




BC Geological Survey  
Coal Assessment Report  
1008



COAL ASSESSMENT REPORT TITLE PAGE AND SUMMARY

<b>TITLE OF REPORT:</b>	Report Submitted to the Ministry of Energy & Mines to Satisfy Section 8(1) Requirements of the Coal Act Regarding Telkwa Property Coal License(s): <b>353440</b>
<b>TOTAL COST:</b>	<b>\$1,882.75</b> (the dollar amount listed is proportioned on a per hectare basis of the total cost for those mineral lands being reported here with a breakdown per title given in Table 1 of the report).
<b>AUTHOR(S):</b>	Rod Churchill, M.Sc., Lands Manager, Carbon Development Corporation
<b>SIGNATURE(S):</b>	
<b>NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):</b>	Not applicable; No permits applied for

<b>DATE SUBMITTED:</b>	January 25, 2016
<b>YEAR OF WORK:</b>	2015
<b>PROPERTY NAME:</b>	Telkwa
<b>COAL LICENSE(S) AND/OR LEASES ON WHICH PHYSICAL WORK WAS DONE:</b>	The only work performed was a thorough review of previous work (1950's to 1998) in order to prepare a technical report meeting 43-101 and JORC criteria.

<b>MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:</b>	n/a
<b>MINING DIVISION:</b>	Omineca
<b>NTS / BCGS:</b>	093L11
<b>LATITUDE:</b> <u>54° 37' 38"</u> (at centre of work)	<b>LONGITUDE:</b> <u>127° 09' 39"</u> (at centre of work)
<b>UTM Zone:</b> <u>9N</u> <b>EASTING:</b> <u>618,725</u> <b>NORTHING:</b> <u>6,054,860</u>	

<b>OWNER(S):</b>	Carbon Development Corporation
<b>MAILING ADDRESS:</b>	P.O. Box 8263, Station A, St. John's, NL, A1B 3N4, CANADA   Tel: 709-579-8290
<b>OPERATOR(S) (who paid for the work):</b>	Telkwa Coal Limited
<b>MAILING ADDRESS:</b>	c/o Malaspina Consultants Inc., 880 - 580 Hornby Street, Vancouver, BC, V6AC 3B6

<b>REPORT KEYWORDS</b> (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude - do not use abbreviations or codes)
coal, claystone, siltstone, sandstone, conglomerate, minor tuff, lava beds, Lower-Upper Cretaceous, Skeena Group, Telkwa Basin, Goathorn Creek, Pine Creek, Cabinet Creek, Telkwa North-Avelling Hill, Tenas Creek, in-situ ~125 million tonnes, past-producer, Manalta, Luscar, Bulkley Valley Coal Limited, Carbon Development Corporation, coal licenses 353440

<b>REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:</b>
Not Applicable

## SUMMARY OF TYPES OF WORK IN THIS REPORT

<b>GEOLOGICAL (scale, area)</b> <i>Work to Report:</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>EXTENT OF WORK</b> <b>(in metric units)</b>	<b>ON WHICH TENURES</b>
	Ground, mapping		
	Photo interpretation		

<b>GEOPHYSICAL (line-kilometres)</b> <i>Work to Report:</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>EXTENT OF WORK</b> <b>(in metric units)</b>	<b>ON WHICH TENURES</b>
	Ground (Specify types)		
	Airborne(Specify types)		
	Borehole		
	Gamma, Resistivity,		
	Resistivity		
	Caliper		
	Deviation		
	Dip		
	Others (specify)		
	Core		
	Non-core		

<b>SAMPLING AND ANALYSES</b> <i>Work to Report:</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>EXTENT OF WORK</b> <b>(in metric units)</b>	<b>ON WHICH TENURES</b>
Total Number of Samples			
	Proximate		
	Ultimate		
	Petrographic		
	Vitrinite reflectance		
	Coking		
	Wash tests		

<b>PROSPECTING (scale/area)</b> <i>Work to Report:</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>EXTENT OF WORK</b> <b>(in metric units)</b>	<b>ON WHICH TENURES</b>
	Preparatory/Physical		
	Line/grid (km)		
	Trench (number, metres)		
	Bulk sample(s)		

Part of Section 3 of the main report, and the following parts of Appendix A: parts of Section 1, parts of Section 13.1, Section 14, Section 24, parts of Section 25, Figure 14.1, Figure 14.2, Figure 24.1, Appendix B, Appendix C, and Appendix D remain confidential under the terms of the Coal Act Regulation, and have been removed from the public version.

[http://www.bclaws.ca/civix/document/id/complete/statreg/251\\_2004](http://www.bclaws.ca/civix/document/id/complete/statreg/251_2004)

**REPORT SUBMITTED TO THE MINISTRY OF  
ENERGY & MINES TO SATISFY SECTION 8(1)  
REQUIREMENTS OF THE COAL ACT**

**Regarding Telkwa Property Coal License:  
353440**

**Submitted On Behalf Of:**  
Carbon Development Corporation ("CDC")  
202 - 66 Kenmount Road, St. John's, NL, A1B 3V7

**&**

Telkwa Coal Limited ("TCL")  
c/o Malaspina Consultants Inc.  
880 - 580 Hornby Street, Vancouver, BC, V6AC 3B6

**Submitted By:**  
Rod Churchill, M.Sc.  
Lands Manager

**January 25th, 2016**

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## **1.0 INTRODUCTION**

### **1.1 General**

This report has been prepared to apprise the Minister of activities ongoing at the Telkwa Coal Project in east-central British Columbia.

On 2014-Apr-28, Altius Minerals Corporation ("Altius") of St. John's, NL closed the acquisition of a portfolio of 11 producing coal and potash royalties from Prairie Mines & Royalty Ltd. ("Prairie Royalties"), wholly-owned subsidiary of Sherritt International Corporation ("Sherritt"). Altius also acquired 100% ownership of Sherritt's Carbon Development Partnership ("CDP"). CDP's wholly owned company Carbon Development Corporation ("CDC") holds coal licenses on behalf of CDP including those located in the Telkwa Area.

### **1.2 Location & Access**

The Telkwa coal license group ("Property") is located approximately 2 km southwest of the community of Telkwa and 15 km south of Smithers which is the large community in this area and which has daily air service. Smithers is ~380 km by rail from Prince Rupert and the Ridley coal handling terminal.

The Property is bisected by the northeast flowing Telkwa River. An all-weather-road originating from Smithers provides access to the north half of the Property and a second all-weather-road originating from Telkwa provides access to the south half of the Property. Numerous logging roads and ATV trails turn from the all-weather-roads providing access to more remote sections of the Property.

## 2.0 MINERAL TENURE

The Property is comprised of 41 Crown Coal Licenses and 5 Freehold titles containing 11,693 hectares. Twenty-nine (29) licenses are issued to CDC and comprise a total of 7,284 hectares. In addition to the coal licenses, CDC also holds 1,301 hectares under five (5) Freehold coal titles. Augmenting the land position are an additional twelve (12) coal licenses issued to Bulkley Valley Coal Limited ("BVCL") comprising 3,108 hectares. CDC has an agreement with BVCL whereby CDC pays BVCL a \$2.00 per acre pre-production royalty annually in exchange for the right to explore and develop coal resources upon those coal licenses. The pre-production royalty amounts to a \$15,360 payment each year by CDC to BVCL. This agreement is renewable every 5 years with the current agreement expiring on May 31, 2020.

As per the Coal Act and Regulations, annual rentals are due for each coal license based on the number of hectares contained within the coal license and the number of years that the coal license has been issued. Accordingly, the total cost of the annual rentals due in February 2016 is \$5,180.

Figure 1 provides a map of the Property showing the distribution of mineral lands. Table 1, provides a listing of mineral licenses and freehold titles that comprise the Property as well as the annual rentals required for each coal license. Also included in Table 1 is the value of the completed work in 2015 proportioned to each license on a per hectare basis. Information pertinent to this report is highlighted in red.





**Table 1. Mineral Land Holdings, Telkwa Property**

Tenure No.	Tenure Type	Application Date	Good to Date	Years Since Issue	Tenure Hectares	Annual Rental Due	Allocation of 2015 Work	Expenditures Filed for 2015 (YES/NO)
DL 230	Freehold	---	---	---	259	\$ -	\$ 1,882.75	NO
DL 237	Freehold	---	---	---	259	\$ -	\$ 1,882.75	NO
DL 389	Freehold	---	---	---	262	\$ -	\$ 1,904.56	NO
DL 391	Freehold	---	---	---	262	\$ -	\$ 1,904.56	NO
DL 401	Freehold	---	---	---	259	\$ -	\$ 1,882.75	NO
<b>353440</b>	<b>Coal License</b>	<b>2/6/1997</b>	<b>2/6/2015</b>	<b>20</b>	<b>259</b>	<b>\$ 5,180.00</b>	<b>\$ 1,882.75</b>	<b>NO</b>
334059	Coal License	3/1/1995	3/1/2015	22	269	\$ 6,725.00	\$ 1,955.44	NO
334060	Coal License	3/1/1995	3/1/2015	22	269	\$ 6,725.00	\$ 1,955.44	NO
362522	Coal License	5/12/1998	5/12/2015	19	259	\$ 5,180.00	\$ 1,882.75	NO
362523	Coal License	5/12/1998	5/12/2015	19	259	\$ 5,180.00	\$ 1,882.75	NO
362525	Coal License	5/12/1998	5/12/2015	19	259	\$ 5,180.00	\$ 1,882.75	NO
362527	Coal License	5/12/1998	5/12/2015	19	259	\$ 5,180.00	\$ 1,882.75	NO
362528	Coal License	5/12/1998	5/12/2015	19	259	\$ 5,180.00	\$ 1,882.75	NO
327830	Coal License	5/30/1986	5/12/2015	31	260	\$ 9,100.00	\$ 1,890.02	NO
327971	Coal License	7/30/1990	7/30/2015	27	259	\$ 7,700.00	\$ 1,882.75	YES
327972	Coal License	7/30/1990	7/30/2015	27	259	\$ 7,700.00	\$ 1,882.75	YES
366754	Coal License	11/5/1998	11/5/2015	19	140	\$ 2,800.00	\$ 1,017.70	YES
327836	Coal License	9/20/1977	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327837	Coal License	6/23/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327838	Coal License	6/23/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327839	Coal License	6/23/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327841	Coal License	6/23/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327842	Coal License	6/23/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327843	Coal License	6/23/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327844	Coal License	6/23/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327845	Coal License	6/23/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327846	Coal License	6/23/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327856	Coal License	6/23/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
328672	Coal License	9/20/1977	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327834	Coal License	6/24/1980	12/31/2015	31	130	\$ 4,550.00	\$ 945.01	YES
327840	Coal License	2/1/1980	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327864	Coal License	9/1/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327865	Coal License	9/1/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327866	Coal License	9/1/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327936	Coal License	9/1/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327944	Coal License	9/1/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327945	Coal License	9/1/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327946	Coal License	9/1/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327949	Coal License	9/1/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327951	Coal License	9/1/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327952	Coal License	9/1/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327953	Coal License	9/1/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327954	Coal License	9/1/1978	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327963	Coal License	10/7/1983	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327964	Coal License	10/7/1983	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
327965	Coal License	10/7/1983	12/31/2015	31	259	\$ 9,065.00	\$ 1,882.75	YES
<b>TOTALS</b>					<b>11,693</b>	<b>\$ 330,340.00</b>	<b>\$ 85,000.00</b>	

### 3.0 PREVIOUS WORK

This section has been adapted from Ledda (1999) who concisely compiled all material previous work done on the Telkwa Property.

Coal was initially discovered in the Telkwa area at about 1900 although production did not commence in the Goathorn Creek area until 1918. On the north bank of the Telkwa River the Aveling (Telkole) Mine produced coal from 1921 to 1922 and again from 1940 to 1945. Telkwa Colliery (McNiel Mine) on the south side of the Telkwa River began producing in 1923 (Malott, 1990). Initial mining production was mainly for local consumption until after 1930 when underground operations were initiated at Bulkley Valley Collieries near Goathorn Creek. Production since that time has been sporadic, however, with underground operations often curtailed by structural complications and inadequate pre-development exploration.

Since 1950 the Telkwa Coalfield has been actively prospected by a variety of companies. Table 2 on the following page provides a tabular summary of the exploration activities completed on the property since that time, while the following provides a descriptive summary of the area's exploration activities.

- **1951 - The Government of Canada** conducted a regional survey, much of which included the Telkwa license area.
- **1969 - Canex Aerial Limited** completed a drilling program of approximately 20 boreholes on the Telkwa North licenses.
- **1977 to 1978 - Cyprus Anvil Mining** completed a rotary drilling program within the Telkwa South licenses.
- **1979 - Shell Canada/Crowsnest Resources Ltd.** completed 13 rotary drill-holes, 4 of which were located on Telkwa South licenses, and the remaining 9 situated on the north side of the Telkwa River. Chip samples were not recovered for analytical testing.
- **1981 - Shell Canada/Crowsnest Resources Ltd.** completed a mapping and exploration drilling program which consisted of 11 rotary holes and one diamond drill-hole, all of which were spaced randomly throughout the Telkwa property. Coal samples were recovered from 4 of the rotary holes as well as the diamond drill-hole for analyses.
- **1982 - Shell Canada/Crowsnest Resources Ltd.** drilled 72 boreholes on the property, the majority of which were located on the south side of the Telkwa River. Of the 72 holes, 7 were rotary drill-holes and 65 were diamond drill-holes. Coal samples were collected and analyzed from all holes that intersected significant coal units.
- **1983 - Shell Canada/Crowsnest Resources Ltd.** completed 69 diamond drill-holes on the Telkwa South licenses, most of which were located within what has been designated as the Goathorn East (Pit #3) resource area. Included within the program were a small number of large-diameter core-holes which, along with all other drill-holes that intersected significant coal units, were sampled and had coal analyses performed. Of the 69 boreholes completed, 11 were situated within the proposed Pit #3 test-pit limits, to provide a preview of the pit development.

Table 2. Telkwa Property Exploration History

Year	Total Drill Holes (rotary & core)	Rotary	Core	ARD Cores	Trenches	ARD Trenches	Surface Geology Drill Holes	Piezometers (piezos per site)	Surface Geophysics (kms)	Bulk Sample (resource area)	Company	Total Expenditures
1969	20	20?	0?	-	-	-	-	-	-	-	Canex Aerial Ltd.	\$ -
1977/78	10?	10?	0?	-	-	-	-	-	-	-	Cyprus Anvil Mining	\$ -
1979	13	13	-	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	\$ -
1980	-	-	-	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	\$ -
1981	12	11	1	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	\$ -
1982	72	7	65	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	\$ -
1983	69	-	69	-	-	-	-	-	-	Pit #3 (2191)	Crowsnest Resources Ltd. (CNRL)	\$ -
1984	44	-	44	5	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	\$ -
1985	4	-	4	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	\$ -
1986	4	-	4	-	-	-	-	1/1	-	-	Crowsnest Resources Ltd. (CNRL)	\$ -
1987	-	-	-	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	\$ -
1988	14	-	14	2	-	-	-	-	3.5	-	Crowsnest Resources Ltd. (CNRL)	\$ -
1989	40	18	22	-	16	-	-	5/4	20.3	Pit #7 (6' core)	CNRL/Coal Mining Research Co./GSC	\$ -
1990	-	-	-	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	\$ -
1991	-	-	-	-	-	-	-	-	-	-	Crowsnest Resources Ltd. (CNRL)	\$ -
1992	43	20	23	6	5	5	-	-	3.6	-	Manalta Coal Ltd.	\$ 503,100
1993	53	33	20	6	-	-	10	7/5	19.0	-	Manalta Coal Ltd.	\$ 627,362
1994	56	48	8	2	-	-	-	-	-	-	Manalta Coal Ltd.	\$ 1,265,595
1995	83	71	12	3	5	4	-	4/4	-	-	Manalta Coal Ltd.	\$ 1,997,000
1996	155	136	19	13	10	4	18	15/13	-	Tenas (801?)	Manalta Coal Ltd.	\$ 2,035,000
1997	121	113	8	8	27	16	7	25/18	-	-	Manalta Coal Ltd.	\$ 1,388,440
1998	45	57	8	4	32	19	-	2/2	-	Tenas (6' core)	Manalta Coal Ltd.	\$ 560,000
<b>TOTALS</b>	<b>828</b>	<b>507</b>	<b>321</b>	<b>49</b>	<b>95</b>	<b>48</b>	<b>35</b>	<b>59/47</b>	<b>46.4</b>	-	-	<b>\$ 8,376,497</b>

Based upon drill-hole information a 219 tonne bulk sample from 7 seams was subsequently extracted from a test-pit located within the Pit #3 area. A full suite of coal quality analyses was performed, including testing on various simulated washplant products.

- **1984 - Shell Canada/Crowsnest Resources Ltd.** completed 44 diamond drill-holes, the majority of which were located within the Pit #3 resource area on the south side of the Telkwa River. Less than 10% of the holes were drilled on the Telkwa North coal licenses. All significant coal units were sampled and analyzed.
- **1985 - Shell Canada/Crowsnest Resources Ltd.** completed 4 diamond drill-holes, all of which were located north of the Telkwa River. All significant coals were sampled and analyzed.
- **1986 - Shell Canada/Crowsnest Resources Ltd.** completed 4 diamond drill-holes, again located on the Telkwa North coal licenses within an area that was designated as the Pits #7 and #8 Resource Area. Coal analyses were performed on all significant seams.
- **1988 - Shell Canada/Crowsnest Resources Ltd.** completed an exploration program exclusive to the Telkwa North licenses which consisted of initially completing approximately 3.5 kilometers of surface geophysics to highlight potential target locations. The area was subsequently drilled with 14 diamond drill-holes from which coal samples were collected and analyzed.
- **1989 - Shell Canada/Crowsnest Resources Ltd.** completed an exploration program consisting of drilling, trenching and surface geophysics on the Telkwa North coal licenses, and reflection seismic exploration within the Pit #3 area of the Telkwa South licenses. In addition a large-diameter coring program was undertaken specifically targeted at obtaining a bulk sample from the Pit #7 resource area.

The conventional exploration drilling program included 31 bore-holes, 18 of which were rotary drill-holes, and the remaining 13 continuous core diamond drill-holes. Coal samples for analyses were collected from all holes that intersected significant coal units although only cored bore-holes were provided a full analyses. Analytical results from recovered rotary chip samples were not considered representative.

At proposed wastedump and tailings pond locations 16 trenches were completed to evaluate the characteristics of the surficial lithologies. The Telkwa North surface geophysics included approximately 15.4 kilometers of geophysics shared between the Pit #7 resource area, the Pit #8 proposed waste dump area and the proposed infrastructure facilities location.

Upon completion of the conventional exploration program four previously drilled sites in the Pit #7 area were selected as locations for large-diameter (6-inch) core-holes. From these a cumulative bulk sample from 7 seams was extracted and provided a complete analysis.

As part of a joint investigation managed by the Coal Mining Research Company of Devon, Alberta, 4 seismic lines totaling 4.9 kilometers were laid out and a reflection seismic exploration program completed. The area chosen for the investigation was within the Pit #3 resource area where reasonable drill-hole control had previously been established.

- **1989 - The Geological Survey of Canada**, as part of a province-wide study of coal quality, drilled 9 core-holes for a combined total length of 280 meters in the vicinity of the old Bulkley Valley Collieries site near Goathorn Creek. Two of the holes were drilled in the vicinity of the historic Aveling Mine. All coal intersections were sampled and subsequently analyzed.
- **1992 - Manalta Coal Ltd.** of Calgary, Alberta acquired the Telkwa Property coal licenses on May 1st, 1992 from Shell Canada/Crowsnest Resources Ltd.. Later the same year Manalta Coal conducted an exploration program that included 3.6 kilometers of surface geophysics, a regional airborne magnetic survey review, 5 track-hoe trenches and 43 drill-holes. The surface geophysics, trenches and 39 of the 43 holes drilled were located on the Telkwa North licenses, while the remaining 4 drill-holes were completed on the south side of the Telkwa River in the Tenas Creek vicinity.

Of the 43 bore-holes completed 19 were diamond core-holes, 3 were rotary core-holes and 21 were drilled utilizing conventional rotary drilling techniques. All holes completed in the Tenas Creek area were of the rotary variety although one was rotary cored through its coal measures. All significant coal seam intersections from cored drill-holes were sampled and analyzed.

Coincidental with the exploration drilling program representatives from the British Columbia Ministry of Energy, Mines and Petroleum Resources (MEMPR), and the Institute of Sedimentary and Petroleum Geology (ISPG) were on site to conduct coalbed methane desorption tests on selected Telkwa coal samples. The study conducted by the MEMPR and the ISPG was part of a regional study of methane desorption in British Columbia coalfields.

- **1993 - Manalta Coal Ltd.** completed an exploration program consisting of 53 drill-holes shared between the Telkwa North and Telkwa South coal licenses. A geotechnical and surficial geology program was also completed by Piteau Engineering on behalf of Manalta Coal Ltd. which included rock strength testing on selected cores, approximately 19 kilometers of surface geophysics and 10 till sample sites. All surficial geology studies were completed within a proposed tailings pond investigation area located near the Pit #7 and #8 resource areas.

The Tenas Creek exploration area on the south side of the Telkwa River was the focus of 26 drill-holes, targeted at obtaining additional coal quality information and further delineation of the field's limits. Also within the Telkwa South coal licenses, 5 drill-holes, all of which were cored, were completed within the Pit #3 resource area to obtain additional coal quality information.

Exploration completed on the Telkwa North coal licenses consisted of 2 drill-holes within the limits of the Pit #8 Resource Area, 11 drill-holes dedicated to further exploration of the Pit #8 coal trend beyond current pit limits, and 9 reconnaissance drill-holes completed proximal to the Pits #7 and #8 resource areas.

Of the 53 bore-holes completed in 1993 11 were diamond drilled coreholes, 10 were rotary core-holes (including one 1993 core-hole on a site utilized the previous year) and 33 were drilled utilizing conventional rotary techniques. All significant coal seam intersections from cored drill-holes were sampled and subsequently analyzed.

- **1994 - Manalta Coal Ltd.** completed their third annual exploration program, consisting of geological surface mapping and the completion of 56 rotary drill-holes, 8 of which were cored at

least partially. Work was undertaken on both sides of the Telkwa River, although dominated slightly by drilling activities on the southern coal licenses where 32 drillholes were completed.

Of the 32 drill-holes completed on the Telkwa South coal licenses 13 were dedicated to further exploration of the Tenas resource area, while 19 exploratory drill-holes were completed to evaluate the coal-bearing potential of the Tenas West coal licenses. Drilling on the Telkwa North licenses included 14 exploratory drill-holes within the MCL (Whalen) Freehold Block, 8 within tentative wastedump areas between Pit #8 and Whalen Block, and 3 drill-holes completed proximal to the Pit #7 resource area. All cored coal seam intersections were sampled and subsequently analyzed.

- **1995 - Manalta Coal Ltd.** completed a summer exploration program, limited exclusively to the Telkwa South coal licenses. A cumulative total of 83 drill-holes totaling approximately 9600 meters, and 5 track-hoe trenches were completed. Of the 83 drill-holes, 3 were continuously cored using a heliportable diamond drilling rig in environmentally sensitive areas near Cabinet Creek, while 9 additional core-holes within the Tenas resource area were completed using conventional coring methods. Coal samples were collected from all cored holes where coal measures were intersected, while rock samples were collected from 3 of the Tenas core-holes. Coal samples were analyzed for their coal quality properties while host rock samples were evaluated for their acid generating potential.

As in some previous years, a geotechnical and hydrogeological program was completed coincidentally with exploration activities, supported by Piteau Engineering Consultants. Four piezometer installations were completed to monitor groundwater flows in the Tenas area and 5 track-hoe trenches, also in the Tenas area, were completed to investigate the surficial lithologies of potential wastedump sites. The lithologies intersected by the trenches were also sampled and analyzed to evaluate their acid generating potential.

- **1996 – Manalta Coal Ltd.** conducted an extensive exploration program on the Telkwa South coal licenses, which included the completion of 155 rotary drill-holes, 10 trenches, 18 shallow surficial drill-holes and the extraction of an 80 tonne bulk coal sample. Drilling activities were restricted mainly to the Tenas and Goathorn East resource areas, while the bulk sample was collected from two small pits dug near the western subcrop edge of the Tenas resource area.

From the bulk sample test-pits the 3 mineable Tenas seams (c-seam, 1U-seam and 1-seam), as well as proportional amounts of host roof and floor lithologies, were collected and sampled individually. The 1U-seam, 1-seam and associated host lithologies were collected from the main pit, while the c-seam and related lithologies were collected from the 2nd, smaller pit. A complete suite of coal quality analytical tests were subsequently performed, including testing on various simulated proposed products.

Of the 155 rotary drill-holes completed, 19 were cored at least partially. Six of the core-holes were completed within the proposed test-pit area prior to pit development to determine seam oxidation levels within the sample collection site, and to evaluate the suitability of the site for the collection of a field representative bulk sample. The 13 other coreholes, completed within the Tenas (10) and Goathorn East (3) resource areas, were continuously cored for acid base accounting and coal quality purposes.

The 18 shallow surficial geology drill-holes were completed to investigate the surficial lithologies of potential tailings pond and wastedump locations. Piezometers were installed within the surficial lithologies of 7 of the bore-holes, while an additional 8 piezometers were installed within the coal seams at 6 conventional drill-sites. Piezometers were also installed within the coal horizons of the 2 testpits prior to backfilling in order to collect groundwater samples and monitor its flow.

Of the 10 trenches completed in 1996, 6 were completed within the confines of the Tenas testpits for the purpose of channel sample collection. All of the remaining trenches were completed randomly in the Tenas resource area for the purposes of investigating the area surficial lithologies, and collecting acid base accounting data.

- **1997 – Manalta Coal Ltd.** conducted an exploration drilling program, again limited exclusively to the Telkwa South coal licenses. Completed within the scope of the program were 121 geology drill-holes and 3 geotechnical bore-holes. Twenty-seven trenches, targeted at further investigating the surficial lithologies of the plantsite, tailings pond and Goathorn East resource areas, were also completed.

Included within the conventional drilling component of the program were 72 drill-holes within the Goathorn East (Pit #3) area, 43 within Tenas area and 6 within the Goathorn West (Pit #6) area. The surficial bore-holes were completed within potential wastedump locations of Tenas and Goathorn areas, while the 3 geotechnical holes were completed within the 1983 Pit #3 test-pit reclamation area.

Of the 121 conventional drill-holes completed during the 1997 program, 8 were continuously cored and sampled for coal and rock sample collection purposes. All coal samples were subsequently analyzed for seam quality determinations, while rock samples were analyzed for their acid generating potential. Sixteen of the trenches and each of the reclamation pit drill-holes were also thoroughly sampled and subsequently analyzed for their acid generating potential.

Within the conventional drill-holes, piezometers were installed at 11 locations, including 4 nested sites where multiple stratigraphic horizons were investigated. Each of the 3 reclamation pit drill-holes, and all of the shallow overburden bore-holes, were also installed with piezometers to monitor groundwater flow characteristics.

- **1998 – Manalta Coal Ltd.** conducted an exploration program restricted locally to the Telkwa South coal licenses, which included 45 drill-holes and 32 track-hoe trenches. Included among the 45 drill-holes were 5 large-diameter conventional core-holes from which bulk samples were collected of the Tenas main mineable seams. For control purposes each of the bulk sample core-holes was completed at an existing, historically completed drill-hole location. Three conventional continuous core-holes, also among the 45 drill-holes, were completed for acid base accounting purposes and to collect coal samples for seam quality determinations.

The trenching component of the exploration program was supported by Piteau Engineering Consultants of Calgary, and was targeted at investigating the surficial lithologies of the proposed plantsite, tailings pond, loadout and haul route corridors. Samples of intersected lithologies

were collected from 19 trench locations and subsequently analyzed for their acid generating potential.

Included within the conventional drilling component of the program were 20 drill-holes within the Goathorn East (Pit #3) area, 8 within Tenas area, 9 within the proposed tailings pond location and 3 within the Goathorn West (Pit #6) area. Continuous cores were collected from among the Tenas, Goathorn East and tailings pond areas. Piezometers were ultimately installed within drill-holes of the Goathorn East and West resource areas.

- **2015 – Telkwa Coal Ltd.** retained the services of Norwest Corporation located in Calgary, AB to prepare a technical report that meets with 43-101 and JORC requirements (Jordan & Lavender, 2015). No new field work nor sampling was completed but rather the work consisted of a review of all prior work and the evaluation of the suitability of that data to meet with 43-101 and JORC requirements. In the process of validating the geological data and interpretation for the Telkwa Area, Norwest first reviewed, verified, and completed any necessary edits of the source data files. The geological database addressed by Norwest included 733 drill holes and 25 trenches. [REDACTED]

The review yielded that the Telkwa Property is a project of merit but would need additional technical data especially related to the assessment of coal quality, pollutants and environmental studies before proceeding to a mine development permit application and approval of an environmental assessment.

The complete Norwest technical report is included here as Appendix A.

In addition to the technical report that was prepared, Telkwa Coal Limited has been busy throughout 2015 with evaluation and scoping work. The list below highlights the main activities that Telkwa Coal Limited has completed or currently still reviewing:

- Completed the maiden NI 43-101 JORC Compliant Report as per above;
- Updated the geological model to a Pre-Feasibility standard with SRK Consulting;
- Continued to source and gather historical data from consultants who undertook work for previous owners and which is missing from our historic files;
- Scoped the coal wash plant requirements with Sedgman Limited;
- Met with and scoped coal haulage requirements with CN Rail;
- Met with and scoped coal export requirements with Ridley Island Coal Terminal;
- Scoped mine infrastructure requirements and capital expenditure;
- Undertook coal quality assessment, marketing and pricing with senior coal industry consultant Kobie Koornhof;
- Commenced preliminary review of the acid rock drainage assessment work with SRK;
- Built top down cost models for both a Major and a Small mine;
- Completed financial models and internal scoping studies for both a Major and Small Mine;



#### 4.0 FUTURE PLANS

In 2016, Telkwa Coal's focus will be to commence baseline studies to support an application for a small scale mine and commence the permitting process.

For the interim, CDC will maintain title of all coal licenses and freehold lands comprising the Telkwa Property as well as ensure all regulatory payments and filings are met.

Dated this 25th day of January, 2016

A handwritten signature in black ink, appearing to read "Rod Churchill". The signature is stylized with large, flowing letters.

Rod Churchill, M.Sc.  
Lands Manager

## 5.0 REFERENCES

Jordan, G. and Lavender, T. (2015): Technical Report, Telkwa Coal Property, British Columbia - A report prepared for Telkwa Coal Limited, 173 pages.

Ledda, A. (1999): Telkwa Property 1995 to 1998 Geological Assessment Report prepared on behalf of Luscar Limited; Unpublished, 75 pages.

## **APPENDIX A. Norwest Technical Report, Telkwa Coal Property, BC**

**TECHNICAL REPORT  
TELKWA COAL PROPERTY,  
BRITISH COLUMBIA**

Submitted to:  
**TELKWA COAL LTD.**

**Report Date:**  
February 5, 2015

**Effective Date:**  
January 5, 2015

**Norwest Corporation**  
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Qualified Person:  
G. Jordan, P. Geo.  
Theresa Lavender, P.Eng.

**NORWEST**  
CORPORATION

## CERTIFICATE OF QUALIFICATIONS

I, Geoffrey R. Jordan, P.Geo., do hereby certify that:

1. I am currently employed as Senior Geologist by Norwest Corporation, Suite 2700, 411 – 1<sup>st</sup> Street SE., Calgary, Alberta, Canada T2G 4Y5.
2. I graduated with a Bachelor of Science degree from the University of New South Wales in 1971.
3. I am a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta, (Member #22095) and the Association of Professional Engineers and Geoscientists of British Columbia, (#30827).
4. I have worked as a geologist for a total of forty-four years since my graduation from university. My work experience includes twenty-eight years of exploration and mining support on a variety of coal properties around the world.
5. I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101.
6. I satisfy the requirements of a Competent Person as defined under the JORC Code, International Reciprocity of Competent Persons, as I am a member of APEGA, which is listed by JORC as current ROPO/RPO’s. As required by JORC, I satisfy the other code requirements of a Competent Person.
7. I have used resource and reserve definition standards that apply to a foreign code. NI 43-101 includes the provision for the use of mineral resource and reserve categories of an acceptable foreign code [7.1(1)], if the issuer is incorporated or organized in a foreign jurisdiction. Part 7.1 of the Companion Policy, “Use of Foreign Code”, states that the disclosure of mineral resources or mineral reserves may be made using either the CIM Definition Standards or “an acceptable foreign code”. In this Technical Report the acceptable foreign code is the JORC Standard. In compliance with 7.1(2) of NI 43-101 there are no material differences between the mineral resource and mineral reserve categories of the CIM Definition Standards and those of the JORC Standard that need to be reconciled.
8. I am responsible for the preparation of all Sections of the report, with the exception of Section 24, titled “Technical Report, Telkwa Coal Property, British Columbia” dated February 5, 2015, Effective Date January 5, 2015 (the “Technical Report”).

9. I completed a site visit on March 27, 2006.
10. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
11. I am independent of the owner/issuer applying all of the tests in Section 1.4 of National Instrument 43-101.
12. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Dated this 5<sup>th</sup> day of February, 2015.

**“ORIGINAL SIGNED AND SEALED BY AUTHOR”**

---

Geoff Jordan, P. Geol.  
Senior Geologist

**CERTIFICATE OF QUALIFICATIONS**

I, Theresa Lavender, P. Eng., do hereby certify that:

1. I am currently employed as Manager, Mining, Suite 2700, 411 – 1st Street SE. Calgary, Alberta, Canada T2G 4Y5.
2. I graduated with a Bachelor of Science degree in Mining Engineering from the University of Alberta in 2000.
3. I am a member of the Association of Professional Engineers and Geoscientists of Alberta, (Member #65015).
4. I have worked as a mining engineer for 15 years since my graduation from university. My work experience includes 5 years of employment at various surface mining operations in Western Canada. Since 2005 I have been employed as a consultant to the mining industry. This work has included various assignments to either existing or potential surface mining operations.
5. I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a “qualified person” for the purposes of NI 43-101.
6. I am responsible for the preparation of Section 24 of the report titled “Technical Report, Telkwa Coal Property, British Columbia” dated February 5, 2015, Effective Date January 5, 2015 (the “Technical Report”).
7. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
8. I am independent of the owner/issuer applying all of the tests in Section 1.4 of National Instrument 43-101.
9. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Dated this 5<sup>th</sup> day of February, 2015.

**“ORIGINAL SIGNED AND SEALED BY AUTHOR”**

---

Theresa Lavender, P. Eng.  
Manager, Mining

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## **1 SUMMARY**

In December 2014, Telkwa Coal Ltd (Telkwa Coal) commissioned Norwest Corporation (Norwest) to prepare a Technical Report for the Telkwa Coal Property licences and leases in central British Columbia. The property location is shown on Figure 2-1.

The principal objectives of this assignment are the reporting of the activities and results of the historic coal exploration conducted on the property by CNRL Canada, Manalta Coal Ltd., Luscar Limited and others and the preparation and reporting of a coal resource estimate. The resource estimate and Technical Report are prepared in accordance with the requirements of the Canadian public reporting system, National Instrument 43-101.

The Effective Date for the resource estimates shown in this report is January 5, 2015 which is the most recent date on which the last technical information to be included in the report, the coal resource estimate and classification, was made. The principal source of data concerning geology, drilling, coal quality testing and many other technical aspects, were obtained from the Provincial archives, other public data sources or were provided by Telkwa Coal.

The Telkwa Coal Property, as illustrated in Figure 4-1, covers coal-bearing strata in west-central British Columbia. The property is located about 11 km south of the city of Smithers, British Columbia. Both the Village of Telkwa and Smithers are located on the Yellowhead Highway (Highway 16) north of the city of Prince George. The property may be accessed by various secondary and forestry service roads; the area is centered approximately at Latitude 54.7<sup>0</sup> N, Longitude 127.1<sup>0</sup> W.

Telkwa Coal acquired the rights to the Telkwa Coal Property from Altius Minerals Corporation in 2014. Coal tenures purchased by Telkwa Coal are currently held variously in the names of Carbon Development Corporation and Bulkley Valley Coal Ltd. Mineral tenure boundaries are located on Block boundaries of the NTS topographic map series of the British Columbia Provincial Government; copies of these, and the mineral title information were obtained on-line. The Telkwa Coal Property covers an area under tenure of 11,693 ha. This area consists of a contiguous block of British Columbia Crown Coal Licences, totalling 10,392 ha plus 1,301 ha of private lands held as Freehold titles; the latter include ownership of coal minerals in the subsurface and surface rights as well. The coal licence and lease areas held by Telkwa Coal are shown on Figure 4-1. The resource model areas are situated over approximately 6,790 ha of the coal tenure.

The Telkwa Coalfield is in the Intermontaine Belt of west-central British Columbia, approximately 18 km south of Smithers. The Telkwa River and Goathorn Creek run through the

basin dissecting it into three segments that are referred to as the North Telkwa Area located north of the Telkwa River, West Goathorn Area located south of the Telkwa River and west of Goathorn Creek and the East Goathorn Area. The coal seams that are potential mining targets in the north and most of Goathorn Project Areas are those that are contained within lithostratigraphic Unit III and include 2 through 11 Seams. In contrast, in the Tenas Project Area, and a small block of Goathorn East, the main seams of interest are those of the 1 Seam coal sequence of Unit I.

Exploration on the property from 1979 to 1989 has included drilling and other forms of work, such as surface geophysical surveys, mapping, trenching and bulk sampling. Table 1.1 is a summary of the non-drilling activities. Table 1.2 summarizes exploration by drilling on this property over the same time period.

**TABLE 1.1**  
**TELKWA COAL PROPERTY**  
**SUMMARY OF NON-DRILLING EXPLORATION ACTIVITIES**

Year	Coal Sample Trenches	Surficial Materials Holes	Piezometers Installations (pz/sites)	Surface Geophysics (km)	Exploration Company
1986			1/1		CNRL
1988				3.5	CNRL
1989	16	-	5/4	20.3	CNRL
1992	5	-	-	3.6	Manalta
1993	-	10	7/5	19.0	Manalta
1995	5	-	4/4	-	Manalta
1996	3	18	15/13	-	Manalta
1997	27	7	25/18	-	Manalta
1998	32	0	2/2	-	Manalta
<b>TOTAL</b>	<b>88</b>	<b>35</b>	<b>59/47</b>	<b>46.4</b>	

**TABLE 1-2**  
**TELKWA COAL PROPERTY**  
**SUMMARY OF DRILLING ACTIVITIES**

Year	Combined Drill Holes	Rotary Drill Holes	Core Drill Holes	Company
1979	13	13	-	CNRL
1981	12	11	1	CNRL
1982	72	7	65	CNRL
1983	69	-	69	CNRL
1984	44	-	44	CNRL
1985	4	-	4	CNRL
1986	4	-	4	CNRL
1988	14	-	14	CNRL
1989	40	18	22	CNRL
1992	43	20	23	Manalta
1993	53	33	20	Manalta
1994	56	48	8	Manalta
1995	83	71	12	Manalta
1996	155	136	19	Manalta
1997	121	113	8	Manalta
1998	45	37	8	Manalta
<b>TOTAL</b>	<b>828</b>	<b>507</b>	<b>321</b>	

Of the 828 hole total, 776 holes were intended for and used for geological evaluation purposes. These represent a total of 91,475 m of drilling.

In the process of validating the geological data and interpretation for the Telkwa Area, Norwest first reviewed, verified, and completed any necessary edits of the source data files. The geological database addressed by Norwest included 733 drill holes and 25 trenches.

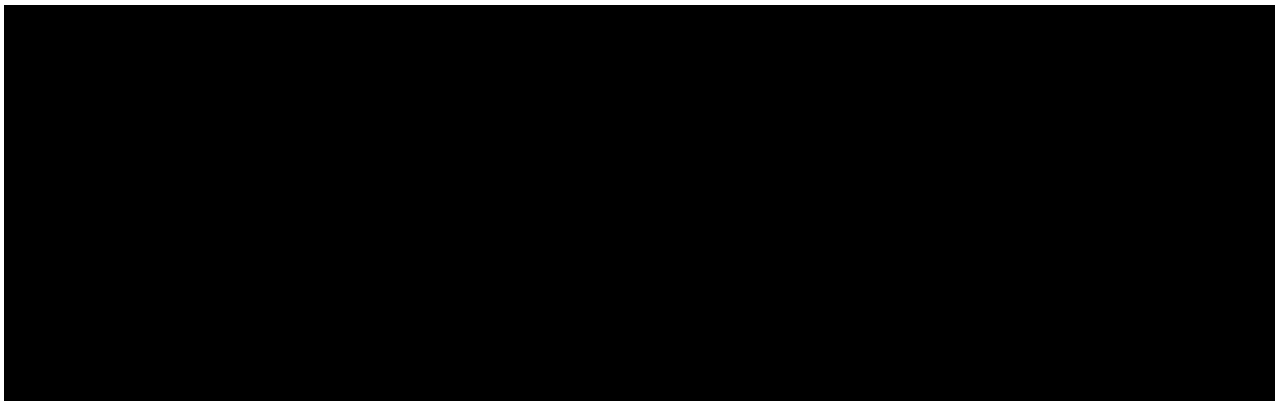
Verification procedures included the following activities:

1. review of the drill hole collar data to identify any obvious location control problems;
2. review of seam tops and bottoms;
3. review of lithology files;
4. review of coal seam interpretations and correlations;
5. review of coal seam density data;
6. review of the coal quality database; and
7. Review of the ARD data and database

The data and/or interpretations are a reasonable representation of the geology of the Telkwa Area, as it is presently understood, based on the exploration and development drill hole data.

Coal quality parameters have been determined from core samples recovered since 1979 from each of the resource areas in the Telkwa Coalfield. The results presented in this report represent a compilation of all analytical results thus far accumulated within the resource areas identified on the coal licenses. Analytical results from all ply samples recovered between 1995 and 1998 in Appendix B, Table 1. The analytical results for seam composites are compiled for the Tenas, Goathorn and Telkwa North Project Areas and are presented in Appendix B, Table 2.

Norwest is of the opinion that the spacing of available coal quality data for the seams used in the geological and mining model is adequate for characterization of the in-place quality parameters. Table 1.3 summarizes the average coal quality for each of the main project areas in the Telkwa Coalfield.



The resource estimates in this report have been prepared in accordance with the requirements of the Canadian National Instrument (NI) 43-101 and the CIM Definition Standards. NI 43-101 is the Canadian equivalent of the JORC Standard. The categories of resources, identified as Measured, Indicated and Inferred, are exactly the same in both NI 43-101 and JORC. In fact, the descriptions of these categories are almost identical. Thus, for resource category definition as used in the present report, NI 43-101 and JORC are compliant with each other and the requirements of JORC are satisfied.

The term “resource” is utilized to quantify coal contained in seams occurring within specified limits of thickness and depth from surface. The term “resource” refers to the in-place inventory of coal that has ‘reasonable prospects for economic extraction’. Coal resources are always

reported as in-place tonnage and not adjusted for mining losses or recovery. However, minimum mineable seam thickness and maximum included parting thickness are considered. In-place resources within the Telkwa Coal Property, summarized in Table ES.4, cover an area of approximately 1,417 ha. These resources include all coal seams that meet the assumptions and criteria defined in Section 14.1. The author of this report is not aware of any known environmental, permitting, legal, title, socio-economic, marketing, political or other relevant factors, other than those discussed in the various sections of this report, that could materially affect the resource estimates presented in this report. Table 1.4.



A discussion and data concerning the potential for surface mining on this property is included in Section 24.

The accuracy of resource estimates is, in part, a function of the quality and quantity of available data and of engineering and geological interpretation and judgment. Given the data available at the time this report was prepared, the estimates presented herein are considered reasonable. However, they should be accepted with the understanding that additional data and analyses available, subsequent to the date of the estimates, may necessitate revision. These revisions may be material. There is no guarantee that all or any part of the estimated resources of will be recoverable.

Norwest's judgement is that the Telkwa Coal Property is a property of merit. However there is the need for additional technical data especially related to the assessment of coal quality, pollutants and environmental studies before this property will be granted a mine development permit and receive government approval related to its environmental assessment. The additional work is concerned with evaluating the mining product quality for the markets into which the coal may be sold. It also includes the preparation of a preliminary feasibility study that allows the present engineering and economic evaluations to be prepared, and the preparation of an Environmental Assessment report in compliance with the requirements of the BC Ministry of the Environment.

The immediate objective for future work should be aimed at the preparation of a Preliminary Feasibility Study which is a regulatory requirement before reserves and be estimated, classified and reported.



## **2 INTRODUCTION**

In December 2014, Telkwa Coal Ltd (Telkwa Coal) commissioned Norwest Corporation (Norwest) to prepare a Technical Report for the Telkwa Coal Property leases in central British Columbia. The property location is shown on Figure 2-1.

The principal objectives of this assignment are the reporting of the activities and results of the historic coal exploration conducted on the property by Shell Canada, Manalta Coal Ltd., Luscar Limited and others and the preparation and reporting of a coal resource estimate. The resource estimate and Technical Report are prepared in accordance with the requirements of the Canadian public reporting system, National Instrument 43-101.

The Effective Date for the resource estimates shown in this report is January 5, 2015 which is the most recent date on which the last technical information to be included in the report, the coal resource estimate and classification, was made. The principal source of data concerning geology, drilling, coal quality testing and many other technical aspects, were obtained from the Provincial archives, other public data sources or were provided by Telkwa Coal.

A discussion and data concerning the potential for surface mining on this property is included in Section 24.

Verification of the geology, coal development and levels of assurance of the coal resources were completed through a site visit, historical data reviews, geological modeling and resource estimation and classification. As indicated above, coal resources have been estimated, classified and reported according to the CIM Standards as is required by NI 43-101.

A summary of the tasks undertaken by Norwest to complete the report are as follows:

1. Estimation of the coal resource for the Tenas, Telkwa North and Goathorn Project Areas. The boundaries of the area being assessed were checked by reference to on-line government records.
2. Review of existing compiled quality and coal survey data.
3. Confirmation of the geological interpretations and their relationship to the raw data was accomplished through the inspection of geophysical logs, geological maps, cross-sections and a site visit.
4. Confirmation of applied geological complexity in terms of resource reporting classification was accomplished during the review of the geological maps and sections and the generation of a geological model.

5. Review of the drill hole spacing to confirm adequacy for reported resource classes was accomplished through the inspection of drill hole location maps;

The present report is accordingly designed to comply with the requirements of National Instrument 43-101 for Technical Reports for reporting of Coal Resources and Reserves. Norwest personnel, who have extensive and varied experience with the coal deposits of western Canada, prepared this report.

On March 27, 2006 a visit to the site was completed by Geoff Jordan. There are no more current coal exploration and development activities ongoing at this site. The project area has been mined by small scale local operations some time ago but, apart from abandoned surface pits, there are few visible signs of this kind of activity. The sites of exploration work conducted by Shell, Manalta, Luscar and others were visited but little evidence of coal at these sites was seen. The local physiographic condition and transportation infrastructure were inspected.

The accuracy of resource estimates is, in part, a function of the quality and quantity of available data and of engineering and geological interpretation and judgment. Given the data available at the time this report was prepared, the estimates presented herein are considered reasonable. However, they should be accepted with the understanding that additional data and analyses available, subsequent to the date of the estimates, may necessitate revision. These revisions may be material. There is no guarantee that all or any part of the estimated resources of will be recoverable.

## **2.1 JORC COMPLIANCE**

Although this report is designed to comply with the requirements of National Instrument 43-101 and the CIM Resource and Reserve Definition Standards, it is also completed in a manner that makes it JORC Compliant. Appropriate sections describe the measures that have been taken to accomplish this. However the following is a description of three specific aspects:

- the JORC Mineral Resource and Reserve Definitions;
- the Competent Persons producing the report; and
- responses to the Checklist of Assessment and Reporting Criteria.

Each of these topics is addressed below.

### **2.1.1 The JORC Mineral Resource and Mineral Reserve Definitions**

The following report is intended to satisfy the requirements of National Instrument 43-101 of Canada, and that document specifies that the mineral Reserve and Resource Definitions of the CIM be used. JORC requires that the definitions of JORC be used for JORC compliant reports.

However, the mineral resource and reserves definitions in these two codes have been made to be identical; hence the requirements of both codes for mineral resource and reserve definitions are satisfied.

### **2.1.2 The Competent Persons**

The JORC Code requires that a Competent Person prepare reports of reserves and resources that are intended for public disclosure purposes in Australia. The code includes statements of the credentials and experience needed for individuals to act in the capacity of Competent Persons. There is a provision for suitably qualified persons who are members of Recognised Overseas Professional Organizations (ROPO) to be able to act as Competent Persons. One of the ROPOs listed by JORC is the Association of Professional Engineers and Geoscientists of Alberta (APEGA) and Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) and the authors are members of these organizations. Their other professional credentials and work experience are described in the certificates that appears at the beginning of this report.

### **2.1.3 Responses to the Checklist of Assessment and Reporting Criteria.**

Table 1 in Appendix D is the checklist from the JORC Guidelines for the Assessment and Reporting Criteria. This checklist (JORC Table 1) is that for the current version of JORC. In the present report it has been taken that the issues raised in this checklist are an important component of compliance. There do not appear to be any instructions requiring the table to be included in a Technical Report that is JORC compliant. It appears that the only purpose of the checklist is to list the issues that should be addressed in the report. However, the table is included in this report in this case as it is the easiest way to ensure that the various items are responded to, and that the reader of the report is able to locate the report sections that do address the various issues.

The third column of the table shows the response to each item raised or the location in the report text where each item is discussed.

### **3 RELIANCE ON OTHER EXPERTS**

This report conforms to the NI 43-101 standard for technical reports on coal resources and reserves. The reporting nomenclature and formats are consistent with CIM Standards for coal reporting. The report has been prepared for Telkwa Coal Ltd. by Norwest Corporation and is intended to be used by Telkwa Coal only, subject to the terms and conditions of its contract with Norwest.

Norwest has relied wholly on information and data provided by Telkwa Coal and, with permission, by Altius Minerals Corp., the former property owners as the basis for estimating coal resources within the Telkwa resource areas. Norwest did not conduct fieldwork, other than a site visit to the Grassy Mountain Property, and did not independently drill, take samples or subject any coal samples to analysis.

All of the material concerned with coal quality and processing in the present report was provided to Norwest by Telkwa Coal, Altius and an earlier property owner, Sherritt International. That information and data has been extracted from historic exploration testing and analysis data originally acquired from 1979 to 1998. A staff member with Norwest participated in portions of that work and, for those portions, are able to confirm the validity of the exploration, sampling and testing procedures and the analytical methods used when those data was originally collected. However he is not able to confirm the exploration and testing for work that was done prior to and subsequent to this. Norwest has conducted a series of checks of a selection of the field exploration data from the original drilling and concluded that the historic records concerning hole locations, coal zone thickness, sample intervals and depth appear to be correct and are generally considered to be reasonable.

Norwest has also relied on data concerning the assessment of the saleable quality of the coal as has been provided by Koornhof Associates, Inc. of Vancouver, British Columbia.

#### **4 PROPERTY DESCRIPTION AND LOCATION**

The Telkwa Coal Property, as illustrated in Figure 4-1, covers coal-bearing strata in west-central British Columbia. The property is located about 11 km south of the city of Smithers, British Columbia. Both the Village of Telkwa and Smithers are located on the Yellowhead Highway (Highway 16) north of the city of Prince George. The property may be accessed by various secondary and forestry service roads; the area is centered approximately at Latitude 54.7° N, Longitude 127.1° W.

Telkwa Coal acquired the rights to the Telkwa Coal Property from Altius Minerals Corporation in 2014. Coal tenures purchased by Telkwa Coal are currently held variously in the names of Carbon Development Corporation and Bulkley Valley Coal Ltd. The Crown licences are shown on Table 4.1. Mineral tenure boundaries are located on block boundaries of the NTS topographic map series of the British Columbia Provincial Government; copies of these, and the mineral title information were obtained on-line. The Telkwa Coal Property covers an area under tenure of 11,693 ha. This area consists of a contiguous block of British Columbia Crown Coal Licences, totalling 10,392 ha plus 1,301 ha of private lands held as Freehold titles; the latter include ownership of coal minerals in the subsurface and surface rights as well. The coal licence and lease areas held by Telkwa Coal are shown on Figure 4-1. The resource model areas are situated over approximately 6,790 ha of the coal tenure.

There are areas of previous underground or surface mining within the Telkwa Coal Project Area and these have been taken account of as necessary in the definition of resource block areas and in the estimation of resources. The mined-out or surface disturbance areas occur in the Goathorn Project Area and are shown on the geology map of Figure 7-4. There are no known hazards or environmental liabilities related to abandoned open pit areas or mined out underground areas but such hazards may be experienced, especially with regard to abandoned underground mines. There are other known environment hazards related to coal mining activity in the project area; the most important of these appears to be concerned with surface and ground water and effects that may result from Acid Rock Drainage (ARD) on water quality. The author is not aware of the survey status of the property other than the locations shown on standard government issued maps. These have been checked to confirm that the licenses and the application are properly located according to the NTS legal descriptions. The project is encumbered by Crown Coal Royalties that are payable on coal production.

**TABLE 4.1**  
**TELKWA COAL LTD.**  
**COAL LEASE TENURES**

Tenure Number	Map Number	Term Date	Area (ha)
327836	093L	2015/dec/31	259
327837	093L	2015/dec/31	259
327838	093L	2015/dec/31	259
327839	093L	2015/dec/31	259
327841	093L	2015/dec/31	259
327842	093L	2015/dec/31	259
327843	093L	2015/dec/31	259
327844	093L	2015/dec/31	259
327845	093L	2015/dec/31	259
327846	093L	2015/dec/31	259
327856	093L	2015/dec/31	259
328672	093L	2015/dec/31	259
327830	093L	2015/may/30	260
327834	093L	2015/dec/24	130
327840	093L	2015/dec/31	259
327864	093L	2015/dec/31	259
327865	093L	2015/dec/31	259
327866	093L	2015/dec/31	259
327936	093L	2015/dec/31	259
327944	093L	2015/dec/31	259
327945	093L	2015/dec/31	259
327946	093L	2015/dec/31	259
327949	093L	2015/dec/31	259
327951	093L	2015/dec/31	259
327952	093L	2015/dec/31	259
327953	093L	2015/dec/31	259
327954	093L	2015/dec/31	259
327963	093L	2015/dec/31	259
327964	093L	2015/dec/31	259
327965	093L	2015/dec/31	259
327971	093L	2015/jul/30	259
327972	093L	2015/jul/30	259
334059	093L	2015/mar/01	269

Table 4.1 (cont'd)

Tenure Number	Map Number	Term Date	Area (ha)
334060	093L	2015/mar/01	269
353440	093L	2015/feb/06	259
362522	093L	2015/may/12	259
362523	093L	2015/may/12	259
362525	093L	2015/may/12	259
362527	093L	2015/may/12	259
362528	093L	2015/may/12	259
366754	093L	2015/nov/05	140
<b>TOTAL</b>			<b>10392</b>

Norwest has relied on information on the ownership of the coal tenures from information provided by Telkwa Coal and from information provided on-line by the British Columbia Provincial Government.

The Crown Coal Licenses are subject to annual lease rental fees and to the payment to the Province of coal royalties on production. There are various private royalties that apply to many of the Crown and Freehold Leases. In some cases there are as many as three private royalties referred to as “the Wheaton Royalty”, “the Shell Royalty” and “the Bulkley Royalty” that apply to individual lease blocks. Norwest does not know what the terms and conditions are that apply to these private royalties.

The author is not aware of any environmental constraint to which the leases are subject other than those described in Sections 18 and 24 of the report.

The author is aware that an exploration permit issued by the British Columbia Ministry of Energy and Mines will be needed to facilitate any or all of the recommended future exploration work but is not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform work on the property.

## **5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

The Telkwa Coal Property is located in west-central British Columbia approximately 15 kilometers south of the city of Smithers and about 2 kilometers southwest of the community of Telkwa, as shown on Figure 4.1. Both of these communities are situated along the Yellowhead Highway (Highway #16) about 11 kilometers distant from each other. Smithers is located 380 kilometers by rail, east of Prince Rupert and the Ridley Island coal handling facilities, shown on Figure 2.1. Smithers is serviced by commercial aircraft on a daily basis.

The Telkwa Property currently consists of 10,392 ha held under 41 British Columbia Crown Coal Licenses plus 1,301 ha under five private Freehold leases, in an area approximately 20 km by 14 km. The Telkwa River flows eastward through the property and bisects it creating two coal resource areas both of which contain coal measures of economic significance.

Access to the north side of the property is via Smithers along an all-weather public road that follows the Bulkley and Telkwa Rivers. The south side of the property is accessed from the community of Telkwa, by all-weather road. Logging roads are frequent in the area, especially on the southern half of the property, branching periodically from the all-weather access road and allowing access to more remote parts of the property. Access to these areas is via four-wheel drive and all-terrain vehicles.

The area is serviced by a 500 KV power line that crosses the property in an approximate east-west direction, following the south side of the Telkwa River. In addition, Pacific Northern operates an underground natural gas transmission line which also crosses the property, being located on the south side of the Telkwa River and branching northward towards Smithers along the eastern license blocks.

The physiographic setting for the Telkwa property is typically foothills, intermediate to the Bulkley Range of the Hazelton Mountains and the low-lying gently rolling relief of the Nechako Plateau. The Bulkley Range is clearly visible to the north and west of the property where the landscape is bedrock controlled, while within the property limits and easterly, topography is rounded and covered with widespread glacial drift. Bedrock on the property is usually obscured as glacial sediments form a shallow mantle over much of the area, exceptions occurring sporadically or along sections of deeply eroded river and stream valleys such as Goathorn Creek.

The principal drainage system on the property is the Telkwa River, which flows east across the property until it ultimately drains into the Bulkley River at the community of Telkwa. Major



tributaries to the Telkwa River include Pine Creek which drains much of the area on the northern licenses, and Tenas and Goathorn Creeks which drain the south.

Topographic relief within the property ranges from a minimum of 530 m above sea level at the Telkwa River's eastern contact with the property boundary to a maximum of 1,375 m at the property's southernmost extremity near Cabinet Creek. Most elevations, however, are in the range from 600m and 900 m.

Vegetation at lower elevations along watercourses consist mainly of cottonwoods, spruce and shrubs. The tree layer is typically composed of large, widely spaced cottonwoods with scattered hybrid spruce and trembling aspen. The understorey is composed of a rich diversity of shrub species which include high-bush cranberry, red-osier dogwood, alder, prickly rose, snowberry and black twinberry. At higher elevations the predominant vegetation cover consists of lodge pole pine, balsam fir and spruce. Understorey species include alder, willow, black twinberry and prickly rose. Some of the area has been commercially logged and a number of areas have been cleared for agricultural purposes.

Pacific Inland Resources Ltd. of Smithers harvests timber within the license area for the production of commercial building products. One of the principal mills in the area is situated at the outskirts of Smithers along the access road to the north side of the property.

Soils in the area vary in thickness and have developed on glacial till, outwash sediments and occasionally on weathered parent material. Parent material generally tends to be represented by either sedimentary sandstone or siltstone of the Skeena Group, or volcanic sediments of the Hazelton Group.

## **6 HISTORY**

Coal was initially discovered in the Telkwa area in about 1900 although production did not commence until 1918. On the north bank of the Telkwa River the Aveling Mine produced coal from 1921 to 1922 and again from 1940 to 1945. Telkwa Colliery on the south side of the river began producing in 1923. The initial production was mainly for local consumption until after 1930 when underground operations were initiated at Bulkley Valley Collieries near Goathorn Creek. Production after that time was sporadic, however, with underground operations often delayed by difficult mining conditions and inadequate pre-development exploration.

Since 1950 the Telkwa Coalfield has been actively prospected by a variety of companies and Government agencies. In 1951 the Government of Canada conducted a regional geological survey, much of which included the Telkwa license area. In 1969 Canex Aerial Limited completed a drilling program of approximately 20 boreholes on the Telkwa North licenses. From 1977 to 1978 Cyprus Anvil Mining completed a rotary drilling program within the Telkwa South licenses and in 1979 Shell Canada Resources Ltd., operating as Crowsnest Resources Ltd. (CNRL), completed a 13 rotary drill-hole program that included 4 holes on the Telkwa South licenses; the remaining 9 were situated on the north side of the Telkwa River.

In 1981, CNRL conducted a mapping and exploration drilling program which consisted of 11 rotary holes and one diamond drill-hole, all of which were spaced randomly throughout the Telkwa property. Coal samples were recovered from 4 of the rotary holes as well as the diamond drill-hole for analyses. CNRL's exploration continued in 1982 when 72 boreholes were drilled on the property, the majority of which were located on the south side of the Telkwa River. Of the 72 holes, 7 were rotary drill-holes and 65 were diamond drill-holes. Coal samples were collected and analyzed from all holes that intersected significant coal units. Then, in 1983, CNRL completed 69 diamond drill-holes on the Telkwa South licenses, most of which were located within what has been designated as the Goathorn East resource area. Included within the program were a small number of large-diameter core-holes which, along with all other drill-holes that intersected significant coal units, were sampled and had coal analyses performed. Of the 69 boreholes completed, 11 were situated within the proposed Pit #3 test-pit limits, to provide a preview of the pit development. Based on drill-hole information a 219 tonne bulk sample from 7 seams was subsequently extracted from a test-pit located within the Pit #3 area.

In 1984 CNRL completed 44 diamond drill-holes, the majority of which were also located within the Pit #3 resource area and in 1985 CNRL drilled 4 diamond drill-holes, all of which were located north of the Telkwa River. All significant coals were sampled and analyzed. In 1986 the company completed 4 diamond drill-holes, again located on the Telkwa North coal licenses

within an area that was designated as the Pits #7 and #8 Resource Area. In 1988 the company completed an exploration program in the Telkwa North licenses which included approximately 3.5 kilometers of surface geophysics to highlight potential target locations. The area was subsequently drilled with 14 diamond drill-holes. Finally, in 1989, CNRL completed an exploration program consisting of drilling, trenching and surface geophysics on the Telkwa North coal licenses, and reflection seismic exploration within the Pit #3 area of the Telkwa South licenses. In addition a large-diameter coring program was undertaken specifically targeted at obtaining a bulk sample from the Pit #7 resource area.

In 1989 The Geological Survey of Canada, as part of a province-wide study of coal quality, drilled 9 core-holes in the vicinity of the old Bulkley Valley Collieries site near Goathorn Creek. Two of the holes were drilled in the vicinity of the historic Aveling Mine.

In 1992 Manalta Coal Ltd. of Calgary (Malta) acquired the Telkwa licenses from CNRL and then conducted an exploration program that included 3.6 kilometers of surface geophysics, a regional airborne magnetic survey review, 5 track-hoe trenches and 43 drill-holes. The surface geophysics, trenches and 39 of the 43 holes drilled were located on the Telkwa North licenses, while the remaining 4 drill-holes were completed on the south side of the Telkwa River in the Tenas Creek vicinity. Of the 43 bore-holes completed 19 were diamond core-holes, 3 were rotary core-holes and 21 were drilled utilizing conventional rotary drilling techniques.

In 1993 Manalta completed an exploration program consisting of 53 drill-holes shared between the Telkwa North and Telkwa South coal licenses. The Tenas Creek exploration area on the south side of the Telkwa River was the focus of 26 drill-holes, targeted at obtaining additional coal quality information and further delineation of the field's limits. Also within the Telkwa South coal licenses, 5 drill-holes, all of which were cored, were completed within the Pit #3 resource area to obtain additional coal quality information. Exploration completed on the Telkwa North coal licenses consisted of 2 drill-holes within the limits of the Pit #8 Resource Area, 11 drill-holes dedicated to further exploration of the Pit #8 coal trend beyond current pit limits, and 9 reconnaissance drill-holes completed proximal to the Pits #7 and #8 resource areas. Of the 53 bore-holes completed in 1993 11 were diamond drilled core-holes, 10 were rotary core-holes and 33 were drilled utilizing conventional rotary techniques.

In 1994, Manalta completed its third annual exploration program, consisting of geological surface mapping and the completion of 56 rotary drill-holes, 8 of which were cored at least partially. Work was undertaken on both sides of the Telkwa River, although dominated slightly by drilling activities on the southern coal licenses where 32 drill-holes were completed. In 1995

the company completed a summer exploration program, limited exclusively to the Telkwa South coal licenses. A cumulative total of 83 drill-holes totaling approximately 9600 meters, and 5 track-hoe trenches were completed.

In 1996 the company conducted an extensive exploration program on the Telkwa South coal licenses, which included the completion of 155 rotary drill-holes, 10 trenches, 18 shallow surficial drill-holes and the extraction of an 80 tonne bulk coal sample. In 1997 Manalta's exploration continued with an exploration drilling program, again limited exclusively in the Telkwa South coal licenses. The company completed 121 geology drill-holes and 3 geotechnical bore-holes.

Finally, in 1998, Manalta conducted an exploration program restricted locally to the Telkwa South coal licenses, which included 45 drill-holes and 32 track-hoe trenches. Included among the 45 drill-holes were 5 large-diameter conventional core-holes from which bulk samples were collected of the Tenas main mineable seams.

In 1999 Luscar Ltd, who had acquired Manalta Coal Ltd and became owner of the property, shelved plans to develop it pending improvements in world thermal coal prices. Subsequently Sherritt International acquired Luscar. That company, and with it the Telkwa coal licenses, were acquired by Altius Minerals Corporation in 2014. No further exploration was conducted on the property from 1998 to 2014.

## **7 GEOLOGICAL SETTING**

The Telkwa Coalfield is in the Intermontaine Belt of west-central British Columbia, approximately 18 km south of Smithers (Palsgrove and Bustin, 1989). The Telkwa River and Goathorn Creek run through the basin dissecting it into three segments that are referred to as the North Telkwa Area located north of the Telkwa River, West Goathorn Area located south of the Telkwa River and west of Goathorn Creek and the East Goathorn Area.

During Jurassic and Cretaceous time much of the western portion of British Columbia was formed as the result of several tectonic regions, referred to as “terranes”, which moved slowly toward and eventually collided with the North American Craton. The Telkwa Coalfield is the product of sedimentation that occurred as one such terrane, the Stikine Terrane, pushed eastward to eventually become sutured to the North American landmass (Richards, 1988).

Subsequent basins, which formed in response to the approaching terrane mass, were the focus of rapid sedimentation, subsidence and increased tectonic activity. One such basin, the Bowser Basin, had developed during Middle Jurassic time near the present-day location of Smithers. It was a center of deposition, bounded on the north by the Stikine Arch, on the south by the Skeena Arch and on the east by the early uplifting of the Columbian Orogeny. The Telkwa Coalfield developed along the northern flank of the Skeena Arch near the southern limit of sedimentary rocks in the Bowser Basin. Figure 7.1 is a Table of Stratigraphy for the coalfield and Figure 7.2 is a Geology Map.

Deposition of the coal-bearing sediments in the Telkwa area was initiated into the Bowser Basin during the Lower Cretaceous, following uplift and erosion of the Skeena Arch. Although this sedimentation initially came from the south and west, an eastern provenance soon dominated as a response to the increased uplift of the Columbian Orogeny. The result in the Telkwa area is represented by more than 500 m of coal-bearing strata, referred to as the Lower Cretaceous Skeena Group. In the Telkwa Coalfield, Skeena Group sediments unconformably overlie Jurassic Hazelton Volcanics.

### **7.1 STRATIGRAPHY**

Sedimentation of Skeena Group sediments occurred throughout the Lower Cretaceous, during which time deposition was influenced by two regressive / transgressive episodes. As a result the stratigraphic sequence is subdivided into four lithostratigraphic units (Palsgrove and Bustin, 1989). Porphyritic Tertiary and Cretaceous intrusive dykes and sills commonly disrupt local stratigraphy as does a large Tertiary granodiorite plug identified on the northern coal licenses.

## 7.1.1 Unit I

The basal unit, Unit I, was deposited in a fluvial environment on an eroded Hazelton volcanic basement of Jurassic age. In the Telkwa area Unit I may be in excess of 100 m in thickness and consists mainly of conglomerate, sandstone, mudstone and coal. Sand and gravel were typically deposited in braided channels and bars while mudstone accumulated in floodplains. Coal Seams within this unit, collectively referred to as Coal Zone 1, formed in poorly drained backswamps and are characterized by lateral variation throughout the study area. Deposition of Unit I ended with a marine transgression and deposition of Unit II.

## 7.1.2 Unit II

Unit II was deposited within a deltaic / shallow marine environment and consists of up to 140 m of sandstone, silty-mudstone and occasional thin coaly mudstone. Sand was deposited in distributary channels and mouth-bars while mudstone and silty-mudstone accumulated in interdistributary bays. Thin discontinuous peat beds, none of which are of economic significance, accumulated in local salt marshes.

## 7.1.3 Unit III

Unit III is indicative of the second regressive episode for the area and represents the deposition of the main coal-bearing stratigraphic sequence. The unit averages 85 m in thickness and consists of sandstone, siltstone, carbonaceous mudstone and thick, laterally extensive coal seams. Restricted nearshore marine, tidal flat and coastal swamp environments persisted throughout much of the deposition of Unit III. Sandstone units were deposited within tidal channels while interbedded sandstone and siltstone were deposited near-shore, within intertidal environments. Mudstone is representative of tidal flat deposits. Indications are that there was significant marine influence during deposition of the entire unit.

## 7.1.4 Unit IV

Unit IV overlies the coal measures and represents a marine transgression that terminated coal deposition over the Telkwa area. This unit is more than 150 m in thickness and consists of sandstone overlain by silty-mudstone. The basal sandstone is a transgressive lag deposit while the remainder represents deposition within a near-shore, shallow marine environment.

## 7.2 STRUCTURE

Since deposition of the Skeena Group sediments during the Lower Cretaceous, the Telkwa Area has undergone at least two episodes of significant tectonic deformation. The Upper Cretaceous of the Bowser Basin reflects a time of deformation, when high angle faulting and plutonism were occurring eastward within the Omineca Crystalline Belt, and increasing uplift was occurring to the west. This was a result of the suturing of the Stikine Terrane to the North American craton

and also the effects of additional terranes approaching from the west. Folding in the Telkwa area was not intense, as illustrated in the Tenas Area and shown on the cross sections of Figure 7-5. However, in other portions of the basin, high angle faults, roughly trending in a north-south direction, are apparent, especially on the south side of the Telkwa River at Goathorn. The geological structure of the Goathorn Area is illustrated on the Typical Cross-sections of Figure 7-4. Porphyritic Late Cretaceous dykes and sills also occur locally within the coal measures.

During the Tertiary, much of the area on the north side of the Telkwa River at Telkwa North was intruded by a large granodiorite and quartz monzonite intrusion. The igneous body, which vertically intruded the Skeena sediments, complicated the structural geology of the area further. This is particularly apparent at close proximity to it on the northern coal licenses. Structural deformation in the Skeena sediments is represented by high angle faults, establishing a mosaic of structural blocks that have been rotated and tilted into a variety of orientations. No specific pattern has been observed for the faulting although faults are apparent in concentric geometries near the intrusive body and also appear to approximately radiate from the intrusive edge. Fault displacements have been observed to range from only a few meters to more than 150 m. Typical cross-sections for this area are shown on Figure 7-3.

Although bedding orientations within the Telkwa Property Project Areas tend to be fault block controlled, each with an independent orientation, dips normally range from  $10^{\circ}$  to  $30^{\circ}$ . In the fault blocks associated with the Goathorn Pit #3 area dips are typically  $20^{\circ}$  to the east, while in the blocks of Goathorn Pit #7 & #8 they average  $17^{\circ}$  to the east and northeast respectively. In the Telkwa North Area, block orientations are to the southeast and southwest, with dips ranging from  $10^{\circ}$  to  $35^{\circ}$ . In the Tenas area the west limb of the Tenas syncline normally dips from  $9^{\circ}$  to  $22^{\circ}$ , while the east limb dips at much steeper orientations, up to  $50^{\circ}$ .

### **7.3 MINERALIZATION**

The coal seams that are potential mining targets in the Northwest and most of Goathorn Project areas are those that are contained within lithostratigraphic Unit III and include 2 through 11 Seams. In contrast, in the Tenas Project Area, and a small block of Goathorn East the main seams of interest are those of the 1 Seam coal sequence of Unit I.

The stratigraphic columns for each of the main resource areas shown on Figure 7-6 clearly illustrate the typical stratigraphy found in each of the Project Areas. The illustration also shows some of the regional variations and trends that occur within seam and interseam lithologies throughout the Telkwa Coalfield.

### 7.3.1 Unit I Coal Stratigraphy

The coal seams in lithostratigraphic Unit I, collectively referred to as the 1 Seam package, are separated from the overlying coals of Unit III by up to 140 m of shallow marine origin sediments. Unit I has been drilled extensively since 1992 in the Tenas Project Area, where the seams in that unit are the targets for commercial development. Unit I has also been identified occasionally in the fault blocks of Goathorn East where its coal sequence remains consistently thick although has been intersected only at depths generally too deep for mining. Where encountered in the Cabinet and Whalen areas the Unit I seams are notably thinner.

In the Tenas Project Area the Unit I seams include as many as 13 seams spread over a stratigraphic section of 45 m. Most of these seams are not of sufficient thickness to be of commercial interest. Some of the thicker more notable trends identified within the main seams, labeled C, 1U and 1 in descending order, are described as follows:

**C Seam:** This is the uppermost and thinnest of the seams in the Tenas Area and averages 1.49 m in thickness and is separated from the underlying 1U Seam by approximately 13 m of strata. The C Seam, like many of the thinner seams in the Tenas Area, is well developed throughout most of the area but is subject to local lateral variability; it is locally absent from parts of the Tenas Area, most notably the deepest part of the basin formed by the Tenas syncline. In the Pit #3 area, where the Unit I stratigraphy is identified, the C Seam is typically absent.

**1U Seam:** This seam in the Tenas and Goathorn areas is very well developed and laterally consistent, averaging 1.77 m in thickness. The sulphur content, however, is laterally variable, often over short distances; the seam has not to date been sufficiently tested to draw the same conclusions for the Goathorn Project Area. In the Tenas Area the 1U Seam is typically separated from the underlying 1 Seam by a siltstone parting that normally ranges from 0.0 m to 2.5 m in thickness. Typically, the parting is absent in the south-central part of the field, increasing progressively in thickness northwesterly across the deposit.

**1 Seam:** This seam is the thickest and most consistent seam of the Unit I seams. It averages 4.12 m thickness in the Tenas Area, and slightly less in the Goathorn Area. Where identified in Cabinet Area it thins substantially, averaging 2.02 m in thickness. Laterally consistent in the Tenas Area, 1 Seam is normally free of significant partings and includes up to five individual seam plies. The 1 Seam is consistently and predictably low in sulphur. The 1 Seam plies are occasionally affected by local thinning or nondeposition.



### 7.3.2 Unit III Coal Stratigraphy

Up to seventeen coal seams that occur in lithostratigraphic Unit III collectively contribute 20.5 m of coal to the Unit's 85.0 m average thickness. Unit III seams are found within the Goathorn East, Goathorn West, and the Northwest Areas. The main coal zones in Unit III, mainly being Seams #2 through #11 in ascending order, display some lateral variability throughout their lateral extent. Some of the more notable seams and seam trends are described as follows:

**Seam #2:** This seam remains consistent throughout much of the property although thin partings are apparent in the Pit #3 and Pit#7 resource areas. The seam does, however, exhibit some thickness variability over short distances especially within the northwest portion of Pit #8. Seam # 2U, which overlies Seam #2, is thin and is present only within the eastern resource areas north of the Telkwa River. Seam #2L also occurs on the northern side of the river but remains of significant thickness only in the western resource areas.

**Seam #3:** This seam is one of the most consistent seams in the stratigraphic sequence of Unit III. It is found throughout the Project Areas that address Unit III, and is consistently split into Seams #3 L and U by a mudstone parting rarely exceeding 1 m in thickness.

**Seam #4:** This seam is normally well developed throughout each of the Project Areas but is locally absent from a small area in the southeast portion of Pit #8. Seam #4 U, which overlies the #4 Seam, is absent from Pit #7 and the eastern half of Pit #8, but occurs throughout the western part of Pit #8, the Northwest Area, and Pit #3. The parting thickness between Seam #4 and #4 U increases progressively in a northwesterly direction attaining a maximum thickness of more than 7.0 m in the Northwest Area.

**Seam #5:** This seam is a very well developed seam and is found throughout the property. It splits midway through Pit #8 where it is represented in Northwest Project Area and the west half of Pit #8 as Seams #5 L and #5 U.

**Seam #5EX:** This seam progressively develops only in the Pit #8 area, becoming increasingly apparent on the west half of Pit #8. Within the Northwest Project Area the seam continues to thicken and represents one of the thickest and best developed seams of the area.

**Seam #6:** This seam shows considerable variability between the resource areas, splitting from a single seam in Pit #3 to as many as three seams in Pit #7. Throughout Pit #7, Pit #8 and Northwest Area the seam occurs as #6 L and #6 U, separated by a parting normally averaging approximately 1.0 m in thickness. In the Pit #7 area Seam #6 L is further split by another parting

normally not exceeding 0.5 m in thickness.

**Seam #7:** Although generally thin and considered uneconomic throughout most of the resource areas Seam #7 is laterally continuous and shows little variability throughout the coalfield. The exception is within Pit #7 where the seam is absent from the sequence.

**Seam #8:** Although present throughout most of the resource areas, this seam exhibits considerable variability with respect to thickness, often over short lateral distances. Seam #8, and those seams which overly it, are not well represented within the Pit #7 area since most of the upper portion of the Unit III sequence was eroded from that area prior to glaciation.

**Seam #9:** Due to its variable thickness and poor quality characteristics, is rarely considered to be of economic significance. The seam is characterized by visible pyrite banding and as a result has higher than average raw sulphur values by comparison with other seams. Like the underlying Seam #8, it often exhibits seam thickness variability and lateral discontinuity.

**Seam #10:** This seam is a relatively consistent seam, present throughout most of the Pit #3, Pit #8 and Northwest Project Areas. The seam varies in thickness, however, often over short lateral distances.

**Seam #11:** Seam #11, the roof of which forms the top of lithostratigraphic Unit III, is found throughout the Telkwa North Project Areas where it is usually a consistent, continuous seam. It does, however, exhibit some regional thinning within the northeast segment of Pit #8.

### **7.3.3 Interburden Lithologies**

Host rock lithologies between seams are dominated by siltstone and fine grained sandstone, with lesser amounts of mudstone and carbonaceous mudstone. Four notable sandstone units identified within or proximal to the Unit III stratigraphy are described as follows:

**The #2 Sandstone:** This unit, which underlies the #2 and #2 L Seams, is the thickest, most consistent sandstone unit. Forming the top of lithostratigraphic Unit II, it is a massive sandstone in excess of 10 m in thickness which has been observed to commonly contain pelecypod shells or shell fragment horizons within it. The sandstone unit is most strongly developed on the north side of the Telkwa River.

**The #3 Sandstone:** This unit, stratigraphically located in Unit III between Seams #3U and #4, is present throughout all of the resource areas but remains thickest and best developed within the

Pit #3 area south of the Telkwa River. The sandstone unit thins in Pit #7 and continues to thin, becoming finer-grained westward into Pit #8 and Northwest Project Area.

**The #7 Sandstone:** This unit occurs stratigraphically in Unit III between Seam #7 and #8 and is laterally continuous throughout the resource areas on both sides of the Telkwa River. However it is most strongly developed in the Pit #3 area. The unit commonly is interbedded with finer-grained lithologies, most apparent on the north side of the Telkwa River.

**The #11 Sandstone:** This unit, which is also referred to as Unit IV Sandstone, occurs at the base of lithostratigraphic Unit IV and usually directly overlies Seam #11. This marine sandstone can regionally be correlated across the resource areas, showing only minor variability. The unit does, however, tend to be slightly thinner in Pit #3 than within Pit #8 and Northwest Project Area.

## **8 DEPOSIT TYPES**

The definition of “Deposit Type” for coal properties is different from that applied to other types of geologic deposits. Criteria applied to coal deposits for the purposes of determination of coal resources and reserves include both “Geology Type” as well as “Deposit Type”. For coal deposits this is an important concept because the classification of a coal deposit as a particular type determines the range of limiting criteria that may be applied during the estimation of Reserves and Resources.

“Geology Type” for coal deposits is a parameter that is specified in Geological Survey of Canada Paper 88-21, which is a reference for coal deposits as specified in NI 43-101. Coal “Geology Type” is a definition of the amount of geological complexity, usually imposed by the structural complexity of the area, and the classification of a coal deposit by “Geology Type” determines the approach to be used for the Resource/Reserve estimation methodology and the limits to be applied to certain key estimation criteria. The identification of a particular Geology Type for a coal property defines the confidence that can be placed in the extrapolation of data values away from a particular point of reference such as a drill hole.

The classification scheme of GSC Paper 88-21 is similar to many other international coal reserve classification systems but it has one significant difference. This system is designed to accommodate differences in the degree of tectonic deformation of different coal deposits in Canada. Four classes are provided for:

1. “Low” which is for deposits of the Plains type with low tectonic disturbance;
2. “Moderate” which is for deposits affected to some extent by tectonic deformation;
3. “Complex” which is for deposits subjected to relatively high levels of tectonic deformation; and
4. “Severe” for Rocky Mountains type deposits which have been subjected to extreme levels of tectonic deformation.

Two of the coal deposits of economic interest at Telkwa are typical of those for Inner Foothills and Rocky Mountain areas which have been subjected to a relatively high tectonic deformation. Coal deposits of this type are characterized by tight folds and may be steeply inclined or even overturned. Fault offsets are common but fault-bounded plates generally retain normal stratigraphic thicknesses. These characteristics suggest that these areas of the Telkwa coal deposit should be categorized as “Complex” Geology Type to reflect the geological complexity according to GSC Paper 88-21. However one part of the field, the Tenas area, is characterised by

being an unfaulted, broad open syncline. This area has the structural characteristics described in GSC Paper 88-21 of a “Moderate Geology Type”.

“Deposit Type” as defined in GSC Paper 88-21 refers to the extraction method most suited to the coal deposit. There are four categories, which are:

1. Surface,
2. Underground,
3. Non-conventional, and
4. Sterilized.

Continuity of the coal seams along strike and the proximity of the coal to surface facilitate the use of surface mining methods to economically extract the coal. The Telkwa coal deposit is mostly suitable for surface mining.

## **9 EXPLORATION**

“Exploration” in this section refers to activities other than drilling and its related data collection and analysis; drilling exploration activities are described in the next section of the report. “Exploration” refers to such activities as mapping, trenching, surface geophysical surveys and similar non-drilling activities.

The following information was originally compiled by the geological staff of Luscar Limited during the period when that company held the mineral titles in the Telkwa area. Although coal in the Telkwa area was discovered around 1900 and mining started in 1921 there are no records for exploration that may have taken place prior to 1951. In that year the Government of Canada conducted a regional geological survey in the valley and much of that work addressed the Telkwa license area.

In 1981 Shell Canada, operating as Crowsnest Resources Ltd. (CNRL), conducted a geological mapping program in conjunction with the drilling that was undertaken in that year. In 1983 a 219 tonne bulk sample from seven seams was extracted from a test-pit located within CNRL’s exploration area. In 1988 Shell Canada/Crowsnest Resources completed an exploration program confined to the Telkwa North licenses; this program included the completion of approximately 3.5 km of surface geophysics to highlight potential drilling target locations.

In 1989 this work continued and, besides drilling, included trenching and surface geophysics on the Telkwa North coal licenses, and reflection seismic exploration. The program included approximately 15.4 km of surface geophysical surveying. In addition, 16 trenches were completed to evaluate the characteristics of the surficial materials at proposed waste-dump and tailings-pond locations. Also in that year and in conjunction with CNRL’s exploration, the Coal Mining Research Center, an agency of the Canadian Federal Government at that time and which later became part of CANMET, completed four experimental shallow reflection seismic survey lines totaling 4.9 km.

In 1992 Manalta Coal acquired the coal licenses from CNRL and completed an exploration program that included 3.6 km of surface geophysical surveying, a regional airborne magnetic survey review, and the construction and sampling of five track-hoe trenches, as well as 43 drill-holes. The surface geophysics and trenches were located on the Telkwa North licenses. Continuation of this exploration in the next year by Piteau Engineering on behalf of Manalta Coal Ltd. included rock strength testing on selected cores, approximately 19 km of surface geophysical surveys and 10 till sample sites. In 1995 Piteau Engineering Consultants completed a geotechnical and hydrogeological program; four piezometer installations were completed to

monitor groundwater flows in the Tenas area and five track-hoe trenches were constructed, also in the Tenas area, to investigate potential waste dump sites.

In 1996 Manalta Coal conducted an extensive exploration program on the Telkwa South coal licenses, which, besides drilling, included 10 trenches and the extraction of an 80 t bulk sample. The bulk sample was collected from two small pits dug near the western sub-crop edge of the Tenas resource area. In 1998 Manalta continued this exploration and 32 track-hoe trenches were completed at that time. No further exploration was conducted on the property from 1998 to 2014, since the property was acquired by Luscar Limited. The non-drilling exploration activity is summarised in Table 9.1.

**TABLE 9.1**  
**TELKWA COAL PROPERTY**  
**SUMMARY OF EXPLORATION ACTIVITIES**

Year	Coal Sample Trenches	Surficial Materials Holes	Piezometers Installations (pz/sites)	Surface Geophysics (km)	Exploration Company
1986			1/1		CNRL
1988				3.5	CNRL
1989	16	-	5/4	20.3	CNRL
1992	5	-	-	3.6	Manalta
1993	-	10	7/5	19.0	Manalta
1995	5	-	4/4	-	Manalta
1996	3	18	15/13	-	Manalta
1997	27	7	25/18	-	Manalta
1998	32	0	2/2	-	Manalta
<b>TOTAL</b>	<b>88</b>	<b>35</b>	<b>59/47</b>	<b>46.4</b>	

## 10 DRILLING

In the period from 1979 to 1998, as shown on Table 10.1, a cumulative total of 828 well documented drill-holes were completed on the Telkwa Property by CNRL and Manalta. Of those, 507 were drilled using conventional rotary methods, while 321 were cored. In 47 of the drill-holes, 59 piezometers were selectively installed at various stratigraphic levels. 35 surficial bore-holes have also been completed to date on the property. In addition, there are reports of about 30 holes being drilled by Cyprus and Canex sporadically in the period from 1969 to 1978.

Several of the holes were intended for geotechnical and hydrological testing of the mining environment and a lesser total were intended for or used for geological evaluation. Of the 828 hole total, 776 holes were intended for and used for geological evaluation purposes. These represent a total of 91,475 m of drilling.

**TABLE 10.1**  
**TELKWA COAL PROPERTY**  
**SUMMARY OF DRILLING ACTIVITIES**

Year	Combined Drill Holes	Rotary Drill Holes	Core Drill Holes	Company
1979	13	13	-	CNRL
1981	12	11	1	CNRL
1982	72	7	65	CNRL
1983	69	-	69	CNRL
1984	44	-	44	CNRL
1985	4	-	4	CNRL
1986	4	-	4	CNRL
1988	14	-	14	CNRL
1989	40	18	22	CNRL
1992	43	20	23	Manalta
1993	53	33	20	Manalta
1994	56	48	8	Manalta
1995	83	71	12	Manalta
1996	155	136	19	Manalta
1997	121	113	8	Manalta
1998	45	37	8	Manalta
<b>TOTAL</b>	<b>828</b>	<b>507</b>	<b>321</b>	

Drill holes in the database have survey coordinates for the collars. Additional data for them includes geophysical logs, geologists' core/cuttings descriptions, sample intervals (core) and drillers' logs, and these data have been compiled and transcribed into a digital database containing the "from", "to" and "thickness" of lithologic units per drill hole, including coal and till, coal seam identification as well as analytical results from coal samples.



The following material describes the drilling and sampling methods that applied in the period from 1995 through 1998; these descriptions have been provided to Norwest by the client and are used here with permission. Wireline as well as conventional coring techniques were employed during each of the exploration programs undertaken in the most recent drilling between 1995 and 1998. Diamond drill-holes, used for the 1995 heli-portable drilling program in environmentally sensitive areas of Cabinet Creek, were continuously cored extracting 380 mm diameter core from the top of competent strata throughout the entire length of the hole. More commonly, however, rotary wire-line techniques were employed to extract core. Where continuous coring was not required a conventional rotary pilot hole was drilled initially at the site location and subsequently a second adjacent hole was drilled, where selected coal units were cored. Commonly rock units between core intervals were conventionally drilled. At rotary core locations, 100 mm diameter core was typically recovered. Core recoveries from both coring methods were good, although notably better on the larger diameter cores. Core recoveries on the larger core normally ranged from 80% to 100%.

For each of the exploration programs conducted between 1995 and 1998, Failing 1250 and Ingersol Rand TH60 truck-mounted drilling rigs were used to complete the rotary component of the program while an Acker Diamond Drilling Rig completed all diamond drill-holes. McAuley Drilling Co. of Spruce Grove, Alberta, SDS Drilling of Calgary, Alberta and Cora Lynn Drilling of Strathmore, Alberta completed the rotary component of the programs while J.T. Thomas Diamond Drilling of Smithers, British Columbia completed all diamond drilling requirements. Mechanical equipment and rig support was provided by Bruce Kerr Contracting of Smithers, British Columbia.

When physically possible all exploration drill-holes completed within competent rock were open-hole geophysically logged shortly after drilling was suspended. Where poor downhole conditions were encountered a slim-line gamma-density tool was lowered through the drillstem so as to obtain at least one complete geophysical log of the hole. Detail logging (1:20 Scale) was undertaken over significant coal seam intervals only. Surficial geology test-holes were not normally geophysically logged due to their shallow completion depths. In these programs Gamma Ray, Long Spaced Density, Bed Resolution Density, caliper, dipmeter and deviation surveys were run.

Methods used for core and cuttings sampling of coal and rock are described in Section 13.

## **11 SAMPLE PREPARATION, ANALYSIS AND SECURITY**

Norwest did not participate in the exploration of the Telkwa Coal Property for the programs that were carried out from 1979 to 1998 by Manalta Coal Ltd and Crowsnest Resources Ltd. We have no direct knowledge of the sampling methods and procedures that were actually used for core sampling. However the coal quality test work, especially that of the 1990s done by Manalta Coal, was performed for a major coal miner in Western Canada of that time period. That work was to assess the potential for mine development of this property in comparison to the many other coal lease areas that they then held. Manalta used standard sampling and testing procedures and the following is a description of the systems that were used by them at that time.

### **11.1 DRILLING**

All cores collected between 1995 and 1998 were logged in detail by geologists on site. Once described and measured, the coals and selected host rock samples were bagged and labeled for subsequent analysis. In addition, during each exploration season, rock samples from representative core-holes were also collected for subsequent analyses to determine potential acid rock drainage (ARD) characteristics; the ARD testing program was a matter of major importance during this exploration period. A cumulative total of 936 rock samples were collected from 28 continuous cores between 1995 and 1998. A further 37 samples were collected via rotary chip sampling, and 129 from trench sampling. Cuttings descriptions from all rotary drill-holes were made and recorded. Samples collected from drill core and cuttings were submitted for analysis using methods that are standard for the coal industry

The specific process used is described below:

1. Core from the drill hole was logged (i.e. measured and described) using standard geological terms to document various attributes including lithology, color, hardness and grain size.
2. Each core hole was subject to a down-hole geophysical logging program. The logging program, except when technical difficulties for logging are experienced, usually produced a geophysical log suite consisting of caliper, density (gamma-gamma), natural gamma, dip meter and deviation traces . The geophysical logs are used to identify rock types, including coal intersected in the hole.
3. For wireline cores, coal intervals were collected in a plastic-lined core barrel. The core tubes were opened and logged by a geologist. The geologist's core log consists of the

measured thickness and description of the coal, inter-seam partings, adjacent roof and floor rock, and details of any sample intervals removed for analysis.

4. Recovered core was measured to determine an overall recovery (reported in percent) by comparing the recovered core length with the coring run length recorded by the driller. Recovered core was measured and compared to the coal interval thickness determined from the geophysical log suite.
5. Collected samples were cleaned of any mud contamination and placed in individual plastic bags. The bags were labelled on the outside with both the core hole and sample number and sealed with plastic tape to prevent excessive moisture loss. The sample bags were placed together in a collection bag for the core hole before being placed in palletized containers and shipped to an independent laboratory for analysis.

In coal work, additional special security methods for the shipping and storage of samples are not commonly employed, as coal is a relatively low value bulk commodity.

## **11.2 BULK SAMPLES**

Bulk samples have contributed considerably to the understanding of the quality characteristics of the Telkwa coals and have been extracted from three of the main resource areas. On each, a complete suite of coal quality analyses was performed, including testing on a variety of simulated washplant products. In 1983 a 219 t bulk sample was collected from 7 major seams within the Goathorn East (Pit #3) area. In 1989 a bulk sample was extracted from the Bowser (Pit #7) area via large-diameter coring and bulk samples were collected from the three mineable seams of the Tenas area.

Bulk samples were collected from the Tenas resource area on two occasions, initially in 1996 through the excavation of a pair of test pits, and again in 1998 via large-diameter coring techniques. In 1996, an 80 t bulk sample was collected from two adjacent test pits located along the western subcrop edge of the 1/1U Seam and C Seam respectively. The first, and largest of these testpits exploited the 1U and 1 Seams. The second, smaller test pit was targeted at collecting a sample of C Seam, which is approximately 13 m stratigraphically above the 1U Seam.

A complete suite of analytical testing was conducted on the sample including individual seam analysis, product testing, complete washability analysis and burn tests. Washplant and process design work was also conducted, based upon the analytical results. Most of the analytical testing was conducted by Birtley Labs of Calgary, while the test burn and resultant analytical

work was performed by CANMET in Ottawa. All process design work was completed by H.A. Simons of Calgary.

### **11.3 RECLAMATION**

Reclamation activities were undertaken in areas disturbed by recent exploration activities, as well as those areas disturbed by previous years' activities that were considered to require additional work. All disturbed areas were recontoured, reseeded and fertilized using Forestry approved mixtures. Access trails on sloping ground were water barred for erosion control, and additional topsoil was added to areas that inhibited new plant growth. All work was carried out in accordance with the regulations and guidelines of B.C. Forestry. Areas that were not reclaimed in the disturbance year due to the onset of adverse weather were completed the following spring.

## **12 DATA VERIFICATION**

A previous owner of the Telkwa Property, Sherritt International, provided Telkwa Coal Property data to Norwest for validation and subsequent use in geological modeling and resource estimation work. All of the drilling data including hole survey information, geophysical logs and coal quality analyse were obtained from the archives of the Provincial Government. Those copies of the provincial government records were obtained in hard copy form. Norwest reviewed all of this test hole geophysical log data throughout the project area for data quality and file content.

The data obtained from the Provincial Government included records related to a total of 828 holes on the property and included geophysical logs and coal analytical data.

### **12.1 DIGITAL DATA**

Digital geological data are stored in an electronic database and include drill hole collar coordinates, lithology, coal seam intercepts, and coal quality information. Norwest uses MineSight® to interpret and model the geologic data.

In the process of validating the geological data and interpretation for the Telkwa Area, Norwest first reviewed, verified, and completed any necessary edits of the source data files. The geological database addressed by Norwest included 733 drill holes and 25 trenches.

Verification procedures included the following activities:

- review of the drill hole collar data to identify any obvious location control problems;
- review of seam tops and bottoms;
- review of lithology files;
- review of coal seam interpretations and correlations;
- review of coal seam density data;
- review of the coal quality database; and
- Review of the ARD data and database

The data and/or interpretations are a reasonable representation of the geology of the Telkwa Area, as it is presently understood, based on the exploration and development drill hole data.

### **12.2 ORIGINAL DATA**

Considering the large number of seams associated with this project, Norwest reviewed all of the available drill hole geophysical logs obtained from the Provincial archive. This review was done to evaluate the quality of the geological data generated, and the extent to which exploration information was interpreted and recorded from downhole sources. The geophysical logs were

used as the main basis for geological interpretation. Surface trench logs were also used for geological interpretation. A new set of data concerning coal seams and lithologies was created by Norwest from the geophysical log responses for subsequent interpretation purposes by modifying the data base as supplied by the client

### **12.3 COMPUTER MODEL PREPARATION**

Due to the steeply dipping, highly faulted structure of the coal, Norwest determined that a block model approach was the most appropriate method to best characterize all parts of the deposit. The 3-D block format is widely regarded as the industry standard for modeling the tectonically disturbed coal deposits of Western Canada. Mintec's MineSight® was used for all resource modeling tasks. MineSight® is a widely recognized commercial software package that is used for resource modeling and mine planning.

Norwest developed the resource models for the Telkwa Project Area using paper and electronic drill hole data. Drill hole data included a collar table, geophysical logs, a seam interpretation table, coal quality and ARD results, topography data, and lease holding boundaries shown on Figure 4-1.

Norwest reviewed the geophysical logs and adjusted the supplied geological interpretation where needed. Minimum mineable coal and minimum separable parting thicknesses for the Goathorn and Telkwa North Areas were determined to be 0.8 m and 0.5 m, respectively. For the Tenas Area, a minimum mineable coal thickness of 0.5 m was used, and a minimum separable parting thickness of 0.3 m. Using these criteria, correlating seam and parting zones resulted in a considerable degree of fluctuation when determining which seams were mineable and non-mineable, as well as the transition of parting zones from separable to non-separable. For these reasons, Norwest determined that, for the purposes of modeling, the coal intersections would be correlated and combined into seam assemblages or groups; nine groups for the Tenas Area, eight groups for the Goathorn Area and ten groups for the Telkwa North Area. The percentage of coal and non-separable parting intervals contained within a given group was interpolated between the drill hole intercepts for each respective group. These results were used to determine mineable coal and non-separable parting tonnages, as well as weighted results for the various coal quality attributes contained in the model.

An additional component included in each of the three resource models was the block and grid identification of the waste intervals contained between each of the coal assemblages. Data from extensive waste rock coring and assaying programs in each of the Project Areas were used to generate an acid rock drainage (ARD) rock quality assay database. This dataset was then used to characterize ARD properties within the various rock zones identified within the model.

## **13 MINERAL PROCESSING AND METALLURGICAL TESTING**

The equivalent terminology, which will be used in this report for a coal property is “Coal Quality and Processing”. In this section the testing procedures that are described are based on methods and procedures that were standard for the industry when the CNRL and Manalta Coal exploration programs from 1979 to 1998 1990’s were completed. One Norwest staff member, while previously employed by CNRL participated in those programs in the early to mid 1980s and has direct knowledge of the procedures that were employed on the property in that period.

### **13.1 COAL QUALITY AND PROCESSING**

Coal in the Telkwa Coalfield varies from High Volatile A bituminous to semi-anthracite by the ASTM classification of coal rank. The vast majority of the area coals, however, are a High Volatile A bituminous product [REDACTED]

Within the coal measures of the Skeena Group sediments, observations are that the coal rank generally tends to decrease slightly for coal units situated higher in the stratigraphic column. As such, rank of the coals situated within Unit I are typically slightly higher than those found within Unit III. Localized occurrences of medium-volatile and semi-anthracite coals are thought to have resulted from either post-Cretaceous heat sources, deeper burial and subsequent uplift of some coal-bearing units, or from localized higher heat flux from the pre-Cretaceous basement (Ryan, B.D., 1992). Increases in coal rank have been observed in coals situated in close proximity to the Tertiary intrusive on the northern resource areas as well as some coals within the Cabinet Creek area.

### **13.2 COAL QUALITY ANALYTIC PARAMETERS**

Each coal core sample is generally subjected to a number of analyses, with the most common described below but numerous others may be tested and reported:

#### **Proximate Analysis**

Determination of moisture, ash, volatile matter and fixed carbon in a sample. The fixed carbon is determined by difference and the four components total 100%.

#### **Sulphur**

Determination of the percent of sulphur in a sample.

#### **Heating Value**

This is a very important parameter with respect to thermal coals. It is traditionally referred to as “calorific value” and is the determination of the amount of energy in kilojoules per kilogram of sample.

Individual ply coal samples at Telkwa were analysed for moisture contents, relative density, and proximate analyses, including heating value and sulphur. Seam roof, floor and partings materials were also regularly collected and tested. Composite, full seam samples were analysed for these parameters as well as other tests including ultimate analyses, chemical analyses of ash, fusibility temperatures, Hardgrove Grindability Indices, and Free Swelling Indices were also part of the testing program.

A coal testing Flow Chart is shown on Figure 13-1 for the coal quality testing conducted by Manalta from 1992 to 1998.

### **13.3 COAL QUALITY TESTING METHODOLOGY AT TELKWA**

The evaluation of coal quality for the 1995 to 1998 exploration programs was based upon the analytical results of core obtained from drill-holes, and from bulk samples collected from the Tenas area in 1996 and 1998. The primary purpose of the coring programs was to obtain sufficient samples of significant coal seams for reliable determinations of the raw and clean quality characteristics of the Telkwa Coalfield. In 1996 an 80 t bulk sample recovered from the Tenas field provided sufficient size and quantity of delivered coal to simulate raw feed operations and perform the testing necessary to conduct a complete processing plant design. The large-diameter coring program completed in 1998 provided small-scale bulk samples from five additional Tenas locations such that comparisons could be drawn between different locations, and also from between the large-diameter and conventional cores.

Typically, specific laboratory analyses on core samples were performed by Loring Laboratories Ltd. of Calgary, Alberta. Most samples collected were representative of selected coal units, although seam roof, floor and parting lithologies were also collected regularly and analyzed. Bulk sample analyses were usually completed by Birtley Labs, also of Calgary.

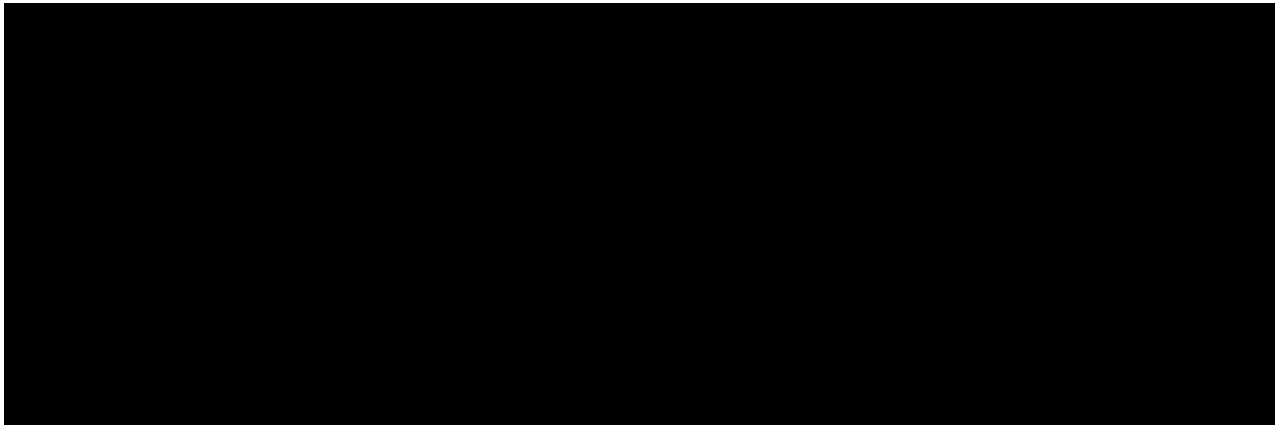
### **13.4 QUALITY CHARACTERISTICS**

Coal quality parameters have been determined from core samples recovered since 1979 from each of the resource areas in the Telkwa Coalfield. The results presented in this report represent a compilation of all analytical results thus far accumulated within the resource areas identified on the coal licenses.

Analytical results from all ply samples recovered between 1995 and 1998 are presented in Appendix B, Table 1. The analytical results for seam composites are compiled for the Tenas, Goathorn and Telkwa North Project Areas and a presented in Appendix B, Table 2.



Norwest is of the opinion that the spacing of available coal quality data for the seams used in the geological and mining model is adequate for characterization of the in-place quality parameters. Table 13.1 summarizes the average coal quality for each of the main project areas in the Telkwa Coalfield.



## **15 MINERAL RESERVE ESTIMATES**

This Technical Report does not include an estimate of coal reserves. The available exploration data has not yet been used for the preparation of a Pre-Feasibility study at this time and therefore, in accordance with the requirements of National Instrument 43-101, the reported coal resources cannot be classified as reserves. The recommendations and conclusions sections of the report address this issue and make recommendations that are designed to address this deficiency. It is anticipated that, once this program is complete, it will be possible to produce a Pre-Feasibility study for the mining of this coal deposit and thus to classify appropriate portions of the resources as reserves.

However there are observations concerning various technical, mining and processing issues, of a historic nature. These have been addressed during the recent computer modelling and resource estimation. Pertinent observations on these topics may be found in Sections 12 and 24 of this report.

## **16 MINING METHODS**

It is anticipated that this deposit may be mined by surface methods. However, for this report no definitive evaluation of the mining method has been made. NI 43-101 F1 defines this topic as being one of “Additional Requirements for Advanced Property Technical Reports”. Such reports are ones that include estimates of reserves, as well as resources, and also provide specific mining development plans for the property. Reserves are not reported in this Technical Report and no mining development plan is given.

However there are observations concerning various technical, mining and processing issues, of a historic nature. These have been addressed during the recent computer modelling and resource estimation. Pertinent observations on these topics may be found in Sections 12 and 24 of this report.

## **17 RECOVERY METHODS**

It is anticipated that the coal recovery methods that will be applicable in this case will involve the extraction of a Run-Of Mine (ROM) product using the mining equipment, followed by washing of the ROM product to produce saleable coal. However, for this report no definitive evaluation of the recovery methods method has been made. NI 43-101 F1 defines this topic as being one of “Additional Requirements for Advanced Property Technical Reports”. Such reports are ones that include estimates of reserves, as well as resources, and also provide specific mining development plans for the property. Reserves are not reported in this Technical Report and no mining development plan is given.

However there are observations concerning various technical, mining and processing issues, of a historic nature. These have been addressed during the recent computer modelling and resource estimation. Pertinent observations on these topics may be found in Sections 12 and 24 of this report.

## **18 PROJECT INFRASTRUCTURE**

The Telkwa Coal Property is located in central British Columbia. With the exception of access roads and nearby main electrical power transmission and a gas pipeline line there is no major existing mining infrastructure on the property.

The basic mine infrastructure of the Telkwa Coal Property must be established and may include electrical power system, haul roads, coal conveyor system, access to a coal preparation plant and rail loadout, maintenance shops, laboratory and all accessory facilities.

NI 43-101 F1 defines this topic as being one of “Additional Requirements for Advanced Property Technical Reports”. Such reports are ones that include estimates of reserves, as well as resources, and also provide specific mining development plans for the property. Reserves are not reported in this Technical Report and no mining development plan is given.

However there are observations concerning various technical, mining and processing issues, of a historic nature. These have been addressed during the recent computer modelling and resource estimation. Pertinent observations on these topics may be found in Sections 12 and 24 of this report. Some of these may include comments regarding Project Infrastructure.

**19    MARKETS AND CONTRACTS**

There is no additional information concerning Markets and Contracts for this section of the report. This is because the property is not presently defined as a property under development and is not a producing coal mine, in accordance with the definitions of NI 43-101.

However there are observations concerning various technical, mining and processing issues, of a historic nature. These have been addressed during the recent computer modelling and resource estimation. Pertinent observations on these topics may be found in Sections 12 and 24 of this report.

## **20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT**

### **20.1 ENVIRONMENTAL EFFECTS OF MINING**

Where surface mining is planned, including the pit area, waste disposal areas and access roads, environmental effects and surface disturbance will be significant. Surface mining activity can have significant impacts on air quality, noise and, most importantly, on surface and ground water. Major programs to eliminate or remediate these impacts to standards that satisfy government regulations will be required as part of the mine planning and permitting activity. They will have to be maintained throughout the life of the mine including the closure and reclamation phase.

The standards of the provincial government for mine permitting and Environmental Assessment are well documented and described on on-line public sites. The process requires that detailed descriptions be provided of all of the planned activities and these descriptions must be supported by data collected in the field and subsequent analytical testing of samples using approved methodologies. Every aspect of the existing physical, chemical, biological and cultural state of the project area and its surroundings has to be examined, documented and reported. Subsequently it is a requirement that a plan for the control of the potential impacts on the existing conditions be prepared. These descriptions, test results and plans are documented in an Environmental Assessment Report.

The process is lengthy and can be expected to last for at least one year and perhaps longer. It involves many approval steps; it may require subsequent documentation and is subject to public disclosure activities. Consultations are required not only with government officials but also with the affected local community and First Nations groups. Further details on the process should be obtained by reviewing the appropriate documents of the Department of Environment of the BC Provincial Government.

The surface mining activity certainly could cause emissions of dust due to traffic in the pit and waste dump areas and on the haul roads to the plant. These impacts will require that water spraying for dust suppression be done through the life of the mine. This effect and the requirements for control and remediation are expected to be very similar to those experienced at the other existing mines in western Canada.

The greatest potential impacts of surface mining are likely to be those that affect surface water quality. This is a very important issue in this area since there is a very important economic and social issue that needs to be protected in this area and that is the Salmon Fishery on the Telkwa River. This is important not only for economic reasons for the whole of the local community but especially for the local and regional First Nations Communities.

In other coal mines in British Columbia developed some years ago in similar physical locations with such topographical constraints, it was the accepted practice in waste dump areas to construct rock drains in the core of the dump as a means to conveying run-off. This method is no longer acceptable for water management since precipitation and runoff waters still interact with mined materials and can thus dissolve substances that occur in those rocks. These affects can cause the surface waters to acquire elevated levels of chemicals beyond those of the original water state. Thus the mine design will require that a water impoundment system be employed that minimizes this interaction while ensuring that all mine-affect waters can be treated prior to release.

Over the life of the mine progressive reclamation activities should be maximized to ensure that the landscape is reclaimed as quickly as possible, meaning that the size of the backlog is minimized. As for the mine closure plan, the objective will be to create a sustainable landscape which will perform as well as or better than that which was found. At this time there is insufficient information to support the development of a detailed closure strategy. Information needs to be collected regarding adjacent leaseholder plans, reclamation materials, government/environment requirements and the detailed Environment Assessment that must be undertaken.

## **20.1 ENVIRONMENTAL EFFECTS ASSOCIATED WITH SURFACE FACILITIES**

With respect to coal processing and surface facilities, the major impacts on air quality stem from the transportation and preparation of coal. Dust emissions from the stockpiles, transfer points and unit trains are identifiable sources of air pollution. Enclosed conveyors, some enclosed transfer points and the use of high-efficiency cyclones will reduce particulate emissions within the Pollution Control Branch (B.C. Government) Level A Air Quality Objective. Prior to shipping, the surface of the coal in unit trains will be sprayed with latex foam.

The only major alteration in land form expected is from the disposal of waste rock and rejects from the preparation of coal. The construction of facilities will alter surface water quality until such time as stabilizing vegetation is established. During construction and operation all surface run-off will be channelled to settling ponds prior to discharge. The thickener and plant water system is essentially a closed circuit, designed to recycle all clarified water. Thus, impacts of the coal preparation process on water quality can be managed.

Recreational use of the area may be affected by plant and coal transportation activities; it is anticipated that plant operations will not significantly affect the regional recreational resources. On a regional basis, impacts of the proposed development will have an effect on visual resources.



If archaeological sites of regional importance are found, delays in construction may be necessary for the removal or restoration of these sites.

## **20.2 ENVIRONMENTAL EFFECTS ASSOCIATED WITH TRANSPORTATION**

The most likely issue concerning environmental effects due to this transportation system is on the air quality due to dust. Fugitive dust must be managed. From a new load-out coal will be transported by rail to the port on the coast where it will be loaded to ships for export. There will be no new environmental impacts, beyond those already experienced, which occur as a result of this development activity.

## **21 CAPITAL AND OPERATING COSTS**

There is no additional information concerning Capital and Operating Costs for this section of this report. This is because the property is not presently defined as a property under development and is not a producing coal mine, in accordance with the definitions of NI 43-101.

NI 43-101 F1 defines this topic as being one of “Additional Requirements for Advanced Property Technical Reports”. Such reports are ones that include estimates of reserves, as well as resources, and also provide specific mining development plans for the property. Reserves are not reported in this Technical Report and no mining development plan is given. Thus, in line with the requirements of NI 43-101, this topic is not discussed in further detail in this report.

However there are observations concerning various technical, mining and processing issues, of a historic nature. These have been addressed during the recent computer modelling and resource estimation. Pertinent observations on these topics may be found in Sections 12 and 24 of this report.

## **22 ECONOMIC ANALYSIS**

There is no additional information concerning and Economic Analysis for this section of the report. This is because the property is not presently defined as a property under development and is not a producing coal mine, in accordance with the definitions of NI 43-101.

NI 43-101 F1 defines this topic as being one of “Additional Requirements for Advanced Property Technical Reports”. Such reports are ones that include estimates of reserves, as well as resources, and also provide specific mining development plans for the property. Reserves are not reported in this Technical Report and no mining development plan is given. Thus, in line with the requirements of NI 43-101, this topic is not discussed in further detail in this report.

However there are observations concerning various technical, mining and processing issues, of a historic nature. These have been addressed during the recent computer modelling and resource estimation. Any pertinent observations related to this topic may be found in Sections 12 and 24 of the present report.

**23 ADJACENT PROPERTIES**

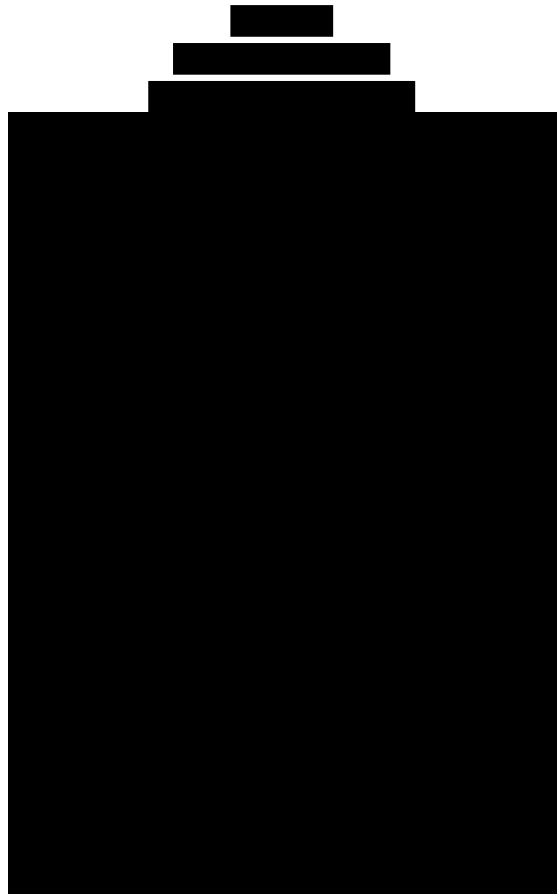
There is no additional information concerning Adjacent Properties for this section of the report. All of the geological, exploration and mining data of significance to this study is based on information compiled for this property alone.

## 24 OTHER RELEVANT DATA AND INFORMATION

A “First-Look” was taken to view the surface mining potential for the Telkwa Project Areas. The following are some observations that are simply intended to provide information as to the potential for surface mining of this property; in no way should it be construed that this brief examination constitutes a mining study. The coal tonnages presented in the following are not to be taken as reserves and/or resources.

As detailed in Manalta Coal Ltd.’s report “Telkwa Coal Project: Application for a Project Approval Certificate,” dated January 1997 and Carbon Development Partnership “Valuation Report: Telkwa Coal Project,” dated February 2013, the Telkwa property is suitable for a truck and shovel operation. Thus MineSight®’s Lerchs-Grossman (LG) software was used to develop and quantify nested pit shells using a cut-off strip ratio as the basis. Table 24.1 through Table 21.4 show the coal tonnages at various cut-off strip ratios for the three Lerchs-Grossman pits developed for the Telkwa Property, made up of Tenas, Goathorn and Telkwa North Areas. Figure 24-1 graphically summarizes the results shown in Tables 24.1. Figure 14-1 shows the resource distribution area.





The following discussion addresses various technical aspects for the development of the potentially mineable coal tonnages at Telkwa.

A Break Even Strip Ratio (BESR) was developed to estimate in-place coal tonnages based on economic indicators. The BESR was calculated on a run of mine (ROM) basis and converted to an in-place basis. Several assumptions were made to complete this calculation.

- It is assumed that a wash plant would be built to produce a marketable product and production of 2.0 million clean tonnes per year would extend for 20 years.
- The clean coal would be transported by rail through the Ridley Island Terminal located at Prince Rupert, British Columbia.

- Potential coal pricing information was provided by Kobie Koornof Associates Inc. The report was titled “Price Assessment for Potential Telkwa Coal Products” dated December 19, 2014 can be found in Appendix C.
- The ore and waste material, plant and facilities operating costs were developed from Norwest’s database of costs. Rail, port, and reclamation costs were estimated on a clean tonnes basis. The acid rock drainage (ARD) management provision was estimated on a bcm-mined basis.
- The capital cost estimates were derived from coal projects with similar coal qualities and expected tonnages. Capital was amortized and depreciated over 20 years. Exploration drilling, future studies, warehouse supplies and inventory, contingency, and equipment salvage is also included in capital costs.
- The coal yield assumed for the Tenas area was 67% and was assumed to be 57% in both the Telkwa North and Goathorn areas, averaging 62% over the three areas for the purposes of the BESR calculation.
- An assumed wall angle of 45° was used to limit the pit shell.

Table 24.5 is an assumption of the initial and sustaining capital as utilized in the BESR calculation.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
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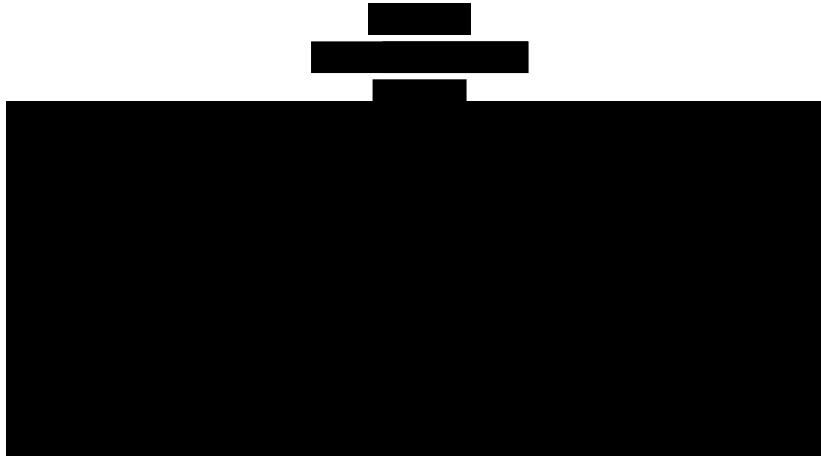
[REDACTED]

[REDACTED]

[REDACTED]







Norwest has undertaken a Preliminary BESR calculation in order to determine estimates of potentially economically recoverable coal tonnages available by surface mining. The BESR calculation procedure requires the use of assumptions of all product and waste capital and operating costs. Coal pricing assumptions for the purposes of calculating potential revenue have to be used as well, in order to complete this process. The coal tonnage estimates in this section of the report are indicative in nature and are only intended for this purpose as stated. These estimates are not, and should not be construed to be, estimates of reserves or resources for the Telkwa Property.

## 25 INTERPRETATION AND CONCLUSIONS

The Telkwa Coal Property lands in central British Columbia are underlain by coal seams that are usually gently dipping in the Tenas Project Area. The coal geology of this part of the property demonstrates lateral stratigraphic continuity, influenced by minor thickness variations and, possibly, small scale structural irregularities. At Tenas, the Geology Type is Moderate according to guidelines set forth in Geological Survey of Canada Paper 88-21. Block faulting is a common feature of the Telkwa North and Goathorn Areas but the other geological and seam conditions are as for Tenas. Due to the more intense tectonic deformation the Geology Type is judged to be Complex in the Telkwa North and Goathorn Areas.

The verification of the local geology and the estimation of resources were accomplished through review of data and maps supplied by the client, by checking and adjusting as needed, a client-supplied digital data base and by the preparation of a computer model using MineSight® geological modeling software.

The density of drilling on this property was adequate for the delineation of in-place resources.

[REDACTED]

[REDACTED] All of these resources are considered to be suitable for the planning and development of a surface coal mine.

A discussion and data concerning the potential for surface mining on this property is included in Section 24.

## **26 RECOMMENDATIONS**

Norwest's judgement is that the Telkwa Coal Property is a property of merit. However there is the need for additional technical data especially related to the assessment of coal quality, pollutants and environmental studies before this property will be granted a mine development permit and receive government approval related to its environmental assessment. The additional work is concerned with evaluating the mining product quality for the markets into which the coal may be sold. It also includes the preparation of a preliminary feasibility study that allows the present engineering and economic evaluations to be prepared, and the preparation of an Environmental Assessment report in compliance with the requirements of the BC Ministry of the Environment.

Future Core drilling will provide sample material to evaluate the local coal properties and other quality properties of the various component coal, coaly rock and clastic rock band types and the effects of the weathering on the surface; these concerns relate to leaching of selenium into the environment, acid rock drainage and effects that may result from the relatively high sulphur content of the coal and/or waste rock.

The immediate objective for future work should be aimed at the preparation of a Preliminary Feasibility Study which is a regulatory requirement before reserves and be estimated, classified and reported.

Before production can commence, exploration and evaluation work will be also be required to advance this property for mining if the decision is taken to proceed to this development step. Such work will include the further drilling and testing of the property, collection of bulk samples for definitive metallurgical testing, the preparation of a Feasibility Study suitable for project financing, an environmental assessment study and market and other related studies. A cost estimate for these aspects has not been prepared as a decision to proceed to this stage has not yet been made.

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

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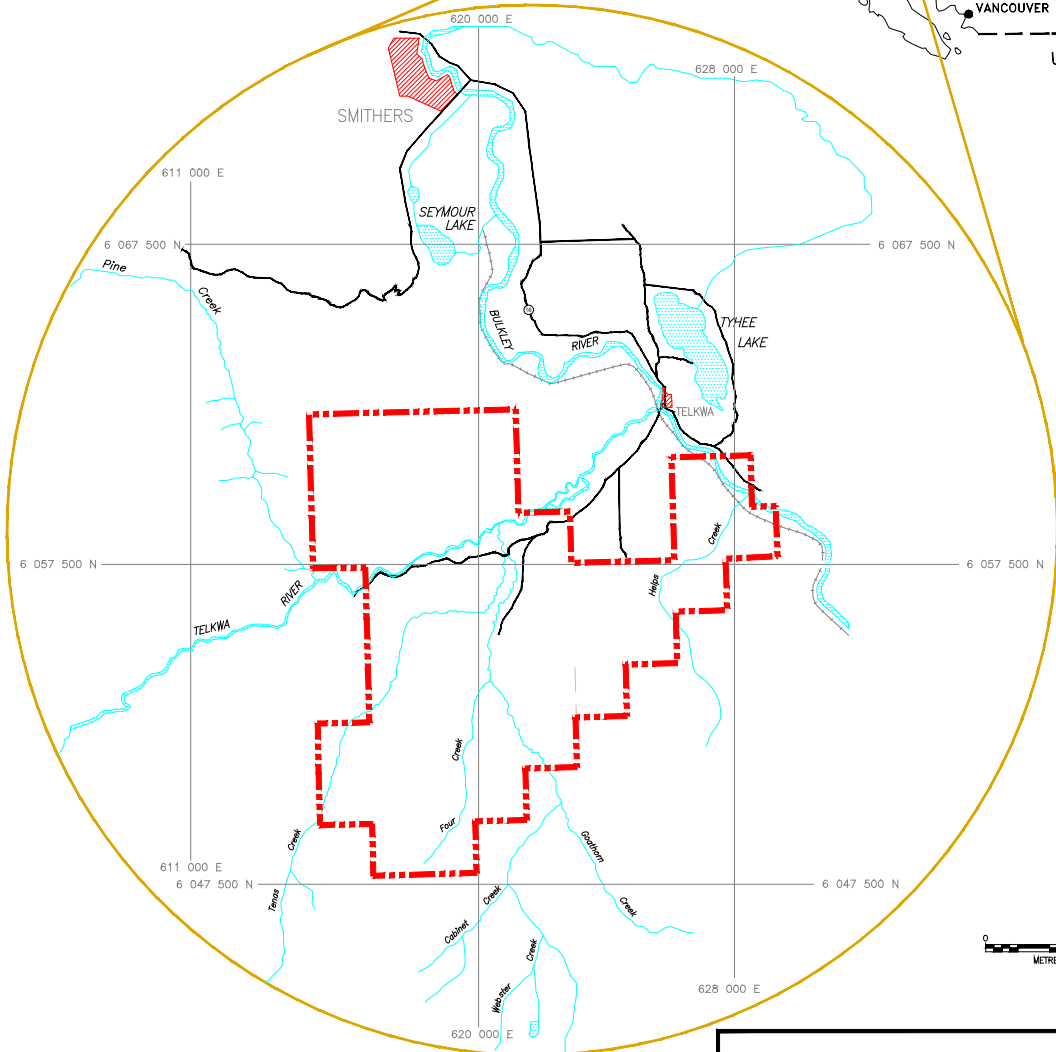
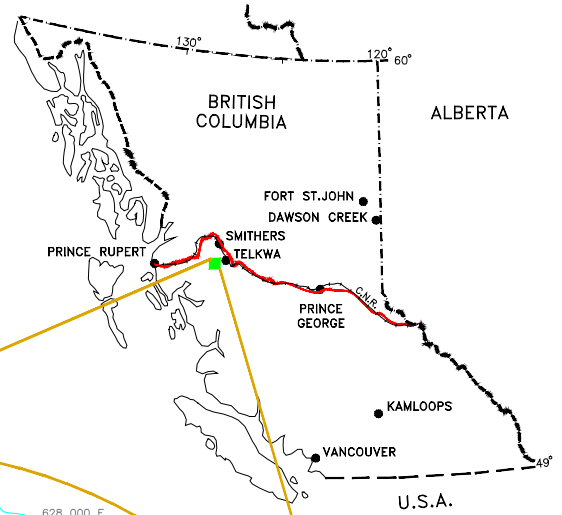
**28 ILLUSTRATIONS**







FIGURE 2-1	LOCATION MAP
FIGURE 4-1	COAL OWNERSHIP AND LOCAL INFRASTRUCTURE MAP
FIGURE 7-1	STRATIGRAPHIC TABLE
FIGURE 7-2	GEOLOGY MAP
FIGURE 7-3	TYPICAL CROSS SECTIONS – TELKWA NORTH AREA
FIGURE 7-4	TYPICAL CROSS SECTIONS – GOATHORN AREA
FIGURE 7-5	TYPICAL CROSS SECTIONS – TENAS AREA
FIGURE 7-6	COAL ZONE STRATIGRAPHIC COLUMN
FIGURE 13-1	FLOW CHART – SAMPLE METHODOLOGY
FIGURE 14-1	COAL RESOURCE DISTRIBUTION MAP
FIGURE 14-2	COAL RESOURCE CLASSIFICATION MAP
FIGURE 24-1	BESR ESTIMATE OF COAL TONNAGE VS STRIP RATIO



LEGEND:  
 HIGHWAY  
 RAILWAY

0 300  
 Kilometres



LEGEND:  
 UTM GRID  
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 LAKE  
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## TELKWA COAL LTD.

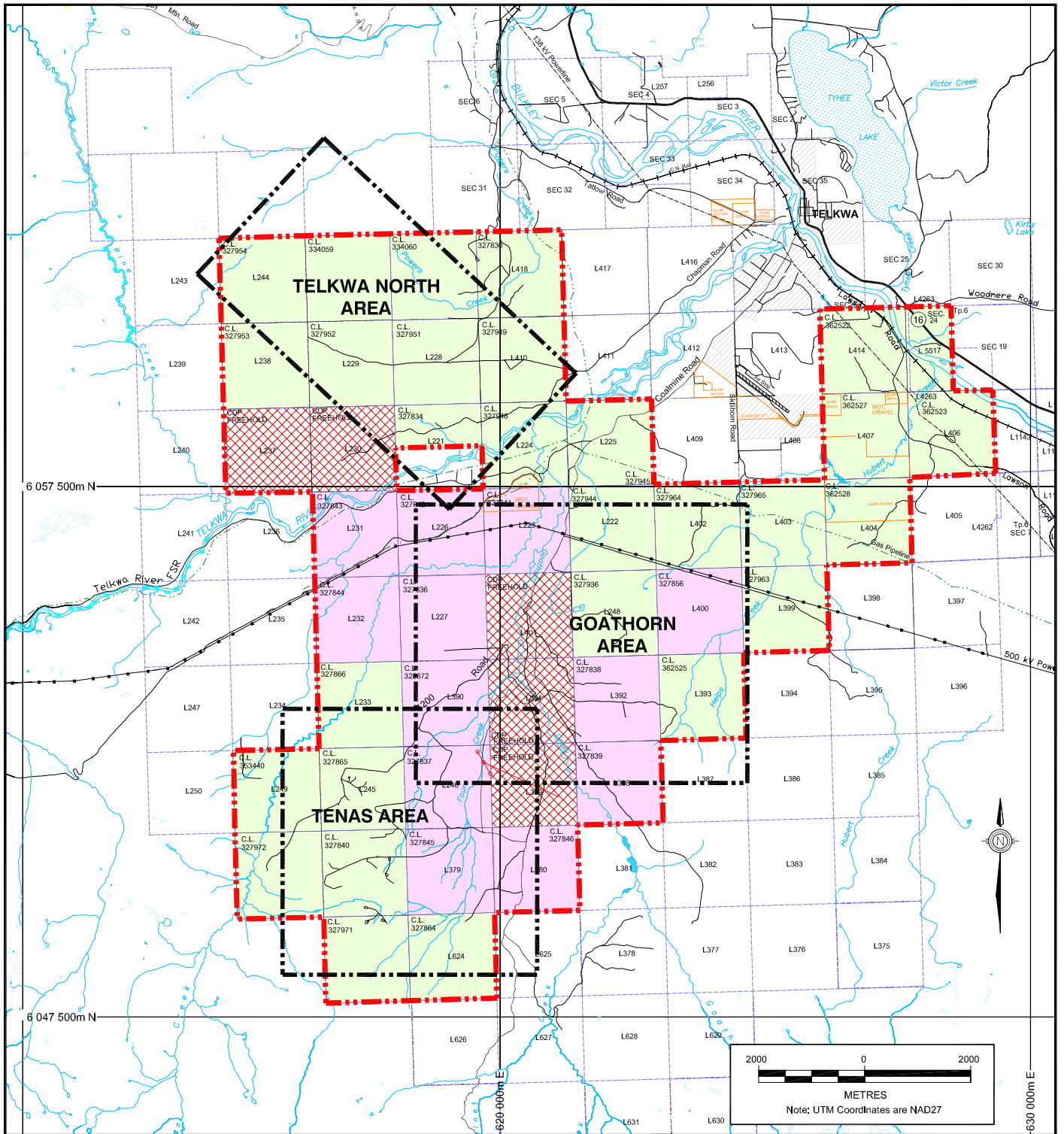
TELKWA COAL PROJECT  
 TECHNICAL REPORT

### LOCATION MAP

FIGURE 2-1

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**NORWEST**  
 CORPORATION



**LEGEND**

- |  |                   |             |  |
|--|-------------------|-------------|--|
|  | PROPERTY BOUNDARY | C.L. 327963 | COAL LICENCE NO.                       |
|  | MODEL BOUNDARY    |             | CARBON DEVELOPMENT CORPORATION LICENCE |
|  | HIGHWAY           |             | FREEHOLD LEASE                         |
|  | PAVED ROAD        |             | BULKLEY VALLEY COAL LTD. LICENCE       |
|  | SECONDARY ROAD    | L407        | SURFACE RIGHTS LOT NUMBER              |
|  | POWERLINE         |             |  |
|  | GAS PIPELINE      |             |  |

**TELKWA COAL LTD.**

TELKWA COAL PROJECT  
TECHNICAL REPORT

**COAL OWNERSHIP AND  
LOCAL INFRASTRUCTURE MAP**

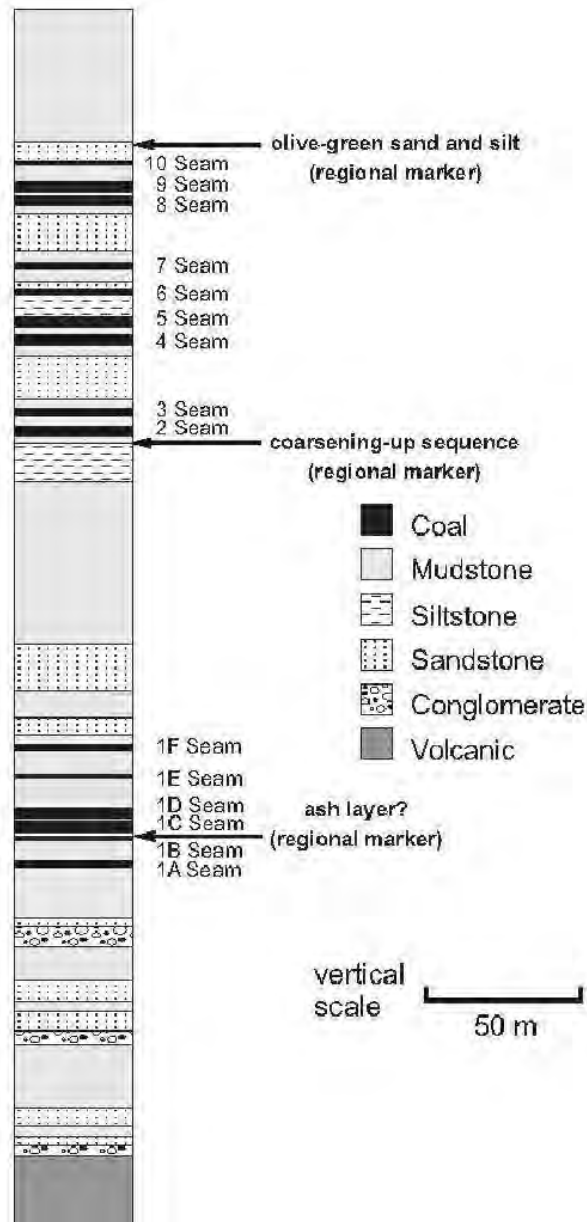
FIGURE 4-1

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**TELKWA COAL LTD.**

TELKWA COAL PROJECT  
TECHNICAL REPORT

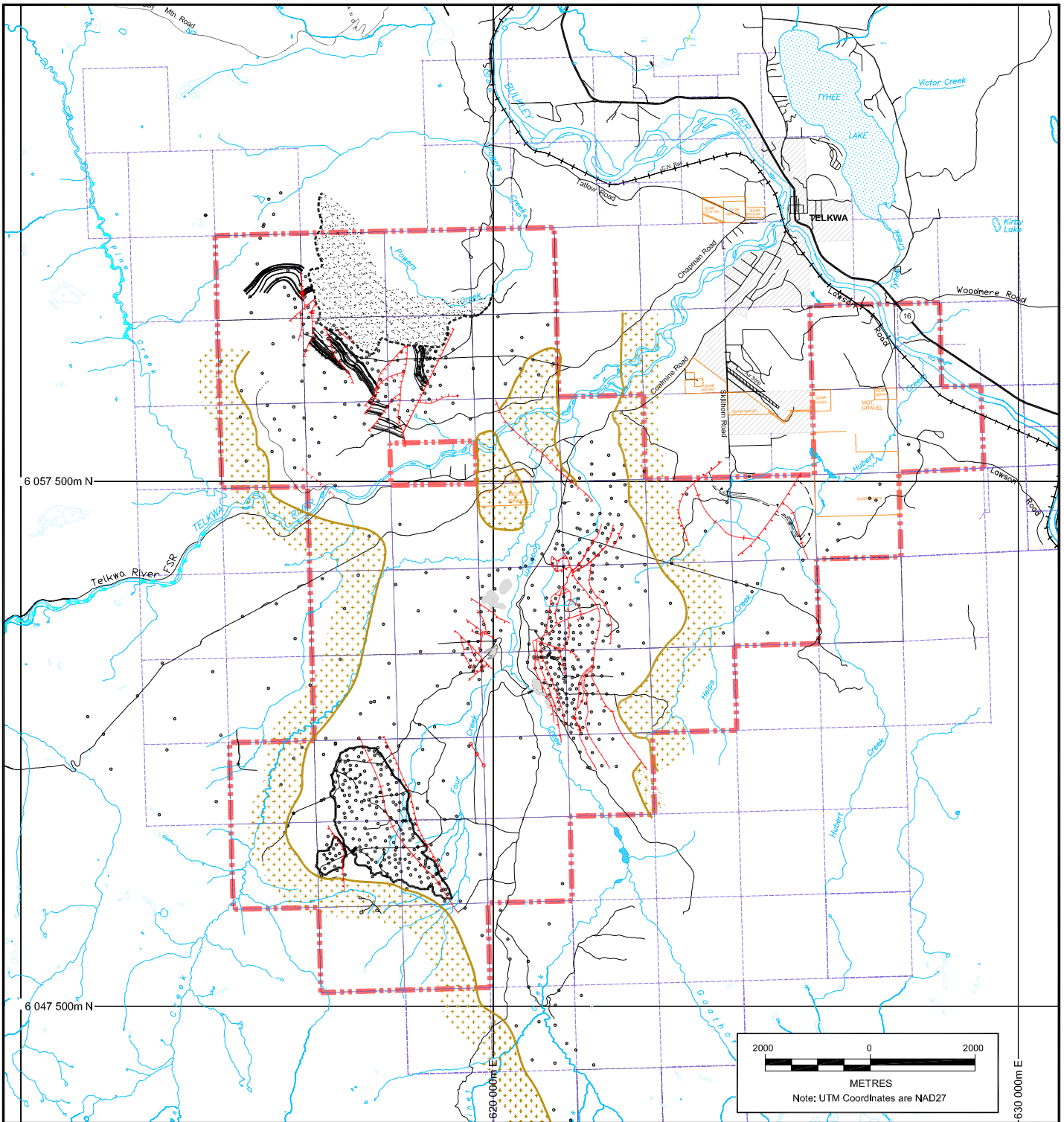
**STRATIGRAPHIC TABLE**

FIGURE 7-1

















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|---|-------------------|---|------------------------|
|  | PROPERTY BOUNDARY |  | EXPLORATION DRILL HOLE |
|  | HIGHWAY           |  | OLD MINE WORKINGS      |
|  | PAVED ROAD        |  | TERTIARY INTRUSIVE     |
|  | SECONDARY ROAD    |  | HAZELTONE VOLCANICS    |
|  |                   |  | NORMAL FAULT           |
|  |                   |  | THRUST FAULT           |
|  |                   |  | PLUNGING SYNCLINE AXIS |
|  |                   |  | SUBCROP                |

**TELKWA COAL LTD.**

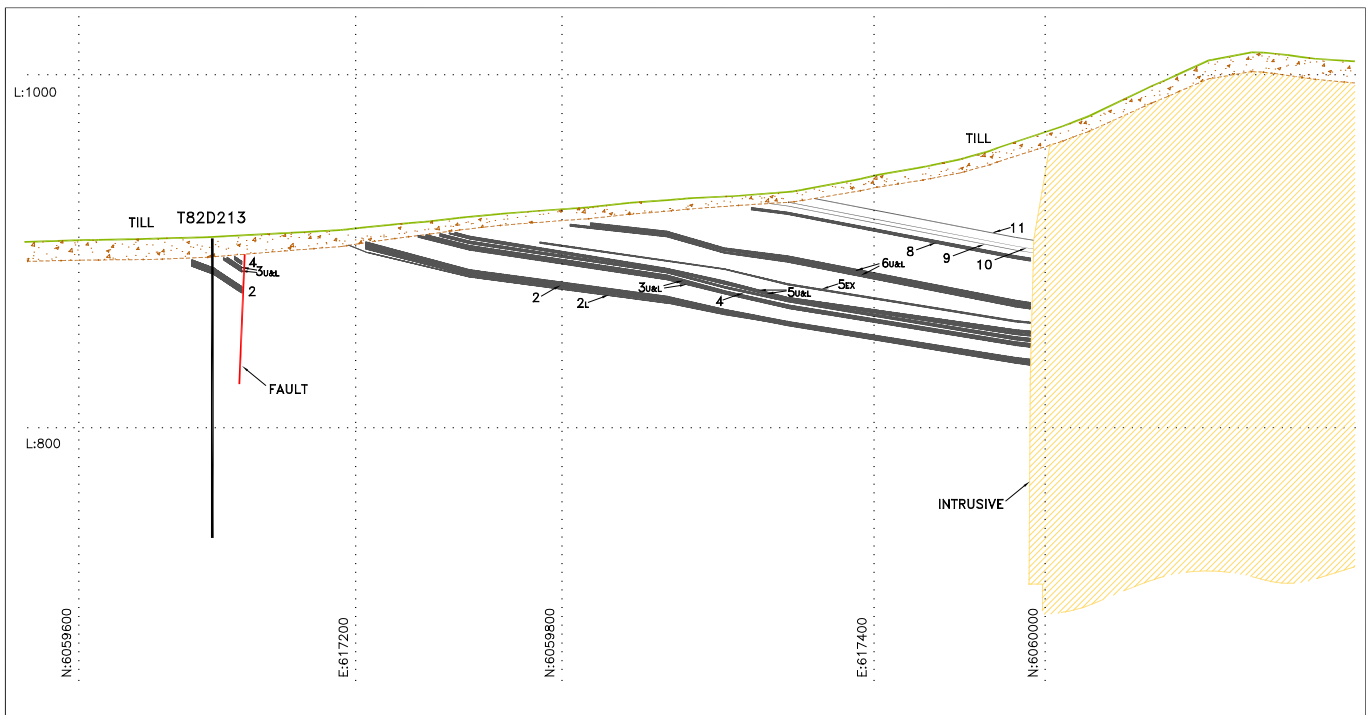
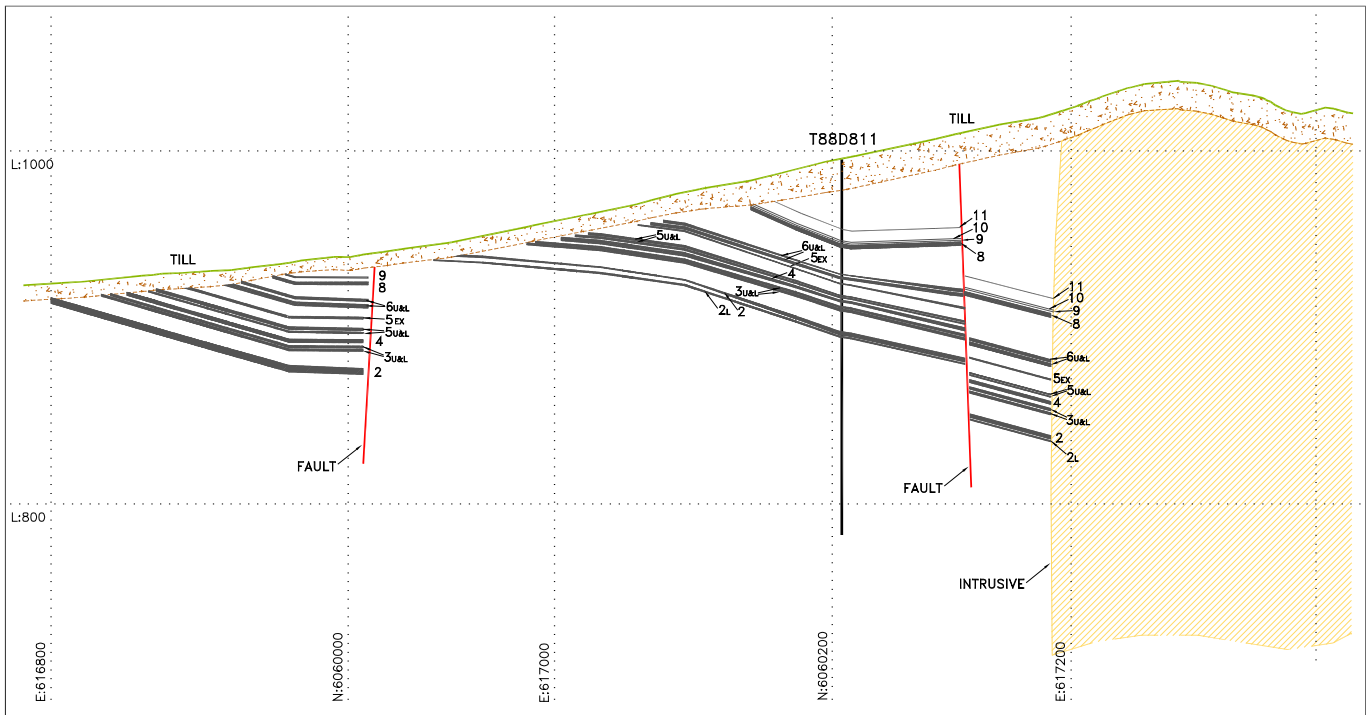
TELKWA COAL PROJECT  
TECHNICAL REPORT

**GEOLOGY MAP**

FIGURE 7-2

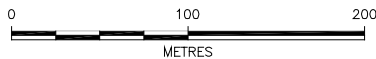
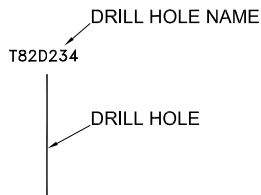
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- TILL
- FAULT
- SEAM AND SEAM NAME



**TELKWA COAL LTD.**

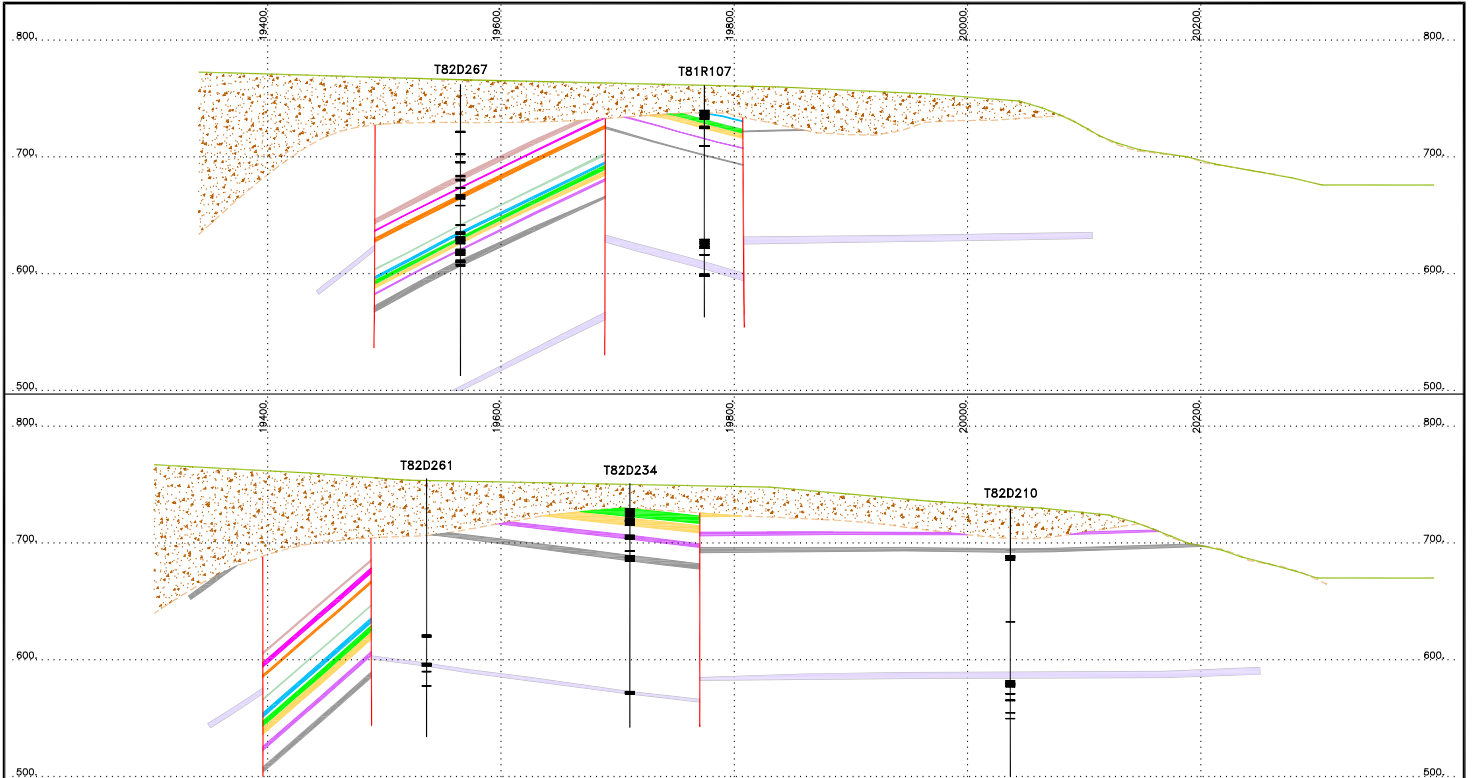
TELKWA COAL PROJECT  
TECHNICAL REPORT

**TYPICAL CROSS SECTIONS  
TELKWA NORTH AREA**

FIGURE 7-3

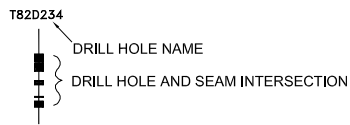
DRAWN BY: A.W. FILE: Fig 7-3 Typical Cross SectionS\_TN  
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DATE: 15 01 28 Telkwa Coal\Reports\Final\Figures





**LEGEND:**

- TOPO
- TILL
- SEAM 1
- SEAM 2
- SEAM 3
- SEAM 4
- SEAM 5
- SEAM 6
- SEAM 7
- SEAM 8
- SEAM 9
- SEAM 10
- SEAM 11
- FAULT



**TELKWA COAL LTD.**

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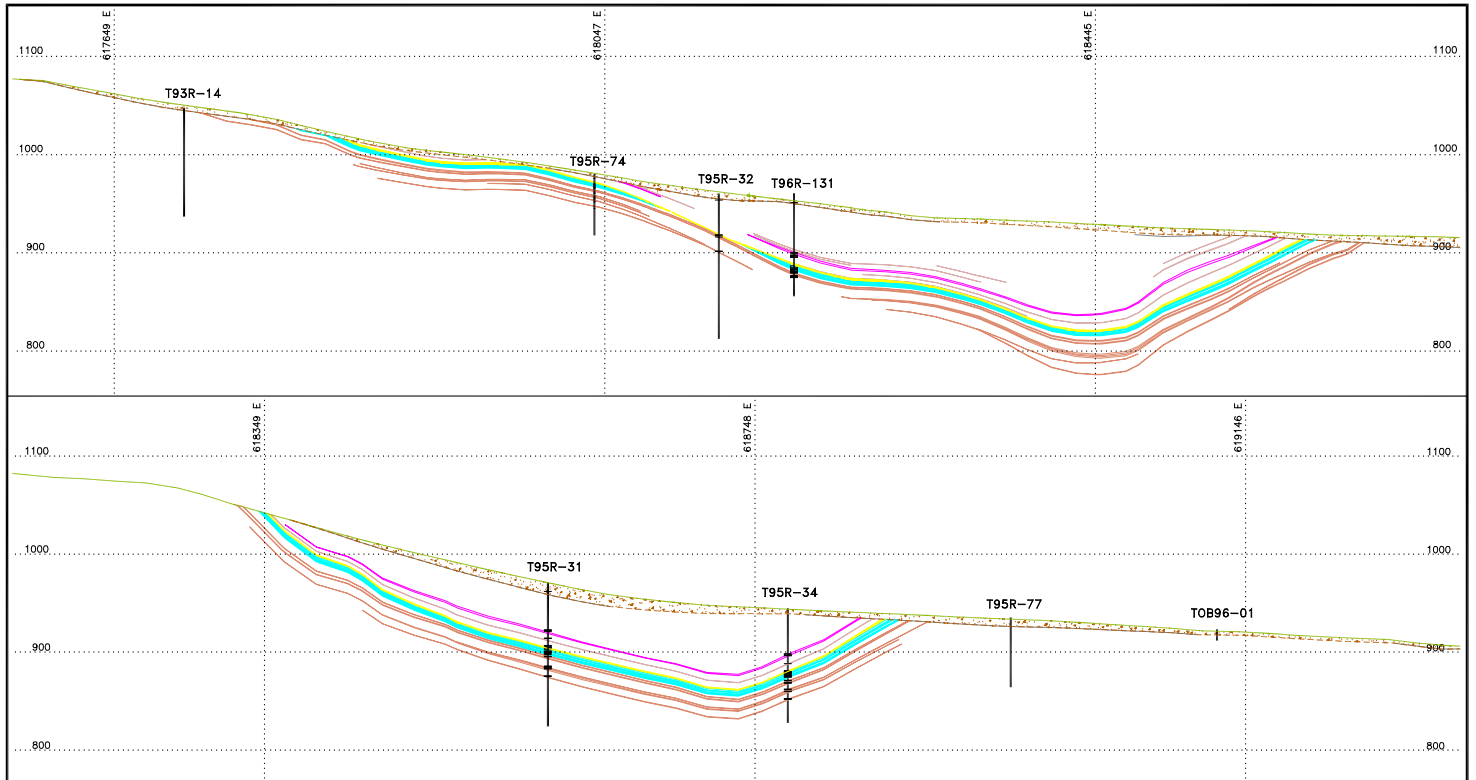
**TYPICAL CROSS SECTIONS  
GOATHORN AREA**

FIGURE 7-4

DRAWN BY: A.W.  
CHKD BY: I.M.  
DATE: 15 01 28

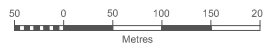
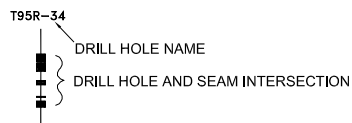
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Telkwa Coal\Reports\Final\Figures





**LEGEND:**

- TOPO
- TILL
- SEAM C
- SEAM 1U
- SEAM 1
- SEAM B, D, E, 1Le, 1Ld, 1Lc, 1Lb, 1La



**TELKWA COAL LTD.**

TELKWA COAL PROJECT  
 TECHNICAL REPORT

**TYPICAL CROSS SECTIONS  
 TENAS AREA**

FIGURE 7-5

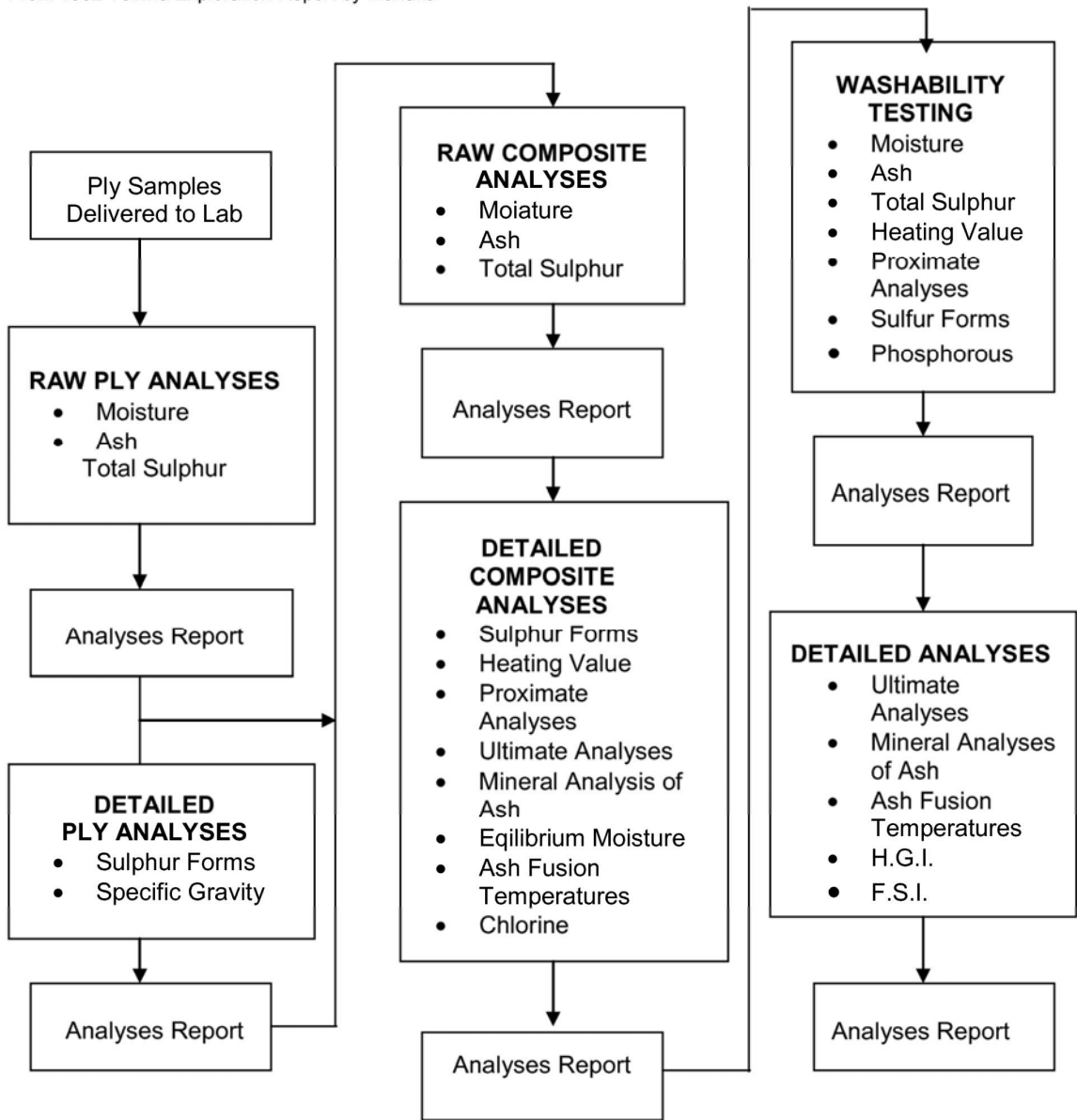
DRAWN BY: A.W.  
 CHKD BY: I.M.  
 DATE: 15 01 28

FILE: Flg 7-5TypicalCrossSections\_Tenas  
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 Telkwa Coal\Reports\Final\Figures





From 1992 Telkwa Exploration Report by Manalta



**TELKWA COAL LTD.**

TELKWA COAL PROJECT  
TECHNICAL REPORT

**FLOW CHART  
SAMPLE METHODOLOGY**

FIGURE 13-1

DRAWN BY: A.W. FILE: Fig 13-1 Flow Chart-Samplw Metho...  
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DATE: 15 01 28 Telkwa Coal\Reports\Final\Figures



**APPENDIX A**



**Appendix A**  
**Table 1**  
**Telkwa Coal Property**  
**Drill Hole Survey Data**

HOLE	EASTING (m)	NORTHING (m)	ELEVATION (m)	TD (m)	AREA
T79R-10	618143.62	6058538.00	753.68	225.9	T North
T79R-11	619564.37	6058688.00	657.96	7.6	T North
T79R-12	620761.00	6059818.50	599.73	48.8	T North
T81R-110	617692.00	6058374.00	764.89	61.6	T North
T81R-111	616496.75	6057981.00	787.46	182.9	T North
T82D-213	617149.25	6059650.00	907.48	169.8	T North
T82D-214	618179.75	6059806.00	865.83	303.3	T North
T82D-216	618656.75	6059477.00	785.75	137.5	T North
T82D-217	618468.00	6059049.00	766.20	84.4	T North
T82D-218	618791.87	6059835.50	799.08	102.7	T North
T84D-440	617695.87	6059637.50	890.75	145	T North
T84D-441	618291.75	6059600.00	838.77	224.7	T North
T84D-442	618519.93	6059822.50	829.49	139.3	T North
T84D-443	618880.31	6059544.00	768.88	111.9	T North
T84D-444	619102.18	6059854.50	765.10	123.7	T North
T85D-501	617481.37	6059570.50	896.45	59.5	T North
T85D-502	617855.25	6059436.50	862.21	148.3	T North
T85D-503	618780.93	6059065.50	734.42	68.7	T North
T85D-504	618644.06	6059690.50	804.32	75	T North
T86D-601	616957.00	6059815.00	922.09	71.5	T North
T86D-602	617799.37	6059280.50	848.01	111	T North
T86D-603	618626.00	6059285.00	772.17	60	T North
T86D-604	618747.18	6059944.00	813.52	84.4	T North
T88D-801	617185.43	6059397.00	888.97	84.7	T North
T88D-802	616192.68	6060252.50	931.72	93.4	T North
T88D-803	616736.50	6060341.00	974.63	131.1	T North
T88D-804	616816.00	6060041.00	939.78	76.8	T North
T88D-805	617304.43	6059912.50	934.07	77.2	T North
T88D-806	615390.62	6060714.00	901.60	59	T North
T88D-810	616484.68	6060623.00	999.88	150	T North
T88D-811	617102.87	6060213.00	994.20	213	T North
T88D-812	616582.68	6060397.00	975.39	118.9	T North
T88D-813	616346.00	6060685.00	982.74	137.2	T North
T88D-814	617604.43	6059756.50	909.40	110	T North
T89D-907	618700.50	6059491.00	782.26	62.8	T North
T89D-920	617060.68	6060105.00	967.95	48.7	T North
T89D-921	617203.00	6060090.00	976.32	113	T North
T89D-922	617001.62	6059966.00	938.02	67	T North
T89D-923	617353.06	6059701.00	908.48	64	T North
T89D-924	617505.75	6059745.50	911.42	66.1	T North
T89D-925	617760.37	6059808.00	906.10	180	T North
T89D-926	618536.18	6060118.50	876.16	21.9	T North
T89D-927	618699.75	6059180.50	751.94	62.2	T North
T89D-928	618749.12	6059599.50	786.10	79	T North
T89D-929	618587.06	6059656.50	808.45	57	T North
T89D-930	618698.25	6060005.50	832.20	76	T North
T89D-931	618879.18	6059836.00	790.01	97	T North
T89R-901	618991.68	6059332.50	740.24	100	T North
T89R-902	618804.75	6059313.00	758.23	81	T North
T89R-903	619097.87	6059679.50	749.55	99	T North
T89R-904	618795.75	6060005.00	819.24	98	T North
T89R-905	618667.43	6059709.00	802.79	71	T North
T89R-906	618739.37	6059829.00	804.70	79	T North
T89R-908	617492.62	6059855.00	927.46	102.5	T North
T89R-909	616912.12	6060324.50	985.87	75	T North
T89R-910	617023.25	6060227.50	988.22	94	T North
T89R-911	616606.43	6060259.50	957.17	94	T North
T89R-912	616737.62	6060161.00	954.02	94	T North
T89R-913	617185.87	6059793.00	922.44	63.5	T North
T89R-914	618250.87	6059966.00	873.31	78	T North

HOLE	EASTING (m)	NORTHING (m)	ELEVATION (m)	TD (m)	AREA
T89R-915	618116.68	6059417.50	837.63	99.5	T North
T89R-916	621143.25	6059740.00	595.08	28	T North
T89R-917	621041.50	6060483.50	580.00	72.6	T North
T89R-918	620543.87	6060240.00	595.03	63.3	T North
T89R-919	620230.12	6059359.00	632.35	85	T North
T92D-02	616384.31	6060496.00	970.23	155.4	T North
T92D-04	616230.93	6060816.00	972.89	191.5	T North
T92D-05	617084.50	6060309.00	1004.33	134.1	T North
T92D-07	617819.25	6059989.50	936.42	234.7	T North
T92D-09	617297.93	6060042.50	969.27	131.1	T North
T92D-12	619119.93	6060315.50	825.29	176.8	T North
T92D-20	618834.81	6059692.50	783.59	84.5	T North
T92D-22	618905.75	6059981.00	799.55	104.6	T North
T92D-24	616313.11	6061109.98	993.69	113.8	T North
T92D-31	616323.35	6061246.96	998.46	122	T North
T92D-41	616619.87	6060077.00	935.46	53.9	T North
T92R-06	616470.62	6060815.00	1012.16	152.4	T North
T92R-08	616633.31	6060522.00	1003.63	134.1	T North
T92R-10	616453.87	6060317.00	954.19	97.5	T North
T92R-11	616850.00	6060219.00	972.25	121.9	T North
T92R-13	616943.43	6059946.50	934.19	76.2	T North
T92R-14	617163.12	6059936.00	937.03	73.1	T North
T92R-15	617093.68	6059796.00	923.54	85.3	T North
T92R-16	617410.50	6059786.00	920.69	85.3	T North
T92R-17	617644.75	6059906.00	931.13	127.7	T North
T92R-18	617356.62	6059634.00	904.49	48.8	T North
T92R-19C	617647.31	6059515.00	884.87	67.1	T North
T92R-21	617810.37	6059604.50	881.67	134.1	T North
T92R-23	617961.50	6059347.00	842.55	164.6	T North
T92R-25	617741.37	6059391.50	865.78	79.2	T North
T92R-27	618544.12	6059524.00	802.67	48.9	T North
T92R-28	618748.75	6059368.00	767.78	60.9	T North
T92R-29	618559.12	6059963.00	837.17	48.8	T North
T92R-30C	617811.43	6059032.00	812.83	84.2	T North
T92R-33	617644.93	6059014.00	824.74	97.5	T North
T92R-35	617441.00	6058956.00	831.23	152.4	T North
T93D-22	618123.12	6058866.50	778.00	207.3	T North
T93D-23	617543.12	6058597.00	792.24	149.4	T North
T93D-24	616963.25	6060475.50	1040.54	45.7	T North
T93D-27	618127.75	6058539.00	754.31	115.8	T North
T93D-31	618212.37	6058717.50	762.48	182.9	T North
T93D-38	618374.37	6058844.00	760.69	137.2	T North
T93D-44	617400.93	6059873.50	931.02	121.9	T North
T93R-21	617949.25	6059118.00	815.55	140.8	T North
T93R-25	618071.12	6059049.50	798.62	185.9	T North
T93R-26	617831.31	6058769.50	790.75	86	T North
T93R-28	617974.43	6058922.00	790.03	146.9	T North
T93R-28P	617989.12	6058925.50	789.32	71.9	T North
T93R-29	617172.81	6058970.50	848.88	134.1	T North
T93R-30	616781.37	6059572.00	902.14	134.1	T North
T93R-32	617589.81	6059863.00	925.55	110.6	T North
T93R-33	616420.37	6059990.50	914.40	152.4	T North
T93R-34	620091.00	6060641.00	683.37	165.3	T North
T93R-35	617994.50	6058676.00	772.01	110	T North
T93R-36	620359.87	6059991.50	605.84	138	T North
T93R-37	619619.87	6059655.00	681.57	137.8	T North
T93R-39	620519.50	6059644.00	611.76	110.3	T North
T93R-46	620868.00	6059531.50	598.05	41.1	T North
T93R-48	619233.12	6058992.00	672.65	137	T North
T94R-33C	618722.81	6059867.00	808.78	76.8	T North
T94R-46C	616690.43	6057642.00	760.23	202.5	T North
TOB93-01	621612.87	6059686.50	584.99	8.2	T North
TOB93-02	621074.18	6059759.00	596.26	8.2	T North
TOB93-03	620550.25	6059876.00	598.43	8.2	T North

HOLE	EASTING (m)	NORTHING (m)	ELEVATION (m)	TD (m)	AREA
TOB93-04	621662.18	6060297.50	593.20	8.2	T North
TOB93-05	620998.81	6060205.00	582.83	8.2	T North
TOB93-06	620534.93	6060284.00	597.51	8.2	T North
TOB93-07	621324.31	6060451.00	584.13	8.2	T North
TOB93-08	620705.43	6060523.00	606.04	4.3	T North
TOB93-09	621226.00	6060600.00	579.19	5.8	T North
TOB93-10	620892.68	6060905.00	600.69	0.5	T North
T79R-01	621340.00	6055880.00	674.76	189	Goathorn
T79R-03	622372.68	6054640.00	732.12	237.7	Goathorn
T79R-13	621457.68	6054761.00	723.09	128	Goathorn
T81D-112	621815.37	6052883.00	892.39	235	Goathorn
T81R-101	622157.25	6055184.00	700.30	252	Goathorn
T81R-102	621600.00	6056612.00	654.02	35.1	Goathorn
T81R-103	621250.00	6056552.00	656.67	21.6	Goathorn
T81R-104	621353.00	6054098.50	771.11	152.4	Goathorn
T81R-105	621675.81	6052692.00	864.50	176	Goathorn
T81R-106	621800.00	6052050.00	853.01	62.5	Goathorn
T81R-107	619774.43	6054080.00	764.16	198	Goathorn
T81R-109	619380.00	6053855.00	779.82	30.5	Goathorn
T82D-201	620815.81	6054645.00	721.42	245.7	Goathorn
T82D-202	621050.25	6054192.00	761.81	300.8	Goathorn
T82D-204	622244.31	6054110.50	767.01	400.5	Goathorn
T82D-208	620971.56	6053665.00	789.44	319	Goathorn
T82D-210	620036.62	6054463.00	733.31	258.2	Goathorn
T82D-219	621616.75	6054106.50	765.67	349.8	Goathorn
T82D-220	621378.68	6053786.00	789.12	325.5	Goathorn
T82D-221	620680.56	6054403.00	728.50	273.4	Goathorn
T82D-222	621049.62	6054189.00	761.90	76.2	Goathorn
T82D-223	621047.31	6053833.00	781.79	233.7	Goathorn
T82D-224	620653.00	6054055.50	737.38	249	Goathorn
T82D-225	621252.25	6053453.50	797.94	282.5	Goathorn
T82D-226	619764.12	6054287.00	765.46	215.5	Goathorn
T82D-227	621386.75	6053452.00	801.14	255	Goathorn
T82D-228	619938.50	6054244.00	755.02	200.3	Goathorn
T82D-229	621896.68	6053457.50	810.96	294.4	Goathorn
T82D-230	619790.00	6053895.00	765.89	142.3	Goathorn
T82D-231	619511.68	6054313.50	765.80	331	Goathorn
T82D-232	621777.75	6053799.00	783.72	358.5	Goathorn
T82D-233	619255.18	6054270.50	773.70	130	Goathorn
T82D-234	619710.37	6054453.50	755.76	209.4	Goathorn
T82D-235	622069.12	6053794.00	787.76	270.3	Goathorn
T82D-236	619821.50	6054777.50	736.97	178.9	Goathorn
T82D-237	619986.87	6054858.00	734.49	151.5	Goathorn
T82D-238	621608.62	6053803.00	786.82	191	Goathorn
T82D-239	620020.18	6055035.50	729.13	159.4	Goathorn
T82D-240	620033.62	6055453.50	714.37	85.6	Goathorn
T82D-241	621253.81	6053155.00	819.93	115	Goathorn
T82D-242	619768.93	6055016.50	737.08	138.9	Goathorn
T82D-243	621396.43	6053109.00	832.47	148.5	Goathorn
T82D-244	621533.18	6052608.00	843.53	151.4	Goathorn
T82D-245	621650.00	6053094.50	862.51	227	Goathorn
T82D-246	621653.56	6052345.00	843.85	163.7	Goathorn
T82D-247	621870.18	6053110.50	863.53	258.6	Goathorn
T82D-248	621840.68	6052041.00	855.94	282.5	Goathorn
T82D-249	622109.18	6053129.00	872.12	264.3	Goathorn
T82D-250	622070.56	6052083.00	872.63	172.5	Goathorn
T82D-251	621583.56	6052867.50	875.75	355.7	Goathorn
T82D-252	622346.75	6052073.00	889.38	374	Goathorn
T82D-253	622276.50	6052593.00	908.08	364.8	Goathorn
T82D-254	622466.50	6053837.00	789.11	249	Goathorn
T82D-255	621656.68	6053462.00	805.98	200	Goathorn
T82D-256	622016.68	6052584.50	893.64	291.6	Goathorn
T82D-257	621141.43	6054640.00	733.59	78.3	Goathorn
T82D-258	621393.12	6054415.00	748.55	121.9	Goathorn

HOLE	EASTING (m)	NORTHING (m)	ELEVATION (m)	TD (m)	AREA
T82D-259	621075.50	6054413.00	750.96	87.2	Goathorn
T82D-260	621019.50	6055019.00	701.78	154.8	Goathorn
T82D-261	619536.18	6054451.50	758.71	221.6	Goathorn
T82D-262	620789.06	6055043.00	694.74	139.3	Goathorn
T82D-263	620745.00	6055520.00	681.80	61	Goathorn
T82D-264	621256.87	6055487.00	692.58	200	Goathorn
T82D-265	619688.00	6054627.50	741.34	279.1	Goathorn
T82D-266	620670.00	6055282.00	693.42	96.1	Goathorn
T82D-267	619565.25	6054091.50	765.73	250	Goathorn
T82D-268	621643.43	6054397.00	749.10	300.6	Goathorn
T82D-269	620775.00	6052240.00	816.33	96	Goathorn
T82D-271	621651.12	6054751.50	725.13	222	Goathorn
T82D-272	621633.00	6055142.00	709.56	121.9	Goathorn
T82R-209	619618.18	6053886.00	768.86	150	Goathorn
T83D-301	620956.25	6054147.00	759.28	72.2	Goathorn
T83D-302	620895.37	6054151.00	754.18	47.9	Goathorn
T83D-303	620835.12	6054151.50	749.59	50.9	Goathorn
T83D-304	620924.06	6054149.00	756.55	60.1	Goathorn
T83D-305	620776.00	6054153.50	746.27	57	Goathorn
T83D-306	621111.68	6054143.50	764.69	87.5	Goathorn
T83D-307	621230.93	6054130.50	769.64	111.6	Goathorn
T83D-308	621353.75	6054128.00	768.86	93.6	Goathorn
T83D-309	621015.93	6054146.50	762.83	69.2	Goathorn
T83D-310	621170.31	6054136.50	768.20	90.5	Goathorn
T83D-311	621140.31	6054137.50	767.32	20.4	Goathorn
T83D-312	620924.50	6053953.00	769.29	59.4	Goathorn
T83D-313	620909.62	6054260.00	754.87	66.1	Goathorn
T83D-314	621010.87	6054637.00	729.09	60	Goathorn
T83D-315	621254.00	6054506.00	738.88	81.4	Goathorn
T83D-316	621086.75	6054904.50	717.03	87.5	Goathorn
T83D-317	621290.25	6054895.00	718.52	108.8	Goathorn
T83D-318	621015.93	6055279.50	688.84	118	Goathorn
T83D-319	621256.18	6053932.00	776.62	77.8	Goathorn
T83D-320	621517.12	6053967.50	775.98	148.4	Goathorn
T83D-321	621505.12	6053623.00	793.90	124.1	Goathorn
T83D-322	621670.00	6053965.50	773.81	179.9	Goathorn
T83D-323	621903.37	6053965.00	774.58	144.2	Goathorn
T83D-324	621221.93	6053643.50	793.23	60.1	Goathorn
T83D-325	621242.87	6053299.00	808.06	66.1	Goathorn
T83D-326	621075.25	6053440.50	796.11	84.4	Goathorn
T83D-327	621075.12	6053289.00	798.06	100.9	Goathorn
T83D-328	621385.18	6052893.00	836.00	87.4	Goathorn
T83D-329	621778.25	6052612.00	868.46	193.9	Goathorn
T83D-330	622027.31	6052878.50	899.33	175.9	Goathorn
T83D-331	621888.75	6052334.50	862.58	185	Goathorn
T83D-332	622160.68	6053452.50	820.42	164.6	Goathorn
T83D-333	621759.43	6053270.00	829.31	187	Goathorn
T83D-334	621772.31	6053612.00	795.95	107.9	Goathorn
T83D-335	621502.12	6053280.50	814.50	127.1	Goathorn
T83D-336	621381.68	6054614.00	731.53	111	Goathorn
T83D-337	621528.87	6054500.00	737.72	123.8	Goathorn
T83D-338	621894.18	6054420.50	746.75	215	Goathorn
T83D-339	621807.00	6054764.50	725.53	114.9	Goathorn
T83D-340	621808.37	6054270.00	757.23	187.4	Goathorn
T83D-341	621517.68	6054283.00	757.36	167.7	Goathorn
T83D-342	621268.25	6054267.50	761.17	130.4	Goathorn
T83D-343	621342.25	6055302.00	702.78	172.9	Goathorn
T83D-344	621624.50	6055431.50	698.10	148.5	Goathorn
T83D-345	619639.06	6053979.00	767.32	136.3	Goathorn
T83D-346	619416.18	6054201.50	771.23	127.1	Goathorn
T83D-347	619647.62	6054198.00	764.50	105.5	Goathorn
T83D-348	619913.93	6054623.00	735.31	136.3	Goathorn
T83D-349	620148.37	6054660.50	718.09	129.2	Goathorn
T83D-350	620931.50	6054790.00	718.31	62.5	Goathorn

HOLE	EASTING (m)	NORTHING (m)	ELEVATION (m)	TD (m)	AREA
T83D-351	621259.18	6054756.00	725.82	111.9	Goathorn
T83D-352	621890.00	6054110.00	766.85	148.4	Goathorn
T83D-353	621108.00	6054836.00	721.86	142.3	Goathorn
T83D-354	622890.43	6055913.50	664.28	162.8	Goathorn
T83D-355	622898.25	6055411.50	688.97	110	Goathorn
T83D-356	622453.75	6055887.00	674.55	127	Goathorn
T83D-357	621641.50	6055647.50	691.60	112.7	Goathorn
T83D-358	622403.50	6055463.00	688.99	108.5	Goathorn
T83D-359	621855.87	6055395.00	699.07	136.8	Goathorn
T83D-360	622190.12	6054759.50	726.35	165.7	Goathorn
T83D-361	621883.00	6055643.50	688.76	154.5	Goathorn
T83D-362	622094.50	6054459.00	746.23	189	Goathorn
T83D-363	621886.43	6055139.00	708.85	150.7	Goathorn
T83D-364	622617.93	6055145.00	695.98	107	Goathorn
T83D-365	622395.50	6054360.00	754.06	163.8	Goathorn
T83D-366	622135.12	6055642.00	689.91	151.4	Goathorn
T83D-367	622863.68	6054422.50	756.08	116.9	Goathorn
T83D-368	622088.75	6055398.00	695.19	120.4	Goathorn
T83D-369	621902.37	6055903.50	679.25	108.8	Goathorn
T84D-401	622175.43	6056405.50	652.32	114.9	Goathorn
T84D-402	622004.87	6053962.50	776.40	163.7	Goathorn
T84D-403	621902.12	6053811.00	784.52	157.5	Goathorn
T84D-404	621643.50	6056393.00	653.15	96.6	Goathorn
T84D-405	621893.43	6053630.50	795.38	238.4	Goathorn
T84D-406	621634.50	6055911.00	678.14	84.1	Goathorn
T84D-407	621650.62	6053644.50	793.73	200.2	Goathorn
T84D-408	622165.18	6055926.00	677.66	114.9	Goathorn
T84D-409	621783.12	6053445.00	813.10	136.3	Goathorn
T84D-410	622147.68	6056154.00	666.85	84.4	Goathorn
T84D-411	621482.37	6052719.00	840.78	74.7	Goathorn
T84D-412	621920.06	6056132.50	666.98	50.9	Goathorn
T84D-413	620905.37	6054402.00	743.83	105.7	Goathorn
T84D-414	621650.50	6056137.00	663.89	102.7	Goathorn
T84D-415	620937.56	6054502.00	736.24	72	Goathorn
T84D-416	621425.93	6056136.50	658.69	84.1	Goathorn
T84D-417	621104.87	6054507.50	743.53	90.5	Goathorn
T84D-418	621082.43	6054234.50	761.20	118	Goathorn
T84D-419	621885.87	6056329.50	658.03	90	Goathorn
T84D-420	621254.00	6054389.00	752.72	114.9	Goathorn
T84D-421	622425.56	6056427.50	652.09	96.6	Goathorn
T84D-422	621265.68	6054630.50	731.62	93.6	Goathorn
T84D-423	622447.25	6056682.00	653.72	139.3	Goathorn
T84D-424	620996.25	6054758.00	722.28	178.9	Goathorn
T84D-425	622189.75	6056684.50	641.98	78.3	Goathorn
T84D-426	620803.62	6053945.00	761.66	53.9	Goathorn
T84D-427	622676.68	6056456.50	665.15	41.1	Goathorn
T84D-428	621367.56	6054500.50	740.19	108.8	Goathorn
T84D-429	621925.18	6056680.50	641.07	110	Goathorn
T84D-430	621529.06	6054621.50	729.15	133.2	Goathorn
T84D-431	621617.75	6055268.00	707.13	127.1	Goathorn
T84D-432	621667.56	6054613.50	733.17	127.1	Goathorn
T84D-433	621891.31	6054627.50	732.10	102.1	Goathorn
T84D-434	621548.50	6055489.00	693.64	106	Goathorn
T84D-435	621881.93	6054877.00	722.91	130	Goathorn
T84D-436	621188.93	6055271.00	698.12	102.7	Goathorn
T84D-437	621698.62	6054897.50	719.78	96.2	Goathorn
T84D-438	621238.00	6055041.50	713.34	148.1	Goathorn
T93R-01C	621094.00	6053956.00	777.51	34.4	Goathorn
T93R-40C	621177.12	6053832.00	782.71	65.6	Goathorn
T93R-41C	621521.12	6053011.50	862.41	141.6	Goathorn
T93R-42C	621336.87	6053284.00	812.00	75.3	Goathorn
T93R-43C	621091.75	6053613.50	792.44	41	Goathorn
T95R-05	619526.25	6053264.50	796.63	118.5	Goathorn
T95R-08	618936.12	6053605.50	790.78	133.2	Goathorn

HOLE	EASTING (m)	NORTHING (m)	ELEVATION (m)	TD (m)	AREA
T95R-23	619275.18	6055029.50	736.20	134	Goathorn
T96R-100	621884.87	6055764.50	682.23	128.7	Goathorn
T96R-101	622040.06	6056271.00	662.71	110	Goathorn
T96R-103	622360.00	6056045.00	670.81	189	Goathorn
T96R-104	622317.93	6056338.00	655.54	122	Goathorn
T96R-106	622289.56	6056577.50	646.82	140	Goathorn
T96R-107	622141.43	6056619.50	642.06	116.1	Goathorn
T96R-108	621978.00	6056569.00	640.77	122	Goathorn
T96R-109	621652.87	6056588.00	652.52	96.3	Goathorn
T96R-113	621369.50	6053935.50	779.10	97.5	Goathorn
T96R-123C	621345.81	6053743.00	790.58	87	Goathorn
T96R-133	621588.12	6053550.50	798.72	152	Goathorn
T96R-134	621656.56	6052990.00	879.47	207	Goathorn
T96R-135	621405.93	6053235.50	813.86	125	Goathorn
T96R-136	621342.87	6053042.00	832.65	115	Goathorn
T96R-138	621286.75	6053375.50	805.23	103.2	Goathorn
T96R-139	621488.50	6052877.50	856.36	153	Goathorn
T96R-140	620967.25	6054315.50	756.07	98	Goathorn
T96R-141	621398.37	6053362.00	806.64	110	Goathorn
T96R-142	621182.06	6054321.00	756.59	127	Goathorn
T96R-143	621707.93	6052813.00	884.47	207	Goathorn
T96R-144	621223.62	6053525.00	795.18	61.4	Goathorn
T96R-36	621507.06	6053762.50	790.96	161	Goathorn
T96R-40C	621546.81	6053168.00	837.15	177	Goathorn
T96R-44	621023.75	6054048.50	768.88	88	Goathorn
T96R-48	621106.12	6054742.50	725.74	140.5	Goathorn
T96R-53	621314.62	6053542.50	797.25	73.4	Goathorn
T96R-55	621466.06	6053540.50	798.72	104.5	Goathorn
T96R-57	621536.43	6053347.50	809.80	120	Goathorn
T96R-62	621112.68	6053724.50	787.59	66.4	Goathorn
T96R-66	621248.25	6053782.50	787.39	85.5	Goathorn
T96R-68	621368.81	6053679.00	791.05	102.7	Goathorn
T96R-71	621541.81	6053923.50	780.36	152.4	Goathorn
T96R-74C	621357.06	6054012.50	772.86	90.6	Goathorn
T96R-80	621264.12	6054024.00	770.09	97.3	Goathorn
T96R-81	621069.31	6054596.00	733.52	98	Goathorn
T96R-85	621087.81	6055013.00	711.55	84	Goathorn
T96R-88	621133.56	6055167.50	700.25	78.8	Goathorn
T96R-90	621124.81	6055934.50	670.02	96.7	Goathorn
T96R-93	621475.18	6056037.50	668.56	116	Goathorn
T96R-94	621807.31	6056197.50	661.82	73.5	Goathorn
T96R-95	621808.68	6056015.00	672.50	79.6	Goathorn
T96R-97	621999.25	6056093.00	669.19	97.8	Goathorn
T96R-98	621626.25	6055816.00	681.84	79.8	Goathorn
T97R-01	621634.18	6052593.50	851.35	153.8	Goathorn
T97R-02	621436.87	6052967.50	850.08	97	Goathorn
T97R-03	621787.93	6053179.00	850.28	190	Goathorn
T97R-04	621632.00	6053323.00	817.77	164.6	Goathorn
T97R-05	621606.18	6052510.50	844.22	140	Goathorn
T97R-06	621651.37	6053178.00	840.03	176	Goathorn
T97R-07	621925.93	6053297.50	833.93	207	Goathorn
T97R-08C	621793.18	6055152.00	709.79	155.4	Goathorn
T97R-09	620820.12	6054048.00	757.85	61	Goathorn
T97R-10	620984.37	6053426.00	790.54	66	Goathorn
T97R-11	621198.62	6053078.00	815.02	91.8	Goathorn
T97R-12	621411.87	6053605.00	796.13	98	Goathorn
T97R-13	620945.75	6055912.00	674.05	145	Goathorn
T97R-14	621830.43	6053341.00	822.02	193	Goathorn
T97R-15	621177.12	6054456.50	743.62	80	Goathorn
T97R-16	621548.43	6053449.50	803.77	130	Goathorn
T97R-17	621576.87	6052679.00	850.77	116	Goathorn
T97R-18	621703.25	6052510.00	854.39	189	Goathorn
T97R-19	621123.06	6055767.50	677.46	202	Goathorn
T97R-20	621475.12	6054915.50	717.80	164	Goathorn

HOLE	EASTING (m)	NORTHING (m)	ELEVATION (m)	TD (m)	AREA
T97R-21C	620998.43	6055107.50	695.13	98.2	Goathorn
T97R-22	621753.50	6053019.50	882.04	207	Goathorn
T97R-23	620832.56	6055389.00	683.72	104.8	Goathorn
T97R-24	621737.62	6052741.00	880.84	206	Goathorn
T97R-25	621378.25	6054815.00	721.64	79	Goathorn
T97R-26	621567.25	6054833.00	721.53	110.3	Goathorn
T97R-27	620813.68	6054912.00	708.14	161	Goathorn
T97R-28	621170.06	6053447.00	797.59	80	Goathorn
T97R-29	621622.37	6054889.00	719.81	91	Goathorn
T97R-30	621028.93	6053523.00	792.19	72.8	Goathorn
T97R-31	621814.68	6054906.00	720.20	98	Goathorn
T97R-32C	620946.75	6054661.50	724.46	169.6	Goathorn
T97R-33	621168.43	6054037.00	769.72	125.4	Goathorn
T97R-34	621213.18	6055441.00	689.47	183	Goathorn
T97R-35	622052.06	6055212.00	700.37	128	Goathorn
T97R-36	621545.81	6055073.00	714.84	164	Goathorn
T97R-37	620753.93	6055205.00	693.04	116	Goathorn
T97R-38	621041.43	6054467.50	741.66	71	Goathorn
T97R-39	621742.43	6055056.50	715.17	122	Goathorn
T97R-40	620816.75	6054353.50	737.58	97.4	Goathorn
T97R-41	620846.68	6055251.50	688.44	110.5	Goathorn
T97R-42C	621834.00	6054634.50	731.20	161.2	Goathorn
T97R-43	621773.43	6055340.00	704.23	176	Goathorn
T97R-44	621996.75	6054977.00	716.16	152.5	Goathorn
T97R-45	620916.62	6055743.00	676.84	122	Goathorn
T97R-46	621443.43	6055109.50	713.16	171.5	Goathorn
T97R-47	621074.93	6055540.50	679.37	147.1	Goathorn
T97R-48	621943.68	6054782.00	725.80	135	Goathorn
T97R-49	621492.37	6055316.50	705.14	116	Goathorn
T97R-50	621227.50	6055646.50	679.88	216	Goathorn
T97R-51	622002.93	6055331.50	699.00	100.8	Goathorn
T97R-52	621897.56	6055288.00	701.50	165	Goathorn
T97R-53	621265.50	6056132.50	661.94	105	Goathorn
T97R-54	621328.37	6055761.50	678.52	140	Goathorn
T97R-55	621068.37	6055924.00	673.08	193	Goathorn
T97R-56	621421.62	6055954.00	672.78	152	Goathorn
T97R-57	621221.81	6055965.50	667.03	200	Goathorn
T97R-58	621200.62	6055091.00	706.68	140.5	Goathorn
T97R-59	621264.43	6055232.50	702.45	150.1	Goathorn
T97R-60	620977.00	6055410.00	684.43	147.3	Goathorn
T97R-61	621112.68	6055355.00	686.09	147	Goathorn
T97R-63	621138.18	6056134.00	666.10	146	Goathorn
T97R-64	620957.75	6055224.00	691.66	110.5	Goathorn
T97R-68	620915.25	6055118.50	695.20	141.7	Goathorn
T97R-72	620929.06	6054910.50	709.78	134.8	Goathorn
T97R-73	621327.81	6054977.00	716.29	164.8	Goathorn
T97R-74	619708.75	6054585.50	743.31	92.1	Goathorn
T97R-76	619654.93	6054367.50	763.94	205	Goathorn
T97R-77	621331.87	6055144.50	706.86	170.7	Goathorn
T97R-81	619732.25	6053726.50	770.76	114.4	Goathorn
T97R-82C	619555.50	6054191.50	765.29	181.4	Goathorn
T97R-83	619781.25	6053965.00	763.26	126.5	Goathorn
T97R-85	619551.50	6053965.00	768.12	134.8	Goathorn
T97R-86	621327.62	6055424.00	695.79	170.8	Goathorn
T97R-89	621465.06	6055482.50	694.79	116	Goathorn
T97R-92	621480.81	6055587.50	692.14	111.5	Goathorn
T97R-93	621392.12	6055596.50	686.63	137.5	Goathorn
T97R-98	621703.43	6055409.00	699.26	152	Goathorn
T98R-01	622195.00	6056540.00	645.80	132	Goathorn
T98R-02	621806.00	6056531.00	646.97	80	Goathorn
T98R-02C	621805.00	6056534.00	647.06	72	Goathorn
T98R-04	622031.00	6056460.00	650.82	31.2	Goathorn
T98R-05	622107.00	6056536.00	644.66	103.5	Goathorn
T98R-06	622162.00	6056475.00	648.27	98	Goathorn

HOLE	EASTING (m)	NORTHING (m)	ELEVATION (m)	TD (m)	AREA
T98R-08	622038.00	6054901.00	720.84	145	Goathorn
T98R-10	622047.00	6054800.00	725.03	122	Goathorn
T98R-11	622047.00	6054688.00	728.25	122	Goathorn
T98R-12	621833.00	6055035.00	714.89	152	Goathorn
T98R-15	621924.00	6055052.00	711.38	140	Goathorn
T98R-17	622327.00	6055075.00	704.24	170.5	Goathorn
T98R-19	622219.00	6054879.00	722.05	176	Goathorn
T98R-22	622073.00	6054984.00	715.69	158	Goathorn
T98R-22C	622069.00	6054981.00	715.93	121.2	Goathorn
T98R-26	619929.00	6054532.00	738.26	47.3	Goathorn
T98R-27	622222.00	6054967.00	715.14	180	Goathorn
T98R-28	619847.00	6054422.00	755.20	47.3	Goathorn
T98R-29	621742.00	6055549.00	690.26	164.3	Goathorn
T98R-30	621807.00	6055459.00	695.65	171	Goathorn
T98R-32	621889.00	6056482.00	648.21	78.5	Goathorn
T98R-33	621998.00	6055451.00	694.23	171	Goathorn
T98R-34	621896.00	6056582.00	644.19	60	Goathorn
T98R-35	622048.00	6055099.00	705.31	153	Goathorn
T98R-36	622144.00	6056576.00	643.35	114.6	Goathorn
T98R-37	622153.00	6055073.00	707.05	163	Goathorn
T98R-38	622111.00	6056445.00	649.94	90.6	Goathorn
T98R-39	622278.00	6055179.00	700.58	103	Goathorn
T98R-40	621227.00	6055802.00	674.03	192.5	Goathorn
T98R-41	621790.00	6055222.00	705.60	153	Goathorn
T98R-42	619759.00	6054538.00	745.64	49.8	Goathorn
T98R-43	621661.00	6055341.00	704.63	134	Goathorn
T98R-44	621534.00	6055388.00	700.62	96.5	Goathorn
T98R-45	621292.00	6055564.00	685.66	79.5	Goathorn
OTC93-01	617977.00	6049982.00	1033.72	7	Tenas
OTC97-01	617026.87	6051180.00	951.21	9.5	Tenas
T81R-108	618040.00	6052175.00	844.09	169.8	Tenas
T82R-205	620667.00	6048358.00	954.66	208	Tenas
T82R-206	620279.00	6048779.00	979.79	236	Tenas
T82R-207	620137.00	6049330.00	956.46	207.5	Tenas
T92R-39C	616972.87	6051476.50	923.32	62.5	Tenas
T92R-40C	617016.12	6051993.50	876.60	67.4	Tenas
T92R-42	616775.25	6051448.50	925.73	28.1	Tenas
T92R-43	617780.50	6050522.50	973.26	85.3	Tenas
T93D-45	617524.50	6052434.50	838.00	142.8	Tenas
T93D-47	619075.43	6049933.00	953.53	178.9	Tenas
T93D-50	617471.56	6053074.00	812.98	87.8	Tenas
T93D-53	618159.18	6050529.00	944.31	91.4	Tenas
T93R-02	617325.18	6050443.50	1007.01	80.6	Tenas
T93R-03	618287.68	6050534.50	938.69	100.8	Tenas
T93R-04	616727.37	6049982.50	1050.58	89	Tenas
T93R-05	617556.25	6050894.00	967.03	92.4	Tenas
T93R-06C	617172.93	6050902.00	988.72	55.8	Tenas
T93R-07C	618156.25	6051011.00	922.34	128.9	Tenas
T93R-08C	616865.75	6050223.00	1032.84	43	Tenas
T93R-09	617629.87	6051431.00	924.78	171.3	Tenas
T93R-10	617174.68	6050007.00	1056.00	61	Tenas
T93R-11C	618162.75	6050005.00	1017.00	73.3	Tenas
T93R-12	618162.68	6051537.50	892.01	128.9	Tenas
T93R-13	618552.93	6051271.50	892.89	140.8	Tenas
T93R-14	617700.50	6049970.50	1052.25	110	Tenas
T93R-15	616994.31	6052496.50	840.21	42.7	Tenas
T93R-16	616769.75	6052299.50	859.12	36.6	Tenas
T93R-17	617550.50	6051979.00	849.77	128.9	Tenas
T93R-18	618082.68	6051994.50	850.67	183.8	Tenas
T93R-19	618817.50	6050577.50	920.84	122	Tenas
T93R-49	619464.06	6049371.50	981.45	111.3	Tenas
T93R-51	616724.62	6051420.50	927.33	71.3	Tenas
T94R-01	616858.81	6050497.00	1009.63	83.8	Tenas
T94R-02	618353.68	6049742.00	1067.65	37	Tenas



HOLE	EASTING (m)	NORTHING (m)	ELEVATION (m)	TD (m)	AREA
T94R-03	617850.25	6050180.50	998.27	84.8	Tenas
T94R-04C	617412.25	6051583.50	900.97	74.7	Tenas
T94R-05	617502.06	6051253.50	934.32	121.6	Tenas
T94R-06	617843.00	6051580.00	902.38	162.8	Tenas
T94R-07	617933.25	6051219.00	919.91	120.9	Tenas
T94R-08	617861.56	6051909.00	856.58	144.5	Tenas
T94R-09	615955.00	6051723.50	895.69	145.9	Tenas
T94R-10C	617539.25	6052177.00	842.56	89.6	Tenas
T94R-11	616201.75	6052223.50	873.83	72.6	Tenas
T94R-12	617237.31	6052187.00	851.03	94.8	Tenas
T94R-13	616086.31	6050937.00	940.69	41.9	Tenas
T95R-04	618656.18	6052395.00	833.43	113.1	Tenas
T95R-05	619526.25	6053264.50	796.64	118.5	Tenas
T95R-06	618110.12	6052877.00	827.71	116	Tenas
T95R-07C	617688.81	6050296.00	999.99	56	Tenas
T95R-10	617849.93	6052275.00	841.41	138	Tenas
T95R-11	616997.93	6051773.50	892.25	55	Tenas
T95R-13	617278.62	6052011.00	856.41	105.3	Tenas
T95R-14	617683.43	6051701.50	883.63	178	Tenas
T95R-15C	617176.87	6051799.50	883.86	100	Tenas
T95R-17	617905.75	6051404.50	921.79	178	Tenas
T95R-19C	618029.43	6050731.50	937.46	85.9	Tenas
T95R-20	619539.31	6052459.00	809.51	164.8	Tenas
T95R-21	617745.43	6050712.50	958.18	73	Tenas
T95R-22C	619129.87	6049638.00	973.59	114.9	Tenas
T95R-24	617218.25	6051402.00	923.46	67.9	Tenas
T95R-25	617027.93	6050089.00	1044.04	43	Tenas
T95R-26	619300.31	6051125.00	860.10	80	Tenas
T95R-28C	618821.43	6049826.50	972.01	115.9	Tenas
T95R-30	619074.25	6049502.50	1002.69	53.3	Tenas
T95R-31	618602.50	6049969.50	975.94	146	Tenas
T95R-32	618137.62	6050296.00	972.54	147	Tenas
T95R-34	618776.43	6050144.50	947.14	116	Tenas
T95R-35C	618406.68	6050242.00	955.54	130	Tenas
T95R-36	616854.75	6050739.50	998.09	55	Tenas
T95R-38C	618470.31	6050771.00	925.00	104.7	Tenas
T95R-39C	617450.62	6050670.50	984.51	80	Tenas
T95R-40	618303.37	6051262.00	904.70	80	Tenas
T95R-43	619051.93	6051796.00	838.43	98.5	Tenas
T95R-44	618883.18	6052824.50	816.06	138	Tenas
T95R-45	619753.50	6050395.50	924.91	56	Tenas
T95R-46	617399.81	6051079.00	951.29	97.5	Tenas
T95R-50C	617164.06	6051179.00	946.94	83.8	Tenas
T95R-51	619788.06	6048852.00	1014.23	141	Tenas
T95R-60	618562.87	6050534.50	929.66	115.7	Tenas
T95R-61	618516.81	6050105.00	963.01	104.7	Tenas
T95R-62	617577.87	6050570.00	980.54	90.7	Tenas
T95R-63	617925.62	6050407.50	972.42	78.7	Tenas
T95R-64	618392.87	6050398.50	944.64	128.9	Tenas
T95R-65	618413.43	6050661.50	928.32	159.2	Tenas
T95R-66	618221.00	6051384.00	901.76	151	Tenas
T95R-67	617177.25	6051093.00	958.22	55	Tenas
T95R-68	618136.87	6050475.50	952.46	120	Tenas
T95R-69	617306.50	6051209.50	938.98	80	Tenas
T95R-70	618504.37	6050974.50	919.34	105	Tenas
T95R-71	618246.75	6050069.50	992.54	97.5	Tenas
T95R-72	618743.00	6050340.50	939.67	140.7	Tenas
T95R-73	618692.87	6050566.50	926.30	134	Tenas
T95R-74	618025.06	6050235.00	983.13	61.5	Tenas
T95R-76	617056.18	6051308.50	934.35	73	Tenas
T95R-77	618952.00	6050289.00	937.99	70	Tenas
T95R-78	616953.43	6051637.00	908.45	74	Tenas
T95R-79	616921.87	6051906.50	886.26	55	Tenas
T95R-80	617125.87	6051615.00	905.88	62	Tenas

HOLE	EASTING (m)	NORTHING (m)	ELEVATION (m)	TD (m)	AREA
T95R-81	617048.87	6051891.00	879.04	80	Tenas
T96R-01	618496.50	6050486.00	933.85	195.2	Tenas
T96R-02	619012.12	6050091.00	946.84	90.7	Tenas
T96R-03	618322.37	6050303.50	956.72	135.1	Tenas
T96R-04C	617458.50	6050534.00	994.43	39	Tenas
T96R-05	618912.93	6050017.50	952.06	128.2	Tenas
T96R-05C	618923.18	6050031.00	951.78	105.8	Tenas
T96R-06	618430.06	6050003.50	990.39	110.1	Tenas
T96R-07C	617370.62	6050504.50	1000.64	25.6	Tenas
T96R-08	616831.12	6050576.50	1006.06	67.7	Tenas
T96R-09	618960.81	6050054.00	950.27	128.7	Tenas
T96R-10	618142.18	6050145.00	987.61	67.1	Tenas
T96R-105	617439.43	6052606.50	831.35	102.7	Tenas
T96R-11	616889.31	6050413.50	1014.62	125.7	Tenas
T96R-110	617345.56	6052403.00	840.02	66.3	Tenas
T96R-119	617183.12	6051928.00	870.24	97	Tenas
T96R-120	617260.50	6051664.00	898.19	73.7	Tenas
T96R-121	617396.87	6052085.00	849.39	109.4	Tenas
T96R-122	616197.12	6051179.00	929.78	37	Tenas
T96R-124	617438.68	6052253.00	840.83	91.7	Tenas
T96R-125	617766.25	6050247.50	998.53	49.3	Tenas
T96R-126	617619.43	6050239.00	1010.98	55.3	Tenas
T96R-127	617213.37	6052270.50	850.16	72.6	Tenas
T96R-128	617057.50	6050661.00	1005.34	53.5	Tenas
T96R-129	618014.00	6050336.50	974.74	65.5	Tenas
T96R-12C	617361.75	6050495.50	1001.19	22.8	Tenas
T96R-130	619374.37	6049502.50	975.00	139.1	Tenas
T96R-131	618226.56	6050306.00	964.59	103.8	Tenas
T96R-132C	617010.81	6050579.50	1007.93	77.7	Tenas
T96R-137	616958.68	6050500.50	1010.63	42.7	Tenas
T96R-13C	617350.68	6050481.00	1003.24	20	Tenas
T96R-14	618628.75	6049867.00	992.07	123	Tenas
T96R-15	618851.62	6049972.50	952.98	128.2	Tenas
T96R-16	617068.68	6050414.50	1016.71	78.8	Tenas
T96R-17C	617341.68	6050467.50	1004.80	17	Tenas
T96R-18C	617333.43	6050449.50	1005.71	13.5	Tenas
T96R-19	617332.12	6050693.00	990.98	79.6	Tenas
T96R-20C	617385.43	6050518.50	999.09	14.4	Tenas
T96R-21	618204.56	6050231.00	974.71	85.6	Tenas
T96R-22	619014.12	6049707.00	970.68	128.5	Tenas
T96R-23C	618280.81	6050788.50	927.16	116.7	Tenas
T96R-24	618472.75	6050708.50	925.03	128.5	Tenas
T96R-25	618127.87	6050384.50	962.45	73.5	Tenas
T96R-26	619049.37	6049730.00	963.80	106.2	Tenas
T96R-27	616834.56	6050312.00	1022.18	73.5	Tenas
T96R-28C	618052.75	6051092.00	922.12	120.7	Tenas
T96R-29	618101.87	6050624.50	940.99	98.6	Tenas
T96R-30	618716.93	6050280.50	942.26	128.2	Tenas
T96R-31	616933.31	6050298.50	1026.75	66	Tenas
T96R-32	617930.25	6050292.50	983.74	67.6	Tenas
T96R-33	616981.37	6050165.00	1036.68	48.8	Tenas
T96R-34	617806.43	6050981.50	937.46	97.6	Tenas
T96R-35	617134.56	6050279.50	1027.81	73.6	Tenas
T96R-37	617595.43	6050397.00	996.97	61.6	Tenas
T96R-38	617658.12	6050146.00	1013.86	76.1	Tenas
T96R-39	617187.56	6050439.50	1015.25	61.5	Tenas
T96R-41	618335.62	6051032.50	917.19	121.4	Tenas
T96R-42C	617377.87	6051844.00	870.76	150.1	Tenas
T96R-43	618281.87	6051543.50	884.96	91.2	Tenas
T96R-45	617976.81	6052447.00	839.08	79.6	Tenas
T96R-46	617657.31	6051566.50	905.02	140.4	Tenas
T96R-47	618058.93	6051526.50	898.75	152.1	Tenas
T96R-49	617394.00	6051676.00	893.31	109.6	Tenas
T96R-50	619093.50	6049722.50	961.81	73.5	Tenas

HOLE	EASTING (m)	NORTHING (m)	ELEVATION (m)	TD (m)	AREA
T96R-51	618710.12	6050224.00	943.82	127.9	Tenas
T96R-52	618277.00	6051028.50	918.92	127.2	Tenas
T96R-54C	617589.68	6051028.50	951.16	103.5	Tenas
T96R-56C	618703.06	6050171.00	947.44	93.1	Tenas
T96R-58	617611.43	6050787.50	967.14	79.9	Tenas
T96R-59	618424.00	6051062.00	915.99	73.6	Tenas
T96R-60	617186.12	6050780.50	993.43	49.2	Tenas
T96R-61	617982.12	6050883.00	933.70	109.7	Tenas
T96R-63	617371.75	6050883.00	981.23	79.6	Tenas
T96R-64	618206.87	6051234.50	908.70	140.4	Tenas
T96R-65C	618304.62	6051041.50	918.01	139.7	Tenas
T96R-67	617779.25	6051289.50	928.56	134.5	Tenas
T96R-69	617494.75	6051398.00	925.89	115.6	Tenas
T96R-70	618149.87	6051341.50	907.46	146.6	Tenas
T96R-72	617745.50	6051835.00	863.40	182.8	Tenas
T96R-73	617997.25	6051735.00	868.31	134.5	Tenas
T96R-75	618158.50	6051761.50	864.88	67.6	Tenas
T96R-76	617315.25	6050462.00	1006.45	17.9	Tenas
T96R-77	617562.00	6051755.00	878.07	164.7	Tenas
T96R-78	617279.31	6051835.50	873.01	103.1	Tenas
T96R-79	618217.12	6051803.50	858.08	73.5	Tenas
T96R-82	617799.50	6052105.00	843.38	104.2	Tenas
T96R-83	618071.06	6051917.00	853.60	79.6	Tenas
T96R-84	617803.87	6052425.50	841.44	52.2	Tenas
T96R-86	617080.50	6052165.00	863.06	60.9	Tenas
T96R-87	617735.37	6052361.50	840.49	71.8	Tenas
T96R-91	617262.37	6051523.50	912.00	76.2	Tenas
T96R-92	617802.50	6052318.00	840.80	79.7	Tenas
T96R-96C	617965.43	6052060.00	845.54	79.5	Tenas
T96R-99	617196.81	6052376.50	842.62	79.6	Tenas
T97R-100C	617265.06	6051293.50	933.82	46	Tenas
T97R-101	617147.50	6052017.50	865.05	74.4	Tenas
T97R-102	617142.12	6051729.00	893.86	61	Tenas
T97R-103	617467.12	6051914.00	856.70	135	Tenas
T97R-104	617165.62	6051519.00	914.84	41.8	Tenas
T97R-105	617065.75	6051001.50	976.93	31	Tenas
T97R-106	617781.31	6051400.50	925.56	152.2	Tenas
T97R-107	618241.43	6050862.00	926.13	128	Tenas
T97R-108C	617495.12	6052333.00	839.31	81	Tenas
T97R-109	618096.62	6051390.50	908.22	142.5	Tenas
T97R-110	618414.68	6050884.50	921.88	78.6	Tenas
T97R-111	617765.00	6051167.00	929.66	121.6	Tenas
T97R-112	618022.93	6051628.00	885.69	207.3	Tenas
T97R-113	617644.00	6051327.00	931.61	122.3	Tenas
T97R-114	617381.62	6051423.00	923.14	123	Tenas
T97R-115	617571.37	6051539.00	909.90	75	Tenas
T97R-116	617772.68	6051492.00	919.73	151.4	Tenas
T97R-117	617542.43	6051425.00	924.56	141	Tenas
T97R-118	617632.81	6052381.00	839.88	91.9	Tenas
T97R-119	617456.75	6051771.00	878.82	133.6	Tenas
T97R-120	616777.56	6050391.00	1017.83	30	Tenas
T97R-121	617748.68	6050451.00	982.95	78.6	Tenas
T97R-62	618651.12	6050431.00	935.13	60.1	Tenas
T97R-65	616791.12	6050130.00	1043.20	29.8	Tenas
T97R-66	617169.00	6050488.00	1010.29	36.5	Tenas
T97R-67	617660.25	6050672.50	968.32	79.4	Tenas
T97R-69	618588.81	6050311.00	943.15	128	Tenas
T97R-70	619040.31	6049900.50	954.98	61	Tenas
T97R-71	618972.62	6049837.50	960.99	103.7	Tenas
T97R-75	618614.87	6050193.00	948.60	135.1	Tenas
T97R-78	618764.12	6049946.50	959.80	85.8	Tenas
T97R-79	618893.06	6050183.00	943.07	50	Tenas
T97R-80	618740.50	6050053.50	951.55	91.3	Tenas
T97R-84	618382.62	6050134.50	972.84	90	Tenas

HOLE	EASTING (m)	NORTHING (m)	ELEVATION (m)	TD (m)	AREA
T97R-87	618282.37	6050674.50	931.76	116.8	Tenas
T97R-88	617180.18	6052152.50	855.60	49.5	Tenas
T97R-90	617740.81	6052285.50	840.53	98.5	Tenas
T97R-91	617948.00	6050651.50	946.02	67.5	Tenas
T97R-94	617199.31	6050368.00	1020.36	30	Tenas
T97R-95C	617002.06	6050369.00	1019.33	36	Tenas
T97R-96	617866.93	6052014.00	848.14	124	Tenas
T97R-97	617982.06	6050025.00	1021.40	23.8	Tenas
T97R-99	617278.31	6052091.50	849.80	80	Tenas
T98R-03C	617171.00	6050899.00	988.96	36.8	Tenas
T98R-07C	618303.00	6051037.00	918.18	97.5	Tenas
T98R-09C	617823.00	6050853.00	943.05	78	Tenas
T98R-13C	617767.00	6051129.00	930.20	103.6	Tenas
T98R-14	617491.00	6051468.00	919.10	84.4	Tenas
T98R-16	618305.00	6051477.00	890.74	65.5	Tenas
T98R-18	617512.00	6050324.00	1010.32	37.4	Tenas
T98R-20	617239.00	6050597.00	1001.86	42.5	Tenas
T98R-21C	618224.00	6050304.00	964.98	91.8	Tenas
T98R-23	617126.00	6050581.00	1006.34	24.8	Tenas
T98R-24	617035.00	6050319.00	1024.36	30.5	Tenas
T98R-25	617065.00	6051551.00	913.86	18.5	Tenas
T98R-31C	617227.00	6051410.00	922.61	51.2	Tenas
TOB96-01	619129.31	6050403.00	925.92	10.5	Tenas
TOB96-02	618580.68	6051748.50	856.26	33.5	Tenas
TOB96-03	617976.81	6052447.00	839.08	24	Tenas
TOB96-04	616356.62	6052433.50	857.11	123	Tenas
TOB96-11	617839.68	6052619.00	831.31	20.2	Tenas
TOB96-12	616197.12	6051179.00	929.78	4.6	Tenas
TOB96-13	616031.87	6050812.50	947.22	20	Tenas
TOB96-17	618747.18	6051407.50	862.52	14	Tenas
TOB96-18	619079.87	6051061.50	875.66	17	Tenas