the property include Lat. 58° 54' N, Long. 127° 55' W. The claims are situated in the Liard Mining Division, on Map Sheet 94 L/13.

Access to the property is best accomplished by helicopter from Watson Lake, Yukon or Dease Lake, B.C. The claims can also be accessed by small launch via the Turnagain, Kechika and Liard River system from the Alcan Highway, 90 km to the northeast. Foot and pack trails are present in the valley and the eastern part of the claims.

HISTORY

The White Bull property was originally staked as the Wendy claims by Amoco Canada Petroleum Co. Ltd. in 1977 as a shale-hosted lead-zinc target. Fieldwork included soil geochemical sampling, soil profile sampling, prospecting and a limited two grid line RAD-EM survey. Generally low and erratic Cu, Pb and Zn results and a strong EM response were found over the acid leached zones. Amoco failed to define the source of sulphur in sulphate minerals, iron in ferricrete and spotty Cu, Pb and Zn values. The property was allowed to lapse in the fall of 1981.

WHITE BULL PROJECT LOCATION

Km 0 100 200 300 400 Km

Miles 0 50 100 200 300 Miles

ATNA RESOURCES LTD.

WHITE BULL PROJECT

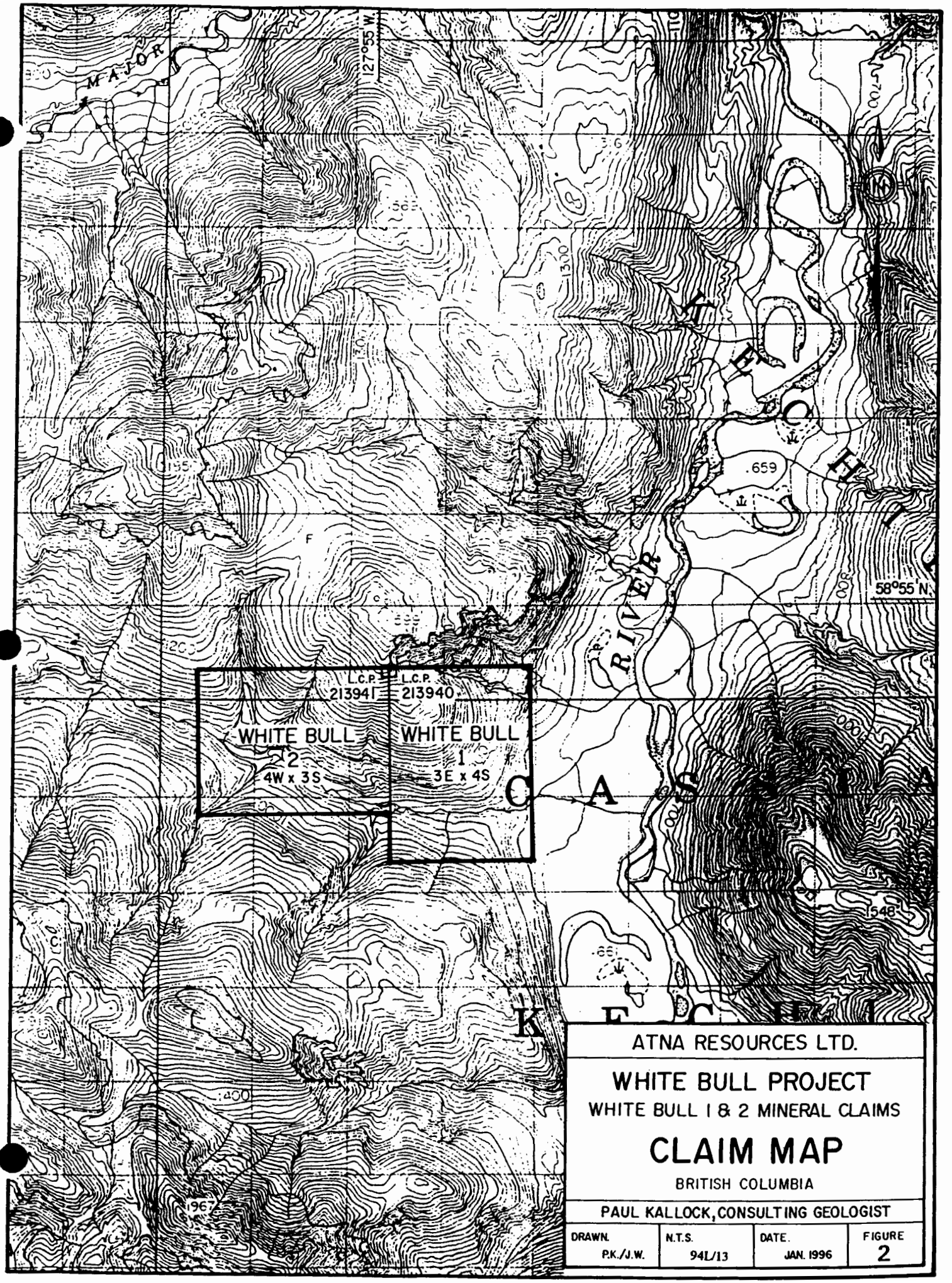
WHITE BULL 1 & 2 MINERAL CLAIMS

LOCATION MAP

BRITISH COLUMBIA

PAUL KALLOCK, CONSULTING GEOLOGIST

DRAWN.	N.T.S.	DATE.	FIGURE.
P.K. /J.W.	94L/13	JAN. 1996	1



ATNA RESOURCES LTD.

WHITE BULL PROJECT

WHITE BULL 1 & 2 MINERAL CLAIMS

CLAIM MAP

BRITISH COLUMBIA

PAUL KALLOCK, CONSULTING GEOLOGIST

DRAWN.	N.T.S.	DATE.	FIGURE
P.K./J.W.	94L/13	JAN. 1996	2

Esso Resources Ltd. staked the area in 1982 and carried out soil, water and rock geochemical surveys and HLEM and magnetometer geophysical surveys. Strong electromagnetic responses and spotty lead in soil values were found associated with Fe-sulfate crust or acid leached zones. Streams draining the area were found to be strongly acid (ph:2.5) and anomalous in fluorine, iron, silver and barium. Semi-massive pyrite was found in sericitized tuffs and pyroclastics interbedded with black locally carbonaceous shales. A diamond drilling program was recommended but never initiated.

Homestake Mining (Canada) Limited acquired the property and carried out geological mapping, soil and rock sampling in 1989. A 1800 m long x 75 m wide lead anomaly partially coincident with sulfate crust acid leached zones was delineated. Massive pyrite lenses and bands sub-parallel to foliation planes are locally exposed in gullies which transect the acid leached zone. Mineralization at the property was thought to be syngenetic and related predominantly to sulphate/sulphide deposition in a sedimentary exhalative environment. The presence of a massive sulphide horizon at depth below the acid leached zone was suggested.

Homestake allowed the claims to lapse. In June 1995, 24 units were staked by Atna Resources Ltd. to cover the White Bull prospect. A regional exploration program was proposed to evaluate the favourable belt if taking the White Bull property. A program of geological mapping and rock geochemical sampling was subsequently carried out and is the subject of this report.

REGIONAL GEOLOGY

Kechika, Road River and Earn Group rocks of Ordovician to Devonian age comprise a structurally complex belt of rocks referred to as the Kechika Trough. These rocks form a southerly extension of the Selwyn Basin which is comprised of Paleozoic sediments deposited off the western margin of ancestral North America. Within the Gataga District of the Kechika Trough, significant Ba-Zn-Pb mineralization is hosted in a Middle-Upper Devonian aged sequence of graphitic shales - the Gunsteel Formation- overlying Silurian-age calcareous siltstones. The White Bull Project is centered alng the northwest extension of this belt, DeLancey (1995).

The area lies west of the Tintina Fault and east of the Kechika Fault. Gabrielse (1962) mapped rocks in the area as Road River and Kechika Group. The Kechika Group is comprised of highly folded Middle Cambrian to pre-lower Ordovician limestone, phyllite, argillite, sandstone and conglomerate locally intruded by mafic sills and dykes. Road River Group comprises Early Ordovician to Middle Silurian graptolitic and pyritic shale, slate, siltstone, argillceous limestone and calcareous shale. The two groups are interfingered and exhibit lateral facies variations. Road River rocks are generally overlain by Middle Silurian to Devonian dolomites and quarzites of the Sandpile Group which are unconformably overlain by Middle to Upper Devonian sediment and volcanic rocks. Esso geologists mapped an intensely quartz K-feldspar altered rhyo-dacite intrusion dated at Middle Cretaceous.

Rocks in the area are complexly folded and faulted reconstruction along fault displacements could bring the White Bull geology into close spatial and stratigraphic association with the favourable stratigraphy of the Gataga District to the southeast.

REGIONAL RECONNAISSANCE PROSPECTING

As part of the overall evaluation of the White Bull Project area, a reconnaissance-type prospecting and sampling program was carried out in a 18 km long belt extending southeast of the claim group. Forty-nine stream sediment samples, 13 soil and 35 rock samples were collected.

Geology is shown on Figure 3 and sample locations on Figure 4. Geochemical analyses and procedures and a description of rock samples is included in the Appendix.

Reconnaissance Geology

Most of the rocks exposed in the map area belong to the Road River or Kechika Groups which range in age from Mid-Cambrian to Mid-Silurian and are composed of black shale, argillite, argillaceous limestone, phyllite and greenstone. Distinction between the two groups was not attempted.

At higher elevations in the eastern part of the map area, 4.5 km east of the cabins (an outfitters camp in the central part of the map area, situated on the east bank of the Turnagain River, elevation 675 m) exposures of gray nodular dolomite are assumed to be part of the Silurian-age Sandpile Group which also may contain chert and gray platy limestone. West of the Turnagain River, in the vicinity of the White Bull claims, previous workers have designated carbonate rocks as part of the Sandpile Group in the eastern part of the map area was not recognized in the Sheep Creek area.

The youngest rocks in the map area may include the felsic intrusive body which outcrops in the central part of the White Bull claim. It exhibits strong quartz veinlets in a tan to rusty brown, hard, rhyolitic appearing resistant outcrop structurally above the acid leached zones. Thin sections studied by Esso, (Everett and Copper 1983) indicate strong K-feldspar alteration and sericitization of the felsic rock.

Rhyolitic felsic rocks, which could be sub-volcanic or intrusives occur, within a belt hosting massive sulfides shown as 3b in the southeast part of the geology map-area. The siliceous rocks are generally light tan and occasionally show quartz eyes or phenocrysts. They occur in close proximity to massive sulphides or within the acid leached and altered sericitic tuffs and interbedded black argillites similar to the White Bull Prospect.

The general structure trend in the map-area northwest-southeast. The rocks appear to be folded into a series of anticlines and synclines. At Sheep Creek the structure appears more complicated, as detailed mapping has shown intense folding and numerous cross faults.

Two faults were seen in the reconnaissance area; both are parallel to the regional structure. Five hundred metres north of the cabins a fault zone bearing 315°/75°SW is located at 800 m elevation. Adjacent cherty metasediments are strongly folded. A small acid leached zone with graphitic black shale and semi-massive pyrite is located 25 m from the fault.

Massive sericite +/- pyrite is present 4.5 km southeast of the cabins along the banks of an incised stream. Sporadically distributed along 1.0 km of the stream and its southeast tributary are very soft, intensely deformed zones of massive silvery-gray sericite locally containing massive pyrite. The soft, pliable nature of the sericite and its deformed character suggest strain from faulting. At one location, PK-134, sericite is present on the footwall of a 2.8 m, true width, massive sulfide exposure which trends 288°/40° SW. Fault movement may have occurred adjacent to the sulfide bed.

Mineralization and Rock Geochemistry

Three areas of significant mineralization were found in the reconnaissance map-area. Each is similar to the White Bull Prospect in that they exhibit to acid leached zones in tan to gray sericitic volcanics rocks and associated black shale or argillite.

Massive pyrite up to 0.25 m thick (PK-83) was discovered within soft, light silvery gray sericite schist at elevation 810 m in a creek bed 4.5 km southeast of the cabins. The sulfides are fine-grained, weakly laminated to medium-grained framboidal with minor quartz. The initial sericite discovery zone is 25 m long, less than 5 m wide and is overlain by black shale and black slaty argillite which is locally folded. Foliation in sericite schist also shows folding and deformation. Massive sulfides generally trend 310°/55° SW, parallel to the creek bed. Most of the schist is barren of pyrite although leaching may have stripped some sulfides.

Two rock samples were collected from sulfide-bearing acid leach zones near the creek at 150 m and 225 m east of the discovery zone. They displayed soft green and gray sulfate/clay and black punky boxwork silicate structures similar to the White Bull Prospect. Base metal values in these samples were low.

Approximately 100 m west of the discovery zone, a gray siliceous and sericitic schist contained 30% to 40% pyrite and 30% to 40% silicate boxwork structures. A grab sample of this material (PK-84) contained 0.5% lead (4706 ppm), 0.7 oz. silver/ton (23.7 ppm), 3.9 ppm mercury (3925 ppb) and 0.4% barium (3893 ppm).

Approximately 500 m southeast of the discovery zone, massive pyrite was found in outcrop in a small southeast tributary of the main creek. Samples PK-134 and PK-137 represent a 2.8 m true width channel across 90% massive stratiform pyrite. The pyrite is very fine grained and often shows framboidal or colloform texture and weak bedding laminations. Trend of the contact with sericitic footwall rocks is 288°/40° SW. Two other textures of pyrite include dense, concoidally fractured pyrite with pyrite hairline veinlets crosscutting earlier stage pyrite. Secondly, massive pyrite shows vague brecciation with a black pyrite matrix. Samples of massive sulfides contain slightly elevated values of silver to 7.2 ppm and 431 ppm nickel. Other base metal values were not significant at this location.

However, additional semi-massive sulfides were found 300 m southeast along the same structural trend. Pyrite occurs in massive, silvery gray sericite schist similar to the discovery area. Sample PK-127, from a 0.1 m thick pyrite lens, contained 0.2% copper (2132 ppm).

Continuing southeast along the structural trend of the sulfide belt, a large acid leached zone with olive green sulfate crust and tan phyllite interbedded with black argillite locally contains silicate boxwork structures. North of PK-22-39 a visual estimate of the width of the altered sequence, which appears to include at least one rhyolitic sill(?), indicates that it may exceed 200 m. Acid leached zones with boxwork silicate structures are present as far as PK-132 which lies at 150 m elevation. Total length of the altered belt including numerous acid leached zones and several massive and semi-massive sulfide occurrences may exceed 3.6 km.

Adjoining the White Bull claims to the southeast, south of Sheep Creek, a narrow belt of black shale and lesser leached olive-green to tan phyllite is exposed at low elevation near the Turnagain River valley floor. Although no elevated base metal values were detected, high barium values up to 4.5% Ba (46,000 ppm) were found. The geology is similar to the White Bull Prospect and to the previously mentioned massive sulfide belt to the southeast. A link between the three areas is suggested.

The only other significant mineralization which was found is located 450 m north of the cabins east of the Turnagain River. Samples PK-77, 78, and 79 contained up to 0.3% lead (2969 ppm) and 0.15 oz. silver/ton (5.2 ppm). The showing lies at 765 to 775 m elevation on the north side of a stream. A small vegetative kill zone, 25 m X 25 m, with acid leached sulfate crusts has been developed over black limestone or dolomite. Soft, granular pyrite sand can be gouged from veins (?) or pods beneath black sulfate crusts or yellow sulfur (?) crusts which cover part of the small zone.

Stream Sediment Geochemistry

During prospecting reconnaissance 49 stream sediment samples were collected from 20 individual drainages along the Turnagain River valley. Subjective analysis of the results in parts per million (ppm) are listed as follows:

Element	**Range: Low**	**High**	**Anomalous**	**# Anomalous**
Cu	11	100	>100	1
Pb	4	72	>70	1
Zn	4	431	>200	3
Ag	>.3	.5	>.5	0
Ni	20	783	>200	3
Co	5	284	>100	2
Ba (29 samples)	495	3300	>2000	4
Ba (29 samples)	<1 ppb	5 ppb	>5 ppb	0

Only one area displays significant multiple base metal anomalous values. Samples PK-ss-37,38, and 40 were collected from a stream in the southern part of the map area, east of the Turnagain River. All of the anomalous Cu, Zn, Ni, and Co samples come from this creek. Near the headwaters of the drainage acid leached zones with silicate boxwork structures were found, indicating massive sulfide potential.

A single anomalous lead sample, Pk-ss-03, containing 72 ppm Pb, was collected from a small black sulfate crust acid leached zone 1.5 km north of the cabins on the Turnagain River, (central part of the map area).

Three of the four samples with anomalous barite originate near Sheep Creek which drains the White Bull claims area. The fourth sample, with 2144 ppm Ba (PK-ss-36), is located near massive sulfides in the southeast part of the map area.

Soil Geochemistry

Soil samples were collected from two areas where streams did not contain sufficient detritus for sampling. Six samples were collected along 3.0 km of the base of the hills west of the Turnagain River extending southwest from the southeast corner of the White Bull Claim Group. These include samples WK-21 through WK-26.

Seven soil samples were collected at 50 m intervals along the ridge top in the southeast part of the map area in hopes of detecting the southeastern extension of the massive sulfide horizon.

All soil samples were collected from 25 to 50 cm below surface with the aid of a mattock. Soil was packed and transported in Kraft manila envelopes to Acme Analytical Labs of Vancouver, B.C. for 32 element ICP analysis plus additional gold and barium analyses.

Significant elevated soil values were not encountered in soils. Geochemical correlation with sulfide mineralization at White Bull claims or the southeast massive sulfide showings could not be made.

PROPERTY GEOLOGY

Stratigraphy

Sedimentary and volcanic rocks of the Middle Cambrian to Middle Silurian Road River and Kechika Groups underlie most of the White Bull claims. These rocks have been divided into 5 map units which are discussed without stratigraphic order due to structural complications. A sixth map unit is assigned to younger K-feldspar altered felsic intrusive rocks outcropping in the central part of the claims.

Stratigraphic Column

Period and Formation		Lithological Description
Mid-Cretaceous	1)	Siliceous, K-feldspar altered felsic intrusive
Mid-Cambrian to Mid-Silurian	2)	Tan to olive-green phyllite, sericite quartz schist, locally showing stretched angular fragments, lesser inter-bedded siliceous argillite, chert and barite
Road River or Kechika Groups	2b)	Tuffite; quartzose, pyritic, orange-weathering
	3)	Argillite, black slaty or silicified shale
	4)	Dolomite, gray siliceous, orange-weathering, strong quartz-carbonate veins, lesser limestone, chert
	5)	Black shale, argillite; black dolomite
	6)	Limestone; gray, dirty, strongly folded; lesser phyllite and quartz sericite altered felsic volcanics along Sheep Creek

Unit 6 is pale buff gray to light brown limestone with lesser phyllite. In outcrops along Sheep Creek, quartz sericite altered volcanics (?) are included in the unit. Their relationship with the limestone is obscured by faulting.

Unit 5 is composed of black shale, graphitic to calcareous argillite and black dolomite. Outcrops are found southeast of the main grid area and along Sheep Creek.

Unit 4 forms the steep, light brown to rusty brown cliffs in the central part of the claims. Lithology consists of tan dolomite, minor sandy dolomite and lesser limestone, chert or quartzite. The unit locally has abundant quartz and/or carbonate veins.

Unit 3 consists of black, slaty argillite and narrow beds of silicifed shale.

Unit 2 consists of tan to olive-green phyllite, sericite quartz schist and lesser siliceous argillite or shale, chert and barite. The schist and phyllite may be derived from altered tuffaceous volcanic rocks which form distinct yellowish to pale olive-green vegatative kill zones (acid leached zones) north of Sheep Creek. Pyroclastic tuff breccia is associated with quartz pyrite fluoride stringers and semi-massive pyrite in the central part of the acid leached zone near 1+75 W, 0+75 N.

Also within Unit 2 is a distinct orange-weathering, more resistant tuffite which contains quartz phenocrysts and local disseminated pyrite. The unit is up to 6 m wide and 75 m long. Smaller exposures of similar tuffite may be extensions, or folded repetition of the same bed or separate individual horizons.

Map Units 2 and 3 are complexly interlayered. Folding and cross-faulting of stratigraphy in addition to gravity slides and soil creep complicate apparent stratigraphic positions. At least five black argillite or shale beds from 1 to 50 m thick are separated by tan to pale green sericitic phyllite or schist interbeds. It is estimated that the black argillite or shale units are approximately equal in volume to the light-colored phyllites and schists in the area of the acid leach zones.

Unit 1 appears in hand specimen to be a rhyolite. It is very siliceous and forms resistant bluffs above and parallel to the acid leached zones. It is at least 1300 m long and 120 to 250 m wide. The unit occurs as a sill-like structure with breccia zones at its eastern and western points. Thin section work by Esso geologists (Everett, 1983) identified abundant K-feldspar, both primary and secondary. The secondary K-feldspar has a texture similar to flow origin trachytic rock. Sericite content varies from 10-70%, Si02 content is high due to strong quartz veining. Homestake geologists (Holbek, 1990) suggest a rhyodacitic composition partly based on the presence of quartz eyes. They also indicated that the rock is intrusive in nature. Potassium-argon dating gave a Middle Cretaceous age of 113+/-4 Ma to the hydrothermal event responsible for alteration.

Structure

The White Bull property is located at the north end of a northwest-trending anticlinal structure as indicated on Figure 3. In general the stratigraphy at the claims trends west to northwest with dips toward the north. North-south cross faults are present which may have minor displacement. A major trust fault was mapped by Esso geologists which separates the argillites and sericitic rocks of Units 2 and 3 from the dolomite of Unit 4. This fault was not confirmed during present mapping. Accessible outcrops at the contact zone are located between 0+20 E, 0+60 S and 0+80 W, 1+20 S. In this area argillite and tan phyllite appear to dip between 10 and 30 degree south which is parallel to the topographic slope. Erosional windows through the argillites and phyllites expose underlying dolomite. In most places the contact zone is obscured by ferricrete development where iron-bearing acid water draining the acid leached zones has encountered buffering carbonate strata.

Folding is clearly visible in all units except the K-feldspar altered intrusive. Northwest of the previously mentioned dip slope contact, argillite and tan phyllite show horizontal bedding and foliation attitudes. As stratigraphy is traced toward the north (up slope) attitudes change abruptly to moderate north dips. The pyritic tuffs and interbedded argillite and siliceous shale maintain moderate to steep northerly dipping attitude as far as 1+25 N (near the upper end of the acid leached zone). At this location attitude changes to a steep south dip.

Folding is also present on more detailed scale. At 1+50 W, 0+60 N narrow black argillite beds up to 0.25 m thick form broad gentle folds visible in the banks of steep incised drainages. In hand sample specimens, folding can be seen in quartz pyrite fluorite veins (?) at 1+75 W, 0+60 N.

Faults which cross-cut stratigraphy were mapped at 2+00 W, 0+40 N; 0+95 W, 1+10 S and 0+15 W, 0+30 S. Faults are inferred where stratigraphy has been displaced. These areas include the major north-south drainage which bisects the eastern acid leached zone near 6+00E, 0+75 S and the central acid leached zone near 1+50 E, 0+50 N and 1+40 E, 0+25 S.

Mineralization

Three general types or areas of mineralization are present at the White Bull Property which warrant further investigation; 1.) Sedex-type chert, barite and galena 2.) Gold in iron-rich pods near the dolomite contact 3.) Gold in pyrite within limestone and/or dolomite.

Near 1+95 W, 1+05 N a poorly exposed chert/barite bed which appears to trend east-west with a near vertical dip. It is approximately 0.5 m wide and 50 m long. Individual samples of barite are white and finely granular with geochemical values up to 57% Ba (567,563 ppm) and 72 ppm Pb (PK-4). Brown chert which occurs within the barite horizon contains higher lead, up to 632 ppm (PK-3) with elevated barium to 19% (189,742 ppm). The barite horizon lies between black argillite to the north and orange-brown-weathering tuffite to the south. Hand dug pits and trenches in talus at the west end of the horizon (Samples PK-115, 116, and 117) contained up to 697 ppm lead, 2.3 ppm silver and greater than 10% Ba. Channel sampling at the east end of the horizon in a north-south gully revealed several narrow barite horizons up to 0.1 m wide which are hosted in a gray to black argillite and light gray phyllite which contain minor orange limonite. Sample PK-34, a 2.0 m channel sample, contained 0.9% lead (8845 ppm) and 6.3 ppm silver. Channel samples in four gullies from 10 m to 90 m east of the barite horizon (Samples PK-90 through 98 and PK-111 through 114) contained lead values up to 167 ppm and up to 2.3% Ba (23,311 ppm). Many of these samples contained black and white silicate boxwork structures which indicate the presence of leached sulfides at depth.

At 0+20E, 0+65 S, 260 m southeast of the barite/chert bed, is another small outcrop of barite and quartz which lies within black argillite near the dolomite contact. Samples of the barite, (PK-40 and PK-99) did not contain other elevated metal values, however, quartz (PK-39) from the same locality showed visible disseminated galena and contained 0.15% PB (1488 ppm) and 2.3 ppm silver.

Zones or horizons within the stratigraphy which have concentrations of silicate boxwork structures have been delineated and are shown on the geology map of the grid area (Figure 6). Many rock samples have been collected from these horizons.

In the western part of the grid area the largest acid leached zone reveals several areas of silicate boxwork structures. At 1+20 W, 0+60 N, (Sample PK-01) near the presumed location of a former test pit, abundant boxwork float is scattered on a sulfate crust and rubble surface. This zone can be followed 50 m to the west, where massive and semi-massive pyrite is exposed in an incised gully. Esso geologists examined this exposure and found up to 70% pyrite with lesser sericite and quartz as matrix within a pyroclastic sericite tuff breccia. In 1995 channel sampling was undertaken in this gully. Samples PK-20 to PK-30 are continuous across 67 m of tan to gray sericite, quartz, pyrite +/- fluorite schist or phyllite, lesser tuff breccia and minor interbedded siliceous argillite. The tuff breccia displays angular to stretched fragments up to 10 cm in length. A notable increase in pyrite content, (up to 8.0 m of 25-30% pyrite in PK-29), lead (up to 191 ppm), mercury (up to 2840 ppb) and barium up to 0.8% (8,113 ppm) is noted as sampling progressed northward toward the barite/chert horizon. Sample PK-30 contained numerous boxwork structures but no visible sulfides. The argillite hosted barite/chert horizon is 12 m north of sample PK-30.

In the acid leached zones, widely-spaced zones of silicate boxwork structures have visual and geochemical similarities. For example, Samples PK-1 and PK-6 contain up to 78% SiO2 and 334 ppm lead and show fine textured black and white punky silicate boxwork structures. Sample PK-6 was collected at 1+20 E, 0+90 N from an intense boxwork zone measuring at least 12 m wide and exposed for 200 m of strike length. More resistant argillite on the south wall (footwall ?) of the zone trends 280° /50° N. On the hanging wall, orange iron oxide, siderite and gypsum are soft and weakly foliated parallel to the black silicate boxwork zone. Channel samples PK-12 through PK-15 oriented across this zone contained up to 151 ppm lead, 1.6% barium (15,966 ppm) and 3.8 ppm mercury (3800ppb). This same boxwork zone was traced in float and outcrop 420 m farther east to PK-11 in the eastern acid leached zone. Here, the silicate boxwork structure zone is poorly exposed in an east-west gully but is probably 1 to 5 m wide and bounded on the south by black argillite and on the north by tan to iron-stained phyllite and gossan.

The eastern acid leached zone is lithologically similar to the western part of the grid area except for a central gossanous zone with strong limonite. The phyllitic or tuffaceous(?) rock which hosts the strong iron stain contains traces to several percent disseminated pyrite in the more deeply incised and less oxidized gullies. Samples of the pyritic tuff, PK-9, 16, 17, and 18 and gossan, PK-10, did not contain significant base or precious metal values. North of the gossanous zone several silicate boxwork structure zones were sampled. PK-100, returned 228 ppm lead, the highest metal value.

Silicate boxwork structures were seen in another acid leached zone 500 m west of the barite/chert horizon. Figure 5, a 1:5,000 geology map of the claims, shows its position and the position of the lead soil geochemistry anomaly delineated by Esso and Homestake exploration in 1982 and 1989. Rock samples PK- 52, 53, and 120 returned up to 178 ppm lead, 1.2 ppm silver, 2.5 ppm mercury and .44% barium (4460 ppm) from silicate boxwork and up to 375 ppm lead from galena-bearing quartz float.

The second area of significant mineralization at the White Bull Prospect occurs near the tan phyllite and argillite contact with underlying dolomite. At 1+20 W, 0+80 S, dark, heavy, moderately porous, iron-rich carbonate (?) pods up to 0.3 m in diameter contain up to 960 ppb (parts per billion) gold, 4.1 ppm silver and 652 ppm lead (Sample PK-106). Ten metres to the east, grab sample PK-107 contained 760 ppb gold and 317 ppm lead from an area of black and olive-green silicate boxwork and sulfate crust. Similar leached material is approximately 10 m wide. Another grab sample of sulfate crust and ferricrete in black argillite (PK-119), located 30 m to the southwest, is also near the dolomite contact. It contained 720 ppb gold. In the opposite direction, 90 m east of PK-106, 2.2 m true thickness of finely structured black silicate boxwork was sampled as PK-37. The boxwork occurs in black argillite at the dolomite contact and contained 267 ppm lead , 5.9 ppm silver and 41 ppb gold.

The third type of mineralization is restricted to pods or irregular veins of pyrite in gray-brown limestone or black dolomite in the southern part of the grid area and along Sheep Creek. Samples PK- 42, 44, and 50 were collected from pyrite-bearing carbonate rock which contained up to 949 ppm lead and 124 ppb gold. Similar irregular pyrite patches and pods are abundant in dolomite talus boulders below the cliffs at the southern part of the grid area at approximately 2+00 E, 1+75 S.

DISCUSSION

At least one sedimentary exhalite horizon exemplified by barite/chert and associated high lead and mercury values is present in the acid leached zone in the western part of the grid. Surficial acid leaching and oxidation has removed most of the shallow gullies draining the leached sulfides from most of the oxidized rock exposure at the White Bull claims. Only the most incised gullies expose sulfides exposed fresh rock, however one gully in the west part of the grid exposes up to 25 meters of semi-massive pyrite. It is felt that this exposure provides sufficient evidence to demonstrate that the adjacent and overlying silicate boxwork structures are indeed formed from sulfide leaching from a semi-massive to massive sulphide zone beneath the leached crop. Furthermore, rock geochemistry demonstrates an increase in base metal values, lead in particular, as the barite/chert horizon is approached from below (presumably from lower in the stratigraphy). In view of the high acid leach environment it is not surprising that other base metals, such as zinc and copper, are not anomalous in the leached crop rocks. The "residual" presence of lead in these leached rocks gives credibility to the presence of significant base metal sulphides beneath these leached zones.

Eastward extension of the barite/chert horizon was not clearly defined. A small outcrop of barite present at 0+20 W, 0+65S near the dolomite contact does not appear to represent an easterly extension. However, another possible marker horizon which may be correlative with the barite/chert horizon is the intense silicate boxwork formation at 1+20 E, 0+90 N. It is at least 12 m wide. It can be followed in outcrop and float and by distinct topographic expression to the east acid leached zone.

Anomalous gold values up to 960 ppb are present in rock samples of silicate boxwork near the dolomite contact. It is not known if this mineralization represents another siliceous exhalite horizon or if it is directly related to the underlying dolomite or the contact zone. This contact was mapped as a thrust fault by Esso geologists, but this was not confirmed by the present mapping.

The statigraphy underlying the White Bull acid leached zones shows several features recognized by MacIntyre (1991), as potential ore controls for Sedex deposits these include:

a) spatial association with continental margin basins.

b)second order basin environments recognized in part by rapid lateral facies changes

c) syn-depositional tectonic and volcanic activity.

d) syn-depositional hydrothermal activity producing volcanic rocks and exhalative deposits

CONCLUSIONS

The White Bull Prospect is underlain by Paleozoic Road River or Kechika Group sedimentary rocks and interbedded moderate to intensely hydrothermally altered tuffs and pyroclastics.

Sedimentary-exhalative mineralization is exemplified by at least one barite/chert horizon. Within the 0.5 m wide and 50 m long horizon, anomalous lead values up to 0.9 % (8845 ppm) have been found. Hosts for the barite/chert mineralization include silicified black argillite on the hangingwall. Stratigraphically below the horizon, silicate boxwork structures are present in black argillite and semi-massive sulfides occur within sericitic phyllite and as matrix in pyroclastic sericitic tuff breccia. Silicate boxwork structures are believed to result from surficial oxidation and leaching of sulfides.

Geological mapping suggests that intense silicate boxwork development in the central part of the grid is a possible eastern extension of the barite/chert/sulphide exhalative zone. The 12 m wide zone can be traced in outcrop and float 400 m east into the eastern acid leached zone. Previous soil geochemical surveys have delineated anomalous lead values which are partially coincident with the barite/chert horizon and underlying zones of silicate boxwork development.

Anomalous gold values up to 960 ppb have been detected in similar argillite-hosted black silicate boxwork structures in the southern part of the acid leached zone near the contact with underlying dolomite.

A west to northwest anticlinal structure is apparent at the White Bull grid area. Numerous folds and cross-cutting faults complicate the stratigraphy.

Regional reconnaissance prospecting in a 14 km long area southeast of the claims has been successful in delineating a 3.5 km long belt of rocks similar to the White Bull Prospect. Furthermore, massive pyrite up to 2.8 m in width has been found within this zone. Rock geochemical samples have been collected from several massive pyrite occurrences within this belt which have analyzed up to 0.5% lead (4706 ppm), 0.7 oz. silver/ton (23.7 ppm), 0.2% copper (2132 ppm), and 23.7 ppm mercury. Strong silicate boxwork structures and acid leached zones within the belt are similar to those at the White Bull Prospect. In contrast, sericite within the belt appears to be more abundant and rhyolitic sills are also present. The elevated copper values plus the apparent increased volume of felsic volcanics indicates that volcanogenic-type massive sulfide deposits may be expected in this area.

RECOMMENDATIONS

Claims should be staked to cover the 3.5 km belt of acid leached zones, silicate boxwork development and massive sulfides which were discovered in the southeast part of the map area. Detailed geological mapping, hand trenching of massive sulfide showings within the belt and rock geochemical sampling should be undertaken. An electromagnetic test survey should be undertaken on the largest massive sulfide occurrence. Black argillite or graphitic shale may complicate interpretation of the survey but the exposed sulfide horizon may produce a distinct response. Diamond drilling of the zone will eventually be needed.

A reconnaissance prospecting program should be initiated on the projected southeast trend of the massive sulfide belt toward and beyond Boreal Lake.

At the White Bull claims additional detailed mapping and rock geochemical sampling is warranted in the south part of the acid leached zone near the dolomite contact where anomalous gold values have been found.

Diamond drilling is warranted at the barite/chert horizon and adjacent zones of silicate boxwork development, especially where high lead values are present. High priority is also given to testing of the 12 m wide silicate boxwork bed in the central part of the grid area.

Statement of Expenditures
July 10, 1995 - February 23, 1996

PROFESSIONAL FEES AND WAGES :			
Peter R. DeLancey, P. Eng.		$ 900.00	$
Paul Kallock, F.G.A.C.		14,012.81	
John Richmond, Geologist		100.00	
William Kahlert, Field Assistant		4,602.40	
Kris Carruthers, Field Assistant		156.00	19,771.21
EXPENSES (expenses prorated) :			
Assays		2,686.31	
Camp			
Groceries	896.76		
Supplies	530.84	1,427.60	
Courier		98.90	
Drafting & Maps		2,603.74	
Equipment Rental			
Chain Saw	16.00		
2 days @$8.00/day			
Field Equipment	875.00		
25 days @$35.00/day			
Generator	350.00		
35 days @$10.00/day			
Radio Telephone	140.00		
14 days @$10.00/day			
VHF Radios (3 units)			
35 days @$3.50/u-day	367.50		
VLF Instrument			
4 months @$520/month	2,080.00	3,828.50	
Helicopters		8,427.38	
Miscellaneous		333.53	
Office Services		330.00	
Travel			
Airfares	2,749.86		
Boards & Rooms	1,107.72		
Fuel	170.70		
Meals	286.72		
Transportation	79.55	4,394.55	
Vehicle Rental, Suburban 4WD			
35 days @$60.00/day		2,100.00	26,230.51
TOTAL EXPENSES			$ 46,001.72

GEOLOGIST'S CERTIFICATE

I, Paul Kallock, do state that I am a Consulting Geologist, and reside at 29031 Pioneer Hwy. Stanwood, Washington, USA.

I further state that:

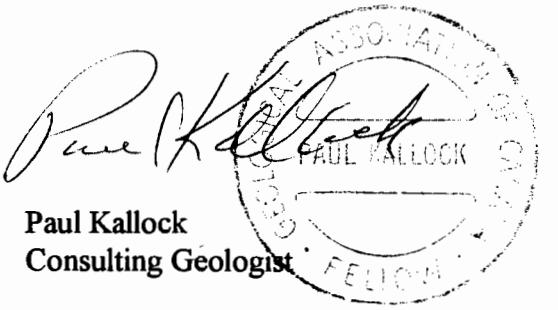
1. I have a Bachelor of Science degree in Geology from Washington State University. I am a Fellow of the Geological Association of Canada and a member of the American Institute of Mining Engineers.

2. I have been engaged in mineral exploration since 1970, both for major mining and exploration companies and as an independent geologist.

3. I have authored the report entitled "Geological Mapping, Rock Geochemical Survey and Regional Reconnaissance Prospecting", White Bull 1 and 2 Mineral Claims Liard Mining Division, Turnagain River Area, B.C. The report is based on my fieldwork carried out on the property and on previously accumulated geologic data.

4. I have no direct or indirect interest in any manner in either the property or securities of Atna Resources Ltd. or its affiliates, nor do I anticipate to receive any such interest.

5. I consent to use this report in a prospectus or in a statement of material facts related to the raising of funds.



Vancouver, B.C.
February 2, 1996

Paul Kallock
Consulting Geologist

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DeLancey, P.R. (1995): Summary Report on the White Bull Project, an in-house report for Atna Resources Ltd.

Everett, C.C. and Copper, W.G. (1983): Progress Report for the 1982 - White Bull Project, an in-house report for Esso Minerals Canada Ltd.

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APPENDIX A

Rock Sample Descriptions

White Bull Project Turnagain River Area, B.C.

PDWB 95-1 Located at 1400 m elev. on claim line; siliceous metavolcanic, tuff(?); quartz in foliation planes, as clasts and veinlets; trace diss. chalcopy; grab of float cobbles.

PDWB 95-2 Located at 1060 m elev. on claim line; grab of very fine grained, gray rhyodacite with <5% pyrite.

PDWB 95-3 Barite/chert horizon; 10 cm chip sample of barite and chert bed containing 5% very fine grained diss. py and < 0.5% sphalerite and/or galena; trends 280 /85 N

PKWB 95-1 1+20W, 0+60 N; Near sinkhole (Amoco pit?); grab sample of rubble near outcrop of black boxwork structure representing +60% sulfides, minor white quartz boxwork structures.

PKWB 95-2 1+70 W, 0+70 N; 0.1 m chip of fine grained framboidal massive pyrite;

PKWB 95-3 1+75 W, 1+05 N; Grab sample of gray-brown chert with 3-5% pyrite and traces sphalerite(?); occurs adjacent to massive barite bed.

PKWB 95-4 1+75 W, 1+03 N; Chip sample from 10 cm wide exposure of white massive, non-crystalline barite with minor black barite(?) inclusions.

PKWB 95-5 1+20 E, 1+00 N; Grab sample of orange iron stained, granular tuff(?) with white to tan siderite(?) or gypsum(?); forms hangingwall of silicate boxwork zone.

PKWB 95-6 1+20 E, 0+80 S; One large piece, 15 cm X 15 cm of black, punky boxwork structure (leached cap).

PKWB 95-7 1+20 W, 0+80 S; Chips of a 0.3 m diameter sulfide(?) pod which is heavy but mostly leached; occurs in argillite adjacent to dolomite contact.

PKWB 95-9 6+00 E, 0+50 S; 0.5 m chip sample of weakly oxidized quartz-sericite-pyrite schist with 5-10% py; near base of iron oxide zone.

PKWB 95-10 5+60 E, 0+05 S; Grab from bottom of 1.0 m deep trench in dark brown limonite gossan; gossan is 2 m wide located in the center of olive-green oxide zone..

PKWB 95-11 5+30 E, 0+30 S; Grab of dark gray punky 100% fine grained boxwork (from sulfides of exhalative horizon ?) which is light gray (very inconspicuous) on outside; similar to boxwork zones in west part of grid.

PKWB 95-12 through PKWB 95-15 are continuous chip samples across black and lesser white boxwork structure zone at 1+ 20 E, 0+80 N; total length: 15 m , true width is approximately 12 m.

PKWB 95-16 5+60 E, 0+30 S; 0.1 m chip sample of orange iron oxide with quartz and gypsum(?) with 5% pyrite hosted in tan phyllite

PKWB 95-17 5+60 E, 0+45 S; Grab sample of quartz-sericite schist with 5 to 10% pyrite, strong iron oxide, siderite or gypsum.

PKWB 95-18 6+00 E, 0+60 S; 0.3 m chip sample of tan to olive-green phyllitic quartz-sericite schist with 20% pyrite, includes 5 cm of 50% framboidal pyrite.

PKWB 95-19 6+30 E, 2+50 S; Chip sample of pyritic tan phyllitic quartz-sericite schist containing 5-10% pyrite; Elev. 885 m

PKWB 95-20 through PKWB 95-30 are continuous channel samples in creek bed across pyrite zone starting at lower (south) side and continuing north;

PKWB 95-20 2+00 W, 0+40 N; 5 m slope length; gray to tan quartz-sericite phyllite cut by abundant quartz veins associated with fault zone; moderate limonite.

PKWB 95-21 5 m slope length; tan quartz-sericite-mariposite phyllite with limonite stringers and 5-10% pyrite.

PKWB 95-22 5 m slope length; similar to #21 except 25% pyrite as veinlets, discontinuous lenses and veins parallel and subparallel to foliation; locally up to 10 cm of massive py.

PKWB 95-23 5 m slope length; partially oxidized; 5% pyrite in tan phyllite.

PKWB 95-24 5 m slope length; averages 10-15% py. with locally up to 20 cm of 50% py. in tan phyllite.

PKWB 95-25 10 m slope length; tan quartz-sericite phyllite with 5-10% py; upper half may equal 20% py.

PKWB 95-26 10 m slope length; tan phyllite with numerous lighter tan stretched fragments up to 10 cm wide and 0.3 m long; 10-15% py., traces of purple fluorite.

PKWB 95-27 10 m slope length; tan phyllite with several zones to 15 cm of 50% py; average 20% py.; contains several interbeds of black argillite to 1 m in width.

PKWB 95-28 6 m slope length; tan phyllite with less than 5% py.; at least two argillite interbeds to 20 cm.

PKWB 95-29 8 m slope length; abrupt py increase from #28; sample may average 25-30% sulfides in tan to gray phyllite.

PKWB 95-30 8 m slope length; soft, tan to gray phyllite; minor white precipitate; sample has been oxidized and most sulfides have been leached; upper contact at black siliceous argillite; upper 2 m of sample have black boxwork silicate structures.

PKWB 95-31 2+20 W, 0+25 N; Grab sample of pyritic tan phyllite adjacent to north-south vertical fault zone; 20% py., trace chalcopyrite(?); west side of fault is brecciated black argillite and quartz.

PKWB 95-32 1+65 W, 0+90 N; 1.0 m chip sample includes .5 m of tan phyllite with weak black boxwork and .5 m of black siliceous argillite

PKWB 95-33 1+65 W, 0+97 N; 2.0 m chip sample includes 10 cm of white massive barite within gray and black argillite.

PKWB 95-34 1+65 W, 1+00 N; 2.0 m chip sample continuing north from #33; includes 2 cm of barite and gray fragmental chert with impure barite hosted in light gray phyllite exhibiting weak orange limonite.

PKWB 95-35 0+35 W, 0+65 N; chip sample across 7.1 m slope distance; massive, black fine to medium boxwork structure; minor quartz boxwork; tan phyllite host; estimated 60-70% former sulfide content.

PKWB 95-36 1+55 W, 0+25 N; 3 m chip of light tan phyllite with 1 m argillite interbed; 25-30% boxwork structures; 5% pink to purple secondary clay(?) filling fractures.

PKWB 95-37 0+35 W, 1+00 S; 8 m slope distance representing 2.2 m true thickness of 100% fine, black silicate boxwork structures; lower contact with dolomite; slaty argillite trends 285 /15 S.

PKWB 95-38 0+15 W, 0+85 S; Grab sample of float and outcrop of boxwork structures in argillite.

PKWB 95-39 0+20 E, 0+65 S; Select of white quartz near dolomite contact; traces galena

PKWB 95-40 Near # 39; float boulder of layered very fine grained, heavy crystalline non-carbonate, barite(?), with 15% very fine grained pyrite.

PKWB 95-41 Grab sample from outcrop in creek, one km west of grid area; elev. 1175 m; gray limestone with quartz-carbonate+barite(?) veins, not bedded.

PKWB 95-42 Chip sample of pyrite vein in south bank of lower Sheep Creek; massive py. to 10 cm with calcite hosted in dark gray limestone; adjacent to 1 m wide limonite and yellow oxide trending305 / 60 SW.

PKWB 95-43 South bank of Sheep Creek, 25 m west of # 42; gray to tan quartz-sericite schist with 15-20% pyrite; chip sample of 0.2 m near limestone contact.

PKWB 95-44 North bank of Sheep Creek, 75 m west of #43; grab sample of irregular pods of weathered pyrite at contact of gray fissile phyllite with black limestone.

PKWB 95-45 Grab sample east of grid area; quartz-calcite-siderite veins hosted in light gray phyllite; has soft, green translucent mineral.

PKWB 95-46 7+60 E, 0+15 N; grab sample of orange-yellow ferricrete, reddish soil.

PKWB 95-47 6+65 E, 0+60 S; 2 m horizontal chip sample of outcrop and rubble(?) of black and white boxwork structures; hosted in argillite toward south and coarse granular tuff(?) on north.

PKWB 95-48 6+50 E, 1+25 S; Grab of black argillite, moderately oxidized, part ferricrete, no visible boxwork.

PKWB 95-49 6+30 E, 1+40 S; Grab sample of gray limestone with strong quartz-carbonate veins at contact with argillite in creek bed.

PKWB 95-50 5+00 S, 8+55 E ; North bank of Sheep Creek; Grab of 10 cm massive pyrite pod; pod is part of irregular vein-fracture zone in black dolomite.

PKWB 95-51 One km west of grid, elev. 950 m; Grab of siliceous dolomite of quartzite with minor quartz and calcite veins.

PKWB 95-52 0.5 km west of grid in 50 m X 50 m acid leached zone; Grab sample of black and white boxwork structures.

PKWB 95-53 Near # 52; quartz float with traces of cubic galena.

PKWB 95-54 1+50 E, 1+50 S; Grab sample of pyritic light gray limestone float boulders; pyrite occurs as irregular veins and pods to 2 cm; quartz-carbonate veins appears younger.

PKWB 95-55 5+90 E, 0+45 S; Grab sample of black siliceous argillite and chert or fine grained quartzite with traces pyrite; 10-15% boxwork.

PKWB 95-56 5+85 E, 0+65 N; Grab sample of gray to olive-green phyllite with moderate boxwork structures.

PKWB 95-57 5+60 E, 0+15 N; Grab sample from central part of east kill zone; small resistant ridge of quartz-carbonate hosted in gray tuffaceous sediment; traces pyrite.

PKWB 95-58 6+30 E, 2+00 S; Located in creek bed below east acid leached zone; brown coarsely crystalline iron carbonate; occur as crystal growth in fractures in black argillite.

PKWB 95-75 through PKWB 95- 88 collected from reconnaissance prospecting.

PKWB 95-75 Grab sample of 5-10 cm gossanous bed at least 3 m long; 5% pyrite hosted in tan calcareous shale.

PKWB 95-76 1 m chip sample of gossanous bed, trace pyrite, strong limonite and hematite; minor boxwork structures after sulfides; gray phyllite and black shale in hanging wall; brown phyllite below; beds trend 300 /50 N.

PKWB 95-77 Grab sample of 10 cm thick gossanous hematite in 3-5 m wide limestone/dolomite bed.

PKWB 95-78 10 m east of #77; elev. 775 m; 0.2 m vertical channel sample of pyrite sand from small kill zone in black dolomitic limestone.

PKWB 95-79 10 m east of #78; same gossanous zone of soft black sulfate and gypsum with 25% pyrite; pyrite sand appears as irregular veins(?) and pods in broken gossanous limestone; local yellow sulfur precipitate; black limestone is overlain by brown grit or limy sandstone.

PKWB 95-80 Grab sample of float boulders of orange quartz-carbonate plus iron carbonate altered greenstone(?) with 5% pyrite as irregular veins and pods.

PKWB 95-81 Elev. 1000 m; Composite sample of 25 m wide light tan to orange micaceous phyllite and chert(?) beds; no visible sulfides.

PKWB 95-82 Elev 750 m; 0.1 m chip across central part of 2 m wide argillic and iron carbonate altered greenstone; includes 3 cm py. vein.

PKWB 95-83 Elev. 810 m; 0.25 m chip across 60-75% pyrite bed within pure sericite schist; sulfides are fine grained, laminated to framboidal.

PKWB 95-83b Float cobble from top of sericite schist; overlain by weakly cemented gravel; cobble is 60% py. with framboidal texture.

WKWB 95-6 and 7 are massive pyrite samples from same area.

PKWB 95-84 75-100 m west of #83; black pyritic sand in gray sericite schist; 50% pyrite evidently disintegrating from a pyrite bed.

PKWB 95-85 Elev. 1125 m; Greenstone and argillic altered greenstone with 5-10% pyrite as irregular discontinuous veins.

PKWB 95-86 West side of Turnagain River; Elev. 770 m; 0.1 m chip of sulfate crust plus limonite and traces malachite in gray dolomite at black shale contact.

PKWB 95-87 Elev. 770 m ; 25 m north of # 86; 0.4 m chip of black shale and cherty dolomite with chert(?) pebbles; local sulfate crust; traces diss. py.

PKWB 95-88 10 m north of # 87; grab of pods of 20% pyrite in tan gritty carbonate which also contain 5% py.

Samples 90 to126 are locate at or near the White Bull Claims

PKWB 95-90 1+54 W, 0+90 N; 1.9 m channel; tan phyllite with diss. mariposite(?) and white clay.

PKWB 95-91 Cont. from #90; 2.9 m of black siliceous argillite; one 10 cm zone on north side may have traces of barite.

PKWB 95-92 Cont. from #91; 4.5 m of tan phyllite; weak limonite on some foliation planes.

PKWB 95-93 1+37 W, 0+86 N; 3.5 m channel of black siliceous shale.

PKWB 95-94 Cont. from # 93; 4.0 m channel of tan phyllite with white clay and green mariposite.

PKWB 95-95 Cont. from # 94; 5.0 m channel of tan phyllite.

PKWB 95-96 1+20 W, 0+85 N; 5.0 m channel, including 1 m black siliceous argillite and 4 m tan phyllite with abundant silicate boxwork structures.

PKWB 95-97 Cont. from #96; 5.0 m channel including two siliceous argillite beds less than 0.5 m thick in tan phyllite; weak boxwork.

PKWB 95-98 Cont. from #97; 5.0 m of tan phyllite with weak boxwork, one black argillite bed less than 0.5m.

PKWB 95-99 0+20 E, 0+65 S; Grab sample of outcrop of dolomitic and/or baritic microbreccia with 5% diss. py.; probably discontinuous pod near shale/dolomite contact

PKWB 95-1006+15 E, 0+75 S; 1.0 m chip of black graphitic shale, minor limonite and one 5 cm quartz vein.

PKWB 95-1016+25 E, 0+75 S; 1.2 m chip of black graphitic shale with moderate quartz veins(othogonal to foliation) plus moderate bedding oriented quartz boxwork structures after sulfides, 10-15%.

PKWB 95-1026+17 E, 0+73 S; 1.0 m chip of black argillite with 20% boxwork structures, bedding=305 /60 NE.

PKWB 95-1036+20 E, 0+60 S; 2.5 m chip across tan quartz-sericite schist with three 5 cm wide boxwork horizons; bounded by black shale above and below.

PKWB 95-1041+75 S, 2+00E; Chips of float cobble with 50% py in gray dolomite.

PKWB 95-1051+75S, 1+75 E; Collection of 12 float pebbles similar to # 104.

PKWB 95-106Re-sample of PKWB 95-7; greenish sulfide(?) boxwork or secondary accretion at shale/dolomite contact.

PKWB 95-10710 m east of # 106; grab sample of black boxwork and olive-green clay/sulfate crust.

PKWB 95-108South tributary of Sheep Creek; Float boulder with 5% py. in siliceous dolomite with quartz and calcite.

PKWB 95-109Major creek south of Sheep Creek; elev. 800 m; outcrop of gray rhyolite or chert with intense silicification; 10-20% py. along irregular veins and diss.; abundant quartz; zone is 10-15 m wide.

PKWB 95-110Elev. 730 m; 2.0 m chip across phyllite with abundant boxwork plus yellow-green sulfate crust similar to White Bull Prospect.

PKWB 95-1110+87 W, 0+65 N; 5.0 m channel sample of black siliceous argillite.

PKWB 95-112Cont. from #111; 5.0 m channel sample of tan to gray to olive-green phyllite with very strong boxwork structure after sulfides; mariposite common.

PKWB 95-113Cont. from #112; 4.0 m channel of black siliceous argillite.

PKWB 95-114Cont. from # 113; 5.0 m channel of tan phyllite with moderate boxwork, strong diss. mariposite.

PKWB 95-1151+00 N, 2+15 W; 0.5 m chip sample of layered rubble/talus including massive barite, chert, gray phyllite and black sulfate.

PKWB 95-1161+04 N, 2+10 W; Grab sample of rubble/talus similar to #115 except chert has 5-10% py.

PKWB 95-1171+05 N, 2+00 W; 2.5 m chip sample of barite, chert and quartz hosted in black siliceous argillite.

PKWB 95-1180+70 S, 1+90 W; 2.0 m chip of 40% white silicate boxwork in black siliceous argillite.

PKWB 95-1191+15 S, 1+50 W; Grab sample of olive-green sulfate of ferricrete cemented black argillite; has surficial orange crust with dark green matrix.

PKWB 95-1200.5 km west of grid; elev. 850 m; black siliceous argillite with mod. black boxwork.

PKWB 95-1213+00S, 5+90 E; 1.0 m vertical chip in pit; black argillite with mod. boxwork underlain by soft iron oxide and clay.

PKWB 95-1226+95 E, 2+70 S; Grab sample of outcrop of chert and/or fine grained quartzite, trace limonite.

PKWB 95-1233+45 S, 8+60 E; Grab of gray dolomite and dolomite breccia with strong silicification, calcite and sericite(?) in matrix.

PKWB 95-1243+08 S, 8+52 E; Chips of outcrop of black dolomite with numerous quartz veinlets.

PKWB 95-1252+95 S, 8+15 E; Grab of outcrop of black dolomite with strong quartz +/- calcite.

PKWB 95-1263+05 S, 8+00 E; Grab of outcrop of dolomite and dolomite-calcite-sericite breccia.

#127 through #137 were collected from the southeast part of the recon area.

PKWB 95-127Elev. 970 m; 0.1 m chip of 60% pyrite with quartz and sericite hosted in soft pliable pure sericite.

PKWB 95-128Elev. 970 m; 6 m from #127; 60% pyrite with quartz and sericite in soft sericite; foliation in pit 280 / 75 N., however entire stream valley shows abundant gravity slides.

PKWB 95-129Elev. 1350-1375 m; East side of ridge; boxwork structures hosted in sericite schist adjacent to black argillite trending 300 / 60 SW.

PKWB 95-1305 m from #129; similar parallel boxwork structure.

PKWB 95- 131 Elev. 1490 m; Grab of rhyodacite or meta-rhyolite; white with abundant quartz, lesser sericite, weak iron oxide; background value expected.

PKWB 95-132Elev. 1550 m; Grab of black boxwork structures from argillite horizon which strikes 305 .

PKWB 95-133Elev. 1420 m.; Grab of brown pinnacle shaped outcrop of meta-tuffite(?) similar to orange bands in acid leached zone at White Bull Prospect; 2-3% to locally 30% pyrite.

PKWB 95-134Elev. 880 m; 2.0 m chip sample (true width) of 90% massive fine grained pyrite, 10% quartz; pyrite shows framboidal structures and blackening (pyrite?) in matrix of pseudo-breccia.

PKWB 95-135At same location as #134; Select sample of massive pyrite with 5-10% blackened pyrite.

PKWB 95-136From trench at #134; float boulders of 95% massive, very fine grained, hard, cherty (concoidal fractured) pyrite.

PKWB 95-137From extension of trench at #134; 0.8 m true width on hangingwall side; similar 90% pyrite.

APPENDIX B

Certificates of Geochemical Analyses and Procedures

Rock Samples

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Atna Resources Ltd. PROJECT WHITE BULL File # 95-1978

900 - 409 Granville St., Vancouver BC V6C 1T2 Submitted by: Peter DeLancey

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb	Hg ppb
PD-WB-95-1	2	60	6	84	<.3	268	31	1197	5.90	12	<5	<2	7	317	3.2	<2	2	56	8.30	.089	13	303	6.48	45	<.01	<3	2.73	.01	.06	<2	1	40
PD-WB-95-2	4	3	9	2	<.3	4	1	33	.79	4	<5	<2	15	24	.8	<2	2	1	.11	.011	88	6	.03	83	<.01	5	.26	.01	.27	2	1	5
PD-WB-95-3	2	136	212	302	2.4	103	17	526	6.47	70	<5	<2	6	2677	3.2	30	3	8	13.33	.075	7	12	.50	10	<.01	<3	.29	<.01	.02	<2	<1	10350
PK-WB-95-1	1	<1	334	3	<.3	4	1	19	.84	<2	<5	<2	<2	1165	.3	<2	<2	10	1.09	.002	8	7	.02	27	<.01	5	.53	.06	.27	<2	1	6095
PK-WB-95-2	4	21	64	23	<.3	45	11	111	16.33	2	<5	<2	<2	320	<.2	<2	4	4	.38	.023	<1	8	.02	3	<.01	<3	.24	.02	.11	<2	2	965
PK-WB-95-3	8	26	632	172	1.2	29	3	38	1.63	30	<5	<2	3	1174	1.3	8	<2	90	.19	.026	15	13	.03	97	.01	<3	1.77	<.01	.02	<2	<1	1000
RE PK-WB-95-3	8	26	632	175	1.2	28	3	40	1.70	33	<5	<2	3	1190	1.0	7	<2	91	.19	.027	16	14	.03	97	.01	<3	1.81	<.01	.02	<2	<1	995
RRE PK-WB-95-3	8	23	730	123	1.3	26	3	29	1.68	31	<5	<2	2	1000	1.0	8	<2	82	.15	.026	14	10	<.01	83	.01	3	1.57	<.01	.02	<2	<1	875
PK-WB-95-4	<1	1	72	4	<.3	1	<1	<2	.11	<2	<5	<2	<2	2980	<.2	<2	<2	1	.02	.003	2	1	<.01	231	<.01	<3	.02	<.01	.01	<2	1	170
PK-WB-95-5	2	73	11	24	<.3	369	50	1723	6.47	2	<5	<2	9	487	2.5	<2	3	19	11.99	.064	38	37	6.03	12	<.01	3	1.44	.04	.12	<2	<1	115
PK-WB-95-6	3	11	201	4	.6	23	4	50	.90	4	<5	<2	3	2280	<.2	6	<2	5	.17	.006	13	18	.11	38	.01	5	.29	.03	.05	<2	1	5100
PK-WB-95-7	75	7	599	22	3.5	2	1	52	25.63	40	<5	<2	24	1605	<.2	12	10	81	1.26	.339	9	7	.03	17	.01	<3	.12	.13	4.84	<2	910	2410
STANDARD C/AU-R	21	67	38	131	6.8	73	33	1017	4.06	38	18	7	37	52	19.1	18	22	58	.47	.093	43	57	.95	183	.08	29	1.93	.06	.16	11	480	1830

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED. HG ANALYSIS BY FLAMELESS AA.
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUN 26 1995 **DATE REPORT MAILED:** July 19/95 **SIGNED BY**.....D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

WHOLE ROCK ICP ANALYSIS

Atna Resources Ltd. PROJECT WHITE BULL File # 95-1978

900 - 409 Granville St., Vancouver BC V6C 1T2 Submitted by: Peter DeLancey

SAMPLE#	SiO2 %	Al2O3 %	Fe2O3 %	MgO %	CaO %	Na2O %	K2O %	TiO2 %	P2O5 %	MnO %	Cr2O3 %	Ba ppm	Ni ppm	Sr ppm	Zr ppm	Y ppm	Nb ppm	Sc ppm	LOI %	SUM %
PD-WB-95-1	44.20	7.75	8.88	7.66	11.87	.12	.59	1.75	.33	.21	.082	168	186	368	104	18	34	15	16.9	100.46
PD-WB-95-2	60.54	19.18	1.03	.31	.12	.23	12.69	.51	.04	<.01	.002	17406	<10	56	755	82	246	<10	1.9	99.66
PD-WB-95-3	13.79	2.73	11.77	.65	24.97	.01	.08	.25	.32	.07	.018	172853	155	15024	10	<10	<10	<10	14.8	100.63
PK-WB-95-1	62.17	16.99	1.17	.21	1.45	1.04	3.32	6.48	<.01	<.01	.018	4795	29	3660	285	17	121	17	6.3	100.46
PK-WB-95-2	24.66	7.38	39.22	.09	.44	.27	1.45	2.22	.06	<.01	.013	2338	100	965	131	<10	44	<10	23.2	99.55
PK-WB-95-3	58.91	3.60	2.11	.05	.23	<.01	.05	.07	.09	<.01	.011	189742	38	3520	38	<10	13	<10	2.6	100.40
RE PK-WB-95-3	59.77	3.58	2.05	.05	.21	<.01	.05	.07	.09	<.01	.012	184903	48	3525	36	<10	16	<10	2.7	100.44
RRE PK-WB-95-3	58.00	3.44	2.19	<.01	.17	<.01	.05	.08	.12	<.01	.007	195799	58	3864	43	<10	11	<10	2.6	100.41
PK-WB-95-4	1.40	<.03	.48	.01	<.01	.05	<.04	<.01	<.01	<.01	.010	567563	<10	6231	<10	<10	<10	<10	.9	100.09
PK-WB-95-5	26.27	5.86	10.74	7.92	19.52	.28	.47	.55	.27	.33	.018	4083	265	800	87	20	<10	<10	21.6	94.67
PK-WB-95-6	77.97	2.08	1.09	.16	.19	.22	.12	7.61	.03	<.01	.047	21927	46	4730	665	37	149	<10	6.5	100.43
PK-WB-95-7	7.15	2.90	37.91	.11	2.02	.19	8.03	.65	1.49	<.01	.016	4485	15	2703	45	<10	23	<10	37.8	99.36
STANDARD SO-15	49.29	12.82	7.34	7.11	5.86	2.35	1.96	1.68	3.00	1.35	1.077	2215	88	392	774	20	11	10	5.9	100.28

.200 GRAM SAMPLES ARE FUSED WITH 1.2 GRAM OF LIBO2 AND ARE DISSOLVED IN 100 MLS 5% HNO3. Ba IS SUM AS BaSO4 AND OTHER METALS ARE SUM AS OXIDES.
- SAMPLE TYPE: ROCK Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUN 26 1995 **DATE REPORT MAILED:** July 19/95 **SIGNED BY.** C. Leong .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Atna Resources Ltd. PROJECT WHITE BULL File # 95-3232 Page 1

900 - 409 Granville St., Vancouver BC V6C 1T2

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Tl ppm	Hg ppb	Ba* ppm
PK-WB-95-75	1	42	58	32	<.3	65	41	1367	16.11	6	21	<2	14	247	<.2	<2	<2	7	9.12	.026	5	6	1.76	16	<.01	<3	.09	.02	.09	<2	<1	105	109
PK-WB-95-76	<1	134	63	45	.8	290	40	1067	13.29	23	13	<2	13	117	.5	9	<2	14	10.16	.076	4	9	.54	20	<.01	<3	.16	.03	.08	<2	<1	60	260
PK-WB-95-77	1	54	111	32	.4	46	15	926	37.73	87	12	<2	15	47	<.2	<2	6	15	3.98	.019	<1	6	.34	15	<.01	<3	.15	.01	.01	<2	<1	145	272
PK-WB-95-78	1	7	617	8	1.7	8	4	166	7.99	<2	10	<2	2	39	.3	<2	<2	1	4.91	.003	1	<1	.20	2	<.01	3	.03	<.01	.03	<2	<1	230	109
PK-WB-95-79	2	9	2969	5	5.2	18	3	96	1.46	<2	<5	<2	<2	31	.2	2	<2	1	4.65	.007	<1	1	.07	1	<.01	<3	.02	.01	.02	2	<1	825	155
PK-WB-95-80	<1	183	113	30	.6	289	60	1214	19.75	27	20	<2	17	125	<.2	<2	2	10	5.54	.009	3	10	1.67	10	<.01	<3	.06	.01	.06	<2	<1	195	87
PK-WB-95-81	1	4	124	15	.4	20	5	657	1.57	<2	<5	<2	11	148	<.2	<2	<2	3	11.22	.008	6	6	3.57	63	<.01	<3	.22	.01	.14	2	<1	55	906
PK-WB-95-82	<1	115	42	29	.3	121	62	552	19.37	5	10	<2	6	86	.3	<2	<2	14	4.43	.052	1	5	1.85	8	<.01	<3	.06	.02	.04	<2	<1	185	168
PK-WB-95-83	2	110	175	16	1.5	187	38	22	16.91	16	<5	<2	5	34	.8	<2	<2	3	.25	.076	1	10	.06	2	<.01	<3	.12	.02	.01	<2	<1	1035	657
PK-WB-95-83B	2	109	464	16	2.9	208	29	73	16.97	15	6	<2	3	62	.5	<2	<2	3	.80	.010	<1	9	.26	2	<.01	<3	.08	.01	.02	<2	<1	2115	750
RE PK-WB-95-83B	2	111	436	16	2.9	211	30	73	17.24	14	7	<2	3	61	1.0	3	<2	3	.77	.010	1	10	.25	2	<.01	3	.07	.01	.02	<2	<1	2100	753
RRE PK-WB-95-83B	2	109	438	16	2.8	206	29	69	16.92	12	6	<2	4	60	.5	<2	<2	3	.75	.010	1	10	.25	2	<.01	<3	.07	.01	.01	<2	<1	2040	740
PK-WB-95-84	3	125	4706	23	23.7	253	29	27	17.31	7	<5	<2	3	97	.7	<2	<2	5	1.28	.006	4	11	.16	2	<.01	<3	.17	.02	.07	<2	<1	3925	3893
PK-WB-95-85	<1	55	58	17	<.3	70	63	1885	6.34	4	7	<2	8	299	<.2	<2	2	27	16.92	.056	17	2	2.89	12	<.01	<3	.39	.01	.06	<2	<1	160	322
PK-WB-95-86	6	56	65	223	.4	71	11	83	4.61	36	<5	<2	3	208	.3	<2	<2	13	2.31	.142	12	51	.16	9	<.01	8	.33	.01	.32	<2	<1	270	17833
PK-WB-95-87	12	28	329	11	.4	24	4	191	2.97	21	<5	<2	<2	134	<.2	<2	<2	4	3.85	.026	12	5	.74	9	<.01	7	.22	.03	.36	<2	<1	95	14569
PK-WB-95-88	4	201	99	19	.6	124	34	456	8.52	43	7	<2	5	452	<.2	<2	<2	24	6.30	.071	5	16	2.08	8	<.01	4	.10	.01	.08	<2	<1	140	23079
WK-WB-95-03	1	6	6	6	<.3	11	3	119	1.28	3	<5	<2	2	28	<.2	<2	<2	3	1.60	.013	5	8	.68	72	<.01	3	.23	.01	.16	2	<1	30	1185
WK-WB-95-05	4	358	31	8	<.3	18	1	1031	.54	3	5	<2	2	592	<.2	<2	2	3	17.97	.002	7	6	.18	60	<.01	3	.05	.01	.03	<2	<1	15	619
WK-WB-95-06	2	81	79	10	1.0	204	22	40	12.95	5	<5	<2	2	60	.4	<2	<2	4	.39	.003	1	17	.12	2	<.01	<3	.13	.01	.04	2	<1	825	3194
WK-WB-95-07	2	111	89	13	1.0	309	70	19	13.15	14	5	<2	<2	39	<.2	<2	<2	18	.61	.041	<1	43	.20	3	<.01	<3	.47	.01	.04	<2	<1	1345	575
WK-WB-95-14	<1	12	51	16	<.3	15	1	157	12.45	2	7	<2	4	123	.2	<2	<2	1	5.06	.003	<1	4	3.68	2	<.01	<3	.03	.01	<.01	<2	<1	210	3452
RE WK-WB-95-14	<1	13	52	16	<.3	18	1	166	13.02	3	9	<2	6	125	.6	<2	<2	1	5.27	.004	1	6	3.79	2	<.01	<3	.03	.01	<.01	<2	<1	195	3625
RRE WK-WB-95-14	<1	12	52	16	<.3	16	1	156	12.07	4	7	<2	3	108	.6	<2	<2	1	4.52	.003	<1	4	3.63	4	<.01	<3	.03	.01	<.01	<2	<1	205	3621
WK-WB-95-15	3	93	5	14	<.3	231	33	1094	6.56	2	8	<2	9	205	<.2	<2	<2	19	13.76	.115	19	27	1.29	11	.01	9	.72	.01	.46	<2	<1	25	7289
WK-WB-95-16	21	59	26	19	<.3	1642	230	721	13.82	15	9	<2	7	112	.5	3	<2	8	6.67	.010	2	16	.36	6	<.01	<3	.06	<.01	.01	<2	<1	80	152
STANDARD C/SO-15	18	56	36	125	6.6	64	31	1106	3.88	43	17	7	35	52	17.8	17	20	60	.50	.092	43	58	.90	182	.08	27	1.84	.06	.15	10	1	2190	2225

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: P1 ROCK P2 STREAM SED. HG ANALYSIS BY FLAMELESS AA.
BA* .2 GM SAMPLE FUSED WITH 1.2 GM LIBO2, ANALYSIS BY ICP. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 30 1995 **DATE REPORT MAILED:** Sept 12/95 **SIGNED BY.** C. Leong .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Atna Resources Ltd. PROJECT WHITE BULL File # 95-3291 Page 1

900 - 409 Granville St., Vancouver BC V6C 1T2

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Tl ppm	Hg ppm	Au* ppb	Ba* ppm
PK-WB-95-90	3	6	97	3	.9	2	1	3	4.99	33	<5	<2	5	321	<.2	4	<2	28	.36	1.489	19	13	.01	57	.01	4	.54	.03	.54	<2	2	<1	4	23311
PK-WB-95-91	6	8	64	1	.9	10	1	25	1.28	4	<5	<2	2	199	<.2	<2	<2	21	.02	.093	18	18	.01	168	<.01	<3	.25	.02	.22	2	2	<1	2	7795
PK-WB-95-92	4	9	125	1	.3	4	1	6	3.90	23	<5	<2	5	270	<.2	2	2	26	.03	.880	14	7	.01	85	.01	5	.44	.03	.48	<2	2	<1	1	19187
PK-WB-95-93	7	14	103	11	1.1	10	1	34	2.15	18	<5	<2	7	452	<.2	3	<2	28	.03	.646	26	17	.01	219	.01	3	.27	.02	.15	2	3	7	1	3912
PK-WB-95-94	3	3	153	2	.4	2	1	6	1.30	9	<5	<2	3	673	<.2	2	2	22	.03	.176	41	8	.01	141	<.01	6	.39	.03	.27	<2	2	1	1	15736
PK-WB-95-95	3	6	78	1	<.3	6	2	7	1.65	6	<5	<2	4	119	<.2	<2	<2	18	.07	.401	13	8	.01	225	<.01	5	.40	.02	.24	<2	1	<1	<1	9231
PK-WB-95-96	6	4	129	1	.4	5	1	5	1.13	8	<5	<2	4	604	<.2	2	<2	27	.46	.151	29	11	.01	120	<.01	3	.35	.02	.21	<2	3	1	1	6519
PK-WB-95-97	3	3	135	1	<.3	4	1	6	.59	4	<5	<2	3	401	<.2	<2	<2	15	.39	.057	21	7	.01	199	<.01	3	.35	.02	.21	<2	1	1	<1	5784
PK-WB-95-98	4	3	156	1	<.3	1	1	5	1.05	7	<5	<2	3	215	<.2	<2	<2	16	.23	.227	12	15	.01	433	<.01	4	.36	.02	.25	<2	1	1	<1	3822
PK-WB-95-99	5	26	20	6	<.3	57	44	185	3.78	21	<5	<2	<2	75	.2	<2	<2	25	3.96	.418	11	280	1.06	11537	<.01	3	7.47	.01	.08	<2	4	<1	6	99999
PK-WB-95-100	7	24	228	49	.4	27	4	50	3.24	18	<5	<2	6	97	<.2	<2	<2	10	4.38	.075	3	17	.05	23	<.01	3	.34	.01	.15	<2	1	<1	1	4323
PK-WB-95-101	8	11	62	3	.8	13	1	35	1.59	3	<5	<2	<2	50	<.2	4	<2	25	1.31	.033	5	20	.03	49	<.01	<3	.17	.01	.17	2	2	1	2	1890
PK-WB-95-102	13	28	23	11	.8	12	2	49	4.28	5	<5	<2	2	13	<.2	7	2	21	.67	.045	5	23	.06	92	<.01	<3	.17	<.01	.06	<2	1	1	2	1945
PK-WB-95-103	6	16	53	6	.5	25	8	61	1.70	6	<5	<2	3	62	<.2	3	<2	29	1.41	.062	8	25	.34	36	<.01	5	.41	.01	.26	<2	<1	<1	<1	3834
RE PK-WB-95-103	7	16	55	6	.6	25	8	62	1.71	6	<5	<2	3	63	<.2	4	<2	29	1.43	.063	8	27	.34	34	<.01	6	.41	.01	.26	<2	<1	<1	1	3736
RRE PK-WB-95-103	6	17	52	7	.5	28	10	60	1.77	6	<5	<2	2	65	<.2	4	<2	31	1.53	.061	8	24	.35	35	<.01	4	.39	.01	.24	<2	2	1	2	3772
PK-WB-95-104	1	54	219	5	1.8	27	4	129	19.41	53	8	<2	<2	38	<.2	42	<2	2	3.40	.002	<1	11	.78	16	<.01	<3	.06	<.01	.01	<2	1	<1	76	46698
PK-WB-95-105	1	42	261	166	1.8	69	7	189	20.22	43	<5	<2	<2	72	1.0	21	<2	4	3.10	.006	<1	11	1.87	17	<.01	<3	.11	<.01	.01	<2	4	<1	26	8493
PK-WB-95-106	72	14	652	1	4.1	4	2	8	24.49	54	<5	<2	18	1128	<.2	23	<2	82	1.26	.406	8	15	.02	33	.01	5	.17	.09	4.53	2	4	<1	960	7864
PK-WB-95-107	11	10	317	2	4.2	7	2	24	8.77	22	<5	<2	<2	204	<.2	15	<2	34	.73	.114	4	25	.09	25	.01	5	.30	.02	1.91	2	5	6	760	47810
PK-WB-95-108	5	37	76	20	<.3	44	15	68	4.77	30	<5	<2	2	111	<.2	8	<2	7	.57	.074	18	21	.17	27	<.01	4	.27	.02	.30	<2	1	<1	14	46145
PK-WB-95-109	5	22	81	13	.6	152	14	30	4.84	55	<5	<2	5	38	<.2	8	<2	1	.18	.008	21	10	.01	15	<.01	<3	.17	.01	.21	<2	2	<1	12	40075
PK-WB-95-110	3	5	88	7	1.7	16	2	12	1.42	9	<5	<2	2	62	<.2	5	<2	11	1.16	.154	12	76	.15	49	.01	8	.33	.01	.37	<2	2	<1	5	7374
PK-WB-95-111	7	9	96	1	1.6	10	1	29	2.11	13	<5	<2	2	327	<.2	3	<2	50	.05	.255	11	19	.01	183	<.01	3	.18	.02	.21	2	1	2	3	2286
PK-WB-95-112	3	3	167	1	.6	3	1	5	1.27	7	<5	<2	2	542	<.2	3	<2	32	.04	.043	14	9	.01	247	<.01	4	.45	.06	.21	<2	1	1	4	8788
PK-WB-95-113	6	6	76	1	1.4	7	1	21	1.14	11	<5	<2	4	389	<.2	3	<2	24	.14	.144	21	12	.01	231	<.01	3	.27	.02	.17	<2	1	1	2	4499
PK-WB-95-114	3	4	111	1	.5	5	1	12	1.45	13	<5	<2	3	320	<.2	3	<2	20	.29	.419	19	11	.01	238	<.01	4	.41	.02	.24	<2	2	<1	3	7951
PK-WB-95-115	5	5	329	2	.6	6	1	13	3.30	30	<5	<2	2	228	<.2	3	<2	12	.55	.365	5	11	.01	30	<.01	5	.29	.03	.54	<2	3	<1	2	99999
RE PK-WB-95-115	6	5	316	2	.7	5	1	17	3.17	28	<5	<2	2	219	<.2	3	<2	11	.53	.352	5	13	.01	26	<.01	4	.28	.03	.52	<2	1	<1	1	99999
RRE PK-WB-95-115	6	5	296	2	.5	6	1	19	3.16	29	<5	<2	<2	168	<.2	4	<2	11	.61	.352	5	14	.01	27	<.01	6	.33	.03	.55	<2	<1	<1	2	99999
PK-WB-95-116	9	8	85	12	1.1	9	1	22	3.22	84	<5	<2	10	161	<.2	6	<2	29	2.45	1.319	1	20	.01	17	.01	3	.19	.01	.07	<2	2	1	3	99999
PK-WB-95-117	9	10	697	10	2.3	9	1	36	1.34	29	<5	<2	<2	770	<.2	11	<2	28	1.41	.115	7	14	.01	27	<.01	3	.15	.01	.15	<2	1	1	4	99999
PK-WB-95-118	7	25	170	3	1.4	12	1	39	3.25	22	<5	<2	<2	91	.2	3	<2	42	.10	.054	3	16	.01	57	<.01	3	.21	.02	.15	2	<1	1	5	4278
PK-WB-95-119	71	17	174	<1	2.9	2	2	14	22.58	152	<5	<2	2	745	<.2	14	<2	404	.06	.463	5	14	.01	25	.01	6	.15	.08	4.00	<2	4	<1	720	14855
PK-WB-95-120	11	11	178	8	1.0	14	1	51	5.77	68	<5	<2	<2	92	<.2	8	<2	55	.07	.038	2	17	.04	24	.01	<3	.07	.06	.71	3	2	1	47	3125
PK-WB-95-121	10	39	79	4	.7	18	2	72	5.57	16	6	<2	<2	101	<.2	2	<2	24	6.89	.021	<1	19	.01	13	<.01	<3	.07	.01	.05	<2	<1	<1	93	1281
PK-WB-95-122	5	7	9	5	<.3	15	2	95	1.03	4	<5	<2	<2	29	<.2	<2	<2	9	.14	.014	1	22	.02	271	<.01	<3	.11	.01	.08	2	<1	<1	6	682
STANDARD C/AU-R/SO-15	17	60	40	136	7.1	69	32	1109	3.99	44	18	8	39	54	17.9	18	20	57	.50	.092	38	69	.91	197	.08	28	1.85	.06	.15	10	2	2	510	2230

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: P1 TO P2 ROCK P3 SOIL P4 STREAM SED. AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.
BA* .2 GM SAMPLE FUSED WITH 1.2 GM LIBO2, ANALYSIS BY ICP. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: SEP 5 1995 DATE REPORT MAILED: Sept 16/95 SIGNED BY. D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Tl ppm	Hg ppm	Au* ppb	Ba* ppm
PK-WB-95-123	1	1	5	24	<.3	13	3	626	1.98	3	<5	<2	<2	256	<.2	<2	<2	5	18.48	.003	2	2	8.52	100	<.01	<3	.06	.01	.03	<2	2	<1	<1	653
PK-WB-95-124	1	2	4	4	<.3	7	2	504	1.20	<2	<5	<2	<2	181	<.2	<2	<2	<1	15.86	.002	1	2	6.65	95	<.01	<3	.04	.01	.02	<2	<1	<1	<1	388
PK-WB-95-125	1	1	3	20	<.3	13	2	699	1.94	2	<5	<2	<2	259	<.2	<2	<2	3	17.84	.003	2	3	8.26	71	<.01	<3	.04	.01	.02	<2	1	<1	<1	406
PK-WB-95-126	1	1	<3	23	<.3	14	5	628	1.77	2	<5	<2	<2	328	<.2	<2	<2	5	18.27	.003	2	5	8.06	94	<.01	3	.04	.01	.02	<2	1	<1	1	533
RE PK-WB-95-126	3	1	4	22	<.3	15	5	627	1.76	3	<5	<2	<2	327	<.2	<2	<2	5	18.12	.003	2	2	8.00	94	<.01	<3	.04	.01	.02	<2	<1	<1	2	546
RRE PK-WB-95-126	3	1	3	23	<.3	15	5	646	1.81	2	<5	<2	<2	339	<.2	<2	<2	5	18.94	.003	2	3	8.31	98	<.01	<3	.05	.01	.02	<2	1	<1	1	497
WK-WB-95-27	15	36	20	18	1.3	50	8	93	3.29	21	<5	<2	3	112	<.2	<2	<2	44	3.11	.090	6	9	.34	43	<.01	3	.30	.02	.21	<2	<1	<1	1	8413
WK-WB-95-28	7	131	6	31	.7	27	8	79	25.25	<2	<5	<2	<2	159	<.2	5	<2	447	.72	.273	9	29	.14	62	<.01	9	.34	.03	1.02	<2	<1	<1	1	1921

Sample type: ROCK. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Atna Resources Ltd. PROJECT WHITE BULL File # 95-3851 Page 1

900 - 409 Granville St., Vancouver BC V6C 1T2

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Tl ppm	Hg ppm	Au* ppb	Ba* ppm
PK-RANGE-95-01	1	110	6	79	<.3	30	25	617	6.03	7	5	<2	<2	31	<.2	<2	<2	181	1.54	.070	<1	15	1.70	59	.44	<3	3.34	.11	.01	<2	<5	1	1	480
PK-RANGE-95-02	1	240	12	52	.4	24	9	439	2.56	4	<5	<2	<2	9	.4	3	<2	23	1.01	.015	2	31	.73	63	.13	<3	1.62	.01	.04	4	<5	1	1	319
PK-RANGE-95-03	34	46058	142	775	5.2	70	527	15	43.49	360	8	<2	<2	13	15.4	7	158	210	.10	<.001	1	46	.38	62	<.01	<3	.22	<.01	<.01	<2	<5	<1	1249	81
PK-RANGE-95-04	<1	157	10	55	.3	42	22	349	4.40	6	<5	<2	<2	26	.7	<2	<2	121	1.46	.045	2	44	1.47	47	.27	<3	3.05	.25	.27	<2	<5	1	1	990
PK-RANGE-95-05	<1	232	39	99	<.3	63	21	591	7.65	91	5	<2	<2	8	.4	<2	<2	186	.39	.054	<1	171	3.24	53	.19	<3	3.18	.05	.13	<2	<5	1	1	515
PK-WB-95-127	5	2132	53	42	1.9	150	36	12	19.23	29	13	<2	<2	9	1.9	3	5	11	.01	<.001	<1	11	.10	3	<.01	<3	.08	<.01	<.01	<2	<5	1	9	679
PK-WB-95-128	4	142	96	12	1.3	265	27	16	20.26	23	7	<2	<2	8	.6	<2	<2	3	.04	.038	<1	11	.11	4	.01	<3	.09	.01	<.01	<2	<5	<1	2	188
PK-WB-95-129	3	18	32	3	4.2	6	1	34	.59	3	<5	<2	6	9	<.2	3	<2	11	.02	.005	18	14	.08	132	.01	<3	.33	.01	.17	<2	<5	<1	1	681
PK-WB-95-130	4	113	69	3	3.1	8	2	14	.60	4	<5	<2	10	12	.3	4	<2	10	.01	.004	38	9	.02	210	<.01	<3	.29	.01	.20	<2	5	<1	2	1236
PK-WB-95-131	3	7	21	5	.8	7	1	17	.69	2	<5	<2	20	20	<.2	<2	3	4	.01	.035	36	6	.01	49	<.01	3	.38	<.01	.28	<2	<5	<1	<1	649
RE PK-WB-95-131	3	6	19	4	.6	6	1	11	.65	<2	<5	<2	20	20	.3	<2	2	3	.01	.036	36	6	.01	47	<.01	3	.37	<.01	.28	<2	<5	<1	<1	645
RRE PK-WB-95-131	3	7	17	23	1.3	4	<1	20	.37	2	<5	<2	22	20	.3	2	2	4	.04	.031	43	6	.02	47	<.01	3	.35	<.01	.26	<2	<5	<1	1	663
PK-WB-95-132	2	50	7	2	<.3	5	1	11	.22	<2	<5	<2	2	31	.3	<2	<2	4	.01	.001	3	4	.01	87	<.01	<3	.36	.02	.21	<2	<5	<1	7	1107
PK-WB-95-133	1	121	24	44	.8	128	39	625	13.00	5	16	<2	8	280	<.2	<2	<2	14	5.99	.045	1	10	2.88	12	<.01	<3	.14	.01	.09	<2	<5	<1	<1	429
PK-WB-95-134	1	103	48	17	5.0	416	28	13	16.08	6	13	<2	<2	6	<.2	<2	2	1	.04	.001	<1	8	.08	2	<.01	<3	.03	<.01	.01	2	<5	4	1	315
PK-WB-95-135	4	132	44	42	4.1	431	28	20	18.62	12	12	<2	<2	7	.6	<2	2	<1	.04	<.001	<1	9	.09	3	<.01	<3	.03	<.01	.01	<2	<5	3	3	221
PK-WB-95-136	4	65	60	30	2.6	396	9	35	16.85	9	14	<2	<2	8	<.2	3	<2	1	.11	.001	<1	14	.11	3	<.01	<3	.02	<.01	<.01	<2	<5	2	2	89
PK-WB-95-137	2	83	85	22	7.2	228	8	15	17.74	5	11	<2	<2	5	<.2	<2	2	1	.01	<.001	<1	11	.08	3	<.01	<3	.02	<.01	<.01	3	<5	4	1	224
STANDARD C/AU-R/SO-15	21	61	35	131	7.0	73	33	1025	4.01	41	21	8	43	52	19.0	17	20	62	.51	.093	40	61	.92	189	.09	25	1.92	.06	.16	10	<5	<1	480	2226

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: P1 ROCK P2 STREAM SED. P3 SOIL AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.
BA* .2 GM SAMPLE FUSED WITH 1.2 GM LIBO2, ANALYSIS BY ICP. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: SEP 27 1995 **DATE REPORT MAILED:** Oct 11/95 **SIGNED BY.** D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

APPENDIX C

Certificates of Geochemical Analyses and Procedures

Soil Samples

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Tl ppm	Hg ppb
PK-WB-95-SS-01	6	23	13	69	<.3	78	16	418	3.01	7	7	<2	8	118	<.2	<2	5	25	11.17	.115	18	30	1.56	84	.05	<3	.79	.01	.10	<2	<5	55
PK-WB-95-SS-02	7	29	15	76	<.3	90	14	509	2.79	10	<5	<2	4	95	<.2	<2	<2	28	6.87	.083	15	48	2.49	92	.05	<3	.81	.01	.09	<2	<5	65
PK-WB-95-SS-03	3	13	72	4	<.3	20	6	140	2.31	81	<5	<2	<2	45	<.2	<2	<2	2	.74	.082	23	3	.03	31	<.01	<3	.10	.01	.07	<2	<5	740
PK-WB-95-SS-04	10	54	18	41	<.3	125	30	590	3.74	12	7	<2	6	159	<.2	<2	2	29	6.40	.232	20	33	1.13	80	.02	<3	.67	.01	.12	<2	<5	105
PK-WB-95-SS-05	10	26	14	100	<.3	85	14	413	2.34	8	6	<2	8	129	.5	2	3	23	10.27	.104	17	19	2.02	83	.01	3	.55	.01	.09	<2	<5	75
PK-WB-95-SS-06	7	31	19	88	<.3	71	16	572	3.35	11	<5	<2	<2	59	.2	<2	<2	44	3.66	.097	19	24	1.19	264	.02	4	1.02	.01	.17	<2	<5	40
PK-WB-95-SS-07	4	24	13	47	<.3	90	15	343	2.30	4	5	<2	6	136	<.2	<2	<2	28	10.03	.105	16	56	1.52	61	.04	<3	.79	.01	.09	<2	<5	50
PK-WB-95-SS-08	4	25	21	37	<.3	64	19	504	3.21	6	<5	<2	8	140	<.2	<2	2	21	9.33	.191	30	19	1.97	68	.02	<3	.58	.01	.03	<2	<5	65
PK-WB-95-SS-09	3	25	23	37	<.3	70	16	490	3.31	6	<5	<2	7	120	<.2	<2	2	21	9.25	.122	25	17	2.33	54	.02	<3	.60	.01	.04	<2	<5	40
PK-WB-95-SS-10	6	35	13	55	<.3	102	25	699	4.13	7	<5	<2	6	118	<.2	<2	2	34	5.16	.304	35	46	1.54	95	.03	<3	.92	.01	.05	<2	<5	55
PK-WB-95-SS-11	1	17	7	31	<.3	24	10	313	1.98	2	<5	<2	9	192	<.2	<2	3	10	14.20	.095	35	8	1.45	29	.01	<3	.54	.01	.03	<2	<5	45
PK-WB-95-SS-12	2	23	8	90	<.3	115	19	359	2.45	<2	9	<2	8	214	<.2	<2	<2	18	13.00	.090	18	91	1.59	76	.01	<3	.63	.01	.03	<2	<5	55
PK-WB-95-SS-13	4	19	12	71	<.3	40	11	289	2.55	<2	<5	<2	9	180	<.2	<2	2	12	8.54	.125	18	20	2.87	27	<.01	<3	1.44	.01	.06	<2	<5	25
PK-WB-95-SS-14	1	13	7	42	<.3	25	8	242	1.73	<2	7	<2	9	335	<.2	<2	<2	7	13.58	.054	9	13	1.84	37	<.01	<3	.67	.02	.03	<2	<5	35
PK-WB-95-SS-15	1	18	6	65	<.3	35	12	338	2.60	<2	6	<2	11	222	<.2	<2	4	8	9.62	.060	14	17	2.43	36	<.01	<3	1.15	.01	.02	<2	<5	25
PK-WB-95-SS-16	11	32	13	98	<.3	81	13	274	2.23	13	<5	<2	4	86	.5	<2	<2	22	5.57	.130	11	20	.88	87	.02	<3	.37	<.01	.10	<2	<5	110
PK-WB-95-SS-17	1	12	4	38	<.3	31	9	278	1.77	5	<5	<2	9	196	<.2	<2	<2	7	11.73	.060	32	13	1.26	55	.01	<3	.63	.01	.04	<2	<5	35
PK-WB-95-SS-18	9	42	14	187	.3	291	27	555	3.68	17	8	<2	8	103	1.2	<2	2	27	10.62	.159	14	69	.85	89	.06	7	.80	.01	.33	<2	<5	95
WK-WB-95-SS-01	4	18	5	61	<.3	79	11	250	1.28	4	<5	<2	5	116	<.2	<2	<2	12	17.74	.075	6	14	.83	63	.02	7	.38	.01	.08	<2	<5	55
WK-WB-95-SS-02	4	16	8	104	<.3	57	10	228	1.29	5	<5	<2	5	129	1.3	<2	<2	12	17.11	.061	7	10	.93	37	<.01	4	.22	.01	.03	<2	<5	65
WK-WB-95-SS-04	2	11	10	26	.3	53	6	175	.88	4	<5	<2	<2	142	<.2	<2	<2	7	23.70	.044	2	10	1.03	56	.01	5	.24	.01	.04	<2	<5	55
RE WK-WB-95-SS-04	2	11	9	27	.4	55	7	190	.97	5	<5	<2	<2	151	.3	<2	<2	8	25.52	.047	2	10	1.13	60	.01	5	.27	.01	.04	<2	<5	65
WK-WB-95-SS-08	4	29	18	63	<.3	69	17	399	2.86	5	<5	<2	7	165	.3	<2	<2	22	7.00	.141	17	19	.87	114	.01	<3	.58	.01	.09	<2	<5	50
WK-WB-95-SS-09	4	14	12	23	.4	96	10	163	1.29	8	<5	<2	<2	135	.2	<2	<2	12	20.66	.068	5	34	.72	101	.01	4	.30	.01	.05	<2	<5	85
WK-WB-95-SS-10	2	23	6	33	.3	100	15	262	1.67	<2	<5	<2	4	204	<.2	<2	3	16	17.58	.057	5	98	1.23	51	.01	4	.49	.01	.03	<2	<5	65
WK-WB-95-SS-11	7	21	9	145	<.3	43	8	263	1.72	3	<5	<2	6	110	.6	<2	<2	11	7.39	.057	14	13	2.93	387	<.01	3	.71	.01	.05	<2	<5	40
WK-WB-95-SS-12	5	21	8	112	<.3	42	11	354	2.18	4	6	<2	11	185	.5	<2	2	9	10.17	.050	10	7	2.82	297	<.01	<3	.38	.01	.04	<2	<5	15
WK-WB-95-SS-13	7	26	9	89	<.3	97	13	264	1.83	7	5	<2	6	119	<.2	<2	2	18	14.78	.083	11	21	1.32	154	.02	<3	.44	.01	.09	<2	<5	55
STANDARD C	20	57	41	133	7.0	68	32	1142	3.96	44	17	7	36	50	17.8	20	23	57	.50	.094	43	56	.92	181	.08	26	1.83	.06	.14	11	<5	1800

Sample type: STREAM SED.. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.
HG ANALYSIS BY FLAMELESS AA.

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Tl ppm	Hg ppm	Au* ppb	Ba* ppm
PK-WB-95-SS-35	5	34	18	78	.3	80	13	341	2.68	11	<5	<2	6	156	.6	3	<2	27	4.19	.123	21	21	.70	114	.01	<3	.65	.01	.13	<2	<5	1	1	1527
PK-WB-95-SS-36	8	37	28	74	.5	50	14	312	3.06	19	<5	<2	7	104	.7	4	6	22	1.66	.114	35	19	.36	170	.01	4	.54	<.01	.18	2	<5	<1	1	2144
PK-WB-95-SS-37	3	25	11	206	<.3	299	87	1473	7.80	14	<5	<2	6	153	1.5	<2	9	16	6.93	.076	38	14	.56	92	.01	<3	.75	<.01	.06	<2	<5	2	<1	942
PK-WB-95-SS-38	<1	16	6	431	<.3	783	284	3954	24.34	21	<5	<2	2	152	3.1	<2	15	7	2.95	.046	96	7	.29	81	<.01	<3	.63	.01	.04	<2	6	<1	1	495
PK-WB-95-SS-39	9	23	26	23	.4	65	20	346	3.54	11	<5	<2	6	187	<.2	4	5	34	7.24	.122	26	25	.32	128	.01	3	.32	.02	.13	2	<5	2	1	1332
PK-WB-95-SS-40	3	100	12	412	<.3	476	101	1475	7.84	13	<5	<2	5	162	5.1	<2	4	20	3.19	.076	29	13	.41	129	.02	<3	2.49	.01	.10	<2	<5	4	<1	1412
RE PK-WB-95-SS-42	1	17	9	60	<.3	36	9	327	2.33	<2	5	<2	6	233	<.2	<2	<2	11	8.68	.058	11	18	.89	46	.01	<3	.78	.01	.06	<2	<5	2	4	499
PK-WB-95-SS-41	3	26	9	140	<.3	134	32	453	2.79	6	<5	<2	4	185	1.4	<2	3	12	14.72	.057	9	9	.38	101	.01	<3	.71	<.01	.06	<2	<5	2	1	1116
PK-WB-95-SS-42	1	17	9	53	<.3	28	9	293	2.06	4	<5	<2	7	225	.4	<2	<2	10	7.51	.053	11	14	.79	43	.01	3	.72	.01	.05	<2	<5	<1	<1	498
PK-WB-95-SS-43	<1	15	12	57	<.3	32	8	338	2.27	4	<5	<2	7	223	<.2	2	3	11	7.55	.061	14	18	.79	44	.01	<3	.82	.01	.05	<2	<5	1	1	519
PK-WB-95-SS-44	1	14	15	63	<.3	33	8	351	2.44	3	<5	<2	7	209	.2	<2	2	12	8.07	.063	15	18	.76	37	.01	<3	.81	<.01	.05	<2	<5	<1	1	512
PK-WB-95-SS-45	<1	22	14	75	<.3	38	11	346	3.02	<2	<5	<2	7	167	.3	<2	<2	13	5.46	.067	16	22	.84	50	.01	3	1.15	.01	.06	<2	<5	2	1	542
PK-WB-95-SS-46	1	7	6	28	<.3	24	5	170	.97	3	6	<2	2	262	<.2	<2	<2	5	22.42	.021	4	7	.49	44	<.01	<3	.35	<.01	.03	<2	<5	<1	<1	277
STANDARD C/AU-S/SO-15	19	61	37	120	6.1	66	30	940	3.66	44	18	6	37	53	16.0	17	20	64	.53	.085	39	55	.81	179	.08	26	1.80	.06	.14	12	<5	3	46	2180

Sample type: STREAM SED.. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Tl ppm	Hg ppm	Au* ppb	Ba* ppm
PK-WB-95-SS-188	1	26	29	63	.4	142	57	536	20.83	5	<5	<2	3	189	.3	6	<2	6	1.95	.045	57	14	.68	162	<.01	8	1.55	.01	.06	<2	5	2	4	1416
PK-WB-95-SS-19	<1	39	34	66	.4	60	28	175	14.42	12	<5	<2	3	239	.6	5	<2	7	1.88	.097	59	22	.39	346	<.01	4	1.32	.01	.08	<2	4	<1	4	3000
PK-WB-95-SS-20	<1	18	12	59	<.3	35	12	294	3.26	3	<5	<2	7	137	<.2	<2	<2	9	5.63	.055	11	36	1.88	142	<.01	<3	1.52	.01	.03	<2	2	<1	2	875
PK-WB-95-SS-21	<1	24	10	51	<.3	34	11	211	2.33	2	<5	<2	4	244	<.2	<2	<2	6	11.04	.039	8	23	.99	92	<.01	<3	.72	.01	.05	<2	<1	<1	3	508
PK-WB-95-SS-22	1	23	14	62	<.3	37	13	300	3.21	5	<5	<2	6	141	<.2	<2	<2	9	5.47	.057	11	30	1.78	165	<.01	<3	1.40	.01	.03	<2	2	<1	2	1301
PK-WB-95-SS-23	3	29	23	102	<.3	45	16	349	3.11	44	<5	<2	8	183	.5	2	<2	7	6.51	.082	12	20	1.50	189	<.01	<3	.59	.01	.05	<2	<1	<1	5	1522
RE PK-WB-95-SS-23	2	28	24	108	<.3	46	16	349	3.13	44	<5	<2	8	184	.6	2	<2	7	6.55	.083	12	16	1.50	192	<.01	<3	.59	.01	.05	<2	1	<1	3	1613
PK-WB-95-SS-24	5	29	26	122	<.3	61	17	362	3.33	12	<5	<2	7	205	.8	<2	<2	12	7.94	.090	13	29	1.69	271	<.01	<3	.52	.01	.05	<2	2	<1	1	1739
PK-WB-95-SS-25	<1	15	8	36	<.3	27	10	294	2.32	4	<5	<2	6	303	.2	<2	<2	5	11.06	.058	15	25	1.17	29	<.01	<3	.96	.01	.02	<2	2	<1	<1	467
PK-WB-95-SS-26	2	22	22	90	<.3	44	14	314	2.88	8	<5	<2	7	195	.5	<2	<2	8	7.26	.080	12	23	1.69	115	<.01	<3	.70	.01	.03	<2	<1	<1	1	1309
PK-WB-95-SS-27	<1	20	10	60	<.3	35	14	418	3.50	3	<5	<2	8	194	.2	<2	<2	4	7.85	.062	10	13	1.49	20	<.01	<3	.29	.01	.02	<2	1	<1	1	614
PK-WB-95-SS-28	1	22	15	60	<.3	36	12	331	3.33	4	<5	<2	8	184	.2	<2	<2	8	6.58	.053	9	34	1.45	48	<.01	<3	1.53	.01	.03	<2	1	<1	1	604
PK-WB-95-SS-29	<1	21	15	56	<.3	33	12	309	3.23	2	<5	<2	8	183	<.2	<2	<2	8	6.85	.059	9	33	1.52	41	<.01	<3	1.44	.01	.02	<2	1	<1	<1	534
PK-WB-95-SS-30	2	17	11	116	<.3	30	6	314	1.35	5	<5	<2	5	75	.9	<2	<2	11	4.10	.065	15	37	1.56	768	.01	<3	.48	.01	.09	<2	<1	<1	3	3300
PK-WB-95-SS-31	1	16	13	62	<.3	37	13	281	3.33	3	<5	<2	9	151	.2	<2	<2	10	5.83	.054	10	35	1.65	49	<.01	<3	1.83	.01	.03	<2	1	<1	3	502
PK-WB-95-SS-32	<1	17	11	56	<.3	33	11	294	2.69	6	<5	<2	6	226	.2	<2	<2	6	9.53	.065	14	23	1.20	170	<.01	<3	.95	.01	.03	<2	<1	<1	1	898
PK-WB-95-SS-33	1	17	13	100	<.3	34	9	257	2.05	4	<5	<2	5	113	.7	<2	<2	11	5.49	.067	12	35	1.75	509	.01	<3	.86	.01	.06	<2	1	<1	<1	1925
PK-WB-95-SS-34	3	20	23	116	<.3	49	9	305	2.39	21	<5	<2	2	230	.7	3	<2	13	11.07	.093	25	33	1.52	373	.01	<3	.39	.01	.08	<2	1	<1	3	2990
STANDARD C/AU-S/SO-15	18	58	37	122	7.0	69	32	1083	3.86	43	19	8	38	51	18.1	18	20	59	.51	.092	39	69	.90	182	.08	26	1.85	.06	.15	10	<1	4	53	2109

Sample type: STREAM SED.. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

APPENDIX D

Certificates of Geochemical Analyses and Procedures

Stream Sediment Samples

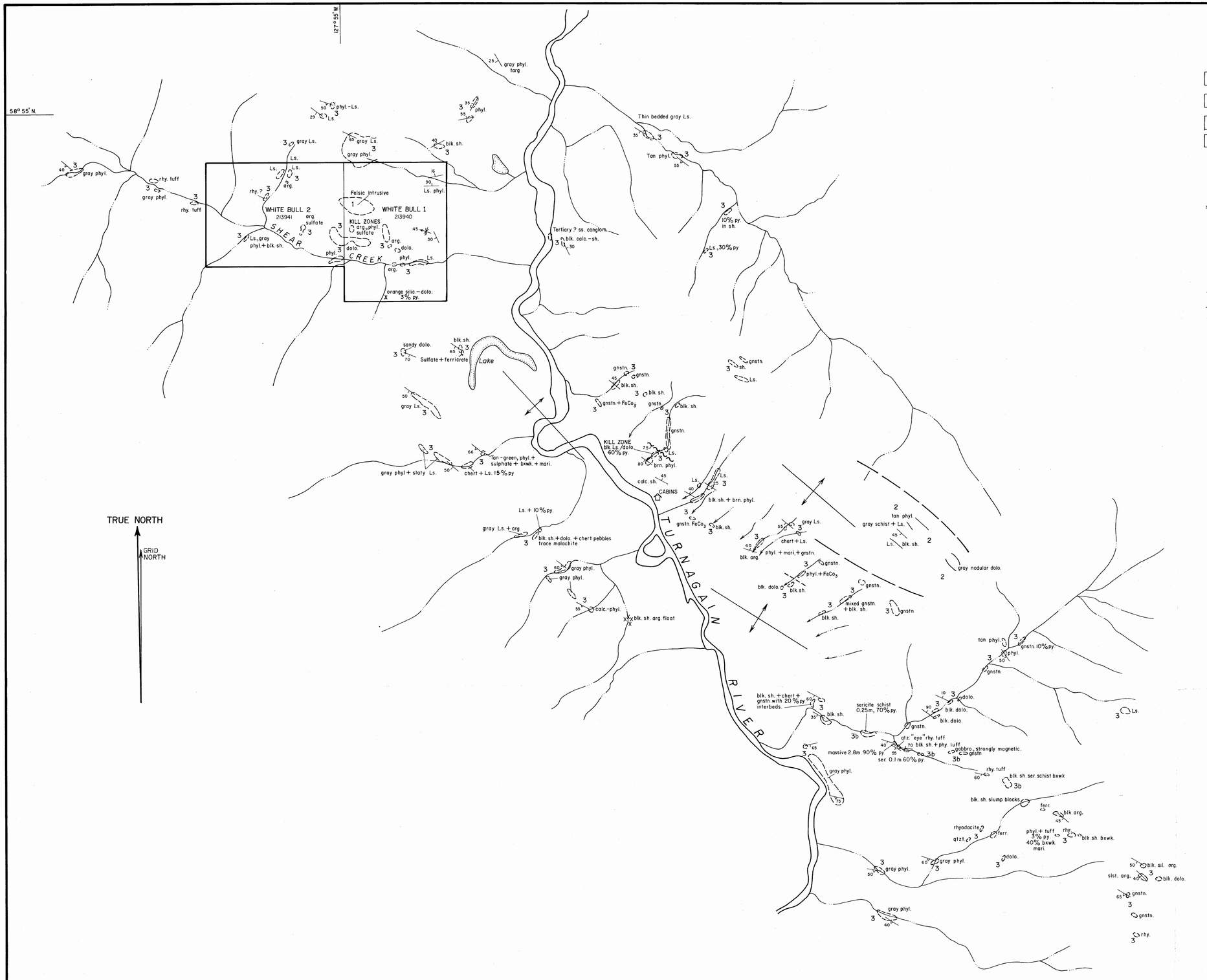
SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Tl ppm	Hg ppm	Au* ppb	Ba* ppm
WK-WB-95-20	3	39	28	31	.5	45	17	862	3.30	13	<5	<2	4	56	.2	<2	<2	20	1.68	.075	36	34	.88	301	.02	3	.95	.01	.17	<2	2	<1	<1	2714
WK-WB-95-21	1	37	13	125	<.3	123	11	174	3.08	9	<5	<2	5	32	.2	<2	<2	43	.26	.055	18	91	.97	107	.09	3	2.04	.01	.07	<2	<1	<1	1	1041
WK-WB-95-22	5	29	36	24	.8	30	12	294	4.31	10	<5	<2	5	187	.3	<2	<2	38	1.84	.081	14	24	.60	79	.07	6	.99	.02	.34	<2	<1	<1	<1	2516
WK-WB-95-23	4	32	13	61	.3	112	18	231	2.55	10	<5	<2	4	185	.9	<2	<2	33	5.57	.077	9	69	.87	115	.04	4	.95	.01	.15	<2	1	<1	<1	1957
WK-WB-95-24	2	22	23	9	<.3	56	21	22	3.41	11	<5	<2	9	32	<.2	<2	<2	30	.49	.041	35	18	.14	164	<.01	<3	.85	<.01	.12	<2	2	<1	<1	4164
RE WK-WB-95-24	2	21	20	9	<.3	53	20	22	3.28	11	<5	<2	9	31	<.2	<2	<2	28	.47	.040	34	19	.13	158	.01	<3	.82	<.01	.11	<2	2	<1	<1	4186
WK-WB-95-25	3	34	15	35	<.3	43	16	331	2.78	7	<5	<2	5	47	<.2	<2	<2	22	1.44	.088	32	46	.77	129	.04	<3	.79	.01	.12	<2	<1	<1	<1	1687
WK-WB-95-26	17	38	20	294	.4	78	19	134	2.73	16	<5	<2	4	162	4.5	13	<2	107	4.83	.186	14	11	.52	54	.01	4	.34	.02	.14	<2	<1	<1	<1	5448

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Tl ppm	Hg ppm	Au* ppb	Ba* ppm
PK-WB-95-S-47	3	31	17	121	<.3	49	12	488	3.10	14	<5	<2	13	144	.4	<2	<2	15	6.30	.081	37	19	.44	88	.01	4	1.18	.01	.22	<2	<5	<1	3	785
PK-WB-95-S-48	8	3	45	4	<.3	1	<1	18	1.83	6	<5	<2	2	63	<.2	6	<2	14	.16	.067	46	4	.02	73	<.01	<3	.11	.01	.18	3	<5	<1	1	1755
RE PK-WB-95-S-51	4	21	5	218	<.3	53	30	810	4.86	6	<5	<2	4	164	.8	<2	<2	20	6.95	.442	28	3	.48	52	<.01	3	.60	<.01	.08	<2	<5	<1	<1	1823
PK-WB-95-S-49	15	17	45	39	1.0	27	12	540	4.46	18	<5	<2	5	17	.2	10	4	55	.17	.061	39	28	.28	97	.01	3	1.53	.01	.09	2	<5	<1	1	1091
PK-WB-95-S-50	5	28	19	77	<.3	48	17	554	4.28	9	<5	<2	6	33	.5	<2	<2	34	.30	.046	52	27	.60	178	<.01	5	1.78	.01	.14	<2	<5	<1	<1	1203
PK-WB-95-S-51	4	22	4	226	<.3	57	31	828	5.06	3	<5	<2	4	165	.7	<2	<2	21	7.32	.459	28	4	.51	55	<.01	<3	.62	<.01	.09	<2	<5	<1	1	1882
PK-WB-95-S-52	2	34	12	146	<.3	124	31	682	5.87	2	<5	<2	6	84	.3	<2	<2	25	3.35	.122	24	17	.65	66	<.01	<3	1.14	.01	.09	<2	<5	1	<1	796
PK-WB-95-S-53	2	40	16	75	<.3	108	28	671	5.04	6	<5	<2	6	27	.2	3	2	30	.90	.081	31	31	.69	70	.02	<3	1.23	.01	.07	<2	<5	1	2	777

Soils

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.



GEOLOGY

1	MID CRETACEOUS - Siliceous, K-feldspar altn., felsic intrusion
2	SILURIAN - Sandpile Group; red to gray dolomite, chert, nodular dolomite, gray platy limestone
3	MID - CAMBRIAN - MID SILURIAN, Road River and Kechika Groups, black shale argillite, argillaceous limestone, phyllite, greenstone
3b	- Massive sulfide horizon.

SYMBOLS

- Bedding attitude
- Foliation attitude
- Syncline with plunge
- Anticline with plunge
- Jointing attitude
- Zone of strong boxwork structure
- Geologic Contact ; defined, assumed
- Stream
- Float
- Helicopter landing
- Outcrop

ABREVIATIONS

Ls	Limestone	sh	Shale
arg	Argillite	gnstn	Greenstone
dolo	Dolomite	slst	Siltstone
ss	Sandstone	congl	Conglomerate
rhy	Rhyolite	qtzt	Quartzite
mari	Mariposite	py	Pyrite
ga	Galena	ba	Barite
ser	Sericite	ferr	Ferricite
sil	Siliceous	bxwk	Boxwork structure
$FeCO_3$	Iron carbonate	calc	Calcareous

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

24,454

METRES

0 500 1000 2000 3000

SCALE 1:25,000

ATNA RESOURCES LTD.

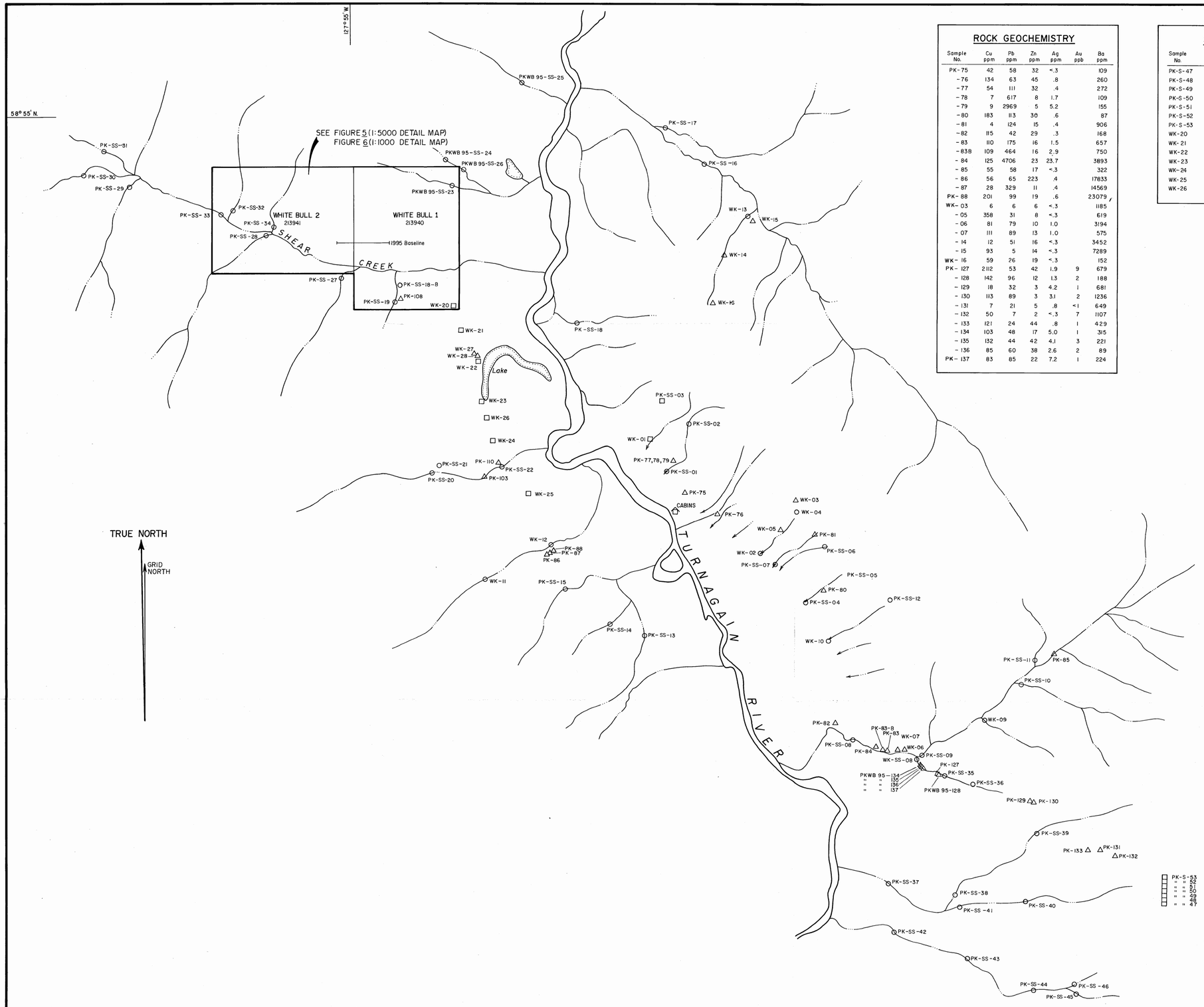
WHITE BULL PROJECT

REGIONAL RECONNAISSANCE GEOLOGY MAP

BRITISH COLUMBIA

PAUL KALLOCK, CONSULTING GEOLOGIST

DRAWN.	N.T.S.	DATE.	FIGURE.
P.K. / J.W.	93 L/13	JAN. 1996	3



ROCK GEOCHEMISTRY

Sample No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Ba ppm
PK-75	42	58	32	<.3		109
-76	134	63	45	.8		260
-77	54	111	32	.4		272
-78	7	617	8	1.7		109
-79	9	2969	5	5.2		155
-80	183	113	30	.6		87
-81	4	124	15	.4		906
-82	115	42	29	.3		168
-83	110	175	16	1.5		657
-83B	109	464	16	2.9		750
-84	125	4706	23	23.7		3893
-85	55	58	17	<.3		322
-86	56	65	223	.4		17833
-87	28	329	11	.4		14569
PK-88	201	99	19	.6		23079
WK-03	6	6	6	<.3		1185
-05	358	31	8	<.3		619
-06	81	79	10	1.0		3194
-07	111	89	13	1.0		575
-14	12	51	16	<.3		3452
-15	93	5	14	<.3		7289
WK-16	59	26	19	<.3		152
PK-127	2112	53	42	1.9	9	679
-128	142	96	12	1.3	2	188
-129	18	32	3	4.2	1	681
-130	113	89	3	3.1	2	1236
-131	7	21	5	.8	<1	649
-132	50	7	2	<.3	7	1107
-133	121	24	44	.8	1	429
-134	103	48	17	5.0	1	315
-135	132	44	42	4.1	3	221
-136	85	60	38	2.6	2	89
PK-137	83	85	22	7.2	1	224

SOIL GEOCHEMISTRY

Sample No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Ba ppm
PK-S-47	31	17	121	<.3	3	785
PK-S-48	3	45	4	<.3	1	1755
PK-S-49	17	45	39	1.0	1	1091
PK-S-50	28	19	77	<.3	<1	1203
PK-S-51	22	4	226	<.3	1	1882
PK-S-52	34	12	146	<.3	<1	796
PK-S-53	40	16	75	<.3	2	777
WK-20	39	28	31	.5	<1	2714
WK-21	37	13	125	<.3	1	1041
WK-22	29	36	24	.8	<1	2516
WK-23	32	13	61	.3	<1	1957
WK-24	22	23	9	<.3	<1	4164
WK-25	34	15	35	<.3	<1	1687
WK-26	38	20	294	.4	<1	5448

STREAM SEDIMENT GEOCHEMISTRY

Sample No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Ba ppm
PK-SS-01	23	13	69	<.3		
-02	29	15	76	<.3		
-03	13	72	4	<.3		
-04	54	18	41	<.3		
-05	26	14	100	<.3		
-06	31	19	88	<.3		
-07	24	13	47	<.3		
-08	25	21	37	<.3		
-09	25	23	37	<.3		
-10	35	13	55	<.3		
-11	17	7	31	<.3		
-12	23	8	90	<.3		
-13	19	12	71	<.3		
-14	13	7	42	<.3		
-15	18	6	65	<.3		
-16	32	13	98	<.3		
-17	12	4	38	<.3		
-18	42	14	187	.3		
-18B	26	29	63	.4	4	1416
-19	39	34	66	.4	4	3000
-20	18	12	59	<.3	2	875
-21	24	10	51	<.3	3	508
-22	23	14	62	<.3	2	1301
-23	29	23	102	<.3	5	1522
-24	29	26	122	<.3	1	1739
-25	15	8	36	<.3	<1	467
-26	22	22	90	<.3	1	1309
-27	20	10	60	<.3	1	614
-28	22	15	60	<.3	1	604
-29	21	15	56	<.3	<1	534
-30	17	11	116	<.3	3	3300
-31	16	13	62	<.3	3	502
-32	17	11	56	<.3	1	898
-33	17	13	62	<.3	<1	1925
-34	20	23	116	<.3	3	2990
-35	34	18	78	.3	1	1527
-36	37	28	74	.5	1	2144
-37	25	11	206	<.3	<1	942
-38	16	6	431	<.3	1	495
-39	23	26	23	.4	1	1332
-40	100	12	412	<.3	<1	1412
-41	26	9	140	<.3	1	1116
-42	17	9	53	<.3	<1	498
-43	15	12	57	<.3	1	519
-44	14	15	63	<.3	1	512
-45	22	14	75	<.3	1	542
-46	7	6	28	<.3	<1	277
(SOIL) -47	31	17	121	<.3	3	785
(SOIL) -48	3	45	4	<.3	1	1755
(SOIL) -49	17	45	39	1.0	1	1091
(SOIL) -50	28	19	77	<.3	<1	1203
(SOIL) -51	22	4	226	<.3	1	1882
(SOIL) -52	34	12	146	<.3	<1	796
(SOIL) -53	40	16	75	<.3	2	777
WK-01	18	5	61	<.3		
-02	16	8	104	<.3		
-04	11	10	26	.3		
-08	29	18	63	<.3		
-09	14	12	23	.4		
-10	23	6	33	.3		
-11	21	9	145	<.3		
-12	21	8	112	<.3		
-13	26	9	89	<.3		

GEOCHEMISTRY

- △ Rock Sample
- ○ Silt Sample
- □ Soil Sample

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

24,454

METRES
0 500 1000 2000 3000
SCALE 1:25,000

ATNA RESOURCES LTD.

WHITE BULL PROJECT

REGIONAL RECONNAISSANCE SAMPLE LOCATION MAP

BRITISH COLUMBIA

PAUL KALLOCK, CONSULTING GEOLOGIST

DRAWN.	N.T.S.	DATE.	FIGURE.
P.K./J.W.	93 L/13	JAN. 1996	4

ROCK GEOCHEMISTRY

Sample No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Ba ppm
PD-WB-95-1	60	6	84	<.3	1	
PK-WB-95-4	<1	3	5	<.3	3	
-95-42	29	178	20	.5	4	
-95-43	141	116	7	.7	11	
95-44	36	949	146	1.4	124	
95-45	5	35	47	<.3	6	
95-46	15	4	21	<.3	<1	
95-47	2	71	2	.4	5	
95-48	222	55	85	.6	3	
95-49	3	4	22	<.3	<1	
95-50	38	160	18	.5	27	
95-51	<1	6	1	<.3	<1	
95-52	5	129	1	1.2	3	
95-53	12	375	1	.9	<1	
95-120	11	178	8	1.0	47	3125
95-121	39	79	4	.7	93	1281
95-122	7	9	5	<.3	6	682
95-123	1	5	24	<.3	<1	653
95-124	2	4	4	<.3	<1	388
95-125	1	3	20	<.3	<1	406
95-126	1	<3	23	<.3	1	533

LEGEND

GEOLOGY

Mid Cretaceous

1 — Siliceous, K-feldspar altered Felsic Intrusion

Road River or Kechika Groups Mid Cambrian to Mid Silurian

2 — Tan to olive-green phyllite, sericite quartz schist, locally showing stretched angular fragments, lesser interbedded siliceous argillite, chert and barite. Assessory minerals include mariposite, pyrite, fluorite and sulfate crusts.
A distinctive interbed includes:-

2b — Tuffite; quartzose, pyrite, orange weathering tuff.

3 — Argillite, black slaty or silicified shale.

4 — Dolomite, gray, siliceous, orange weathering, strong quartz-carbonate veins, lesser limestone and chert.

5 — Black shale, argillite, black dolomite

6 — Limestone, gray dirty strongly folded lesser phyllite and quartz sericite altered felsic volcanics along Sheep Creek.

SYMBOLS

- Bedding attitude
- Foliation attitude
- Syncline with plunge
- Anticline with plunge
- Jointing attitude
- Zone of strong boxwork structure
- Geologic Contact; defined, assumed
- Stream
- Float
- (H) Helicopter landing
- Outcrop

ABREVIATIONS

Ls	Limestone	sh	Shale
arg	Argillite	gnstn	Greenstone
dolo	Dolomite	slst	Siltstone
ss	Sandstone	congl	Conglomerate
rhy	Rhyolite	qtzt	Quartzite
mari	Mariposite	py	Pyrite
ga	Galena	ba	Barite
ser	Sericite	ferr	Ferricite
sil	Siliceous	bxwk	Boxwork structure
$FeCO_3$	Iron carbonate	calc	Calcareous

SOIL GEOCHEMISTRY

Lead values >100 ppm

Zinc values >500 ppm

1982 Esso and 1989 Homestake Soil Geochemistry

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

24,454

WHITE BULL 2
4W x 3S
TAG No. 213941

WHITE BULL 1
3E x 4S
TAG No. 213940

1982 BASELINE

BASELINE 0+00N

Watson Lake, Yukon
145 Km

Dease Lake, B.C.
130 Km

SHEEP CREEK

Phyllitic limestone

Gray limestone

Folded gray phyllitic limestone

gray limestone

Spring

Limestone

PK-WB95-41 gray Ls

Black subhorizontal argillite

PKWB95-51 Siliceous rhyodacite ?

PK-SS-33

PK-SS-32

PK-SS-34

PK-SS-28 Float Ls, gray phyl + blk sh

PK-WB95-53 Quartz float trace ga

PK-WB95-52 Black boxwork

PK-WB95-120 Float siliceous argillite 25% bxwk

Black argillite minor olive oxidation

Coarse tuff + gray argillite

Cherty felsic intrusive ?

Tuff breccia or conglomerate

argillite

Sil., K-feld. altered felsic intrusion

PD-WB-95-1 Tuff float

Gray strongly folded limestone

Ls with interbedded gray phyllite

PKWB95-SS-23

Folding

Gray banded limestone, phyllite interbedded

Gray limestone

PK WB95-45 quartz-siderite veins

Dolo

Gray fissile phyllite

PKWB95-126

PKWB 95-125

PKWB95-12

Blk sh

Chert+qtz

phyll

dolo

PKWB 95-122

PKWK95-124 ser-chl-schist

Cherty-ser

PKWB95-123

Orange dolomite

Ferricrete

Altered tuff

PKWB95-44

PKWB 95-42 Pyrite in limestone

PKWB95-50

Waterfall

PKWB 95-43 Pyrite

Gray nodular limy phyllite

Gray limy phyllite

White clay pinnacle

Quaternary silts + gravels

Ferricrete org

PK-SS-27

PK-SS-18-B

PK-SS-19

PKWB-95-108

WK-20

TRUE NORTH

GRID NORTH

METRES
0 100 200 300 400 500
SCALE 1:5000

ATNA RESOURCES LTD.

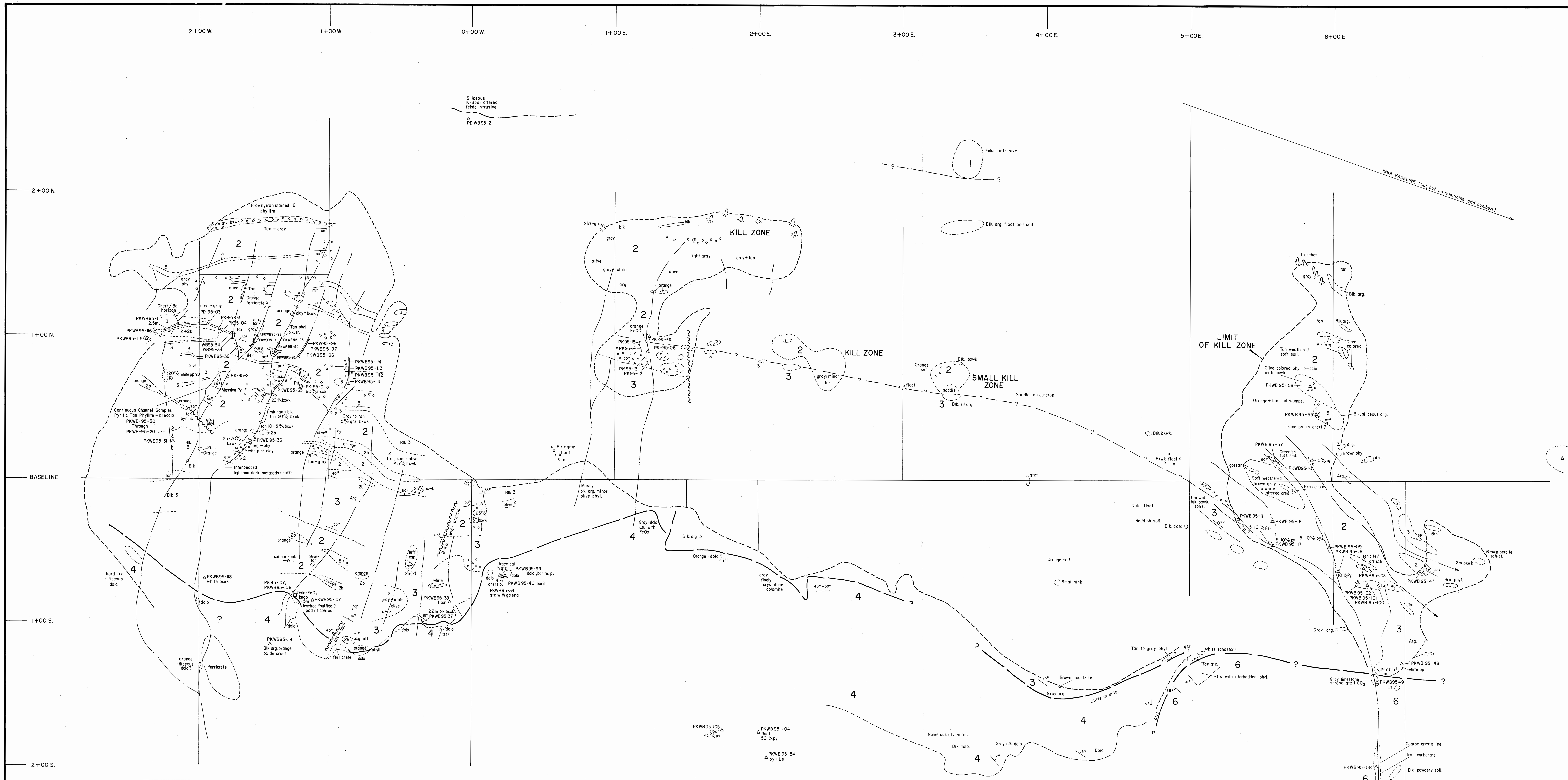
WHITE BULL PROJECT
WHITE BULL 1 & 2 MINERAL CLAIMS

GEOLOGY AND SAMPLE LOCATION MAP

BRITISH COLUMBIA

PAUL KALLOCK, CONSULTING GEOLOGIST

DRAWN.	N.T.S.	DATE.	FIGURE.
P.K./J.W.	93 L/13	JAN. 1996	5



LEGEND

GEOLOGY

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	3	Argillite, black slaty or silicified shale.
	4	Dolomite, gray, siliceous, orange weathering, strong quartz-carbonate veins, lesser limestone and chert.
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- Helicopter landing
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mari	Mariposite	py	Pyrite
ga	Galena	ba	Barite
ser	Sericite	ferr	Ferricite
sil	Siliceous	bxwk	Boxwork structure
$FeCO_3$	Iron carbonate	calc	Calcareous

GEOCHEMISTRY

- Channel sample location
- Rock sample location
- Soil sample location

ROCK GEOCHEMISTRY

Sample No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Ba ppm
PDWB95-2	3	9	2	.3	1	
-3	136	212	302	2.4	<1	
PKWB95-1	1	334	3	<.3	1	
-2	21	64	23	<.3	2	
-3	26	632	172	1.2	<1	
-4	1	72	4	<.3	1	
-5	73	11	24	<.3	<1	
-6	11	201	4	.6	1	
-7	7	599	22	3.5	910	
-9	132	46	114	.9	3	
-10	2	4	27	.4	1	
-11	1	59	<1	.3	1	
-12	5	117	<1	1.2	1	
-13	5	99	<1	.9	1	
-14	3	151	<1	.8	1	
-15	3	23	<1	.3	<1	
-16	62	23	15	.3	6	
-17	59	72	21	.4	1	
-18	59	54	44	.5	1	

Sample No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Ba ppm
PKWB95-19	29	22	13	.3	1	
-20	41	14	1	.5	14	
-21	21	7	<1	<.3	1	
-22	33	21	7	<.3	1	
-23	27	12	4	<.3	1	
-24	32	11	4	<.3	1	
-25	44	10	2	<.3	<1	
-26	38	14	7	.3	<1	
-27	31	50	14	.5	1	
-28	17	56	<1	.6	1	
-29	35	110	22	.3	1	
-30	2	191	<1	1.5	2	
-31	22	18	5	.6	5	
-32	2	168	1	1.2	1	
-33	27	3851	13	4.2	1	
-34	16	8845	<1	6.3	1	
-35	1	356	<1	.5	1	
-36	6	37	2	.5	3	
-37	8	267	1	5.9	41	

Sample No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Ba ppm
PKWB95-38	2	147	<1	1.4	46	
-39	2	1488	1	2.3	3	
-40	17	38	1	.5	11	
PKWB95-54	41	248	25	.9	42	
-55	7	43	<1	.4	3	
-56	4	134	<1	.5	<1	
-57	2	18	4	.3	1	
-58	9	22	4	<.3	<1	
-90	6	97	3	.9	4	23311
-91	8	64	1	.9	2	7795
-92	9	125	1	.3	1	19187
-93	14	103	11	1.1	1	3912
-94	3	153	2	.4	1	15736
-95	6	78	1	<.3	<1	9231
-96	4	129	1	.4	1	6519
-97	3	135	1	<.3	<1	5784
-98	3	156	1	.3	1	3822
-99	26	20	6	.3	1	99999
-100	24	228	49	.4	1	4323

Sample No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Ba ppm
PKWB95-101	11	62	3	.8	2	1890
-102	28	23	11	.8	2	1945
-103	16	53	6	.5	<1	3834
-104	54	219	5	1.8	76	46698
-105	42	261	166	1.8	26	8493
-106	14	652	1	4.1	960	7864
-107	10	317	2	4.2	760	47810
-108	37	76	20	<.3	14	46145
-109	22	81	13	.6	12	40075
-110	5	88	7	1.7	5	7374
-111	9	96	1	1.6	3	2286
-112	3	167	1	.6	4	8788
-113	6	76	1	1.4	2	4499
-114	4	111	1	.5	3	7951
-115	5	329	2	.6	2	99999
-116	8	85	12	1.1	3	99999
-117	10	697	10	2.3	4	99999
-118	25	170	3	1.4	5	4278
-119	17	174	<1	2.9	720	14855

Sample No.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Ba ppm
WKWB95-27	36	20	18	1.3	1	8413
-28	131	6	31	.7	1	1921

METRES
0 10 20 40 60 80 100
SCALE 1:1000

ATNA RESOURCES LTD.

WHITE BULL PROJECT
WHITE BULL 1 & 2 MINERAL CLAIMS

GEOLOGY & ROCK GEOCHEMICAL SURVEY MAP

BRITISH COLUMBIA

PAUL KALLOCK, CONSULTING GEOLOGIST

DRAWN.	N.T.S.	DATE.	FIGURE
P.K. / J.W.	93 L/13	JAN. 1996	6