Report to:

GEODEX MINERALS

Technical Report on the Sisson Brook Project, New Brunswick Canada

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GEODEX MINERALS

TECHNICAL REPORT ON THE SISSON BROOK PROJECT NEW BRUNSWICK CANADA

NOVEMBER 2007

Prepared by	Hasan Ozturk	Date	November 9, 2007
Reviewed by	Andy Nichols, P.Eng.	Date	November 9, 2007
Authorized by	Peter Wells, A.Sc.T., B.Comm.	Date	November 9, 2007

JH

WARDROP

Suite 800, 555 West Hastings Street, Vancouver, British Columbia V6B 1M1
Phone: 604-408-3788 Fax: 604-408-3722 E-mail: vancouver@wardrop.com

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GLOSSARY

ABBREVIATIONS AND ACRONYMS

Activation Laboratories Ltd. .... Actlabs
ALS Chemex .... Chemex
Ammonium Paratungstate .... APT
Canadian Dollar .... CDN$
Canadian Institute of Mining, Metallurgy and Petroleum Standards .... CIM Standards
Champlain Resources Inc. .... Champlain
Engineering, Procurement and Construction Management .... EPCM
Geodex Minerals Inc. .... Geodex
Golder Associates Limited .... Golder
High-pressure grinding rolls .... HPGR
Inductively Coupled Plasma .... ICP
Ideal Drilling Ltd. .... Ideal Drilling
Internal Rate of Return .... IRR
Instrumental Neutron Activation Analysis .... INAA
Kidd Creek Mines Ltd. .... Kidd Creek
Knelson Research and Technology Centre .... Knelson
Local Area Network .... LAN
Lantech Drilling Limited .... Lantech
Maritime Diamond Drilling Limited .... Maritime
Mercator Geological Services Ltd. .... Mercator
Methyl-isobutyl-carbinol .... MIBC
National Fire Protection Association .... NFPA
National Instrument 43-101 .... NI 43-101
New Brunswick .... NB
Nicon Holdings Ltd. .... Nicon
North American Datum 83 .... NAD 83
Net Invoice Value .... NIV
Net Present Value .... NPV
Net Smelter Return .... NSR
Nicon Holdings Ltd. .... Nicon
Non-acid generating .... NAG
Petro Drilling Limited .... Petro
Potassium alkyl xanthate .... PAX
Potentially acid generating .... PAG
Process Research Associates .... PRA
Rescan Environmental Services Ltd. .... Rescan
Rock Quality Determinations .... RQD
Run-of-mine .... ROM
Securities and Exchange Commission .... SEC
SGS Canada Inc. .... SGS
Standard Penetration Test .... SPT

Ultra-violet....UV
Universal Transverse Mercator....UTM
US Dollar....US$
Wardrop Engineering Inc.....Wardrop
Work Breakdown Structure....WBS
X-Ray Fluoresence Spectroscopy....XRF

UNITS OF MEASURE

Centimetre	cm
Cubic centimetre	cm^3
Cubic foot	ft^3
Cubic feet per minute	cfm
Cubic inch	in^3
Cubic metre	m^3
Day	d
Days per week	d/wk
Degree	°
Degrees Celsius	°C
Degrees Fahrenheit	°F
Diameter	ø
Foot	ft
Gram	g
Grams per litre	g/L
Grams per tonne	g/t
Greater than	>
Hectare (10,000 m2)	ha
Horsepower	hp
Hour	h
Inch	"
Inverse Distance Squared	ID^2
Kilo (thousand)	k
Kilogram	kg
Kilograms per cubic metre	kg/m^3
Kilograms per hour	kg/h
Kilograms per square metre	kg/m^2
Kilometre	km
Kilometres per hour	km/h
Kilowatt	kW
Kilowatt hour	kWh
Kilowatt hours per tonne (metric ton)	kWh/t
Less than	<
Litre	L
Litres per minute	L/m
Megapascal	MPa
Megawatt	MW
Metre	m
Metres above sea level	masl
Metres per minute	m/min
Metres per second	m/s
Metric ton (tonne)	t
Micrometre (micron)	µm
Miles per hour	mph
Milligram	mg

Milligrams per litre	mg/L
Millilitre	mL
Millimetre	mm
Million	M
Million cubic metres	Mm^3
Million tonnes	Mt
Minute (plane angle)	'
Minute (time)	min
Month	mo
Ounce	oz
Parts per billion	ppb
Parts per million	ppm
Percent	%
Percent moisture (relative humidity)	% RH
Pound(s)	lb
Second (plane angle)	"
Second (time)	s
Short ton (2,000 lb)	st
Specific gravity	SG
Square centimetre	cm^2
Square foot	ft^2
Square inch	in^2
Square kilometre	km^2
Square metre	m^2
Thousand tonnes	kt
Tonne (1,000 kg)	t
Tonnes per day	t/d
Tonnes per hour	t/h
Tonnes per year	t/a
Week	wk
Weight/weight	w/w
Wet metric ton	wmt
Yard	yd
Year/Annum	a

1.0 SUMMARY

1.1 INTRODUCTION

Geodex Minerals Inc. (**Geodex**) commissioned Wardrop Engineering Inc. (**Wardrop**) to prepare an independent National Instrument 43-101-compliant (**NI 43-101**) Technical Report for the Sisson Brook Project in New Brunswick (**NB**), Canada.

The preliminary economic evaluation, or scoping study, involved developing a conceptual design of all aspects of the project, including mine design, mineral processing, tailings disposal and economic evaluation. This scoping study has been completed to a ±35% level of accuracy, suitable for this level of study. This report deals primarily with Zone III of Sisson Brook, one of several mineral zones contained within the property.

In March 2007 (Mercator 2007), Mercator Geological Services Ltd. (**Mercator**) completed a NI 43-101-compliant resource estimate and technical report (Mercator, 2007). Wardrop's work began in July of 2007 and is based on an updated resource estimate (Geodex 2007, Mercator 2007a).

Mr. Michael P. Cullen, P.Geo., of Mercator is the Qualified Person for matters relating to the mineral resource estimate (Section 2-18 in this report).

Mr. Andy Nichols, P.Eng., Chief Mining Engineer of Wardrop Engineering Inc., is the Qualified Person for matters relating to mine design and financial analysis (Sections 1,19 and 21-35).

Mr. Andre De Ruijter, P.Eng., Senior Metallurgical Engineer of Wardrop Engineering Inc., is the Qualified Person for matters relating to metallurgy and mineral processing (Section 20).

Certificates of Qualified Persons are included in Section 35.

1.2 PROPERTY DESCRIPTION AND LOCATION

The Sisson Brook property is located approximately 100 kilometres (**km**) northwest of the city of Fredericton, New Brunswick, Canada. The property is accessible by traveling west approximately 60 km from Fredericton via the Trans Canada Highway to the town of Nackawic, then north approximately 45 km on secondary highways and the Valley Forest Products forestry access road to the property centre. Numerous secondary forestry access roads cross the property and these have been used by Geodex to provide access for exploration personnel, vehicles and drilling equipment. Four-wheel drive vehicles are required to travel some of the property roads, but two-wheel drive access by car or truck is possible over most of the property (Mercator 2007).

1.3 HISTORY

The history of modern mineral exploration at the Sisson Brook property spans from the mid-1950s through to the present.

In October 2004, Geodex entered into an agreement with Champlain Resources Inc. (**Champlain**) to acquire a 70% interest in the Sisson Brook property. Geodex subsequently carried out ground geophysical surveying, mapping, geochemical sampling and diamond core drilling programs on the property. In 2005, the company drilled nine holes totalling a depth of 1219 metres (**m**); only two of these were drilled in the immediate vicinity of Zone III. In 2006, the company drilled a further 29 holes, 28 of which, totalling a depth of 7053 m of drilling, were completed in Zone III. A single hole was completed in the adjacent Zone I area. In 2007 Geodex initiated a major drilling campaign on the Sisson Brook property that was ongoing at the report date.

In March 2007, Mercator completed a NI 43-101-compliant resource estimate and technical report on the Zone III deposit (Mercator, 2007) and in October 2007, Mercator completed an updated resource estimation for Zone III compliant with Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves Definitions and Guidelines, as well as a NI 43-101 (Geodex 2007, Mercator 2007a).

1.4 GEOLOGICAL SETTING

Cambro-Ordovician volcanic and sedimentary rocks of the Mirimichi tectono-stratigraphic zone extend north-easterly across central New Brunswick from the St. Croix area in the southwest to the Bathurst area in the northeast. Both felsic and mafic volcanic assemblages occur in association with continental and marine sedimentary sequences in the Zone, and were intruded by younger mafic and felsic igneous bodies ranging in proportion from thin dikes to plutons and batholiths (Mercator 2007).

Two main stratigraphic sequences are present in the immediate proximity of the Sisson Brook property, the oldest of which comprises a mixed succession of siltstone, slate and quartzite. Smith and Fyffe (2006) identify these sequences as the Baskahegan Formation of the Cambrian to Early Ordovician Woodstock Group; they strike north-northeast in the Zone III area and are in steeply dipping contact to the west, with a sequence of mixed felsic and mafic volcanics plus metasedimentary rocks of the Cambro-Ordovician Meductic Group's Porten Road Formation. The latter sequence hosts much of the Zone III mineralization near its near-vertical contact with a gabbro intrusion that also strikes north-northeast in this area. Both sequences were affected by the Late Ordovician Taconic Orogeny that resulted in development of sub-greenschist facies regional metamorphic assemblages and two regional foliation fabrics that trend north-northeast in the Zone III area and show steep dips.

Foliated stratified sequences were intruded by Early Devonian granodiorite and gabbro of the Howards Peak Granodiorite, and also by the related, and significantly larger, Early Devonian Nashwaak Granite, which shows peraluminous geochemical affinity (Smith and Fyffe, 2006; Ruitenberg and MacCutcheon, 1994). These intrusions were emplaced along the north-northeast regional structural grain in this area and lack penetrative deformation fabrics. However, both are locally affected by spatially discrete shears, faults and zones of foliation development.

Emplacement of gabbro and granite into the steeply dipping and slightly metamorphosed host sequences at Sisson Brook post-dated the Mid-Devonian Acadian Orogeny, and resulted in overprinting of the earlier regional metamorphic fabrics by contact metamorphic effects of the intrusive bodies. Subsequent emplacement of granitic to granodioritic feldspar-quartz-biotite porphyry dikes post-dated main phases of the Howards Peak Granodiorite and Nashwaak Granite and marked the end of significant igneous activity evidenced in bedrock sequences of the immediate property area (Mann, 1982). As documented by Nast and Williams-Jones (1991) and Mann (1982), contact aureole thermal effects related to the Early Devonian intrusions are represented in metasedimentary rocks at Sisson Brook as porphyroblastic biotite, garnet, cordierite and andalusite. In mafic lithologies, actinolitic hornblende porphyroblasts reflect the contact metamorphic imprint.

The Nashwaak Granite, and the later porphyries, form part of a regional episode of post-tectonic, Early-to-Mid Devonian granite emplacement that is metallogenically related to development of polymetallic Sn-W-Mo-Cu-Bi-(Id) mineralization in the Mirimichi Zone, and within adjacent litho-tectonic zones to the southwest. Prominent examples of the association include the Burnt Hill W deposit (MacLellan and Taylor, 1989), approximately 30 km northeast of Sisson Brook, the Lake George Sb-W-Mo-Au deposit (Seal et. al., 1988), approximately 50 km to the south near Fredericton, and the Mount Pleasant Sn-W-Mo-Bi-Id deposit (Kooiman et. al, 1986; Ruitenberg and McCutcheon, 1994) located approximately 120 km south of the property (Mercator 2007).

1.5 DEPOSIT TYPES

The Sisson Brook Zone III deposit is recognized as part of a larger mineralized area defined by the spatial extent of the combined Zone I, Zone II and Zone III deposits. As discussed earlier in this report, these three zones were originally defined through core drilling carried out by Kidd Creek Mines Ltd. (**Kidd Creek**) between 1979 and 1982, and Zone III has been the primary focus of Geodex drilling in 2005 and 2006. Geological and geochemical aspects of the three zones were addressed in detail by

Nast and Williams-Jones (1991), who also reviewed potential genetic deposit models for the styles of mineralization represent. Several features of W-Mo-Cu mineralization at Sisson Brook bear strongly on assessment of genetic models, prominent among these being that mineralization is multi-stage, but predominantly vein and fracture associated and clearly superimposed on host rocks that include gabbro as well as a steeply dipping to vertical sequence of interbedded mafic and felsic volcanics and metasedimentary rocks, mineralization occurs within two distinct, but spatially superimposed, alteration systems, the first being hornblende amphibole-albite-magnetite and the second being potassic and represented by both biotization of amphibole and K feldspar alteration of plagioclase. Nast and Williams–Jones (1991) documented the spatial aspects of these envelopes and showed that intensity of both increases concentrically toward a focal point centered on the area of Zones I, II and III. All mineralized zones occur within the contact metamorphic aureole of the Nashwaak granite and are spatially associated with feldspar-quartz-biotite porphyry dikes that are interpreted to reflect presence of a buried porphyry plug beneath the Sisson Brook area. The vein–associated Nashwaak Pb-Zn-Ag-Cu prospect located southeast of Zone III may be of similar provenance.

In light of this, and in combination with detailed assessment of geochemistry of both mineralized zones and granitic and granodioritic rocks of the area, Nast and William-Jones (1991) concluded that W-Mo-Cu mineralization at Sisson Brook was hydrothermally developed in association with emplacement of a granite-related porphyry system beneath the area. Furthermore, the hydrothermal system was considered to be low in fluorine and to have been characterized by relatively low water-rock ratios. The porphyry system assignment is consistent with other views of regional magmatic evolution in central and southwestern New Brunswick and provides a metallogenic link to other granite-related polymetallic deposits such as Mount Pleasant (Sn-W-Mo-Id-Bi) Burnt Hill (W-Sn-Mo), Lake George (Sb-W-Mo-Au) and various lesser prospects and showings (Thorne et. al., 2006).

For the purposes of this report, the Zone III W-Mo deposit and the related Zone I W-Cu and Zone II W-Mo-Cu deposits are considered members of the granite-related porphyry W-Mo-Cu class of polymetallic mineral deposits. Their affinity with hydrothermal-magmatic evolution of the regionally extensive granitoid bodies of the Mirimichi Zone is assumed (Mercator 2007).

1.6 RESOURCE ESTIMATE

Mineral resources were estimated for a range of Equivalent WO3% threshold values between 0.025% and 0.225% based on a Surpac © Version 6.01 block model model, which incorporated capping of high grade values and inverse distance squared grade interpolation methodology. Results of the resource estimation program (Geodex 2007, Mercator 2007a) are indicated in the following table (Table 1.1).

Table 1.1 *Mineral Resource Estimate for Sisson Brook Zone III – October 17, 2007 Effective Date

Resource Category	Equivalent W03 % Threshold	Tonnes	Tonnes (Rounded)	W03 %	Mo %	Equivalent W03 %
Inferred	0.025	290,784,224	290,800,000	0.059	0.020	0.118
Inferred	0.075	214,997,356	215,000,000	0.069	0.024	0.140
Inferred	0.125	109,039,490	109,000,000	0.084	0.032	0.179
Inferred	0.175	43,440,318	43,400,000	0.100	0.043	0.227
Inferred	0.225	15,836,218	15,800,000	0.121	0.054	0.281

*Notes: Mo and WO3 values capped at 0.7% and 1.2% respectively; WO3 Equivalent = (WO3% + 2.97*Mo %)

1.7 MINE PLAN AND PRODUCTION

Pit optimization was carried out in Whittle by using the Surpac block model provided by Mercator for Geodex to evaluate the potential for an open pit mine.

The Surpac block model provided consists of geology, grade (WO3 and Mo), and specific gravity attributes.

The Whittle program generated a set of optimum pit shells. The base case pit shell sets molybdenum pricing at CDN$25.3/lb, and tungsten pricing at CDN$9.4/lb, which is 80% of the three-year average price. These results are considered accurate to within ±35%. A detailed mine design is required to develop a more accurate cash flow analysis.

Pit optimization analyses refer to the best-case and worst-case scenarios. Operational constraints, such as berms and access roads, are not considered at scoping level. While the best-case scenario, which is based on cone-by-cone mining, is not 100 percent (**%**) achievable, a detailed pit design would nonetheless provide the best opportunity to achieve near-best-case results.

The table below shows the best case production scheduling most significantly for the first 23 years (Table 1.2).

Table 1.2 Best Case Production Scheduling

Year	Tonne Input	Waste & Stockpile	Strip Ratio	Grade Mo%	Grade WO3%	11-year Average Grade Mo%	11-year Average Grade WO3%
1	6,860,000	7,082,852	1.03	0.037	0.093		
2	6,860,000	5,511,926	0.80	0.028	0.082		
3	6,860,000	6,932,834	1.01	0.024	0.076		
4	6,860,000	3,866,183	0.56	0.022	0.078		
5	6,860,000	5,652,181	0.82	0.027	0.085		
6	6,860,000	8,214,096	1.20	0.025	0.075	0.026	0.080
7	6,860,000	10,372,882	1.51	0.026	0.078		
8	6,860,000	5,933,884	0.86	0.026	0.083		
9	6,860,000	7,624,639	1.11	0.022	0.077		
10	6,860,000	12,883,537	1.88	0.020	0.078		
11	6,860,000	7,247,917	1.06	0.026	0.079		
12	6,860,000	7,990,183	1.16	0.023	0.079		
13	6,860,000	18,198,784	2.65	0.020	0.075		
14	6,860,000	8,644,946	1.26	0.025	0.081		
15	6,860,000	14,701,563	2.14	0.024	0.079		
16	6,860,000	18,717,436	2.73	0.022	0.074		
17	6,860,000	17,663,768	2.57	0.023	0.076		
18	6,860,000	18,746,585	2.73	0.023	0.075		
19	6,860,000	17,714,830	2.58	0.022	0.069		
20	6,860,000	37,381,148	5.45	0.020	0.063		
21	6,860,000	20,220,356	2.95	0.017	0.060		
22	6,860,000	18,614,257	2.71	0.021	0.064		
23	6,860,000	12,302,146	5.03	0.020	0.067		

1.7.1 *WASTE DUMPS*

For this scoping study, all the waste dump material is assumed to be non-acid generating (**NAG**), given that there is no evidence so far to the contrary.

The waste dump is located on a relatively dry and flat area and the waste dump angle is assumed to be 36 degrees (°). The maximum height of the waste dump is 50 m. For this scoping study, no roads or individual lifts are designed for the waste dump. The total volume of the waste dump is 80,000,000 cubic metres (**m^3**) with a swell factor assumption of 30%.

1.7.2 *TAILINGS DAM*

For the tailings dam location, the use of natural depressions to contain tailings provides an economic advantage.

Three dams are proposed on the south west side of the pit (Chainy Lakes) and plant location to contain the tailings in the valley. The impoundment is located near the head of the drainage basin to minimize runoff inflow and to reduce the cost of constructing surface water diversions.

The proposed site has the advantage of a starter dam constructed from waste rock and building up the dams as mining progress. The final dams have a height of 60 m and the impoundment has a catchment capacity of 121 million cubic metres (**Mm^3**). At the end of operations, 100 Mm^3 of tailings will be deposited in the pond and the total quantity of water will be 21 Mm^3.

1.7.3 *Equipment Fleet*

The fleet includes drills, excavation equipment and hauling equipment.

The fleet is diesel powered.

Two middle-sized 20 m^3 bucket capacity shovels, two loaders, three drills, and eight 100 t trucks have been selected to meet the daily production requirement, along with four bulldozers for pit and waste dump operations.

1.8 Process and Metallurgy

1.8.1 *Mill and Process Plant*

Sisson Brook recently conducted a short metallurgical test program on material. The test program was scoping by nature and provided very limited information for the design of the processing facilities. Consequently, the selected design has been based on general tungsten and molybdenum recovery practices and principles. A metallurgical test program is currently underway.

1.8.2 *Unit Process Operations*

The process plant design consists of the following unit operations:

- delivery of ore into a dump pocket
- four stages of crushing and screening
- rod mill grinding
- classification by screening
- primary sulphide conditioning and flotation
- selective molybdenum flotation including cleaning stages
- molybdenum concentrate thickening, dewatering and bagging
- cyclone classification of primary sulphide flotation tailings and regrind mill discharge

- gravity concentration of a portion of the cyclone underflow for recovery of tungsten
- gravity concentrate upgrading using spirals and shaking tables to produce a high grade tungsten gravity concentrate
- dewatering and bagging of the tungsten gravity concentrate
- regrinding of cyclone underflow and gravity concentration tailings
- thickening of cyclone overflow
- secondary sulphide conditioning and flotation
- tungsten conditioning and rougher flotation
- tungsten cleaner flotation
- tungsten flotation concentrate thickening, dewatering and bagging
- deposition of tungsten flotation tailings and molybdenum tailings in the tailings pond facility
- reclamation of water from the tailings pond for re-use in the plant.

1.8.3 PROCESS DESCRIPTION

The processing facilities will be designed to treat an annual plant feed of 6,860,000 tonnes per year (**t/a**). The daily throughput will be 20,000 tonnes (**t**) for 343 working days per year. The plant availability was estimated as 80% for the crushing plant, and 95% for grinding, gravity concentration, and flotation circuits. The life-of-mine average head grade of the ore will be approximately 0.063% tungsten tri-oxide (WO3) and 0.024% Mo), but during the first 11 years of operation, the grade will be 0.080% WO3 and 0.026% Mo. The molybdenum recovery will be 85%, and the overall tungsten recovery will be 70%.

Run-of-mine ore will be delivered to a dump pocket using 100 t trucks. This dump pocket will feed the primary gyratory crusher. The crushed material will be deposited on the ore stockpile, which will act as surge capacity for the crusher plant. A conveyor from the stockpile will feed the secondary crushing screen. Undersize material from the screen will be fed onto the mill bin feed conveyor. Oversize material from the secondary crushing screen will feed the secondary stage cone crusher. Crushed ore will be conveyed to the tertiary ore storage bin. Material will be drawn from the bin to feed a vibrating screen, with the undersize material collected onto the mill bin feed conveyor. The screen oversize will be crushed using a cone crusher. The crusher product will be returned to the tertiary ore storage bin. The intermediate sized ore will be transferred to the quaternary ore storage bin. The quaternary ore storage bin will feed the quaternary stage cone crushers. The crushed material will be deposited onto the mill bin feed conveyor, and this material will be conveyed to the mill feed bins.

The grinding circuit will be a conventional rod mill circuit whose classification screens will have an aperture size of 300 microns. Screen undersize material will flow to the primary sulphide conditioning tank. Coarse oversize material will be returned to the rod mill for further grinding.

The slurry will be conditioned with flotation reagents and this will be followed by the flotation of sulphide minerals. The tailings from the primary sulphide flotation stage will be the feed to the gravity concentration circuit for tungsten recovery. The rougher sulphide flotation concentrate will be specifically treated for the recovery of molybdenum. Six stages of cleaning will result in a saleable molybdenum concentrate with a grade of 50% Mo being produced. This concentrate will be thickened and filtered to reduce the moisture content to a value of 8% moisture. This concentrate will be bagged and loaded onto trucks for dispatch off the property.

The sulphide flotation tailings, together with the regrind mill discharge material, will be cycloned to produce an overflow material which will be pumped to the tungsten flotation feed thickener. A portion of the cyclone underflow will be diverted to centrifugal gravity concentrators for tungsten recovery. The balance of the cyclone underflow stream, and the gravity tailings, will be returned to the regrind mill circuit.

The gravity concentrate material will be further upgraded using spiral concentrators and shaking tables to produce a saleable high grade tungsten gravity concentrate with a grade of 70% WO3. This concentrate will be dewatered and bagged, and will then be dispatched by truck off the property.

The cyclone overflow material will be thickened prior to a secondary stage of sulphide flotation, followed by flotation to produce a tungsten flotation concentrate. The secondary sulphide flotation concentrate will be returned to the molybdenum cleaner circuit. The tungsten flotation circuit consists of staged reagent conditioning followed by rougher flotation and several stages of cleaner flotation. The cleaner tungsten flotation concentrate will be thickened, then filtered to produce a low-moisture content product. This flotation concentrate will have a WO3 grade of 50%, and will be bagged before trucking this material off the mine.

The tungsten flotation circuit tailings will be discharged to the tailings pond together with the molybdenum tailings. Water will be pumped back from the tailings pond for recycling as process water in the plant.

1.9 SITE AND INFRASTRUCTURE

1.9.1 GENERAL

The infrastructure (e.g. existing/permanent roads, local and arterial highways, railway, and power grid) of the proposed operation is of sufficient quality to facilitate the regular transport of personnel, consumables and materials. Napadogan (10 km north) and Stanley (40 km east) are two potential settlements for permanent staff. A mine camp is not necessary for this operation.

The design approach for the Sisson Brook site and infrastructure incorporates the following:

- foundation design will address the opportunity to construct all buildings on bedrock where possible
- electrical power will be delivered from the power grid, which is within the claim boundary of the property
- year-round access to the site provides that storage facilities for consumables will be sized according to the minimal requirements.

1.9.2 Geotechnical Conditions

The geotechnical properties of the rocks, overburden and the available borrow fill material will be an issue affecting future surface construction, stability of stockpiles and waste dumps. Any surface construction should include a thorough site investigation program to investigate the properties of the overburden and consider the geotechnical tests.

1.9.3 Site Facilities - General

Currently, the site has no facilities.

The following major developments and permanent facilities are proposed for the project:

- improved site roads and laydown areas
- stockpile areas for waste rock and overburden materials
- settlement pond for open pit drainage water
- bulk emulsion plant and explosives storage bunkers
- primary crusher and coarse ore stockpile, conveying systems
- process plant
- power distribution system
- equipment service building, with trades shops
- warehouse and maintenance offices
- administration complex, with security, and first aid facilities and vehicles
- water storage and distribution
- sewage treatment, and garbage disposal

- diesel fuel storage and distribution.

1.9.4 ACCESS AND LOGISTICS

The Sisson Brook property is accessible from the nearby city of Fredericton by traveling west approximately 60 km via the Trans Canada Highway to the town of Nackawic and then northerly approximately 45 km on secondary highways and the Valley Forest Products forestry access road to the property center. Numerous secondary forestry access roads cross the property and these have been used by Geodex to provide access for exploration personnel, vehicles and drilling equipment. Four-wheel drive vehicles are required to travel some of the property roads but two-wheel drive access by car or truck is possible over most of the property.

The port city of St. John is located 200 km south of Sisson.

Access to the site will be by an existing local road via Fredericksburg, from local highway, 620 at Boyd's Corner, which continues north.

1.9.5 SITE ROADS AND LAYDOWN AREAS

Site roads will be constructed of crushed, compacted aggregate material. All aggregates will be developed from the pit waste rock by feeding the rock to portable crushers.

Off-road mining vehicles will be restricted to separate and dedicated roads between the open pit, primary crusher ramp, rock stockpiles, and the equipment service building.

Plant site development will accommodate the mine buildings (to be constructed on structural engineered foundations), as well as the temporary construction facilities and laydown area. The primary crusher ramp and other plant site features will be developed as construction areas become available.

A reinforced earth wall will be constructed at the primary crusher buildings to retain the ramp fill and provide conveyor access out the bottom of the building.

1.9.6 WATER SUPPLY AND DISTRIBUTION

Water is required for:

- fire protection
- process
- domestic potable uses

Fresh water required for process and firefighting purposes will be stored in a single tank. The capacity of the system for refilling the tank will be based on the process requirements. The outlets for the tank will be arranged so that process operations can never draw down the level below the storage volume required for firefighting.

The process will recycle water to the maximum extent possible. There will be a substantial net loss of water from pumping the fine tailings to the disposal area in the form of slurry. Surface runoff water will be used as a water supply for the plant.

Potable water will be from a drilled long after it has been tested and approved.

The primary potable water consumption points will be the administration offices and washrooms.

Pumps will deliver water from the storage tanks to the various areas as required.

1.9.7 ORE STORAGE, RECLAIM AND CONVEYING FACILITIES

Ore from the open pit will be transported by truck up a ramp and dumped through a grizzly in to the primary crusher.

Primary crushing will take place in a reinforced concrete structure housing a hopper, apron feeder, and mineral sizer or jaw crusher. The concrete structure will be enclosed and extended by structural steel to provide shelter for maintenance activities, and to support ancillary equipment and service units (operator's cab, compressors, hydraulics, electrical room, etc.). A steel structure will be erected over the dump hopper to provide shelter and reduce the amount of escaping dust.

Crushed ore will be conveyed to a transfer tower via an inclined conveyor gallery. In the tower, the ore will be loaded on the coarse ore conveyor leading to the process plant, or diverted to a coarse ore. Dust suppression and collection will be installed at transfer points on all conveying systems to minimize the release of dust and the build-up of dust in galleries and other enclosures.

Conveyor galleries will be enclosed, unheated structures, supported on steel bents and towers with concrete footings. To minimize field installation time, these galleries will be pre-assembled in 12 to 16 m long sections, complete with conveyor support stringers, idlers, walkways, lighting fixtures, cable trays, and pipe supports. Gallery sections will be designed with bolted flange connections for field erection. Fire suppression piping and power and control cabling will be routed through the galleries. Sheltered personnel access to the galleries will be provided between the plant complex and the tower and primary crusher.

There will be no shelter over the coarse ore stockpile. Ore will be reclaimed by loader and fed to the coarse ore conveyor that extends beyond the transfer tower to a loading hopper. Frozen lumps in the stockpile will be pushed aside and recycled through the primary crusher.

1.9.8 POWER

The electrical demand requirement of the Sisson Brook project is estimated at 30 Mega Watt (**MW**). Power will be tapped off from adjacent electrical grid within the Sisson claim boundary.

1.9.9 FUEL STORAGE AND DISTRIBUTION

Diesel oil will be the primary fuel used at site. Ambient conditions involve minimum design temperatures of -35 degrees Celsius (**°C**). "Regular" or No. 2 grade diesel fuels are available with cloud points at approximately -37°C. For the mobile mining and other secondary equipment, Arctic grade fuels should be utilized for their cloud point of -41°C.

Tanker trucks will transport the fuel on a weekly basis. This is a hazardous fluid; all transportation and handling equipment and procedures will respect regulations and good practice. Diesel fuel is also critical to project operations; various measures will be incorporated into the storage and distribution systems to secure its supply. Diesel fuel requirements are estimated at 100 m^3 per week. Fuel storage will be two 6 m diameter by 9 m high field-erected steel storage tanks located at the plant site.

According to National Fire Protection Association Standards (**NFPA**) codes, fuel must not be dispensed to vehicles from the main bulk tanks; two fuel dispensing locations will therefore be provided. The first tank, located in front of the truck shops, will dispense only diesel fuel to mine operating vehicles; the second tank will dispense diesel fuel to other vehicles that do not use the mine haul roads.

Both locations will have dispensing pumps and a vehicle standing area outfitted with a drain leading to a sump, where any spills will be contained. The storage tanks at the fuel dispensing containment will be aboveground, as well as fire-resistant or fire-protected as required by code.

The diesel tanks will be replenished by branches from the main distribution ring. The gasoline tank will be replenished from a tanker truck with an on-board pump; alternatively, additional gasoline storage in one or more on-site tank containers can be implemented.

A canopy and windbreak can be provided to shelter the fuel dispensing operations, but fuel dispensing itself is a ventilation and fire/explosion hazard that is subject to regulatory restrictions. The extent to which the operation can be sheltered requires further study.

For mine equipment (including remote generators and pumps and lighting units) that cannot travel to the fuel dispensing station, a fuel dispensing truck will travel from the tank area to the stationary equipment for refuelling.

1.9.10 Administration Building

The Administration Complex is a two-story prefabricated modular-type construction. The current layout allows adequate space for management, administration, and engineering offices.

1.9.11 Assay Office

An assay lab is located next to the administration building.

1.9.12 Truckshop and Warehouse

The building is clad with prepainted, insulated metal siding and roofing. In addition to the process and repair facilities, the building contains workshops, a machine shop warehouse, and offices for maintenance personnel.

First aid facilities and ambulance and fire truck parking are housed in the main complex adjacent to the truckshop.

The truckshop slab on grade is heated by the propane system, and has imbedded rails for wear protection in tracked vehicle repair bays.

1.9.13 Ancillary Facilities

Aggregate Crushing and Concrete Batch Plants

To meet future needs (such as road maintenance, and the development of building pads and other features) for crushed aggregate, the portable crusher and concrete batch plant used during construction may remain on site. Raw materials used for crushing may be country rock from the open pit operation, if suitable.

Sewage Treatment Plant

A sewage field will be constructed.

1.9.14 Mobile Equipment

The mobile equipment required to support non-mining-related activities are listed as part of the G&A mobile equipment fleet, and are costed under G&A and Capital Cost Estimation. The fleet excludes graders, backhoes, and bulldozers for non-production tasks, such as road maintenance and ditching, as these functions have been included in direct mining costs.

1.9.15 FIRE PROTECTION

All enclosed spaces in the main plant complex will be serviced by a sprinkler system and supplied with portable extinguishers. Sprinkler systems will be wet except where temperatures may fall below freezing, in which case dry systems will be used. Sprinkler coverage will include:

- process plant including recovery plant
- electrical room
- warehouse
- administration offices
- truck shop
- primary crusher building (partial) and belt conveyors
- fuel oil pumphouses
- interior fuel and lubricating oil storage spaces.

Multiple loop wet mains and external hydrants will be provided around the plant buildings.

A fire truck, with foam equipment and monitors for fighting fires at the fuel storage area, will be stationed on site. Hydrants will be strategically located on both sides of the storage area to accommodate these trucks.

Remote buildings, such as the explosives plant, will be equipped with portable extinguishers instead of hydrants or sprinklers. The fire truck will be equipped with water tanks for firefighting at these locations.

FIRE WATER PUMPING

Main fire pumps will be installed in a fire pumproom adjacent to the water storage tank. Two of the pumps will be electric, served by a secure power supply from one of the two powerhouses, or from an emergency generator located within the same building. The third pump will be a direct diesel-driven engine. A jockey pump will maintain the supply pressure in the network.

1.9.16 SOLID & LIQUID WASTE MANAGEMENT

TYPES OF WASTE

Construction, mine waste, and process waste are discussed in relevant sections. Other wastes that must be considered include:

- sewage

- domestic wastes
- packaging materials
- used lubricating oils
- contaminated diesel fuel and storm water contaminated with diesel fuel
- other spent or contaminated fluids.

Waste Management

Domestic and packaging wastes will be collected and transported to an external disposal site. Materials contaminated with heavy metals or other unusable content will be transferred to the tailings pumping system.

The use of lubricating oil quantities will be minimized as much as possible by selecting mobile and other equipment that uses long-lasting lubricants and reduces waste quantities.

Spills at the truck loading/unloading points of the main tankfarm will drain directly to an oil trap for processing through a separator. Spills at the fuel dispensing pads and rainwater collected in the sumps of the fuel tank containments will be transferred to the same oil trap and recovery system by mobile pumping equipment. Spills at other locations where there is no containment will be soaked up by absorbent materials and incinerated.

Segregated storage will be provided in a low-fire-risk location for absorbent material containing used lubricants or other fluids that cannot be incinerated for environmental reasons. These materials will be transported off site to applicable licensed processing facilities.

Other spent or contaminated fluids will be classified by type and either treated with sewage or stored and transported off site to licensed processing facilities.

Sewage System

The sewage treatment will be with septic field. Sewage will be generated from the following primary areas:

- administration complex
- assay offices
- process plant

Where grease or oily wastes occur, oil/grease traps will be installed at the point of entrapment.

Washrooms will be installed in the administration complex and assay office.

1.9.17 Site Communications

In general, site networking communications will be provided by one common physical local area network (**LAN**), with virtual LAN segregation delivering service to other areas (I/C, security, accounting, maintenance, etc.).

A telephone PBX communication system, complete with infrastructure, will be connected to New Brunswick's telephone system for telephone service.

1.10 Mine Water and Waste Management

1.10.1 Surface Water Management

The chief priority of Surface water control management will be to prevent surface water from coming into contact with mine workings. Should that occur it will be required to run through a settling pond system to remove excess sediments that may result from that contact prior to discharge to the environment.

A diversion channel is planned for diverting Sisson Brook to the west that feeds into an existing drainage and finally into McBean Brook.

Water within the mining boundary that comes into contact with mining activities will be directed to the nearest settling pond facility or into the tailings pond. Once the water has met the required discharge quality, it will then be released to the environment.

1.10.2 Open Pit Water Management

Pit water will be discharged into the settling pond system. Once the approved level of sediment is reached, the water will then be released. Current indications suggest that there is NAG material present.

1.10.3 Processed Containment Facility

The processed slurry fraction will be pumped from the process plant to the tailings storage area. The initial starter dam will be constructed in the second year of pre-production of mining with pre-stripped material.

The chemical composition of the slurry material is unknown for this study, but will be available after detailed metallurgical testwork is completed. If control of the seepage is required, a liner and grout curtain will be installed during construction of the facility. The final design will be determined from a detailed site investigation.

The sequencing of the dam is considered as years -1, 7 and 14 for this report.

1.10.4 WASTE MATERIALS MANAGEMENT PLAN

Drainage from the dumps will be directed to tailings impoundment. Excess sediments will be allowed to settle prior to discharge into the environment. It is expected that further work will be undertaken to determine the acid-generating potential of any of the rock planned to be disturbed. Should potentially acid-generating (**PAG**) material be present, the mining plan will be modified to accommodate that material, to ensure it does not produce acid.

1.11 PROJECT EXECUTION

1.11.1 INTRODUCTION

The project is likely to continue through pre-feasibility and feasibility to execution, assuming a favourable economic evaluation and successful funding of the project. The pre-feasibility/feasibility study will include a bulk sample and geotechnical drilling.

The execution of the project will depend upon the following environmental issues:

- completing the environmental assessment process
- obtaining principal permits to allow construction to proceed
- commencing site construction activities and obtaining all secondary permits prior to major construction activities

Several other considerations that need to be addressed include:

- availability of experienced contractors
- measures to ensure safe working conditions and high productivity
- deferral of capital expenditure (delayed cash flow)
- adequate fundraising, and project execution approval from Geodex .

The overall project execution schedule is based on the above criteria and constraints. A strategy for procurement and logistics has been developed based on past experience with similar projects, and to meet the requirements for safety and logistical support.

1.11.2 EXISTING SITE DEVELOPMENT

Currently, the site has no facilities.

1.11.3 SCHEDULE

The execution schedule would assume that all project phases will progress without interruption. Critical to the pre-feasibility/feasibility study is a site works program that should be conducted in conjunction with the pre-feasibility/feasibility studies. This program will provide additional data for the study and for environmental permitting.

The pre-feasibility/feasibility study and associated site program will commence if the economics of this study are acceptable to Geodex and its shareholders and financial backers. The project team will work with Geodex to finalize a detailed study. The feasibility study will also finalize the design concepts necessary for permitting. Environmental and socio-economic work will continue through in parallel with the feasibility study to initiate permitting at the earliest opportunity.

To meet scheduled timelines, federal and provincial permits will be pursued simultaneously. It is assumed that key permit applications will be submitted to the appropriate federal and provincial agencies, and that a consensus on all major issues will be reached with the government regulators in advance.

The main construction period will extend approximately two years, followed by a commissioning period and production build-up of approximately one year.

Activities in Construction Year 1:

- Clear trees
- Install permanent power supply
- Construct temporary site roads
- Earthworks for preparing building foundations
- Crush and screen aggregate for concrete
- Commence foundation work
- Erect fuel tanks.

Activities in Construction Year 2:

- Erect process plant and other buildings
- Install equipment
- Complete electrical, piping and ancillary services
- Commission Process and Plant facilities
- Build diversion channels
- Pre-strip
- Erect starter tailings dam.

1.11.4 ENGINEERING & PROCUREMENT

Design and procurement activities must be scheduled with sufficient lead time to allow equipment and materials to be delivered to the selected marshalling point selected during the feasibility study. To defer capital expenses and to avoid damage to sensitive equipment (e.g., electrical, instrumentation, and x-ray equipment), some major equipment will have significant lead times, requiring engineering and procurement to be scheduled accordingly.

Procurement for the project is driven by minimizing advance cash flow. Deferring cash commitments dictates an aggressive construction schedule after materials and equipment have arrived on site.

While materials and services for the project will be sought from worldwide sources, special attention should be given to regional suppliers who can meet price, delivery, and quality requirements, as well as provide spare parts and service.

Overall management, centralized procurement, and expediting activities should be conducted out of a single office. Bids on equipment packages should accommodate timely vendor information and the project's design schedule; advance equipment purchases should be avoided in order to defer payments in accordance with project parameters. Construction and supply packages should be awarded based on negotiation and clarification with the lowest bidders.

An aggressive in-shop QA/QC inspection effort will ensure quality and minimize site delays. Overseas QA/QC inspections will be performed by a project team or qualified third party. Once construction is underway, expedited responsibilities will be transferred to site to enable close communication with field staff and assist with winter road logistics.

CONTRACT ADMINISTRATION

The project team will tender and award design/supply/erect contracts, and execute the design/supply and delivery phases. The site construction management team will be responsible for receiving, forwarding and erection.

PROJECT TEAM & RESOURCE PLANNING

Preferably, an integrated project team execute the future phases of the project, as well as the geotechnical and bulk sample programs, from the site. If an expedited schedule is required, advance engineering will be required prior to completion of the feasibility study.

The integrated project team will execute engineering, procurement, and project management from a selected project office.

1.11.5 Construction Management and Contract Planning

Construction Management Team

The construction management team will be a typical Engineering, Procurement and Construction Management (**EPCM**) approach, most of whose members will work a three-week-in/one-week-out rotation schedule. Most positions will have will be relieved by other on-site staff, depending on the position and level of construction activity.

Contractor Selection

Contractors should be chosen based on their ability, level of experience, track record, commitment to safety and environmental issues, as well as their ability to work independently. Both union and non-union contractors will likely be accepted on site. All contractors must have a labour relations plan in place prior to commencing work.

Contracting Strategy

Principles by which contracts will be identified and structured are outlined below:

- construction and operations contracts will be structured with scopes of work that can be reasonably achieved and managed by local businesses
- Geodex will publish a business opportunities profile that will outline the goods and services required by the project. This profile will be provided to local communities in advance of its release to the general public, to give aboriginal and businesses communities an opportunity to respond
- to encourage the hiring and training of area residents, Geodex will require all contractors to disclose their policies and practices regarding preferential hiring
- contracts for goods and/or services (e.g., operation, catering, safety, and medical aid) will be awarded to outside contractors when it is of economic benefit to Geodex
- during the operating phase, Geodex will retain direct control over mine production, ore processing, and providing services (power, water, fuel)
- Contractors may supply a number of associated surface activities (e.g., mine pre-stripping).

Construction Management Team

Construction contracts will generally include design and supply elements (e.g. pre-engineered buildings, fuel tanks, and bulk emulsion plants) when it is cost-effective to do so. Except for long-lead items, or those requiring specific design and/or fabrication control, contractors will supply minor equipment and materials.

Larger construction contracts will generally be awarded to contractors from outside the region; Geodox will, however, encourage these contractors to subcontract to local businesses and labour, to the extent practicable. Smaller contracts that could be awarded to local businesses and aboriginal groups include:

- maintenance for the construction camp
- site surveying (for construction)
- freight forwarding
- site security during construction.

1.11.6 TEMPORARY CONSTRUCTION FACILITIES

It is assumed that temporary construction facilities, including power, fuel, sewage, water, etc., will be provided by the contractor.

1.11.7 SAFETY & HEALTH MANAGEMENT PLAN

A project safety management system will be established and included in all tendered contracts. During the construction phase, all site work will be measured against safety guidelines.

1.11.8 ENVIRONMENTAL MANAGEMENT PLAN

An ISO Environmental Management System will be required for all site activities, including construction mine operations.

1.11.9 HUMAN RESOURCES MANAGEMENT PLAN

The Sisson Brook project will provide Maritimers significant opportunities for business development, economic growth, and lasting employment.

1.12 MINE CLOSURE

The Sisson Project will be developed, operated, and closed with the objective of leaving the property in a condition that will mitigate potential environmental impacts and restore the land to its pre-mining land use and capability. When possible, closure and reclamation activities will be carried out concurrently with mine operation; final closure and reclamation measures will be implemented at the time of mine closure.

For the purposes of reclamation planning, the Sisson Project has been broken down into the following key components, or reclamation units:

- open pit
- waste rock
- tailings impoundment
- mine site facilities.

1.13 MARKETS

Wardrop recommends the use of an independent third party for market analysis.

1.14 CONTRACTS

The geotechnical and environmental studies have been awarded to Golder Associates Ltd. (**Golder**) and Rescan Environmental Services Ltd. (**Rescan**), respectively.

1.15 ENVIRONMENTAL CONSIDERATIONS

It is assumed that all necessary operating and reclamation permits will be obtained.

1.16 TAXES

This model is based on pre-tax income.

1.17 CAPITAL COST ESTIMATES

All costs are expressed in Q3 2007 Canadian dollars unless otherwise specified, with no allowance for currency or interest changes during construction. The estimate has been prepared at a scoping study level, which is considered within a +/-35% level of accuracy.

The total estimated cost is CDN$353 million to design, construct, and commission the facilities described in this study, including a 20% contingency that has been applied for this level of study.

A summary of the capital cost estimate is shown in Table 1.3.

Table 1.3 Capital Cost

Area	Description	Man Hours	Amount
Direct Works			
A	Overall Site	30,623	$5,699,360
B	Mining	2,393	$20,677,550
C	Crushed Ore Storage and Reclaim	221,205	$52,703,837
E	Grinding and Flotation	274,181	$105,317,610
F	Tailings	36,662	$24,027,710
G	Site Services and Utilities	5,799	$1,657,809
J	Ancillary Buildings	13,873	$7,441,595
K	Plant Mobile Equipment	275	$2,086,340
Indirect Works			
X	Project Indirects	109,810	$69,601,000
Y	Owners Costs		$5,000,000
Z	Contingency (20%)		$58,843,000
Estimated Total		**694,787**	**$353,056,212**

The estimate comprises the direct field costs of executing the project, plus the indirect costs associated with the design, construction, and commissioning of the new facilities.

1.17.1 SUSTAINING CAPITAL

Sustaining capital requirements that are scheduled to begin the first year of production include:

- mining sustaining capital includes replacement of mobile equipment as required, as well as replacement of fixed facilities and non-mobile equipment
- tailings dam costs include annual costs to raise the dam and the construction of additional piping systems
- sustaining capital for surface mobile equipment includes replacement based on hours of use
- process plant and infrastructure sustaining capital is estimated to be $500,000 per year

1.18 OPERATING COST ESTIMATION

The operating cost estimate is a representative estimate based on Wardrop's experience (Table 1.4).

Table 1.4 Operating Costs

Operating Costs	
Unit Mining Cost (CDN$/t)	1.30
Unit Processing Cost (CDN$/t ore)	5.33
G&A Cost (CDN$/t ore processed)	1.09

1.19 FINANCIAL EVALUATION

1.19.1 INTRODUCTION

The scope of the Preliminary Economic Assessment includes the development of a spreadsheet designed to evaluate the sensitivity of the project to various inputs. Modifying the inputs would allow the impact of updated field results to be examined quickly as to their impact on the overall project. It would also allow Geodex to set priorities and determine how best to target their exploration program to enhance value.

The schedules themselves were fixed in terms of tonnes of ore and waste. The economics used to define the pit designs were fixed based on the most accurate information available at the time

The financial evaluation spreadsheet calculated the Net Present Value (**NPV**) assuming a discount rate of 8%, but the rate is adjustable in the spreadsheet. The NPV and the Internal Rate of Return (**IRR**) was calculated for each of the options. All the calculations are pre-tax.

1.19.2 REVENUE

Revenue for tungsten is based on the two streams (gravity and flotation) of scheelite concentrate (Table 1.5) and adjusted for losses, insurance, representations, transportation costs, and royalties.

Table 1.5 Tungsten Concentrate Properties

	% Grade WO3	% Recovery
Gravity (G1) Flotation	70% 50%	35% 35% 70%

The Securities and Exchange Commission (**SEC**) requirements state that, in the absence of client-supplied metal price forecasting, metal pricing is established using the average metal price and exchange rate over three years. For this scoping study, the base case revenue is calculated using 80% of three-year average prices for molybdenum and tungsten.

Scheelite (tungsten) concentrate prices are based on 80% of three-year average discounted ammonium paratungstate (APT, 79%) price. Since tungsten concentrate grades are not 79%, the prices were discounted for 70% gravity and 50% flotation concentrates.

US$164.8/mtu for gravity concentrate

US$117.6/mtu for flotation concentrate

Revenue for molybdenum is determined by grade, molybdenum price and 85% mill recovery; it is adjusted for losses, insurance, representations, transportation costs, and royalties.

The base case molybdenum price is US$21.6/lb. A roasting charge for US$0.11/lb of Mo contained in concentrate to convert MoS_2 to MoO_3 and a conversion loss of 1.5% is applied.

The other deductions are as follows (Table 1.6):

Table 1.6 Tungsten and Molybdenum Deductions

Tungsten and Molybdenum Deductions		
Transport Cost		
Tungsten Ore	150	US$/wet metric tonne concentrate
Molybdenum Ore	150	US$/wet metric tonne concentrate
Losses, Insurance, Representation for tungsten & molybdenum		
Losses	0.50%	Net smelter return
Insurance	0.15%	Net smelter return
Representation	0.5	US$/wet metric tonne

Net revenue= Net smelter return (**NSR**)-royalty (if any)

Net smelter return (NSR) = Net Invoice Value (NIV) – losses – representation - transportation

Net Invoice value (NIV) = Gross revenue - smelting

1.19.3 NET PRESENT VALUE AND IRR SUMMARY

The financial analysis for the scoping study is based on a discount rate of 8%. The base case analysis achieves a positive NPV value. The project has a payback period of 2.7 years (Table 1.7).

Table 1.7 IRR & NPV Results @ 8% Discount Rate for Different Cases

Case	**Molybdenum Price ($US/lb)**	**Tungsten Price ($US/mtu)**		**NPV ($CDN)**	**IRR (%)**
	Mo in Mo03	Flotation Concentrate W03	Gravity Concentrate W03	000's	
Base Case	**21.6**	**117.6**	**164.8**	**692,688**	**29.8**
Three Year Average	27.0	146.9	205.6	1,118,238	40.6
Current Price	32.3	150.9	211.3	1,000,828	37.7
70% of Base Case	15.1	82.3	115.4	186,494	15.0

1.19.4 SENSITIVITY ANALYSIS

Sensitivities of the project IRR to initial capital cost, operating cost, exchange rate and the metal prices are considered (Table 1.8 and Table 1.9).

Base case parameters are listed in Table 1.8

Table 1.8 Base Case Parameters

Base Case Parameters	
Molybdenum price (US$/lb)	21.6
Tungsten price	
Flotation concentrate (US$/mtu)	117.6
Gravity concentrate (US$/mtu)	164.8
Initial capital cost (Million CDN$)	353
Operating costs	
Processing cost (CDN$/t milled)	5.33
Mining cost (CDN$/t mined)	1.30
G&A (CDN$1.09/t milled)	1.09
Exchange rate (US/C)	1.17

Table 1.9 IRR by Percent Change of Base Case

IRR Value					
Percent of base case	-30%	-20%	0%	+20%	+30%
Metal price	15%	20%	30%	38%	43%
US/C Exch	15%	20%	30%	38%	42%
Op Cost	34%	33%	30%	27%	25%
Initial Capex	41%	37%	30%	25%	23%

An initial capital cost increase of $70 million dollars (20% of base case) decreases the IRR by 5%. An operating cost increase of 30% decreases the IRR by 5%. A metal price decrease of 30% decreases the IRR by 15%. An exchange rate decrease of 20% created a 10% decrease in the IRR results.

Sound project management practices can control capital cost and other items. Proper mining methods can in part control the grade and dilution of the grade, once the insitu grade is known, although this requires further study for confirmation. The estimates for this study reflect typical scoping study accuracy.

Figure 1.1 IRR Percent Change from Base Case

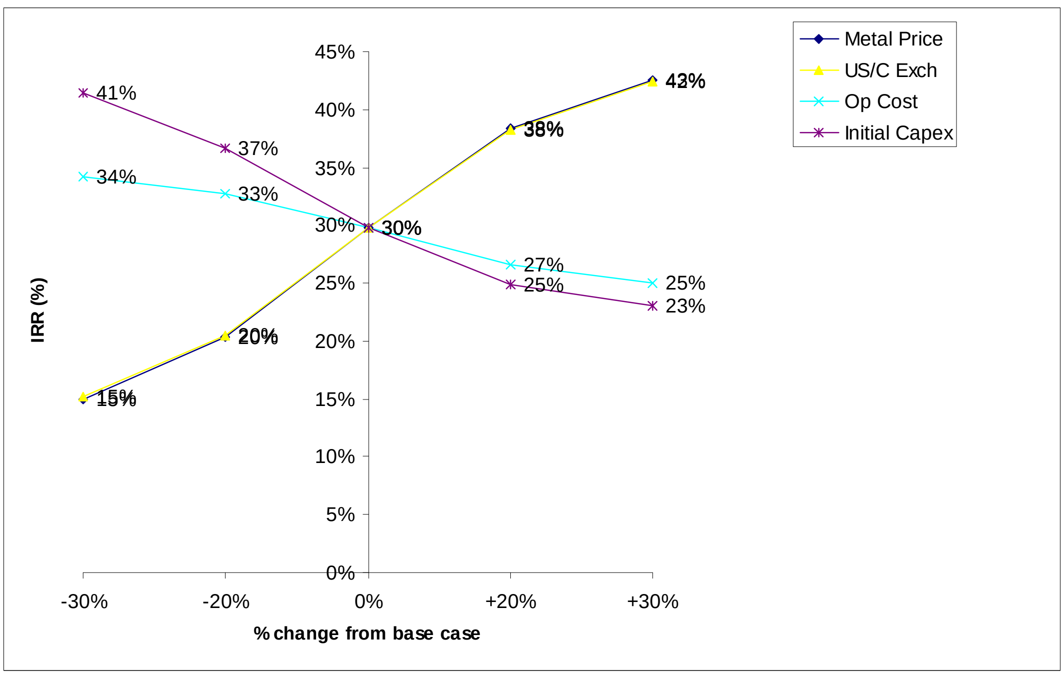
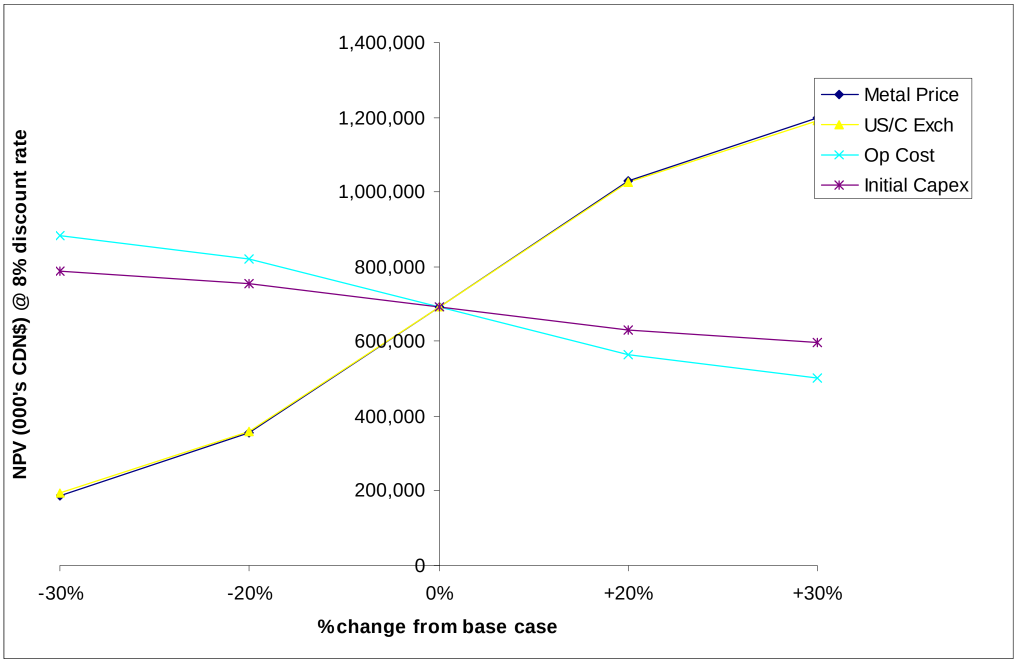


Table 1.10 NPV by Percent Change of Base Case

NPV Value (000 CDN$) @ 8% discount rate					
Percent of base case	-30%	-20%	0%	+20%	+30%
Metal price	186,494	355,225	692,688	1,030,150	1,198,881
US/C Exch	192,661	359,337	692,688	1,026,039	1,192,714
Op Cost	883,631	819,983	692,688	565,392	501,744
Initial Capex	787,556	755,933	692,688	629,442	597,819

Figure 1.2 NPV Percent Change from Base Case



1.20 FINANCIAL RESULTS

Assuming base case prices for molybdenum and tungsten, analysis indicates that a 20,000 tonnes per day (**t/d**) production over a 31-year mine life means the project will have an IRR of 30% and an NPV of CDN$692 million. The project will have operating cost of CDN$9.3/t milled ore, and it has a payback period of 2.7 years.

The sensitivity of the financial indicators (IRR and NPV) to metal prices is clearly demonstrated in the sensitivity analysis.

Reducing infrastructure, mining and plant costs can have a significant positive impact on the overall profitability of the project.

1.21 INTERPRETATION AND CONCLUSIONS

This scoping level or preliminary economic assessment of the Sisson Brook Project indicates that based on the parameters assumed, an open pit mine operating at 20,000 t/d would be profitable and a viable financial investment.

The results are significantly robust to justify proceeding with studies at the preliminary feasibility level i.e. the next step of development.

Main areas of study would be:

- drilling and resource modelling to advance the status of the resources above the inferred level
- metallurgical testing to determine ore recovery, concentrate characteristics and other metallurgical parameters
- geotechnical studies to enable pit design and infrastructure layout
- capital and operating cost studies
- mine design and production scheduling
- environmental studies including base line sampling
- all other work required to enable a decision to be made to proceed (or not) to the feasibility study level.

1.22 RECOMMENDATIONS

1.22.1 DETAILED MINE DESIGN AND SCHEDULING

The pit shells resulting from pit optimization do not consider operational constraints such as berms and ramps; therefore, the numbers provided in this report do not yet represent a practical mine design but approximate to the mineable reserve. Detailed mine design and scheduling incorporating the additional drilling results are required.

1.22.2 GEOTECHNICAL DESIGN

Arbitrary geotechnical assumptions were made for the purposes of this scoping study. Geotechnical assessment work needs to be performed to determine the mining geotechnical parameters to ensure that those assumptions are valid. In addition, hydrological studies must be undertaken to determine the pumping requirements in the pit, and what surface drainage would be required. Golder is carrying out further geotechnical analysis.

1.22.3 ENVIRONMENTAL STUDIES

It is assumed that all necessary operating and reclamation permits will be obtained. Rescan is working on the development of environmental studies.

1.22.4 PROCESS AND METAL RECOVERIES

Knelson Research and Technology Centre (**Knelson**) and SGS Canada Inc (**SGS**). have collaboratively developed a test program in order to assist with the definition of the process design. The testwork program has been scheduled for late 2007, when the metallurgical test sample will be drilled and be made available for testing by Knelson and SGS.

2.0 INTRODUCTION AND TERMS OF REFERENCE

2.1 INTRODUCTION

The Sisson Brook Zone III tungsten-molybdenum deposit is located in central New Brunswick, Canada and defined by 45 diamond drill holes and analytical results for 5916 core samples. Epigenetic vein and stringer style mineralization in Zone III is developed in either Early Devonian gabbro or its host Cambro-Ordovician volcano-sedimentary sequence and is considered to reflect granite-related porphyry style mineralization developed above a buried Early Devonian intrusion. The near-vertical gabbro contact and strike parallel stratified host sequences have exerted spatial control on mineralization, which broadly conforms to the regional north-northeast structural grain in this area.

The Zone III deposit was initially defined by Kidd Creek drilling carried out in the 1979 to 1982 period and Geodex subsequently completed additional deposit delineation drilling in 2005 and 2006. Mercator was retained by Geodex in June 2006 to assist with the company's ongoing drilling project, and reviewed, validated and provided preliminary interpretations of drilling information to support a mineral resource estimate for Zone III. Mercator subsequently secured the services of Mr. H. Andrew Daniels, P. Geo. to assist in development of a three dimensional block model of the deposit using Datamine© deposit modeling software. Zone III Mineral resources were estimated for a range of Equivalent WO3% threshold values between 0.025% and 0.225% based on the Datamine model, which incorporated capping of high grade values and inverse distance squared grade interpolation methodology. Results of this resource estimation program were reported in March, 2007 (Mercator 2007) and are considered compliant with Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves Definitions and Guidelines as well as NI 43-101.

In October 2007, Mercator reported an updated Zone III resource estimate, based on a Surpac © Version 6.01 block model that incorporated similar methodology to the March 2007 estimate (Geodex 2007; Mercator 2007a). Results of all drilling used in the earlier estimate were incorporated plus results for 17 new drill holes completed by Geodex in 2007 and one re-sampled pre-2007 hole not used in the earlier estimate. Results of this estimate are also considered compliant with Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves Definitions and Guidelines as well as NI 43-101 and were used by Wardrop for current scoping study purposes. Details of the October 2007 estimate appear below in Table 2.1.

As per NI 43101 Section 2.3 (3) (i): The Preliminary Assessment is preliminary in nature, that it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary assessment will be realized; and (ii) states the basis for the preliminary assessment and any qualifications and assumptions made by the qualified person.

Table 2.1 *Mineral Resource Estimate for Sisson Brook Zone III – October 17, 2007 Effective Date

Resource Category	Equivalent W03 % Threshold	Tonnes	Tonnes (Rounded)	W03 %	Mo %	Equivalent W03 %
Inferred	0.025	290,784,224	290,800,000	0.059	0.020	0.118
Inferred	0.075	214,997,356	215,000,000	0.069	0.024	0.140
Inferred	0.125	109,039,490	109,000,000	0.084	0.032	0.179
Inferred	0.175	43,440,318	43,400,000	0.100	0.043	0.227
Inferred	0.225	15,836,218	15,800,000	0.121	0.054	0.281

*Notes: Mo and WO3 values capped at 0.7% and 1.2% respectively; WO3 Equivalent = (WO3% + 2.97*Mo %)

Mercator recommended that a program of 50 m spaced infill drilling between the current 100 m spaced drill sections is considered necessary to support future delineation of Indicated category mineral resources at Zone III. Additionally, the deposit has not been fully delineated to date by drilling and good opportunities exist to extend its current limits. Additional core drilling both along and across the deposit trend has been recommended by Mercator to address such potential.

The purpose of this report is to provide a Preliminary Economic Assessment or scoping study compliant to the NI 43-101 for the Sisson Brook Zone III Project based on the resource estimate done by Mercator on October 17, 2007 (Geodex 2007, Mercator 2007a).

2.2 TERMS OF REFERENCE

Wardrop Engineering Inc. (Wardrop) has been retained by Geodex Minerals Ltd. (Geodex) to produce a scoping study.

2.3 SOURCES OF INFORMATION

Based on work done by Mercator, Geodex provided Wardrop with a Surpac© Version 6.01 block model, 3D geological models (gabbro, interbedded felsic and mafic volcanics with metasediments, and felsic augen schist) and topographic, bedrock surfaces (Mercator 2007a).

3.0 RELIANCE ON OTHER EXPERTS

Wardrop has relied upon the staff of Geodex and Mercator for information pertaining to Property legal description, environmental permits and liabilities.

4.0 PROPERTY DESCRIPTION AND LOCATION

The Zone III deposit at Sisson Brook is located approximately 100 km northwest of the city of Fredericton, NB and occurs within mineral exploration claims registered to Champlain. These claims form part of a larger contiguous exploration holding within which exploration titles are held by either Champlain or Geodex (Figure 4.1 and Figure 4.2).

Geodex has advised that surface rights to lands comprising the Zone III area are exclusively held under government ownership and that the company has established access agreements to these lands, as necessary, to allow exploration activities to be carried out (Mercator 2007).

Figure 4.1 Sisson Brook Location Map

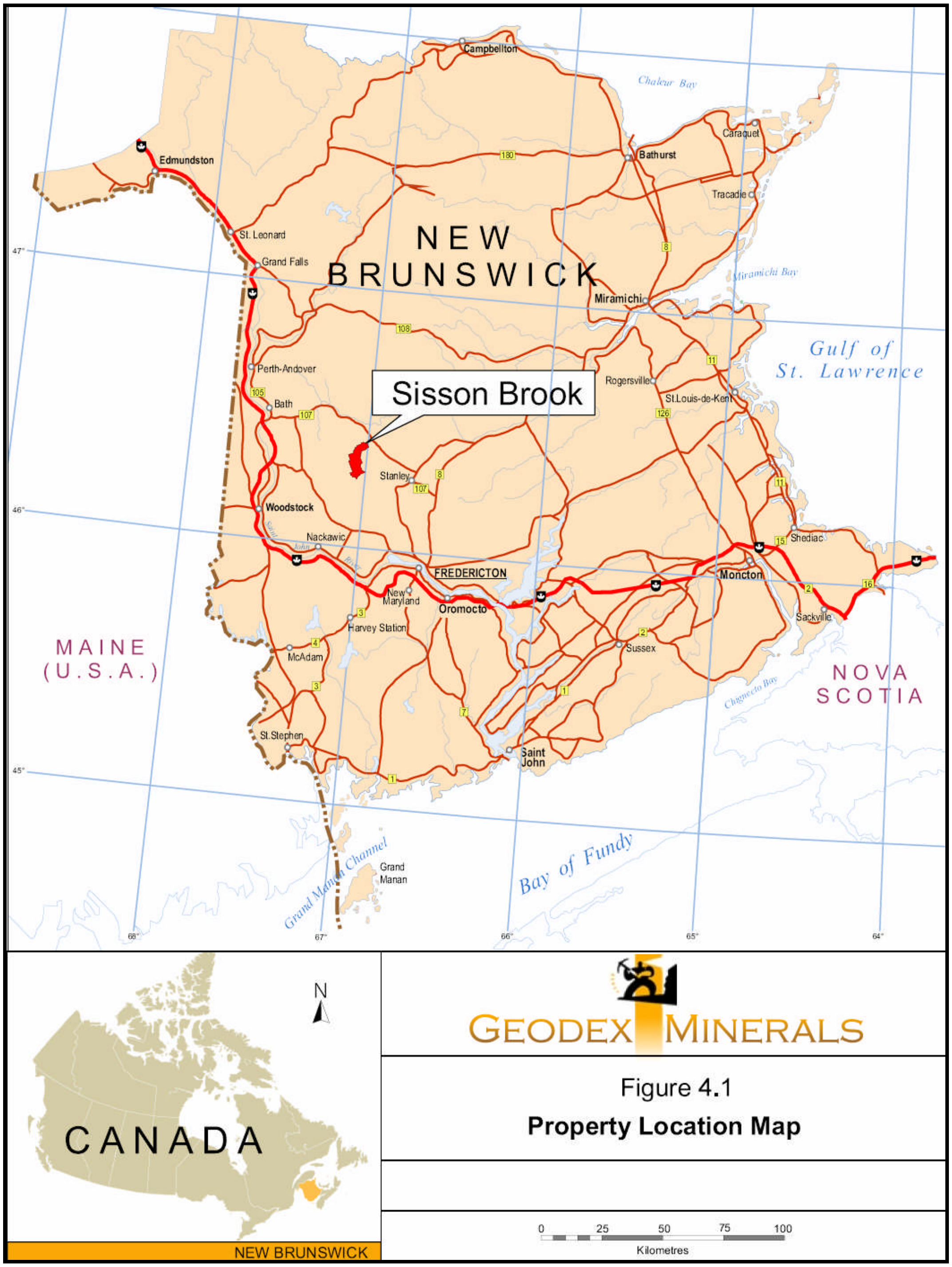
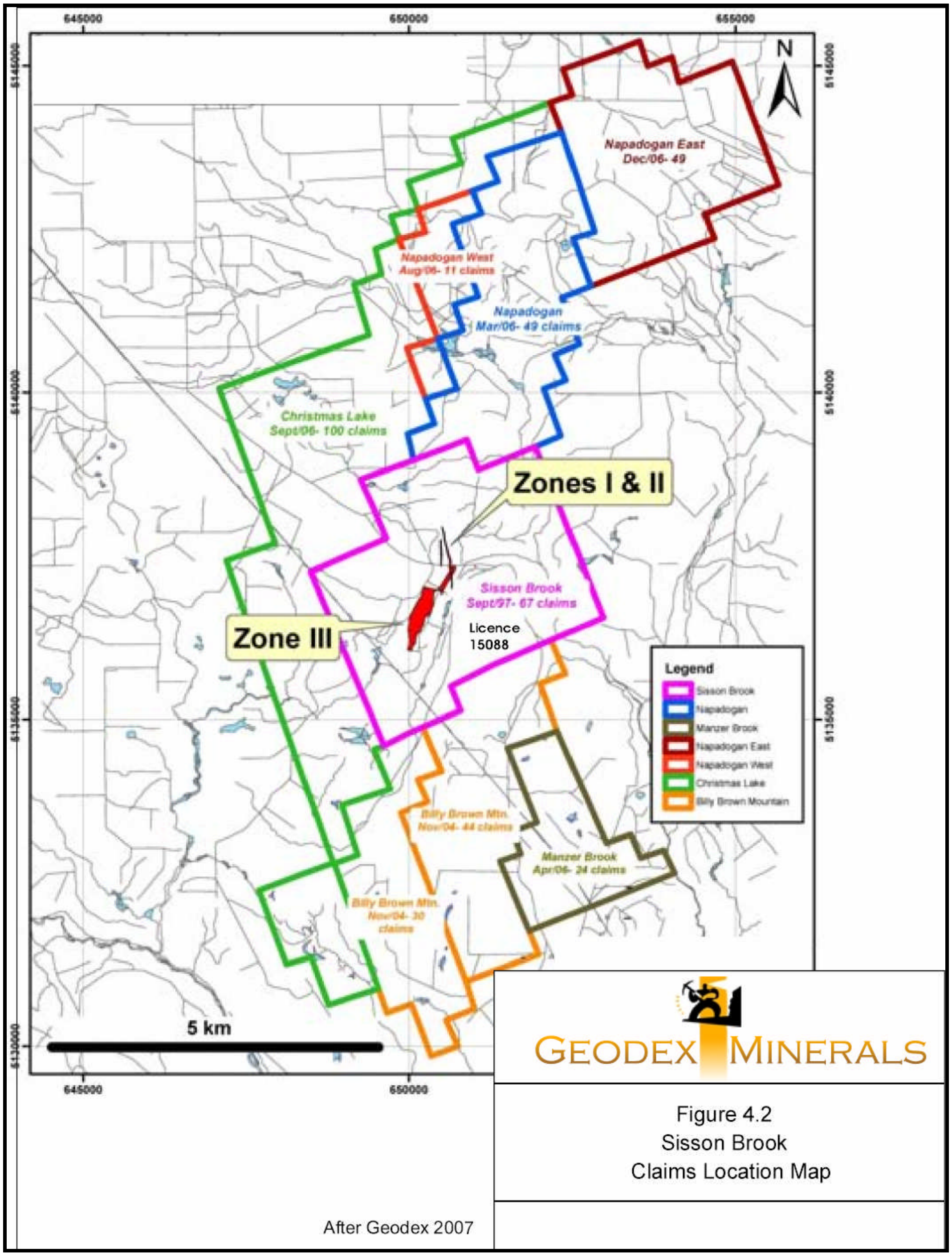


Figure 4.2 Sisson Brook Claim Map



4.1 AGREEMENT WITH CHAMPLAIN RESOURCES LTD.

On the 24th of October, 2005 Geodex and Champlain entered into a letter agreement pertaining to certain exploration properties or titles held at that time by Champlain in the Sisson Brook area of central New Brunswick. This agreement was replaced by a more complete agreement dated July 6th, 2006. The License 15088 area covering the Zone III deposit was included under terms of the current agreement, which provides Geodex with an opportunity to earn a 70% interest in the property by December 31st, 2008. As reflected in the company's Unaudited Financial Statements dated December 31st, 2006, to earn the 70% interest the company must make cash payments to Champlain totalling CDN$200,000 by December 31st, 2007 and complete at least CDN$2,000,000 in exploration expenditures on the property by December 31st, 2008. Wardrop did not independently verify the terms and conditions of the Champlain agreement for purposes of this report, but at the report date had no reason to question the information provided and understood that obligations required to that date under the agreement had been met.

4.2 SUMMARY OF EXPLORATION TITLE INFORMATION

Mineral exploration claims in New Brunswick are issued under the province's Mining Act, c.M14. 1 of the Acts of New Brunswick, 1985 ("the Act") and adjudicated under terms of associated Regulations. Any individual or company acquiring claims in the province must hold a valid Prospector's Licence at the time of staking. No specific reference to "patented claim status" is defined under this Act but certain mineral rights in certain areas of the province are vested with the surface title holder and therefore excluded from general staking. These areas generally reflect land grants issued prior to 1810.

All areas of the province are subject to ground staking, which requires establishment of claim posts in the field, with claim tags affixed, to define individual claims. Retention of claims in good standing from year to year requires payment of a renewal fee for each claim plus submission of documentation to government describing work programs and associated costs applicable to the property during the course of the reporting year. Table 4.1 summarizes fees and work commitments applicable to the Sisson Brook property to keep mineral exploration claims in good standing.

Table 4.1 Claim Renewal Fees and Work Requirements

Claim Renewal Fees and Work Requirements			
Year of Issue	**Required Work**	**Period**	**Renewal Fees**
1	$100 per claim	Anniversaries 1 to 5	$4 per claim
2	$150 per claim	Anniversaries 6 to 10	$4 per claim
3	$200 per claim	Anniversaries 11 to 15	$4 per claim
4	$250 per claim	Anniversaries 16 to 25	$4 per claim
5 through 10	$300 per claim		
11 through 15	$400 per claim		
16 through 25	$500 per claim		
25 plus	$600 per claim		

There is no requirement in New Brunswick to legally survey all mineral exploration claim boundaries. A requirement to re-establish mineral exploration claim boundaries in the fifth year of claim issue and every five years thereafter does apply to all exploration claims. Application for a Mining Lease under the Act, which must be obtained to allow commercial production of a mineral to occur, does require completion of a legal boundary survey of the claims under application. None of the Licence 15088 claim boundaries have been surveyed to date.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 ACCESSIBILITY

The Sisson Brook property is accessible from the nearby city of Fredericton by traveling west approximately 60 km via the Trans Canada Highway to the town of Nackawic and then northerly approximately 45 km on secondary highways and the Valley Forest Products forestry access road to the property center. Numerous secondary forestry access roads cross the property and these have been used by Geodex to provide access for exploration personnel, vehicles and drilling equipment. Four-wheel drive vehicles are required to travel some of the property roads but two-wheel drive access by car or truck is possible over most of the property.

5.2 PHYSIOGRAPHY AND CLIMATE

Central New Brunswick is characterized by northern temperate zone climatic conditions. Winter conditions of freezing temperatures and substantial snowfall can be expected from late November through late March, while spring and fall seasons are cool, with frequent periods of rain. Summer conditions prevail from late June through early September and Environment Canada records for the 1971 to 2000 period for nearby Fredericton show daily mean temperatures in the 16.2 to 19.3 C range during the summer months, with an extreme summer daily maximum of 39.2 C. Daily minimum temperatures in January and February average between -14.1 and -15.5 C, with an extreme daily minimum of -37.2 C. Average yearly precipitation for the period totals 1143 mm with an average of 276.5 cm of snow accumulation and 885 mm of rain.

Weather conditions in this part of New Brunswick are conducive to year-round exploration activity, with project planning necessary to deal with relatively deep snow cover in winter and locally impassable forestry road conditions during the spring break-up period. For this reason, scheduling of field activities to avoid the break-up period is advisable.

The property area is characterized as forested upland occurring at an average elevation of 300 m above sea level. The well-developed main drainage pattern in the area is characterized by the southeast flowing Nashwaak River system, which shows well developed subsidiary drainages, frequently trending northwest-southeast or north-south. Geological interpretations indicate that this pattern reflects dominant bedrock structural trends in areas where relatively shallow glacial overburden is present. Mixed deciduous and coniferous cover is typical of the area and was originally present over most of Licence 15088. Clear cut harvesting and subsequent forest regeneration programs have been carried out to substantial degrees in this area over the last 30 years and at present large areas of relatively recent clear cutting exist in the immediate vicinity of Zone III. The Zone III area is totally uninhabited at present with the exception of a few isolated hunting or fishing cabins leased by private interests.

5.3 LOCAL RESOURCES AND INFRASTRUCTURE

The city of Fredericton, located 90 km to the southeast of the Sisson Brook property, is the second largest city in New Brunswick, with a population of approximately 50,000, and is also the provincial capital. The "Greater Fredericton Area", which includes several surrounding communities, incorporates a larger population of approximately 85,000. This area constitutes a major government, business, service and education center for the province and hosts campuses of both the University of New Brunswick and Saint Thomas University. The city is served by regional and national airlines and good highway infrastructure but lacks direct rail service.

The town of Nackawic is situated adjacent to both the Trans Canada Highway and the St. John River, approximately 60 km west of Fredericton, and is only 35 km from the Sisson Brook property. The town and surrounding areas have a combined population of approximately 7000 and have supported a major pulp mill operation since 1970, although recent market conditions have resulted in sporadic mill closures. Presence of the mill has resulted in local development of forest industry contractors, a local population of skilled tradesmen and availability of basic business services in the area. Presence of such support is advantageous to current mineral exploration activities and would also benefit any future mine development programs in the area.

The provincial electrical grid crosses the Sisson Brook property and access to the CN Rail main line linking Atlantic Canada with Montreal is possible approximately 15 km to the north of Zone III. In the broader context of natural site attributes, surface water resources of significant volume are present in the Sisson Brook area in the form of the Nashwaak River and its subsidiary drainages and topographic relief poses no impediment to site development.

In summary, the Sisson Brook area is considered advantageously situated with respect to potential future mine developments due to its current undeveloped state, proximity to good road, rail and electrical grid systems and relative proximity to government, business and work force population centers.

6.0 HISTORY

6.1 INTRODUCTION

The history of modern mineral exploration at the Sisson Brook property spans the time period from the mid 1950's through to the present and Giggie (2006) assembled an excellent detailed review of property exploration history on behalf of Geodex. During the course of the Zone III project Mercator was provided access to this report and subsequently reviewed the major documents referenced therein. This provided independent confirmation of sources and content. Compiled information not originating from Geodex was found to be primarily sourced in: (1) underlying archival assessment reports available through the New Brunswick government; and (2) independently published research papers or articles. Geodex files pertaining to the company's 2005 exploration campaign rounded out the field of technical information relevant to exploration history of the Zone III area (Mercator 2007).

6.2 SUMMARY OF PAST EXPLORATION

The following itemized summary presents a chronological review of the Sisson Brook property's exploration history and, with only slight modification, reflects the compilation study text provided by Giggie (2006) on behalf of Geodex and is used herein with permission from Geodex. The area of compilation extends beyond the limits of Licence 15088 and therefore references activities not directly related to the Licence.

6.2.1 *NASHWAAK PULP AND PAPER (1955, 1959-1960)*

Prior to 1966, Nashwaak Pulp and Paper held exclusive prospecting rights in the area of the present claims. In 1959, in conjunction with York Mining Co., they contracted Canadian Aero to conduct an airborne electromagnetic survey over a large area including the present claim group. Follow-up work included line-cutting and ground geophysics. A number of conductive zones were identified and were investigated with trenching and soil sampling. Twelve holes were drilled to test the most promising targets, which led to the discovery of sulphide mineralization (HoleN-7) of the Nashwaak (Zn-Pb-Cu-Ag-Au) occurrence located in the east-central portion of the present group. In 1959-60, the company drilled an additional 43 holes (3957 m) in the area of the Nashwaak occurrence and intersected a narrow zone of low grade sulphide in Holes E- 10 and E- 11.

6.2.2 *PENARROYA CANADA LTÉE. (1969)*

In 1967, Penarroya staked the Napadogan "A" claim group, which covered most of the present Geodex property and extended to the northeast. Geological mapping resulted in the identification of four distinctive geological zones trending N45-60E with a dip of 90°. After the zone of volcano-sedimentary schists was traced using ground magnetic surveying, the claim block was extended to the north. In June 1968, a 29 mile survey grid was established and soil sampling identified three major areas of Pb-Zn-Cu anomalies. Four drill holes (3,033 feet (**ft**)) were drilled on coincident soil Cu and magnetic anomalies. Drilling intersected low grade disseminated sulphides and also identified low values of Cu, MoS2 and WO3%% in the area of the present day Sisson Brook deposits. However, due to the lack of significant base metal sulphides, the company conducted no further work on the Napadogan group. IP surveying and general prospecting of "peri-plutonic" zones for possible porphyry copper deposits were recommended.

6.2.3 *TEXASGULF INC. (NASHWAAK AREA, 1974, 1979)*

In 1973, Texasgulf staked 82 claims stretching from Hayden Brook northeast to Napadogan Brook, including the southeast portion of the present Geodex holdings and containing the Nashwaak occurrence discussed above. A large survey grid was cut covering the entire group with a 4-mile baseline oriented at 010 Az, and 1,800 soil samples were collected and analyzed. Horizontal loop electromagnetic and magnetic surveys were carried out on the grid. Three trenches were dug west of the access road in the vicinity of the Nashwaak occurrence on combined geophysical/geochemical targets, but only one intersected bedrock (black graphitic argillite). The company then drilled five holes (910 m) on targets in the vicinity of the known mineralized sections of the occurrence. Significant mineralization of 7.19% Zn, 3.50% Pb, 1.10% Sb, 3.70 oz/ton Ag, and 0.44% Cu over 16.2 ft was encountered in hole NW-3. In 1979, an additional hole (NW-6) was drilled to test this mineralization at depth, but no significant results were obtained.

6.2.4 *TEXASGULF SULPHUR / KIDD CREEK MINES LTD. (SISSON BROOK AREA, 1978-1982)*

In April 1978, Texasgulf staked an additional four claims to the west of their Nashwaak group, to investigate ground on which scheelite and chalcopyrite mineralization had been discovered by Penarroya in 1969, and which also contained a significantly high value of Mo reported in a regional stream silt survey published by NBDNR in 1970. Penarroya's old survey grid lines were located and re-cut, followed by prospecting, which led to the discovery of tungsten and copper bearing float. Five soil pits were dug and sampled along two of the old lines. Heavy mineral sampling along Sisson, Napadogan and Bird Brooks yielded significantly elevated W values (450 to 700 part per million (**ppm**). Based on the results of this work, additional claims were staked, bringing the Nashwaak/Sisson Brook group to a total of 103 claims and covering most of the present Geodex property.

Concentrating on the Sisson Brook area, the company did further line-cutting, followed by geological mapping, soil sampling (800 samples), magnetic and very low frequency and horizontal loop electromagnetic surveys. Eleven holes were drilled on targets in the area of the present Sisson Brook Zones I and II, resulting in the discovery of significant Cu-Wo mineralization hosted by sheeted quartz vein systems. In the fall of 1979, the grid was extended to the north and south.

Soil sampling, geological mapping, trenching, horizontal loop and very low frequency electromagnetic surveys and a magnetic survey were conducted on the grid extensions in 1980, and twelve additional holes were drilled on the present Zone I. In 1981, nine holes were drilled to the south of Zones I and II, leading to the discovery of an additional concentration of scheelite-molybdenite mineralization, which was termed Zone III. In 1982, eight holes were drilled In Zone III and induced polarization surveying, and detailed geological mapping was carried out over the area of mineralization. In addition, a compilation of previous soil sampling from 1979 (original grid) and 1980 (expanded grid) revealed that the soil anomaly related to Zones I and II was open to the southeast. A surface geology and overburden geochemistry orientation survey was also completed in 1982. A mineral resource estimate for Zone I at that time (Moore, 1980 in Mann, 1981) and results of this work are presented below in Table 6.1. The authors caution that this resource was prepared prior to adoption of NI 43-101 and the current CIM Standards. As such, it is not complaint with NI 43-10 1 or the CIM Standards and should not be relied upon. In the opinion of the authors, however, this early assessment of tungsten and molybdenum mineralization at Sisson Brook provided valuable insight with respect to lithologies, mineralization and alteration in the three zones considered.

Table 6.1 Sisson Brook Resource Estimate – Kidd Creek Mines Ltd.

Area	Category	Tonnes (Rounded)	MoS (%)	W03 (%)	Cu (%)
Zone 1	Drill Indicated	7,500,000		0.21	0.35

*Figures are historic in nature and not compliant with National Instrument 43-101 or CIM Standards

6.2.5 CANADIAN NICKEL CO. (1977-1980)

In 1977, Canadian Nickel carried out an airborne geophysical survey followed by ground reconnaissance in 1978. Based on results of this unfiled work, the company staked a 38 claim group in 1979 covering ground from Chainy Lakes in the south to the extreme southwest corner of the present property in the north. A grid located on the southwest corner of the present group was cut in 1979, and the company conducted VLF, soil sampling, and geological mapping. In 1980, three holes (750 ft total) were drilled to test electromagnetic anomalies, one of which appears to have been located on the southwest portion of the present group. All three holes intersected felsic meta-volcanics and graphitic meta-sediments, but did not return mineralization of substantial interest.

6.2.6 RIOCANEX (1981)

In 1980, Riocanex staked a number of claim groups on map sheets 21J06, 07 and 03 to cover ground conductivity and magnetic anomalies detected by an airborne EM and magnetic survey (not filed). The Millville project included the North Group, (39 claims) which extended onto the northeast corner of the present Sisson Brook property, and the Road Group, (12 claims) which was staked on the southeast corner of the present group. Line-cutting and geophysical surveys (magnetics, MaxMin II electromagnetic and gravity) were conducted on both claim groups, but no magnetic or gravity anomalies were found to significantly correlate with the airborne conductive zones and the property was downgraded. Soil sampling was recommended.

6.2.7 PHELPS/DODGE- FALCONBRIDGE (1993-1994)

In 1992, Phelps Dodge optioned 22 claims from Falconbridge (previously Kidd Creek Mines Ltd. /Texasgulf Exploration Canada Ltd.) and conducted work in the vicinity of the Nashwaak occurrence on the present group. Although only the Nashwaak claims (also referred to as the Napodogan group) were covered by the option, the company was also required to apply work to the contiguous claims contained in the Sisson Brook group to the west. A 24 km grid was cut, centered on the Nashwaak occurrence, covering the southeast third of the present group, and tied in with the old Texasgulf grid. Geological mapping, time domain electromagnetic surveying and soil sampling were carried out on the grid.

Two holes were targeted to test geophysical and geochemical targets. One hole was drilled to test a coincident horizontal loop and time domain electromagnetic survey anomalies approximately 2 km northeast of the Nashwaak occurrence, and intersected graphitic and weakly sulphidic black shale. The second hole tested continuity between the Sisson Brook and Nashwaak mineralization, and was drilled approximately 700 m southwest of the Nashwaak occurrence. This hole intersected black spotted shales that were interpreted as evidence that the Nashwaak deposit, although locally stratiform, is likely genetically related to the intrusion of a granite body to the west. However, as only minor sulphide mineralization was encountered in sulphide-bearing fractures no further work was recommended.

6.2.8 BRUNSWICK MINING & SMELTING LTD. (1992-1998)

In 1992, Brunswick Mining and Smelting began work in the Sisson Brook area as part of an assessment of rock units in the area believed to be correlative with those hosting the Brunswick massive sulphide ore bodies. As part of this project, Noranda contracted and filed in 1993 (for information purposes only) the results of a helicopter-borne magnetic and EM survey conducted by Aerodat covering 350 square kilometres (**km²**) of parts of 21J07, 06 and 10 map sheets, including the present claim group.

Compilation of airborne and regional data including unexplained Zn, Pb and Cu anomalies from stream sediments obtained in Hayden Brook (NBDNR 1975/76) resulted in the staking of the Chainy Lake Group in April 1992. The original group comprised 211 claims located south of the present property, extending from an area south of Chainy Lakes and northeast to Trouser Lake. In September 1992, a 46 claim extension was staked to the north, covering parts of the southern and eastern margins of the present group.

Initial work in 1994 consisted of prospecting, line-cutting, soil geochemistry, magnetic, VLF and horizontal loop EM surveys. Soil sampling revealed a strong Pb/Zn anomaly on the east side of the West Branch Napodogan Brook. Three holes (826 m) were drilled in this area slightly east and north of the present group but no significant mineralization was intersected.

In February 1995, the Sisson Brook claim group (24 claims) was added, covering most of the present group and bringing the Chainy Lakes Group to a total of 281 claims. Work in 1995 consisted of further line-cutting on the Sisson Brook claims, to connect the Brunswick Chainy Lakes grid with the Phelps Dodge/Falconbridge grid. Soil sampling, gravity, magnetic, horizontal loop and UTEM electromagnetic surveys were conducted on the grid.

In 1998, the highest priority geophysical and geochemical targets generated during the 1995 exploration program were tested with two holes (1615 feet) on the Sisson Brook Group and located on the east side of Napodogan Brook in the southeast corner of the present group. Trace vein-type Cu-Pb-Zn mineralization, and pyrite and pyrrhotite-rich rocks were encountered to explain the anomalous geochemical and geophysical responses, while the presence of felsic and mafic intrusive rocks explained the areas of low amplitude high gravity results. Although some lower priority targets remained untested, no further work was conducted and the group was reduced to 120 claims.

6.2.9 NICON HOLDINGS LTD. /CHAMPLAIN FINANCIAL (1997-2001)

In 1997, Nicon Holdings Ltd. (**Nicon**) staked 42 claims over the present group covering the Sisson Brook deposit, but excluding the Nashwaak occurrence to the east. Initial work consisted of compilation of previous geochemical and geophysical data. Targets were identified on coincident Cu soil/IP-VLF anomalies and 11 claims, covering the Sisson Brook deposit were retained. Work filed in 2000 consisted of further compilation, including a structural study, prospecting, and 12 till samples, which yielded no significant results.

In 2001, additional claims were then acquired by Nicon to include the Nashwaak deposit and covered the entire present group. In the Sisson Brook area, the company assessed the base metal – precious metal potential of the Sisson Brook Zones I, II and III. The Sisson Brook grid (1500 m) was established over the previously identified northwest-southeast trending VLF and magnetic anomalies identified to target an area south of Zone I and II where compilation showed coincident induced polarization and very low frequency electromagnetic survey anomalies as well as soil anomalies in a known fault zone. Additional electromagnetic and magnetic surveys were carried out on the grid, along with limited trenching. A review and analysis of stored core from previous drilling was carried out.

A second grid (15.5 km) was established to the east over the Nashwaak deposit and was tied into the original Texasgulf grid. Very low frequency electromagnetic and magnetic surveys were carried out on the grid on an area targeted for base and precious metal mineralization believed to be the epithermal manifestation of the Sisson Brook mineralization.

6.2.10 GEODEX MINERALS LIMITED (2004-2007)

In October 2004, Geodex entered into an agreement with Champlain to acquire a 70% interest in the Sisson Brook property. Subsequent to that time the company carried ground geophysical surveying, mapping, geochemical sampling and diamond core drilling programs on the property. In 2005, 9 drill holes totalling 1219 m were completed with only two of these in the immediate area of Zone III. In 2006, 29 drill holes were completed on the Sisson property with 28 of these, totalling 7053 m of drilling, being completed on Zone III. A single hole was completed on Zones I. The 2005 and 2006 Geodex drilling programs are discussed in more detail in Section 11 of this report.

In March 2005, Geodex disclosed results of an in-house mineral resource estimate completed by D. Martin, P. Geo. (Martin, 2006). Results of this work are presented below in Table 6.2. The company subsequently disclosed that the estimate should be considered a “potential mineral deposit that is the target of further exploration” and that tonnage and grade should be considered conceptual in nature (Geodex Press release, March 24, 2006). The authors note this qualification and caution that the Martin (2006) estimate is not considered compliant with NI 43-10 1 or CIM Standards and therefore should not be relied upon.

Table 6.2 *Zone III “Potential Mineral Deposit” Estimate (Martin, 2006)

Area	Resource Class	Tonnes	MoS_2 (%)	W03%
Zone III	Inferred	25,950,000	0.05	0.102

*Figures are not compliant with the National Instrument 43-101 or CIM Standards and should not be relied upon.

In 2006, 29 drill holes were completed on the Sisson property with 28 of these, totaling 7053 m of drilling, being completed on Zone III. A single hole was completed on Zone I.

In March 2007, Mercator completed a resource estimation compliant with Canadian Institute of Mining, Metallurgy and Petroleum Standards CIM on Mineral Resources and Reserves Definitions and Guidelines as well as NI 43-101. Mercator developed a three dimensional block model of the deposit using Datamine© deposit modeling software. Mineral resources were estimated for a range of Equivalent WO3% threshold values between 0.025% and 0.225% based on the Datamine model, which incorporated capping of high grade values and inverse distance squared grade interpolation methodology. Results of the resource estimation program are presented below in Table 6.3 (Mercator 2007).

Table 6.3 *Mineral Resource Estimate for Sisson Brook Zone III – March 28, 2007 (Effective Date)

Mineral Resource Estimate for Sisson Brook Zone III					
Resource Category	Equivalent WO3% Threshold	Tonnes	WO3%	Mo%	Equivalent WO3%
Inferred	0.025	167,400,000	0.059	0.021	0.122
Inferred	0.075	126,300,000	0.069	0.025	0.143
Inferred	0.125	64,400,000	0.084	0.034	0.186
Inferred	0.175	28,900,000	0.098	0.045	0.233
Inferred	0.225	12,300,000	0.110	0.057	0.281

*Notes: Mo and WO3% values capped at 0.7% and 1.2% respectively. WO3% Equivalent = (WO3% + 2.97*Mo %)

Resource numbers were updated on October 17, 2007 (Geodex 2007, Mercator 2007a) with the addition of 18 new drill holes (Table 6.4 *Mineral Resource Estimate for Sisson Brook Zone III – October 17, 2007 Effective Date

Resource Category	Equivalent W03 % Threshold	Tonnes	Tonnes (Rounded)	W03 %	Mo %	Equivalent W03 %
Inferred	0.025	290,784,224	290,800,000	0.059	0.020	0.118
Inferred	0.075	214,997,356	215,000,000	0.069	0.024	0.140
Inferred	0.125	109,039,490	109,000,000	0.084	0.032	0.179
Inferred	0.175	43,440,318	43,400,000	0.100	0.043	0.227
Inferred	0.225	15,836,218	15,800,000	0.121	0.054	0.281

Notes: Mo and WO3 values capped at 0.7% and 1.2% respectively; WO3 Equivalent = (WO3% + 2.97*Mo %)).

Table 6.4 *Mineral Resource Estimate for Sisson Brook Zone III – October 17, 2007 Effective Date

Resource Category	Equivalent W03 % Threshold	Tonnes	Tonnes (Rounded)	W03 %	Mo %	Equivalent W03 %
Inferred	0.025	290,784,224	290,800,000	0.059	0.020	0.118
Inferred	0.075	214,997,356	215,000,000	0.069	0.024	0.140
Inferred	0.125	109,039,490	109,000,000	0.084	0.032	0.179
Inferred	0.175	43,440,318	43,400,000	0.100	0.043	0.227

Resource Category	Equivalent W03 % Threshold	Tonnes	Tonnes (Rounded)	W03 %	Mo %	Equivalent W03 %
Inferred	0.225	15,836,218	15,800,000	0.121	0.054	0.281

Notes: Mo and WO3 values capped at 0.7% and 1.2% respectively; WO3 Equivalent = (WO3% + 2.97*Mo %)

A major drilling program initiated by Geodex in 2007 was still in progress at the date of this report, but results for 17 initial drill holes totaling 4665.2 m of coring from this program are included in the October resource estimate by Mercator, along with results for one pre-2007 Geodex drill hole (147.2 m) that had been re-sampled. Geodex drilling programs are discussed in more detail in Section 11.0 of this report.

7.0 GEOLOGICAL SETTING

Cambro-Ordovician volcanic and sedimentary rocks of the Mirimichi tectono-stratigraphic zone extend northeasterly across central New Brunswick from the St. Croix area in the southwest to the Bathurst area in the northeast (Figure 7.1 and Figure 7.2). Both felsic and mafic volcanic assemblages occur in association with continental and marine sedimentary sequences in the Zone III, and were intruded by younger mafic and felsic igneous bodies ranging in proportion from thin dikes to plutons and batholiths.

In the immediate area of the Sisson Brook property, two main stratigraphic sequences are present, the oldest of which comprises a mixed succession of siltstone, slate and quartzite that Smith and Fyffe (2006) identify as the Baskahegan Formation of the Cambrian to Early Ordovician Woodstock Group. These strike north-northeast in the Zone III area and are in steeply dipping contact to the west with a sequence of mixed felsic and mafic volcanics plus metasedimentary rocks of the Cambro-Ordovician Meductic Group's Porten Road Formation. The latter sequence hosts much of the Zone III mineralization near its near-vertical contact with a gabbro intrusion that also strikes north-northeast in this area. Both sequences were affected by the Late Ordovician Taconic Orogeny that resulted in development of sub-greenschist facies regional metamorphic assemblages and two regional foliation fabrics that trend north-northeast in the Zone III area and show steep dips.

Foliated stratified sequences were intruded by Early Devonian granodiorite and gabbro of the Howards Peak Granodiorite and also by the related, and significantly larger, Early Devonian Nashwaak Granite, which shows peraluminous geochemical affinity (Smith and Fyffe, 2006; Ruitenberg and MacCutcheon, 1994). These Intrusions were emplaced along the north-northeast regional structural grain in this area and lack penetrative deformation fabrics. However, both are locally affected by spatially discrete shears, faults and zones of foliation development.

Emplacement of gabbro and granite into the steeply dipping and slightly metamorphosed host sequences at Sisson Brook post dated the Mid-Devonian Acadian Orogeny and resulted in overprinting of the earlier regional metamorphic fabrics by contact metamorphic effects of the intrusive bodies. Subsequent emplacement of granitic to granodioritic feldspar-quartz-biotite porphyry dikes post-dated main phases of the Howards Peak Granodiorite and Nashwaak Granite and marked the end of significant igneous activity evidenced in bedrock sequences of the immediate property area (Mann, 1982). As documented by Nast and Williams-Jones (1991) and Mann (1982), contact aureole thermal effects related to the Early Devonian intrusions are represented in metasedimentary rocks at Sisson Brook as porphyroblastic biotite, garnet, cordierite and andalusite. In mafic lithologies, actinolitic hornblende porphyroblasts reflect the contact metamorphic imprint.

The Nashwaak Granite and the later porphyries form part of a regional episode of post-tectonic, Early to Mid Devonian granite emplacement that is metallogenically related to development of polymetallic Sn-W-Mo-Cu-Bi-(Id) mineralization in the Mirimichi Zone and within adjacent litho-tectonic zones to the southwest. Prominent examples of the association include the Burnt Hill W deposit (MacLellan and Taylor, 1989), approximately 30 km northeast of Sisson Brook, the Lake George Sb-W-Mo-Au deposit (Seal et. al., 1988), approximately 50 km to the south near Fredericton, and the Mount Pleasant Sn-W-Mo-Bi-Id deposit (Kooiman et. al, 1986; Ruitenberg and McCutcheon, 1994) located approximately 120 km south of the property (Mercator 2007).

Figure 7.1 Regional Tectonic Framework of New Brunswick

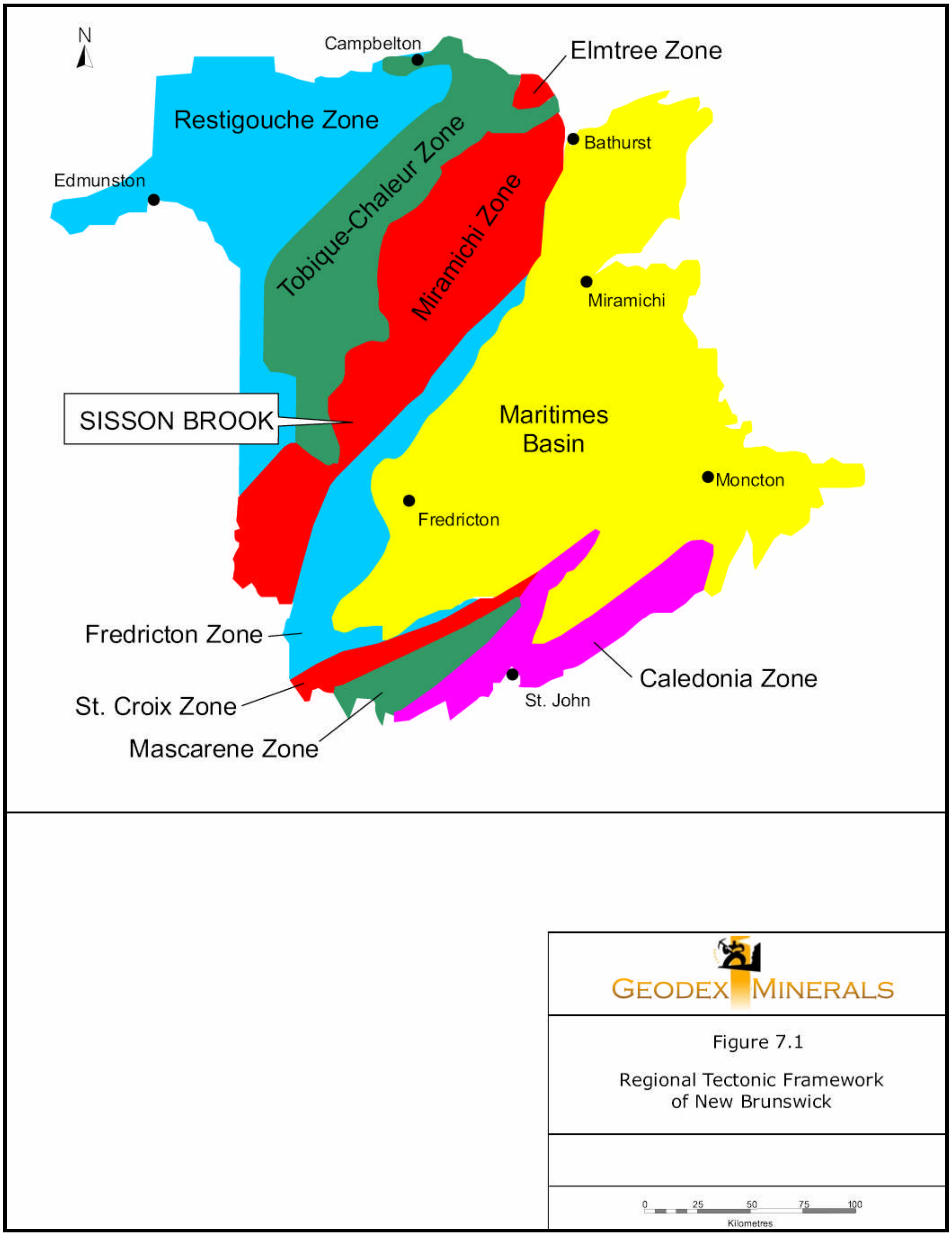
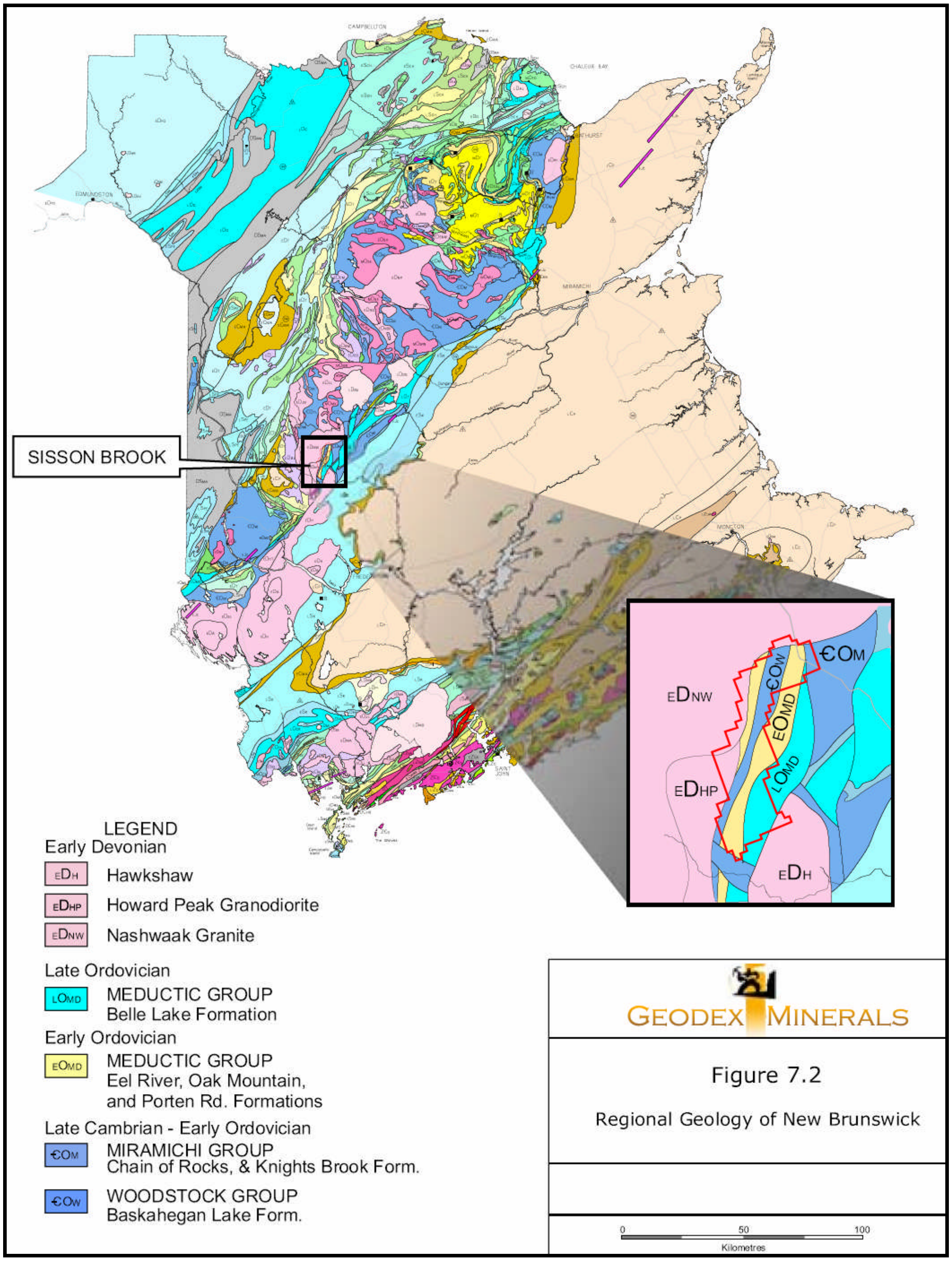


Figure 7.2 Regional Geology of New Brunswick



8.0 DEPOSIT TYPES

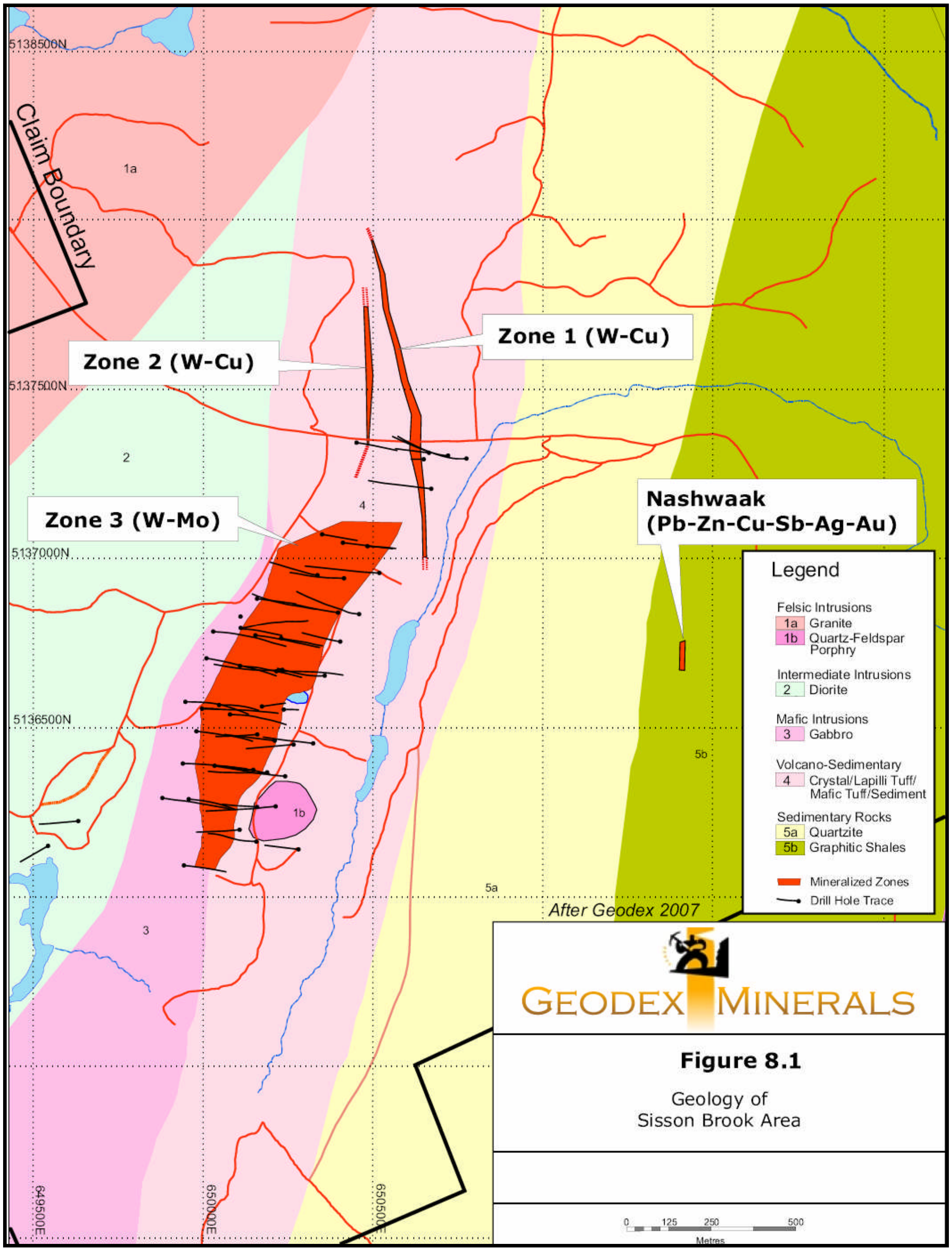
The Sisson Brook Zone III deposit is recognized as part of a larger mineralized area defined by the spatial extent of the combined Zone I, Zone II and Zone III deposits (Figure 8.1). As reviewed earlier in this report, these three zones were originally defined through core drilling carried out by Kidd Creek in the 1979 through 1982 period, and Zone III has been the primary focus of Geodex drilling in 2005 and 2006. Geological and geochemical aspects of the three zones were addressed in detail by Nast and Williams-Jones (1991) who also reviewed potential genetic deposit models for the styles of mineralization represent. Several features of W-Mo-Cu mineralization at Sisson Brook bear strongly on assessment of genetic models, prominent among these being that mineralization is multi-stage, but predominantly vein and fracture associated and clearly superimposed on host rocks that include gabbro as well as a steeply dipping to vertical sequence of interbedded mafic and felsic volcanics and metasedimentary rocks.

Mineralization occurs within two distinct, but spatially superimposed, alteration systems, the first being hornblende amphibole-albite-magnetite and the second being potassic and represented by both biotization of amphibole and K feldspar alteration of plagioclase. Nast and Williams–Jones (1991) documented the spatial aspects of these envelopes and showed that intensity of both increases concentrically toward a focal point centered on the area of Zones I, II and III, (3) all mineralized zones occur within the contact metamorphic aureole of the Nashwaak granite and are spatially associated with feldspar-quartz-biotite porphyry dikes that are interpreted to reflect presence of a buried porphyry plug beneath the Sisson Brook area. The vein–associated Nashwaak Pb-Zn-Ag-Cu prospect located southeast of Zone III may be of similar provenance.

In light of the above, and in combination with detailed assessment of geochemistry of both mineralized zones and granitic and granodioritic rocks of the area, Nast and William-Jones (1991) concluded that W-Mo-Cu mineralization at Sisson Brook was hydrothermally developed in association with emplacement of a granite-related porphyry system beneath the area. Furthermore, the hydrothermal system was considered to be low in fluorine and to have been characterized by relatively low water-rock ratios. The porphyry system assignment is consistent with other views of regional magmatic evolution in central and southwestern New Brunswick and provides a metallogenic link to other granite-related polymetallic deposits such as Mount Pleasant (Sn-W-Mo-Id-Bi) Burnt Hill (W-Sn-Mo), Lake George (Sb-W-Mo-Au) and various lesser prospects and showings (Thorne et. al., 2006).

For purposes of this report, the Zone III W-Mo deposit and the related Zone I W-Cu and Zone II W-Mo-Cu deposits are considered members of the granite-related porphyry W-Mo-Cu class of polymetallic mineral deposits. Their affinity with hydrothermal-magmatic evolution of the regionally extensive granitoid bodies of the Mirimichi Zone is assumed.

Figure 8.1 Geology of Sisson Brook Area



9.0 MINERALIZATION

As currently defined, the Sisson Brook property contains three separate zones of W-Mo - + Cu mineralization that have been investigated by diamond drilling. These are believed to be related to the same Devonian granite-related porphyry style mineralizing system, with differences between them in respect to character of mineralization being attributable to host rock physical and chemical characteristics and both spatial and temporal positions within the causative hydrothermal system. While only one of the three mineralized zones is the focus of the current resource estimate (Zone III), it is helpful to consider general characteristics of all three. Figure 8.1 illustrates relative locations of the three zones and characteristics of each are presented below under separate headings (Mercator 2007).

9.1 ZONE I

Zone I is the most northerly of the three zones at Sisson Brook and was the first to be discovered and drilled. Mann (1981, 1982) described mineralization in Zone 1 as consisting of a mineralized quartz vein system trending 170 azimuth and dipping 80 to 85 degrees to the west. Multiple quartz veins ranging in width from less than a centimetre to a meter characterize the zone within a broader envelope of sericitization and silicification. The zone has been identified along 800 m of strike length and width is noted as ranging between 2 m and 36 m. The main minerals of economic interest in Zone I are wolframite and chalcopyrite and mineralized intercepts for angled drill holes through the thickest sections of the zone returned values such as 0.25% Cu and 0.187% WO3% over 48 m (hole SSN-1 between 36 m and 48 m down hole). Within this broad intercept discrete zones of higher grade veining are present, such as 3 m between 45 m and 48 m down hole grading 0.55% WO3% and 0.57% Cu. Host rocks at Zone I consist of altered volcano-sedimentary lithologies of the Porten Road Formation that strike north-northeast and dip steeply east. Nast and Williams-Jones (1991) provided further discussion of Zone I in the context of mineralized vein set paragenisis and noted that two north-northwest trending and steeply dipping fracture systems separated by about 20 degrees in azimuth control mineralization in this area. Veins are oriented obliquely to bedding and were interpreted as representing a late stockwork system.

9.2 ZONE II

Zone II is located approximately 100 m west of Zone I and is noted by Mann (1982) as also striking 170 azimuth and dipping steeply to the west. The zone is hosted by silicified volcano-sedimentary rocks of the Porten Road Formation, but has been tested by only four diamond drill holes to date. Three of these were completed by

Kidd Creek and Mann (1982) reported occurrence of weak pyrrhotite, wolframite and chalcopyrite mineralization. Trenching in an area south of the drilling outlined chalcopyrite scheelite and wolframite mineralization in quartz vein systems similar to those described for Zone I and it is likely that these two zones are similar in overall style. Potential of the zone is demonstrated by a 35.72 m intercept grading 0.29% Cu and 0.10% WO3% between 9.28 m and 45 m down hole in drill hole SSN-4. Geodex completed one drill hole on this zone in 2006 and confirmed the earlier observations with respect to bedrock mineralization.

9.3 ZONE III

Zone III is the largest and now best-explored of the three mineralized zones at Sisson Brook. The zone is located approximately 1 km south of Zone I and occurs as a complex system of vein and fracture associated mineralization, centered along the vertically dipping, north-northeast striking contact between a gabbro phase of the Howards Peak Granodiorite and adjacent stratified volcano-sedimentary sequence rocks of the Porten Road Formation. Mineralization present in this area differs from that to the north. Scheelite and molybdenum-bearing scheelite are the predominant tungstate minerals present and molybdenite is the other mineral of economic interest. Chalcopyrite is not a pervasively distributed phase, but is locally present in infrequent thin quartz veins (<50 cm thickness) or stringer sets that show polymetallic sulphide assemblages.

Results of drilling to date by both Kidd Creek and Geodex show the Zone III deposit to be in excess of 1 km in strike length and to reach up to 300 m in width at surface in its broadest area. The deposit is currently open along strike to both north and south and also down dip and may merge with the south extension of Zone II to the north. To the south, mineralized zone components appear to bifurcate and show overall thinning across strike.

Nast and Williams-Jones (1991) referred to Zone III as their Zone B and described in detail the distinctions between various stages of mineralization and alteration represented in the zone. Previously, Mann (1982) had reported initial descriptions of mineralization styles and established basic paragenetic relationships between metallic mineral assemblages and associated alteration assemblages. In contrast to the ubiquitous association of metallic minerals of economic interest in association with quartz stringers and veins in Zones I and II to the north, this occurrence style is augmented in Zone III by an earlier, extensive presence of scheelite and molybdenum-bearing scheelite in fracture stringer and vein associated sites characterised by well developed hornblende + albite + magnetite alteration and massive aggregations or clots of predominantly chloritized hornblende. Nast and Williams-Jones show that this style of mineralization and associated alteration displays a zoned distribution pattern that intensifies toward a hydrothermal focus broadly centered on the contact between the gabbro and volcano-sedimentary sequences to the east. These relationships are considered typical of the low fluorine, granite-related porphyry style deposit class to which the Sisson Brook deposits have been assigned (Figures 10.1, 10.2, 10.3, and 10.4)

Mineralization in Zone III is represented over a large area and clearly crosses major lithologic boundaries such as the contact zone between the gabbro complex and the volcano-sedimentary sequence to the east, this being a reflection of its epigenetic nature. Spatial distribution of WO3% and Mo within the Zone III deposit is not homogenous, however, and local WO3%/Mo ratios vary depending upon the host rock present and relative percentages of early versus later vein sets. As a general statement, early veining, represented by the VI and early V2 vein sets described by Nast and Williams-Jones (1991) have higher percentages of scheelite and molybdenum-bearing scheelite relative to late V2 and V3 vein sets that have proportionately higher levels of molybdenite. This relationship is manifested at the Zone III deposit scale by local presence east of the gabbro contact of tuff-hosted areas showing molybdenite enrichment relative to presence of scheelite or molybdenum bearing scheelite.

Metal grades associated with Zone III are dealt with in detail in section 17 of this report but it is important to note that the Zone III deposit incorporates a relatively large area of mineralized bedrock. Continuous core sampling results from Geodex drilling completed in 2005 and 2006 clearly exemplify this point, with an example being hole SB06-13 that intercepted 249 m grading 0.114% WO3% and 0.029% Mo between 41 m and 290 m down hole. While demonstrating a broadly mineralized bedrock section, this hole did not cross the entire width of the Zone III deposit.

10.0 EXPLORATION

In November 2004, Geodex entered into an agreement with Champlain to acquire a 70% interest in the Sisson Brook property then defined as exploration Licence No. 15088, that contains all three of the main Sisson Brook mineralized zones described earlier in this report. Subsequent to that time the company carried out induced polarization geophysical surveying, mapping, geochemical sampling and diamond core drilling programs on the property. A greater emphasis in 2005 was placed on none-Zone III areas of the property, with only two holes of a 1,219 m (9 holes) drilling program being completed on Zone III. The remaining holes tested other exploration targets in the area. Beginning in June, 2006 the company completed an additional 29 drill holes totalling 7,454 m of coring on the property with 28 of these, totalling 7,199 m of drilling being focused on Zone III. The remaining hole tested Zone I mineralization.

The 2005 and 2006 drill holes were successful in further delineating Zone III mineralization and in combination provide a major portion of the drilling data set used in both Mercator resource estimates for Zone III. In 2007 Geodex launched a major (~20,000 m) drilling campaign on Zone III that continued at the date of this report. Mercator included 17 initial holes from this 2007 program in its October 2007 resource estimate. Specifics of the various programs appear in report section 11.0, along with documentation of earlier drilling campaigns by Kidd Creek.

Geodex exploration holdings in the Sisson Brook area extend substantially beyond Licence 15088 that contains mineralized Zones I, II and III, but review and reporting with respect to work programs carried out by the company on such surrounding holdings were considered beyond the current terms of reference pertinent to preparation of the Zone III resource estimate. On this basis they were not assessed by Wardrop and are not presented herein.

Figure 10.1 Strongly altered gabbro showing chloritized amphibole alteration and quartz veining (Drill hole SB06-14)

Figure 10.2 Altered feldspar porphyry and gabbro with disseminated sheelite in gabbro indicated by yellow pencil marks (Drill hole SB06-14)

Figure 10.3 Altered mafic tuff with pyrrhotite, chalcopyrite and scheelite (yellow pencil marking) in quartz veining (Drill hole SB06-14)

Figure 10.4 Altered felsic tuff with molybdenite in quartz vein (Drill hole SB06-14)

11.0 DRILLING

11.1 GENERAL

Diamond drilling on the Sisson Brook property that has served to delineate W-Mo+Cu mineralization in Zones I, II and III was completed by two interests, these being Kidd Creek during the 1979 to 1982 period and Geodex in the 2005 to 2007 period. In the first case, 40 drill holes were completed in three campaigns and in the second, 38 holes were completed though 2006. The 2007 program continued at the report date, with 17 initial holes from this program, combined with those of the previous campaigns, being used in the October 2007 mineral resource estimate by Mercator. Company-specific details of all drilling programs are discussed below under separate headings.

In the first case, 40 drill holes were completed in three campaigns and in the second, 38 holes were completed in two campaigns. Combined results of 45 holes drilled within the Zone III by the two companies were used in the mineral resource estimate described in this report.

Company-specific details of all drilling programs are discussed below under separate headings. In each case, all associated information, including lithologic and sampling logs, assay results, collar survey data and down hole survey data was assembled from hard copy assessment reports filed with the New Brunswick government or from in-house data sets and reports provided by Geodex. Some digital compilation of historic drilling data was initially carried out by Geodex staff and both hard copy source documents plus the digital files of associated drill hole data were subsequently made available to Mercator for validation and resource estimation purposes.

Table 11.1 below provides a summary of drilling program information pertaining to both Geodex and Kidd Creek that was available for use in the October resource estimate by Mercator.

Table 11.1 Company – Specific Listing of Diamond Drill Holes on Zone

Company	Year	Drill Hole Series	No. of Drill Holes
Kidd Creek Mines Ltd.	1979	SSN-1 to SSN-11	11
Kidd Creek Mines Ltd.	1980	SSN-12 to SSN-23	12
Kidd Creek Mines Ltd.	1981	SSN-24 to SSN-32	9
Kidd Creek Mines Ltd.	1982	SSN-33 to SSN-40	8
Geodex Minerals Ltd.	2005	SB2005-1 to SB2005-9	9
Geodex Minerals Ltd.	2006	SB2006-2 to SB2006-30	29
Geodex Minerals Ltd.	2007	SB2007-1to SB2007-16; SB2007-21	17
Total			**95**

11.2 LOGISTICS

Ideal Drilling Ltd. (**Ideal Drilling**) provided contract drilling services for the 1979 through 1981 drilling campaigns and Petro Drilling Limited (**Petro**) provided services in 1982. In all cases, BQ size drill core measuring approximately 36.5 mm in diameter was recovered and Kidd Creek staff supervised on-site geological work and also carried out core logging, sampling, interpretive and reporting functions. The 2005 drilling program by Geodex was contracted to Maritime Diamond Drilling Limited (**Maritime**) of Hilden, Nova Scotia and recovered NQ size drill core measuring approximately 47.6 mm in diameter. In 2006 Maritime initiated the Zone III drilling program using two drill rigs, both recovering NQ size core. Slow production attributed to equipment failures prompted Geodex to contract Lantech Drilling Limited (**Lantech**) of Moncton, New Brunswick to assist in completion of the 2006 program. Lantech recovered NQ core and Geodex staff supervised all aspects of the project, including on-site supervision, core logging, sampling, interpretive and reporting functions. Lantech was retained by Geodex to carry out all 2007 drilling on the Sisson Brook property

With the exception of one track mounted drill rig operated by Maritime, conventional skid mounted drilling equipment was utilized in all instances. Kidd Creek programs were coordinated from the company's Fredericton exploration office and the later Geodex programs were also directed by staff operating out of that company's Fredericton office. Drill core from all programs completed prior to 2006 is stored at the New Brunswick Department of Natural Resources core storage facility near Sussex, NB. Core from 2006 and 2007 programs is held under secure storage by Geodex.

Drill hole collar locations for all Kidd Creek holes were originally surveyed and coordinated to Mining Lease survey pins in the area. Most of these in the Zone III area were re-located by Geodex in 2006 and subsequently re-surveyed along with all Geodex holes for the 2006 and 2007 programs. Universal Transverse Mercator (**UTM**) Zone 19 grid coordinates based on North American Datum 83 (**NAD 83**) were generated from this program and are reflected in the project drilling data base developed by Mercator for use in both Zone III resource estimates. Holes were typically tested for inclination and azimuthal variation using down hole survey instruments and this data was also incorporated in the project database for use in the model.

12.0 SAMPLING METHOD AND APPROACH

12.1 KIDD CREEK MINES LTD. PROGRAMS 1979-1982

Government assessment reports provided by Geodex were reviewed to identify core logging and sampling procedures applicable to the Zone III area drilling programs carried out by that company. These showed that drill core was logged by staff geologists who produced hard copy lithologic logs for each drill hole. Detailed information related to lithology, alteration and mineralization was systematically recorded in the logs along with complete records of core sampling and major analytical results. Core sample intervals were laid out by the logging geologists and sample intervals recorded on the drill log. All core was split and half core samples were submitted for analysis to Bondar-Clegg and Co. laboratories in Ottawa, ON. Reports do not specify details of actual sample handling, tagging or shipping protocols, but standard tagging of sample intervals in archived drill holes is apparent. While some core sample intervals were laid out based on visually determined mineralized zone limits or lithologic boundaries, with individual samples ranging from as little as 5 cm for well mineralized vein intercepts, most ranged between 2 m and 4.1 m in length. Continuous down hole sampling of drill core was not carried out in all holes, possibly due to lack of visible mineralization in certain areas.

12.2 GEODEX MINERALS LTD. PROGRAMS

12.2.1 2005 PROGRAM

Geodex staff was consulted with respect to determination of core logging and sampling procedures used during the company's 2005 drilling program and a review of related core logs and sample records was completed to augment the staff information. Standard Geodex practice was to have a staff geologist prepare detailed conventional core log descriptions and to mark core sampling intervals based on lithologic units and both intensity and style of observed mineralization and alteration. All core was split and half core samples were submitted for analysis to Activation Laboratories. Geologists used standard core sampling and tagging procedures. Sample records and drill logs were subsequently entered into digital spreadsheets to facilitate data handling and development of interpretive sections and plans. As was the case in previous programs, core sample intervals were laid out based on visually determined mineralized zone limits or lithologic boundaries, with individual samples ranging from as little as 12 cm for well mineralized vein intercepts, to a maximum length of 2.56 m. A 1.5 m standard sample interval was typically applied, however, and the majority of samples reflect this length. In contrast to the earlier programs, continuous down hole sampling of core was carried out to provide a more complete analytical record of bedrock metal distribution and grades.

12.2.2 2006 AND2007 PROGRAMS

Early in the 2006 drilling campaign Geodex retained Mercator to assist in development of revised core logging, sampling, security and quality assurance and control procedures for the company's Sisson Brook project. After onsite review and discussions with Geodex staff, a series of amendments to existing procedures were recommended by Mercator and ultimately adopted by Geodex. With respect to logging and sampling protocols, use of three tag sample record books was first instituted to provide a more efficient means of tracking and recording samples through the splitting and archiving process. A standardized 1.5 m core sample length to be used in conjunction with continuous half core sampling from the top of bedrock to hole bottom was also established. Where deemed appropriate by the core logging geologist, smaller sample intervals could be assigned within the continuous sample sequence if the presence of a high grade vein or other interval dictated that segregation of analytical values to a specific zone would be appropriate. A minimum sample length of 0.5 m was implemented for this situation.

Core logging and sampling were carried out at the Geodex logging facility located in Nackawic. The first step in this process was receipt of core from the field after which it was washed and prepared for an initial inspection under ultra-violet (**UV**) light to define major rock units and associated mineralized intervals. UV-fluorescent qualities of scheeelite and molybdenum-bearing scheelite were used in combination with observations of the visually more apparent molybdenite to provide a preliminary assessment of mineralization intensity. Core was then stacked for subsequent detailed logging and sampling. After logging by a staff geologist, but prior to sampling, all core was photographed using a standardized layout format and digital camera to provide a permanent pre-sampling record of core from each drill hole. At the same time continuous rock quality determinations (**RQD**) were recorded for all cores and entered into the digital project database.

Conventional core logging procedures were standardized through use of a project lithologic legend and lithocode system with log information entered directly into a spreadsheet based template that could be easily integrated into the digital project database.

Core splitting was carried out by Geodex staff using mechanical splitters for general use and a core saw where close inspection of mineralization or other features was required. Split samples were placed in pre-labelled plastic bags along with a corresponding sample book tag and then sealed and laid out for checking prior to insertion of quality control materials into the sample sequence.

13.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

13.1 KIDD CREEK MINES LTD. – PROGRAMS

Reports documenting the Kidd Creek drilling programs do not provide detailed descriptions of sample preparation methodologies, analytical procedures or security considerations. However, Mann (1982) reported on the first two items and it is assumed that similar procedures were in place for the earlier programs, reporting for which was prepared by the same author.

Bagged samples of half core material were shipped from Kidd Creek's Fredericton office to Bondar-Clegg laboratories in Ottawa, ON and upon arrival were subjected to standard rock preparation procedures that would have included jaw crushing and pulverizing. This produced a -200 mesh rock pulp that was used in subsequent analytical procedures. Assay quality analyses for WO3%, Cu, Ag, As and Bi were obtained for 1982 sampling with Cu, WO3%, and Ag assay quality analyses requested for earlier years. In addition to assay procedures, geochemical analyses for Pb, Zn, Ag, Mo, Bi, Au, As, Sb, and Sn were obtained for non-assayed samples in 1979 and 1980 with this suite changing to Cu,Pb,Zn, Mo, Ni, Ag, Bi, F and As in 1981 and subsequently to Cu, Ag, Bi Sb and Zn in 1982. Analytical and extraction details are only reported for the 1982 program and are summarized in Table 13.1 below. It is assumed that similar preparation and analytical procedures were used for samples from the drilling programs pre-dating 1982 but this was not confirmed.

Table 13.1 Analytical Methods Reported in Mann (1982) for Zone III Core Samples

Types	Element	Fraction	Extraction	Method
Assay	WO3%	-200 Mesh	Thiocyanate	Colorimetric
Assay	Cu	-200 Mesh	HF + HNO3	NS
Assay	Ag	-200 Mesh		Fire Assay
Assay	As	-200 Mesh	Na Peroxide Fusion	Idiometric Titration
Assay	Bi	-200 Mesh	HF + HNO3	Atomic Absorption
Geochemical	Pb, Zn, Bi	-200 Mesh	HNO3	Atomic Absorption
Geochemical	Mo	-200 Mesh	HNO3-HCL	Atomic Absorption
Geochemical	Sb, Sn	-200 Mesh	X-Ray Fluorescence	Atomic Absorption
Geochemical	F	-200 Mesh	Fusion	Specific Ion Electrode
Geochemical	As	-200 Mesh	HNO3-HCLO4	Atomic Absorption

* NS =Not Stated

No direct mention is made of sample or site security measures in the Kidd Creek report, but this is not unusual for the reporting period. For present purposes it is assumed that security measures consistent with industry standards of the day were in place during all of the 1979 through 1982 drilling programs.

13.2 Geodex Minerals Ltd. – Programs

Core samples from both the 2005 and 2006 drilling programs were placed in plastic sample bags, checked for sample sequence integrity and shipped by courier to Activation Laboratories Ltd. (**Actlabs**) in Ancaster, ON for analysis using the interleaved echo-planar imaging (**IEPI**) multi-element (Au plus 14) analytical package. Instrumental Neutron Activation Analysis (**INAA**) methods were used to determine Au, As, Ba, Sb, Hg, and W levels and Inductively Coupled Plasma (**ICP**) methods were used to determine Ag, Cd, Cu, Mn, Mo, Ni, Pb, Zn and S values after Aqua Regia digestion. Standard rock preparation methods of crushing, pulverizing to 95% minus 150 mesh and splitting prior to analysis were specified. This laboratory and methodology were used for all 2005 core samples as well as for initial samples submitted in 2006.

Early in the 2006 sampling program the IEPI protocol was reassessed by Geodex in consultation with Actlabs management to restrict the company's analytical protocol to Mo and W as the main metals of economic interest and to ensure that assay quality results were being provided at all times. As a result, the company changed its analytical protocol from IEPI to assay level determinations using INAA methodology. This served to specifically provide assay quality precision and accuracy for the range of W and Mo elemental concentrations of interest at Sisson Brook. Assay quality determinations were also requested to assess the earlier IEPI results and, based on these results, re-analysis of additional higher grade samples was completed to establish validity of results.

In addition to analysis of core by Actlabs, prepared check sample splits from the 2006 drilling program were analyzed by ALS Chemex in Vancouver, BC using the X-Ray Fluoresence Spectroscopy (**XRF**) Pressed Pellet method. This formed part of the Geodex quality control and assurance program, results of which are discussed in section 14 of this report. Table 13.2 provides a summary of sample preparation and analytical details associated with both the INAA and XRF packages used by Geodex to date.

Table 13.2 Analytical Methods used by Geodex for 2005 and 2006 Programs

Method	Laboratory	Fraction	Elements	Category
INAA and ICP	Actlabs	-150 Mesh	**W, Mo	Near Assay Quality
INAA	Actlabs	-150 Mesh	Mo	Assay Quality
INAA	Actlabs	-150 Mesh	W	Assay Quality
XRF	ALS Chemex	-150 *Mesh	W, Mo	Assay Quality
ME-XRF-05	ALS Chemex	-150 *Mesh	W, Mo	Assay Quality

*Prepared check sample split from Actlab coarse reject
** Plus Au, Ag, Cd, Cu, Mn, Ni, Pb, Zn, S, As, Ba, Hg, Sb,

A system of responsibility for security of drill core was implemented during the 2006 program that began at the drill site and continued through transportation to the sampling and logging facility and then onward through shipment of samples to the laboratory. At the drill site security of core was the responsibility of the contractor under direction of Geodex. Drill crews were instructed that only they and designated Geodex personnel were to access core at the drill sites and that core boxes should be covered immediately after drilling. Designated field transfer points were established at which responsibility for core security passed from the drilling contractor to Geodex. This was a matter of day to day arrangement between the drilling contractor's crews and Geodex personnel. The focus of site security was to ensure that core was not left in a location where it could be reasonably accessed by non-authorized persons. It was generally assumed that Geodex staff would transport core to the logging facility at Nackawic. Core delivered to the logging facility was placed in a secure location prior to logging and sampling and Geodex personnel were responsible for security of all core and samples at the logging facility. Only persons authorized by Geodex were allowed to view the core and the sampling facility was locked at all times when Geodex staff were not present. Prior to sampling, a digital picture of each core box was taken and archived for future reference. After core logging and sampling were completed, core boxes containing half-core archives were labelled with weather-proof aluminium tags and stored at the logging facility on pallets confined by steel strapping bands.

All 2006 split core samples were recorded on sample shipment forms, after checking against sample listings, and were placed in sealed plastic buckets for shipment to the selected laboratory. Details of the shipment were recorded, including date shipped, sample numbers, client account number, laboratory name and name of the individual responsible for preparation of the documents and security of the sample shipment preparation process. Samples were commercially shipped to Activation Laboratories in Ancaster, ON and indexed by Geodex. Subsequent to receipt of analytical data, sample pulps were retained at the laboratory for subsequent return to Geodex or other disposition.

Sample handling and analysis protocols for 2007 were the same as those used in 2006 with the exception that sample preparation was carried out at a laboratory facility operated by Actlabs in Fredericton, New Brunswick. Accordingly, logistical details of sample delivery to this facility differed from 2006.

14.0 DATA VERIFICATION

14.1 REVIEW AND VALIDATION OF PROJECT DATA SETS

Government assessment reports and internal Geodex files consisting of core sample records, lithologic logs, laboratory reports and associated drill hole information for all holes used in the Zone III resource estimate were reviewed by Mercator. Spot checking of digital records of drilling information used to create the resource estimate block model were manually validated against hard copy records. This consisted of back checking individual database lithocode entries against the source hard copy drill logs and assessing whether the lithocoding adequately represented originally logged rock types. Approximately 10% of all lithocoded drill hole intervals were checked in this manner and no substantial inaccuracies were detected. However, in several instances it was apparent that subjective assignments had been made with respect to lithocoding of some rock types. Fine grained rocks of mafic composition being coded to either mafic volcanic, mafic dike or gabbro lithocode categories are an example of this. To a lesser degree this had also occurred in applying Geodex lithocodes to the Kidd Creek drill log entries. While potential existed in such cases for miscoding of the lithology, no changes were made to the database in these instances. Drill hole intervals checked for lithocode validity were also checked for sample record and assay value validity against available source documents and the database was found to be in agreement with source records. This in part reflected pre-resource estimate use of automated validation routines that had detected several data entry errors associated with sample records, drill hole lithocodes intervals and both collar and down hole survey tables. All of these were addressed to establish a validated and functional drilling database.

14.2 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

14.2.1 *KIDD CREEK MINES LTD. - PROGRAMS*

Assessment reports documenting the Kidd Creek drilling programs do not specifically address QA/QC issues. No evidence was noted of independent certified standards being submitted with core samples nor is there any evidence of systematic submission of blank samples or systematic provisions for duplicate sample splits to be prepared and analysed. Mann (1982) reported on re-assays of WO3% for a collection of 67 original sample pulp splits from drill hole SSN-33, nine of which also had new assays reported for pulps generated from second splits of original sample reject materials. Review of the re-assay data set relative to original values showed that reproducibility is moderately good for samples with original WO3% results above

0.05% but relatively poor for samples with lower original values. Original split values are typically lower than re-assay values, but no explanation is offered for this trend. Mann (1982) considered the overall reproducibility of assay values between sample splits to be consistent and acceptable.

While the split discrepancy issue does not appear to have been clearly resolved, reproducibility of values at grade levels of economic interest is more acceptable than at low analytical levels. The entire drilling dataset from Kidd Creek cannot be properly assessed on the basis of results from this one drill hole, but the better reproducibility for sample pairs in the higher grade ranges suggest that such data is of reasonable precision. Laboratory QA/QC standards appear to have been generally relied upon by Kidd Creek to monitor precision and accuracy of analytical results and it can be assumed that Bondar-Clegg results met internal laboratory QA/QC standards of the day. On this basis, the Kidd Creek drilling results are considered to be of sufficient quality for use in the current Inferred Mineral Resource estimate. However, future re-analysis of additional samples from these drill holes should be carried out.

14.2.2 GEODEX MINERALS LTD. - PROGRAMS

OVERVIEW

During its 2005 drilling program, Geodex completed only 3 drill holes within the Zone III resource area described in this report. Through discussions with Geodex staff it was determined that analytical standards, blanks and duplicate sample analyses administered by Activation Laboratories in the course of the 1EPI analytical protocol were used to meet QA and QC requirements. Independent insertion of certified standards by the company was not carried out nor were in-house blanks inserted or duplicate analyses requested for sample splits. Comparison with results of Kidd Creek Mines drill core sampling results and subsequent 2006 results by Geodex showed that comparable grade ranges were exhibited for closely spaced drill holes from the three programs. This subjective comparison was assessed for current resource purposes by graphically comparing analytical results for 6 m composites from the 2005 program with adjacent 6 m composites from the preceding and subsequent programs across correlatable mineralized zones shown in corresponding grade cross sections. This comparison showed that while variance existed, results from the three data sets showed generally comparable values that allowed correlation of similar grade trends from hole to hole. On this basis, and in light of the internal laboratory generated and monitored QA and QC procedures, it was determined that results for the 2005 Geodex drill holes were of acceptable quality for use in estimation of the current Inferred Mineral Resource. It is recognized, however, that confirmation of this assumption through completion of a systematic re-sampling program of available coarse reject or half-core materials from both the 2005 program as well as the previously noted Kidd Creek drill holes should be completed during the course of the next exploration drilling program. This work should be prioritized for completion prior to any future definition of mineral resources in the Indicated or Measured resource categories.

In the main 2006 drilling program Geodex completed 28 holes within Zone III and 1 in Zone I. The company adopted a QA/QC program recommended by Mercator that included systematic insertion of Canmet certified analytical standards and blind blank samples in addition to preparation and analysis of duplicate split samples and submission of additional split samples to Chemex, an accredited third party commercial laboratory, as analytical check samples. More specifically, blind blank samples were inserted into the normal core sample sequence at a frequency of every 25th sample and sample tag books were pre-marked to ensure adherence to this system. Barren greywacke core supplied by Mercator was initially used for sample blanks but was subsequently replaced by barren sandstone sample material collected by Geodex. Two certified laboratory standards sourced from Canmet were used in 2006, these being Canmet MP-2 and Canmet BH- 1 and in 2007 these were augmented by inclusion of additional standards. Standard samples were inserted into the sample submission sequence by Geodex staff at nominal intervals of every 80 core samples in 2006 and 40 samples in 2007 and assigned sample numbers within the continuous sample record sequence. Since these standards were previously prepared, they were not blind to the receiving laboratory, but no recognition of their status or identity was included in sample support documentation submitted to the laboratory. Preparation and analysis of duplicate sample splits from every 30th core sample was also carried out during the 2006 and 2007 programs, with the duplicate analysis identified as such by the laboratory. A third sample split was also prepared from coarse reject of the same sample for submission to Chemex in 2006 and to Teck Cominco Limited’s Global Discovery Labs in Vancouver, B.C. in 2007, for purposes of independent check analysis of metal levels.

Certified Standard Program

Insertion of independent Certified analytical standards was not begun by Geodex until hole SB06-6 of the 2006 campaign, but insertion of blind blanks, analysis of duplicate splits and preparation of check sample splits was initiated with the first hole of the main 2006 drill hole, this being SB06-03. In total, 24 splits of the Canmet MP-2 certified standard and 22 splits of the Canmet BH-1 standard were analysed as part of the 2006 independent Geodex program. Actlabs also used these standards in their internal QA/QC program.

Table 14.1 presents descriptive statistics for 2006 drilling program standards. Generally good reproducibility of the certified values is evident for MP-2, with the exception of two samples that deviate substantially from accepted values of both Mo and W. Review of the analytical data set did not reveal an explanation for these discrepancies and adjacent core sample results in the analytical sequence do not show comparable deflections. Geodex investigation of the two samples also did not provide a definitive explanation of the deviation from accepted values seen in these two samples. Results for the BH-1 standard are acceptable, with the exception of one sample that stands out as reporting substantially lower than the certified value. A slight negative bias is also apparent for drill holes SB06-04 through SB06-1 1 during which only the 1EPI analytical procedure was initially being used. A subsequent review of data for this period by Geodex resulted in selective re-analysis by Actlabs using assay quality INAA procedures for W and Mo levels, resulting in an adjustment of the data base with the new assay quality data where necessary. Actlabs internal QA/QC protocols pertained to all re-analysed samples, and while independent certified standards were not systematically reinserted by Geodex for the re-analysis program, some split materials from previously submitted standards was re-analysed during the program and acceptably reflected certified values.

Based on the above, results of the certified standard program for the 2006 program are interpreted as showing that final analytical results from the 2006 drilling program by Geodex are acceptable for use in the October 2007 resource by Mercator. The analytical standard population for the additional 2007 drill holes used in the October resource estimate is discussed in Mercator (2007a), where it is concluded that these also define acceptable levels of reproducibility. On this basis, the initial 2007 drill core sampling data associated with these standards was deemed to be of acceptable quality for use in the October 2007 resource estimate by Mercator.

Table 14.1 BH-1 and MP-2 Certified Standard Descriptive Statistics(2006)

Parameter	MP-2 Standard (W)	MP-2 Standard (Mo)	BH-1 Standard (W)
Certified Value	0.658	0.281	0.422
Mean	0.643	0.265	0.399
Standard Deviation	0.039	0.060	0.042
Range	0.168	0.357	0.21
Minimum	0.528	0.0005	0.221
Maximum	0.696	0.358	0.431
Variation Coefficient	0.061	0.22	0.10
Confidence Level (95%)	0.017	0.025	0.019
Number	24	24	22

Blind Blank Sample Program

Blind blank samples were inserted by Geodex into the sample stream at a frequency of every 25th sample. Barren greywacke supplied by Mercator was used until being replaced by non-metamorphosed sandstone acquired locally by Geodex. In total, results for 233 blank samples were reviewed for the 2006 program combined with the initial 2007 program holes dealt with in the October 2007 resource estimate by Mercator. These results show that sample background values for the two materials are consistently repeated. This is interpreted as indicating that no systematic problem with respect to consecutive sample contamination from laboratory preparation procedures is present in the data set. Isolated divergent values may be attributable to original sample heterogeneity, field collection practices or a non-systematic laboratory sample preparation factor. Steps should be taken to further understand these contributing factors.

Duplicate Split Sample Program

Duplicate sample splits were prepared from coarse reject materials for every 30th sample submitted and these were analysed for W and Mo levels in addition to the original sample split. In total, 317 duplicate split pairs (including re-assay pairs) were reviewed for the October 2007 resource estimate by Mercator and determined to collectively show acceptable correlation. This was interpreted as indicating that precision of the combined 2006 and 2007 data was acceptable for use in the October 2007 resource estimate by Mercator.

Independent Check Sample Program

A check sample split was prepared from coarse reject material of every 30th core sample from the 2006 program and these were submitted to Chemex in Vancouver, BC for analysis of W and Mo values using pressed pellet XRF methods. In total, results for 168 samples were returned. While reasonable support is clearly apparent between the two sets of results, a variable discrepancy is also present, particularly at higher assay levels. In such instances Chemex values tend to underreport compared to those from Actlabs and this trend is evident in splits of both core samples and Canmet Certified standards submitted as part of the check sample program. Geodex investigated this discrepancy with Chemex and it was determined that while acceptable results were in many cases returned, the XRF analytical assay methodology used had not consistently and accurately measured the Mo and W levels in many of the submitted samples. On this finding, and in light of acceptable results of the Geodex QA/QC programs for both Certified Standards and duplicate sample splits analyzed at Actlabs for the 2006 program, it was determined that (1) while ALS Chemex data clearly supported Actlabs values over much of the analytical range represented by sampling, it could not be used for check sample purposes, (2) other Geodex QA/QC results combined with laboratory QA/QC results were sufficiently consistent and controlled to support use of the 2006 Actlabs data set for current resource estimation purposes. It was also determined that further study of the XRF question at Chemex would be required before use of the laboratory for routine or other W and Mo analyses could be considered.

Check samples for the 2007 program were submitted to Teck Cominco Limited's Global Discovery Labs in Vancouver, B.C. Results for the initial drill holes of the 2007 program used in the October 2007 resource estimate by Mercator had not been received by Geodex by the effective date of the resource estimate. As a result, no comment could be made on these samples by that date. While recognizing this as a limitation, receipt of acceptable results for all other elements of the quality control and assurance programs, as summarized above, were relied upon to categorize the data set used in the October 2007 resource estimate by Mercator as acceptable for that use. Check sample results for all 2007 drilling will be reported in the next resources estimate by Geodex that will include results of all 2007 drilling.

15.0 ADJACENT PROPERTIES

No adjacent properties as defined under NI 43-101 are pertinent to this report.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

In mid-2006, Geodex retained the services of Micron Geological Limited of Vancouver, BC to carry out an initial petrographic assessment of Sisson Brook Zone III mineralization. This project was designed to support planned metallurgical testwork by Process Research Associates, also of Vancouver, BC., on the same sample materials. Le Couteur (2006) reported on petrographic study of five sections of drill core reject materials consisting of six contiguous 1.5 m lengths samples selected from Geodex drill hole SB-06-03. Each sample represented a zone of known W-Mo, W or Mo mineralization that had been identified through drill core analysis by Geodex.

Results of the petrographic work confirmed that scheelite and molybdenite are the main minerals of economic interest and that trace element analyses did not reveal substantial levels of any other economically significant elements in the samples. However, small amounts of sphalerite, galena, chalcopyrite and wolframite were observed. Quartz, feldspar, amphibole, biotite-phlogopite and chlorite comprised the major rock forming minerals in the samples and their occurrence was deemed to be consistent between samples. Minor amounts of calcite, ilmenite, pyrite, pyrrhotite and arsenopyrite were also noted.

A study of scheelite grains in the samples showed that size varied substantially, from <0.025 mm to 2 mm, and observations on screened sample fractions showed that 80% to 95% of scheelite grains in the size range -0.86 mm to +0.25 mm were fully liberated from gangue or host rock particles. In contrast, less than 5% liberation of scheelite was reported for the +0.86 mm size fraction. Similar results were seen for molybdenite, where observed grain size varied from <0.025 mm to more than 4.0 mm and 80% to 90% liberation of the mineral was noted in the -0.86 mm to +0.25 mm sample fraction. This liberation trend was more strongly represented in heavy mineral concentrates that were also studied by Le Couteur (2006) and geochemical studies on the screened fractions showed that scheelite grain compositions predominated with only minor representation of powellite.

Results of the work outlined above provide a preliminary indication that good liberation of scheelite and molydenite from Zone III material may be possible after grinding to minus 0.86 mm grain size. This characteristic will be further assessed in on-going metallurgical studies conducted on behalf of Geodex.

17.0 MINERAL RESOURCE ESTIMATE

17.1 GENERAL

The definition of mineral resource and associated mineral resource categories used in this report are those recognized under NI 43-101 and set out in the CIM Standards. Assumptions, metal threshold parameters, capping factors and deposit modeling methodologies associated with this estimate are documented in Mercator (2007a) and are summarized below in report sub-sections 17.2 through 17.4.

17.2 GEOLOGICAL INTERPRETATION USED IN RESOURCE ESTIMATION

Zone III is the largest and now best-explored of the three mineralized zones at Sisson Brook, and occurs as a complex of mineralized quartz stringers, veins and stockworks as well as mineralized amphibole rich stringers, fracture fillings, aggregates and wall rock alteration selvage zones. Zone III is centered along the vertically dipping, eastern contact of a north-northeast striking Devonian gabbro body, with mineralization developed in both the gabbro and its host sequence of steeply dipping volcano-sedimentary rocks. Scheelite and molybdenum-bearing scheelite are the predominant tungstate minerals present in Zone III and molybdenite is the predominant molybdenum-bearing phase. Chalcopyrite, sphalerite, galena and arsenopyrite also occur locally in discrete, thin (<50 cm) quartz veins or stringers.

Nast and Williams-Jones (1991) referred to Zone III as their Zone B and described in detail the distinctions between various stages of mineralization and alteration represented in the zone. Previously, Mann (1982) had reported initial descriptions of mineralization styles and established basic paragenetic relationships between metallic mineral assemblages and associated alteration assemblages. In contrast to the ubiquitous association of metallic minerals of economic interest in association with quartz stringers and veins in Zones I and II to the north, this occurrence style is augmented in Zone III by an earlier extensive presence of scheelite and molybdenum-bearing scheelite in fracture associated sites characterised by well developed hornblende ± albite ± magnetite alteration and massive aggregations or clots of predominantly hornblende alteration. The same workers show that this style of mineralization and associated alteration displays a zoned distribution pattern that intensifies toward a hydrothermal focus broadly centered on the contact between the gabbro and volcano-sedimentary sequences.

Mineralization in Zone III is represented over a large area and clearly crosses major lithologic boundaries such as the contact zone between the gabbro complex and the volcano-sedimentary sequence. Spatial distribution of WO3 and Mo within the Zone

III deposit is not homogenous and local WO3/Mo ratios vary depending upon the host rock present and relative percentages of early versus later vein sets. As a general statement, early veining, represented by the V1 and early V2 vein sets described by Nast and Williams-Jones (1991) have higher percentages of scheelite and molybdenum-bearing scheelite relative to later V2 and V3 vein sets that have proportionately higher levels of molybdenite. This relationship is manifested at the deposit scale in Zone III by local presence east of the gabbro contact of tuff-hosted areas showing quartz stockwork associated molybdenite enrichment relative to presence of scheelite or molybdenum- bearing scheelite.

17.3 METHODOLOGY OF RESOURCE ESTIMATION

17.3.1 OVERVIEW OF OCTOBER 2007 RESOURCE ESTIMATION PROCEDURE

The October 2007 Zone III resource estimate (Geodex, 2007; Merctaor 2007a) is based on a three dimensional block model developed using Surpac © Version 6.01 modelling software. The model was based on composited results of 5916 drill core samples from a total of 63 separate drill holes completed on Zone III by Geodex and Kidd Creek. Prior to initiation of deposit modelling, a complete set of vertical cross sections through the deposit were produced from the project database. These were initially used to develop manual geological interpretations through the deposit at the nominal section spacing of 100 m. Drill holes from the Geodex 2007 program locally allowed further assessment of grade and geological features on the basis of 50 m spaced drill sections. Analytical results for core sampling were also represented on all interpreted geological sections and these were contoured manually for comparison with later model-derived grade distribution patterns.

After validation of the drill hole database, distribution statistics were calculated for contributing Mo and WO3 data populations after normalization of results to a common 1.5 m sample base. Frequency distribution and probability plots were prepared and based on these results; high grade capping factors of 1.2% for WO3 and 0.70% for Mo were established and applied. Distribution statistics were then calculated for the capped data sets. Continuous down hole grade composites measuring 6 m in length were generated based on capped sample results and these were subsequently used in the deposit block model.

The manually interpreted geological and grade distribution cross sections were initially used to assess large scale grade distribution trends within the deposit. This showed that WO3 grades were generally highest in areas within or near the gabbro body and that increasing influence of Mo was evident in tuff-hosted settings east of the gabbro contact. Dip continuity of higher grade metal trends was notable in near-vertical corridors in all rock types represented on these sections and comparisons between sections showed potential strike continuity of such corridors. In general, strike of the higher grade mineralized corridors was shown to be north to north-northeast trending (000 to 030 azimuth) and therefore broadly parallel to the trend of both the gabbro contact and the strike of the steeply dipping volcano-sedimentary strata east of the contact.

Subsequent to development and interpretation of cross sections, directional variograms were calculated for Mo, WO3 and Equivalent WO3 based on the 6 meter composite sample populations. Results of this program were then used to develop search ellipse orientation and range values for inverse distance squared grade interpolation within the deposit block model. After inspection of separate Mo, WO3 and Equivalent WO3 preliminary block models, wire-framed outlines of major lithologic units were developed to constrain both internal block grade assignments and rock density distributions. A peripheral limit to the deposit was established on the basis of interpreted assay and geological section trends and this was used to develop a three dimensional solid within which block assignment and grade interpolation were restricted.

After model constraints were set, tonnage and grade resource estimates for Equivalent WO3, Mo and WO3 were calculated at 0.025%, 0.075%, 0.125%, 0.175% and 0.225% Equivalent WO3 threshold values. Results of these estimations were represented in a series of cross sections and level plans cut through the block model and these were assessed against the manually developed geological and grade interpretation sections previously mentioned. An acceptable degree of correlation was evident and the results of the grade–tonnage estimation were used to define the final Zone III mineral resource estimate.

Report subsections 17.3.2 through 17.3.10 below provide further summaries of the resource estimation procedures and parameters noted above.

17.3.2 High Grade Capping Of Assay Values

Presence in the drilling data set of a restricted number of samples showing high Mo and/or WO3 grades was recognized during initial data processing and was evident in cumulative frequency curves and frequency distribution histograms. Such high grade outliers are not uncommon in assay populations with associated skewed grade distributions. They typically have little demonstrated continuity and represent a very small percentage of the total sample population. As such, they should not be allowed to skew the distribution of the broader data population and should be reduced or capped to a more appropriate value.

To determine capping factors for the Zone III data set all assays were first normalized to a 1.5 m base, this being the predominant sample interval for the Geodex drill programs. Review of cumulative frequency and probability plots for the normalized data resulted in capping values being set at approximately the 99.8th percentile (or 0.2% of the samples) for both tungsten and molybdenum. This corresponds to a 1.20 % cap for WO3 values and a 0.70 % cap for Mo values, based on 1.5 m sample support. Normalized assays were capped to these values and then weighted back to respective database sample widths prior to subsequent compositing. A subjective check on the applicability of the capping factors was carried out on the basis of logged geology and mineralization styles and it was concluded that 1.5 m intervals of Mo and WO3 mineralization at the capping grades were geologically reasonable, with potential to show both strike and dip continuity at such levels.

17.3.3 Compositing of Drill Hole Data and Statistics

Six meter down-hole composites of capped drill hole assay values were created for each drill hole, with this length nominally representing 4 times the predominant 1.5 m sample interval used in the 2006 and 2007 Geodex drill programs. No lithological constraints were initially imposed on the down-hole compositing, since mineralized vein and fracture sets were known to cross lithologic contacts at the scale of several sample lengths.

Descriptive statistics were calculated for the 6 m composites based on the capped datasets and results appear in Table 17.1 below. Distribution histograms, cumulative frequency plots and probability plots for the capped composites were also prepared to further describe the associated assay populations and appear in Merctaor (2007a). On the basis of this information, the capped data sets for Mo, WO3 and Equivalent WO3 were deemed suitable for use in development of the Zone III deposit block model.

Table 17.1 Mo, WO3 and WO3 Equivalent Statistics for 6 Meter Capped Composites

6 Meter Composite Grades			
Parameter	**Mo%**	**WO3%**	**WO3 E%**
Mean	0.019	0.066	0.123
Variance	0.001	0.005	0.018
Standard Deviation	0.033	0.074	0.134
Coefficient of Variation	1.72	1.12	1.09
Number	2265	2265	2265

17.3.4 Calculation of Equivalent WO3 and WO3%

WO3 was directly calculated from laboratory W values by multiplying the laboratory value by a factor of 1.26 and WO3% Equivalent values were then calculated for each of the 6 m composites used in the block model. Averaged monthly metal prices for the 37 month period beginning in January, 2004 were used to calculate a 2.97 (WO3) to 1 (Mo) ratio, which was then used to create metal equivalence values for WO3 based on the 6 m composite data sets. This factor was used originally used in the March 2007 resource estimate (Mercator, 2007) and retained for the October 2007 estimate (Mercator 2007a) due to continued applicability. As an example, Equivalent WO3% was calculated as WO3% + (Mo% x 2.97). Equivalent WO3% was used to define estimation thresholds for the current mineral resource and also used in the block model to depict trends of combined metal accumulation.

17.3.5 VARIOGRAPHY

The manually derived models of geology and grade trends in Zone III provided definition of a north-northeast (or south southwest) striking, near vertical control to metal distribution within the deposit. To further assess spatial aspects of grade distribution within the deposit, a series of directional variograms were calculated for WO3%, Mo% and Equivalent WO3%. These were assessed at 10° increments within a plane initially corresponding to the north-northeast striking and steeply dipping grade corridor defined in the manually developed geological interpretation and then along similar planes oriented between 355 aazimuth and 015 azimuth at various lag values. Several steep dip options were modeled. Capped 6 m composite data sets were used in all instances and promising variograms were assessed against a spherical model curve.

The best variogram results were obtained for Equivalent WO3 with a range of 200 m defined along an axis at 360 azimuth and plunging at +56°. A secondary axis of continuity was identified at 013 azimuth, plunging at -33.25° and showing a 200 m range. Variograms calculated across the strike of the main north-northeast grade distribution were not definitive and a minor axis range of 20 m oriented orthogonally to the major-secondary axis plane was assigned after review of down hole omidirectional variograms and consideration of the deposit geological model. Selected variograms are presented in Mercator (2007a).

17.3.6 SETUP OF OCTOBER 2007 THREE DIMENSIONAL BLOCK MODEL

Block model grid extents were defined as being from 649000 m East to 651250 m East and from 5135225 m North to 5137755 m North, using UTM Zone 19 (NAD83) grid coordination. The model also extends in elevation from minus 125 m to plus 455 m relative to sea level datum, with the nominal topographic surface at approximately 300 m in elevation. Standard block size for the model was 10 m x 10 m x 10 m and a minimum sub-block size of 5 m x 5 m x 5 m was permitted to better constrain the model along geological, topographic and peripheral solid limits. No block rotation was applied. The chosen block size was considered a reasonable approximation of a minimum mining unit that might be applicable in a hypothetical open pit development of a Zone III style mineral deposit.

Three major lithologic units were defined through wireframing of geological contacts within the block model area, these being, from west to east; (1) gabbro, (2) interbedded and variably foliated felsic lapilli tuff and tuff breccia, with associated, but subordinate, metasedimentary and mafic volcanic sections, collectively termed “augen schist”, and (3) felsic and mafic metavolcanics thinly interbedded with metasedimentary lithologies. These provided lithologic definition within the model and were also used to internally constrain individual block limits. Additionally, rock density factors used in the resource model were assigned on the basis of the lithologic unit solids. .

A topographic surface wireframe was established based on surveyed drill collar coordinates and a top of bedrock wire frame was also developed, based on overburden lithocodes in the drill hole database. The block model was constrained by the top of bedrock wireframe and otherwise by the peripherral deposit solid developed from cross sectional wireframes.

17.3.7 RESOURCE ESTIMATION

Inverse Distance Squared (**ID^2**) grade interpolation was used to assign block grades within the Zone III model based on the assumption that discrete corridors of higher metal grade were present within the deposit and that over-smoothing of values associated with these could be of concern. Search ellipse orientation and range values used in the estimation reflect trends previously determined through variography. The primary axis of the search ellipse trends 360 azimuth and plunges at + 56°, the secondary axis trends 013 azimuth and plunges at minus 33.25°, and the minor axis is oriented orthogonally to the plane containing these two. Ranges of 200 m, 200 m and 20 m apply to the three axes. The maximum number of composites used to estimate a block grade was set at 15 and the minimum number of contributing composites was set at 2. No constraint was applied to the number of drill holes allowed for block grade estimation and block discretization was set at 1 x1 x 1. Block model grades were estimated for WO3% and Mo% and Equivalent WO3%.

A complete set of block model cross sections at 100 m section spacing and block model level plans at 50 m elevation increments appear in Mercator (2007a).

17.3.8 MATERIAL DENSITIES

Density factors for major rock units encountered in the Zone III drilling were calculated by Geodex staff during 2006 and a total of 205 separate determinations were made using water emersion methodology. Resource blocks in the model were grouped into three broad lithologic categories for the purpose of density assignment, with these being (1) gabbro, (2) “augen schist” consisting of interbedded and variably foliated felsic lapilli tuff and tuff breccia, with associated, but subordinate, metasedimentary and mafic volcanic sections, and (3) felsic and mafic metavolcanics thinly interbedded with metasedimentary lithologies. As noted earlier, these major rock units were developed as wire-framed model solids to which corresponding density factors were applied. This allowed assignment of density values to individual model blocks based on surrounding lithology. Results of the Geodex density determinations were assigned as follows to the wire-framed major rock units: 2.77g/cm3 for augen schist, 2.87g/cm3 for gabbro and 2.77g/cm3 for the sequence of mixed mafic and felsic volcanic rocks with interbedded metasedimentary rocks.

17.3.9 Validation Visual Comparison To Geological Sections

Results of block modeling were compared on a section by section basis with corresponding manually interpreted geological and grade distribution sections prepared prior to model development. This comparison showed block model grade patterns to generally conform with the trend of steeply dipping to vertical major lithologic units and to locally transgress such unit boundaries. This is consistent with the recognized epigenetic character of WO3 and Mo mineralization in Zone III. Results of the visual inspection were considered to show an acceptable degree of consistency between the block model and the independently derived sectional interpretation.

17.3.10 Validation Comparison of Composite Database and Block Model Grades

Descriptive statistics were calculated for the drill hole composite values used in the block model grade interpolation and these were compared to values calculated for block model figures calculated at the 0.025% WO3 equivalent resource estimate threshold. The mean drill hole composite grades of 0.066% (WO3) and 0.020% (Mo) were found to compare favourably with corresponding grades of the block model, thereby providing a general check on the model with respect to the underlying assay composite population. Values for the two data sets are presented in Table 17.2 below and results of the comparison are interpreted to indicate that acceptable agreement exists between the data sets.

Table 17.2 Comparison of Drill Hole Composite Grades and Block Model Grades

Parameter	Deposit Grades At 0.025% WO3 Equivalent Threshold			6 Meter Composite Grades		
	Mo%	WO3%	WO3_E%	Mo%	WO3%	WO3_E%
Mean	0.020	0.059	0.118	0.019	0.066	0.123
Variance	NA	NA	NA	0.001	0.005	0.018
Standard Deviation	NA	NA	NA	0.033	0.074	0.134
Coefficient of Variation	NA	NA	NA	1.72	1.12	1.09
Number	NA	NA	NA	2265	2265	2265

17.3.11 Resource Category Definitions

Definitions of mineral resource and associated mineral resource categories used in this report are those recognized under NI 43-101 and set out in the CIM Standards.

17.3.12 Resource Category Parameters Used In Current Estimate

All mineral resources presented in the October 2007 estimate were assigned Inferred Mineral Resource status. This reflects consideration of various factors, including evaluation of grade distribution and continuity trends in both strike and dip directions within the deposit block model as well as review of drilling results and drill core lithologic correlations. In combination, these show that discrete zones of higher grade Mo and WO3 mineralization occur within the deposit and that these appear to be locally controlled by variations in frequency and spacing of mineralized veins, stringers, fractures, selvages and amphibole aggregations. The current block model reflects this through recognizable higher grade domains that conform to the preferred north trending, steeply dipping geometry reflected in the variogram analysis of the Mo, WO3 and Equivalent WO3 composites. Geological correlation and lithocoding are important aspects of increasing confidence in the deposit model and must be fully understood to define higher order resource categories. With this in mind, the 100 m spaced drilling section separation characterizing much of the drilling included in the October 2007 resource estimate is considered appropriate for Inferred resource category designations but too broad to provide the necessary degree of control for Indicated status in such areas. Notwithstanding this point, review of the initial 2007 in-fill drill holes included in the estimate has shown that strike continuity is largely confirmed by the more closely spaced holes and that upgrading of the Zone III resource to include Indicated and Measured categories after completion of the 2007 in-fill program is anticipated.

Results of the October resource estimate (Geodex, 2007; Mercator 2007a) are presented below in Table 17.3.

Table 17.3 *Mineral Resource Estimate for Sisson Brook Zone III – October 15, 2007 Effective Date

Resource Category	Equivalent W03 % Threshold	Tonnes	Tonnes (Rounded)	W03 %	Mo %	Equivalent W03 %
Inferred	0.025	290,784,224	290,800,000	0.059	0.020	0.118
Inferred	0.075	214,997,356	215,000,000	0.069	0.024	0.140
Inferred	0.125	109,039,490	109,000,000	0.084	0.032	0.179
Inferred	0.175	43,440,318	43,400,000	0.100	0.043	0.227
Inferred	0.225	15,836,218	15,800,000	0.121	0.054	0.281

*Notes: Mo and WO3 values capped at 0.7% and 1.2% respectively; WO3 Equivalent = (WO3% + 2.97*Mo %)

17.4 PREVIOUS RESOURCE OR RESERVE ESTIMATES

In March, 2007 Mercator prepared a mineral resources estimate for the Zone III deposit based on 45 historic and Geodex drill holes available at that time (Mercator, 2007). All resources were assigned to the Inferred category and considered compliant with the CIM Standards and NI 43-101. Results appear in Table 17.4 below:

Table 17.4 *Mineral Resource Estimate for Sisson Brook Zone III – March 28, 2007 Effective Date

Resource Category	Equivalent WO3% Threshold	Tonnes (Rounded)	WO3%	Mo%	Equivalent WO3%
Inferred	0.025	167,400,000	0.059	0.021	0.122
Inferred	0.075	126,300,000	0.069	0.025	0.143
Inferred	0.125	64,400,000	0.084	0.034	0.186
Inferred	0.175	28,900,000	0.098	0.045	0.233
Inferred	0.225	12,300,000	0.110	0.057	0.281

** Notes: Mo and WO3 values capped at 0.7% and 1.2% respectively; WO3 Equivalent = (WO3% + 2.97*Mo %)*

As reported earlier, Kidd Creek (Moore, 1980 in Mann, 1981) reported a mineral resource estimate for Zone I at Sisson Brook based on drilling results available to that date and results of this work are presented below in Table 17.5. The authors caution that this resource does not cover the current Zone III and was prepared prior to adoption of NI 43-101 and current CIM Standards. As such, it is not complaint with NI 43-101 or the CIM Standards and should not be relied upon.

Table 17.5 *Summary of Resource Estimate by Kidd Creek Mines Ltd.

Area	Resource Class	Tons (Rounded)	MoS%	WO3%	Cu%
Zone 1	"Drill Indicated"	7,500,000	---------	0.21	0.35

**Figures are historic in nature and not compliant with NI 43-101 or CIM Standards*

In March, 2006 Geodex disclosed results of an in-house Zone III resource estimate (Martin, 2006) for a "potential mineral deposit that is the target of further exploration" rather than a formal mineral resource estimate (Geodex Press Release March 24, 2006) and results of this work are presented below in Table 17-6. The authors note this qualification and caution that the estimate should not be considered a mineral resource or compliant with NI 43-101 or current CIM Standards. Geodex had previously prepared an in-house estimate for Zone II based on Kidd Creek data and reported 1,600,000 t grading 0.215 WO3 and 0.41% Cu. This estimate is also not complaint with the CIM Standards or NI 43-101 and should not be relied upon.

Table 17.6 *Summary of Sisson Brook "Potential Mineral Deposit" Estimate

Area	Resource Class	Tonnes (Rounded)	MoS2%	WO3%	Cu%
Zone III	Inferred	25,950,000	0.05	0.102	-

**Figures are not compliant with NI 43-101 or CIM Standards*

While recognizing that the 2006 estimate by Geodex did not meet reporting standards for mineral resources, consideration of these figures in combination with their unpublished support documentation, provided a useful introduction to grade distribution trends that are reflected in the current block model. Since the work was completed prior to initiation of the major drilling program by Geodex in 2006, substantially fewer drill holes and a smaller assay database were available for consideration at that time, resulting in smaller tonnage being defined.

With regard to the Mercator (2007) estimate, the substantial increase in deposit tonnage reflects a combination of factors, the most significant being (1) increase in deposit width in the well-mineralized northernmost part of the deposit by approximately 65 %, (2) extension of deposit strike length by approximately 100 m, (3) extension of down dip projections of mineralized zones and (4) expansion of block model search ellipse ranges and use of a peripheral deposit solid as a model constraint rather than a standard 100 m maximum block distance from associated composite parameter previously used. These changes reflect assessments based on the upgraded and expanded drilling data set.

18.0 RECOMMENDATIONS

Based upon results of data review and resource estimation studies presented in Mercator (2007a) the following specific recommendations were offered with respect to future resource estimation and deposit modeling programs:

Infill drilling within the current deposit limit should be continued at a nominal section spacing of 50 m along the deposit strike. Planning of holes to provide testing of the deposit at 50 m vertical elevation levels, where possible, is also appropriate. This will provide required confirmation of deposit grade distribution, geometry and continuity to support delineation of Indicated category mineral resources. Results of such work should also allow establishment of parameters for future definition of Measured category resources.

Core logging, sampling, site security and data handling protocols currently in effect should be maintained, including the RQD and expanded rock density and quality assurance and control programs currently being carried out by Geodex

An increasingly detailed geological interpretation and corresponding wireframe model should be created to better constrain future three dimensional block models. To support the above, particular emphasis should be directed toward (1) definition and correlation of sheared and faulted zones within the deposit and (2) establishment of a review process to flag and resolve any conflicting drill hole lithocoding or correlation issues at the earliest possible point .

Study of spatial distribution trends exhibited by WO3 and Mo values should be continued through incorporation of all 2007 infill drilling results. This will better qualify spatial characteristics of metal distribution and allow modeling of individual grade domains within future block models. This approach will also reduce potential masking effects attributable to metal equivalence values.

19.0 MINING OPERATIONS

19.1 INTRODUCTION

The objective of this Preliminary Economic Assessment or scoping study is to evaluate the open pit mining potential of the Sisson Brook Project

The process plant rate is 20,000 t/d.

Wardrop considers this study to be at a scoping level of accuracy, with the capital and operating cost estimates in the order of ±35%.

19.2 PIT OPTIMIZATION

Pit optimization was carried out in Whittle by using the Surpac block model provided by Mercator for Geodex to evaluate the potential for an open pit mine.

The Surpac block model provided consists of geology, grade (WO3 and Mo), and specific gravity attributes.

The Whittle program generated a set of optimum pit shells. The base case pit shell sets molybdenum pricing at CDN$25.3/lb, and tungsten pricing at CDN$9.4/lb, which is 80% of the three-year average price. These results are considered accurate to within ±35%. A detailed mine design is required to develop a more accurate cash flow analysis.

The following section summarizes the results of this economic analysis.

The mining, processing and G&A costs were based on Wardrop's experience in similar situations.

Pit optimization analyses refer to the best-case and worst-case scenarios. Operational constraints, such as berms and access roads, are not considered at scoping level. While the best-case scenario, which is based on cone-by-cone mining, is not 100 percent achievable, a detailed pit design would nonetheless provide the best opportunity to achieve near-best-case results.

In this analysis, the following assumptions have been made (Table 19.1):

Table 19.1 Pit Optimization Input Parameters

Parameters	Values
Block Dimension	10 x 10 x 10
Default Mass	2790 t/block
Unit of Mass	Tonne
Unit of Currency	CDN$
Slope Profile	45°
Reference Mining Cost	$1.3/t
Mining Recovery Rate	95%
Mining Dilution Factor	1.0
G&A	$1.09/t
Mill Recovery Rate of Molybdenum	85%
Mill Recovery Rate of Tungsten	70%
Base Case Price for Molybdenum	$25.3/lb
Sell Cost for Molybdenum	$1.18/lb
Base Case Price for Tungsten	$9.4/lb
Sell Cost for Tungsten	$0.62/lb
Discount Rate	8%
Milling Limits per Year	6,860,000t

19.3 PIT OPTIMIZATION RESULTS

Pit optimization with a stockpiling option is carried out for a different number of above break-even cut off grades. After a number of iterations, cut off grades of 0.037% for WO3% and 0.008% for Mo are found to be the optimum for NPV and IRR values.

With an average Mo price of US$21.60/lb and average WO3% price of US$8.00/lb (80% of last three-year average prices), the model indicates that an economic open pit with a 31 year mine life is possible . Note that the results shown in this section are optimized pit shells used for determining the most economic pit outline and do not include the effects of operational constraints. Due to the building of haul roads and other in-pit structures, the stripping ratio will slightly increase in the practical open pit design.

The optimisation results are presented below (Figure 19.1).

Figure 19.1 Pit by Pit Value and Tonnage Chart

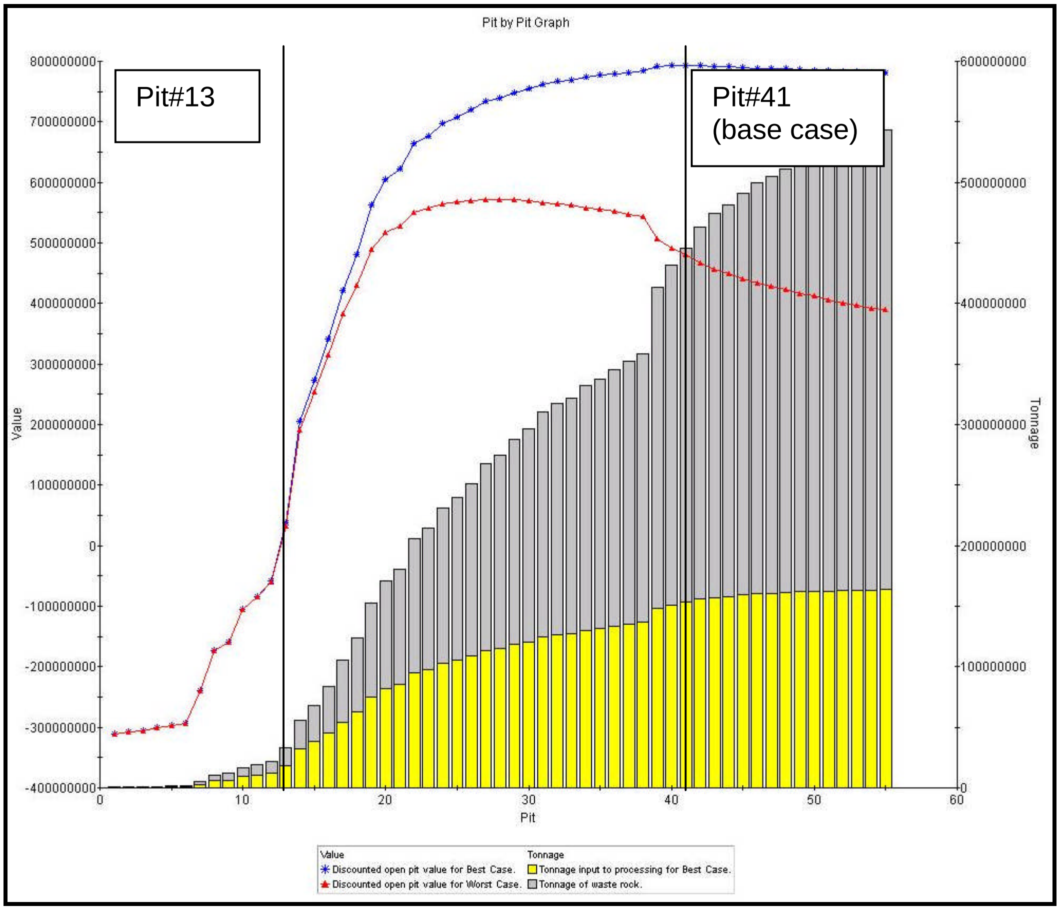


Figure 19.1 shows the number of pit shells generated by the Whittle on x-axis and the value and the tonnage of the waste and ore amount of the pit shells on y-axis, respectively. Each pit shell has a different molybdenum and tungsten price. For example, pit shell 1 has a Molybdenum price of CDN$7/lb and a tungsten price of CDN$2.6/lb. As the pit shell number increases the selling price of the metals increases proportionally. The base case pit shell (pit number 41), has a Molybdenum price of CDN$25.3/lb and a tungsten price of CDN$9.4/lb. As can be seen from the above chart, pit shells above pit number 13 (molybdenum price of CDN$11.06/lb and tungsten price of CDN$4.13/lb) has a positive NPV.

19.4 PRODUCTION SCHEDULING

Using the US$21.60/lb Mo pit shell introduced in the previous section, production scheduling has been done assuming the two scenarios.

The best case scheduling is based on maximizing NPV and mining cone by cone (Table 19.2 and Figure 19.2). The best case schedule consists of mining out pit 1, the smallest pit, and then mining out each subsequent pit shell from the top down, before starting the next pit shell. In other words, there are as many intermediate mining push-backs as there are pit outlines within the one we are mining.

The worst case scheduling is also based on maximizing NPV and mining bench by bench principle (Table 19.3). The worst case schedule consists of mining each bench completely before starting on the next bench.

Table 19.2 Best Case Production Scheduling

Year	Tonne Input	Waste & Stockpile	Strip Ratio	Grade Mo%	Grade WO3%	11-year Average Grade Mo%	11-year Average Grade WO3%
1	6,860,000	7,082,852	1.03	0.037	0.093	0.026	0.080
2	6,860,000	5,511,926	0.80	0.028	0.082		
3	6,860,000	6,932,834	1.01	0.024	0.076		
4	6,860,000	3,866,183	0.56	0.022	0.078		
5	6,860,000	5,652,181	0.82	0.027	0.085		
6	6,860,000	8,214,096	1.20	0.025	0.075		
7	6,860,000	10,372,882	1.51	0.026	0.078		
8	6,860,000	5,933,884	0.86	0.026	0.083		
9	6,860,000	7,624,639	1.11	0.022	0.077		
10	6,860,000	12,883,537	1.88	0.020	0.078		
11	6,860,000	7,247,917	1.06	0.026	0.079		
12	6,860,000	7,990,183	1.16	0.023	0.079		
13	6,860,000	18,198,784	2.65	0.020	0.075		
14	6,860,000	8,644,946	1.26	0.025	0.081		
15	6,860,000	14,701,563	2.14	0.024	0.079		
16	6,860,000	18,717,436	2.73	0.022	0.074		
17	6,860,000	17,663,768	2.57	0.023	0.076		
18	6,860,000	18,746,585	2.73	0.023	0.075		
19	6,860,000	17,714,830	2.58	0.022	0.069		
20	6,860,000	37,381,148	5.45	0.020	0.063		
21	6,860,000	20,220,356	2.95	0.017	0.060		
22	6,860,000	18,614,257	2.71	0.021	0.064		
23	6,860,000	12,302,146	5.03	0.020	0.067		
24	6,860,000	Stockpile feed		0.023	0.026		
25	6,860,000			0.023	0.026		
26	6,860,000			0.023	0.026		
27	6,860,000			0.023	0.026		
28	6,860,000			0.023	0.026		
29	6,860,000			0.023	0.026		
30	6,860,000			0.023	0.026		
31	1,204,897			0.023	0.026		

Figure 19.2 Best Case Production Scheduling Chart

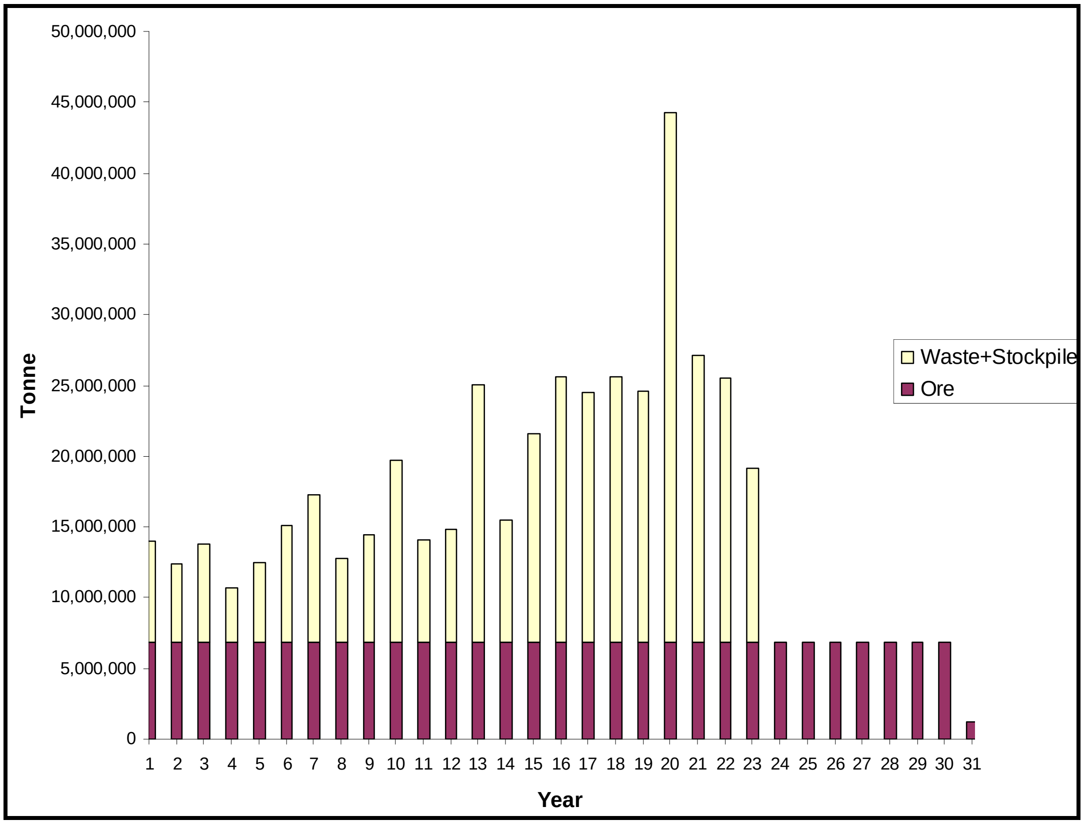
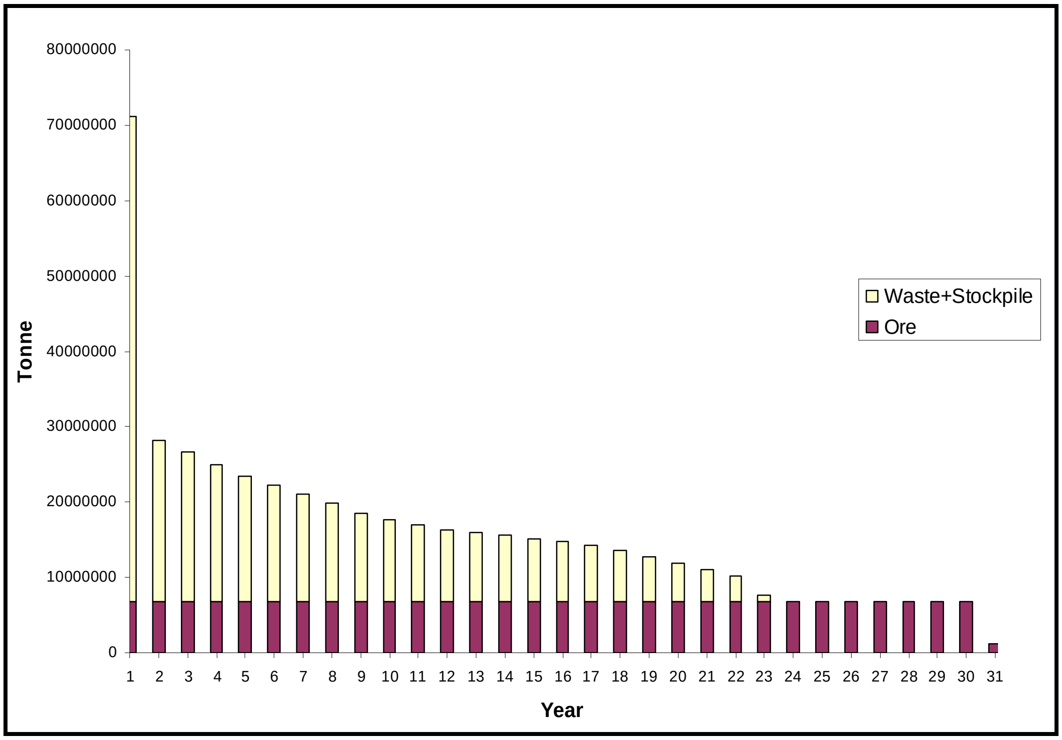


Table 19.3 Worst Case Production Scheduling

Year	Tonne Input	Waste & Stockpile	Strip Ratio	Grade Mo%	Grade WO3%
1	6,860,000	64,390,456	9.39	0.021	0.076
2	6,860,000	21,312,536	3.11	0.021	0.076
3	6,860,000	19,761,522	2.88	0.021	0.076
4	6,860,000	18,068,763	2.63	0.021	0.075
5	6,860,000	16,619,152	2.42	0.022	0.075
6	6,860,000	15,371,758	2.24	0.022	0.075
7	6,860,000	14,268,835	2.08	0.022	0.075
8	6,860,000	12,984,723	1.89	0.022	0.074
9	6,860,000	11,698,545	1.71	0.022	0.072
10	6,860,000	10,842,364	1.58	0.022	0.072
11	6,860,000	10,136,579	1.48	0.022	0.072
12	6,860,000	9,478,868	1.38	0.022	0.074
13	6,860,000	9,099,640	1.33	0.023	0.075
14	6,860,000	8,744,141	1.27	0.023	0.076
15	6,860,000	8,278,843	1.21	0.024	0.077
16	6,860,000	7,839,583	1.14	0.024	0.078
17	6,860,000	7,398,819	1.08	0.025	0.078
18	6,860,000	6,806,960	0.99	0.025	0.079
19	6,860,000	5,906,208	0.86	0.026	0.078
20	6,860,000	5,024,934	0.73	0.027	0.080
21	6,860,000	4,138,506	0.60	0.029	0.082
22	6,860,000	3,308,029	0.48	0.032	0.081
23	6,860,000	738,798	0.30	0.036	0.082
24	6,860,000	Stockpile feed		0.023	0.026
25	6,860,000			0.023	0.026
26	6,860,000			0.023	0.026
27	6,860,000			0.023	0.026
28	6,860,000			0.023	0.026
29	6,860,000			0.023	0.026
30	6,860,000			0.023	0.026
31	1,204,897			0.023	0.026

Figure 19.3 Worst Case Production Scheduling Chart



The best case 3D pit view over the mine life can be seen in Figure 19.4, Figure 19.5, and Figure 19.6.

Figure 19.4 Best Case 3D Pit View Year 1

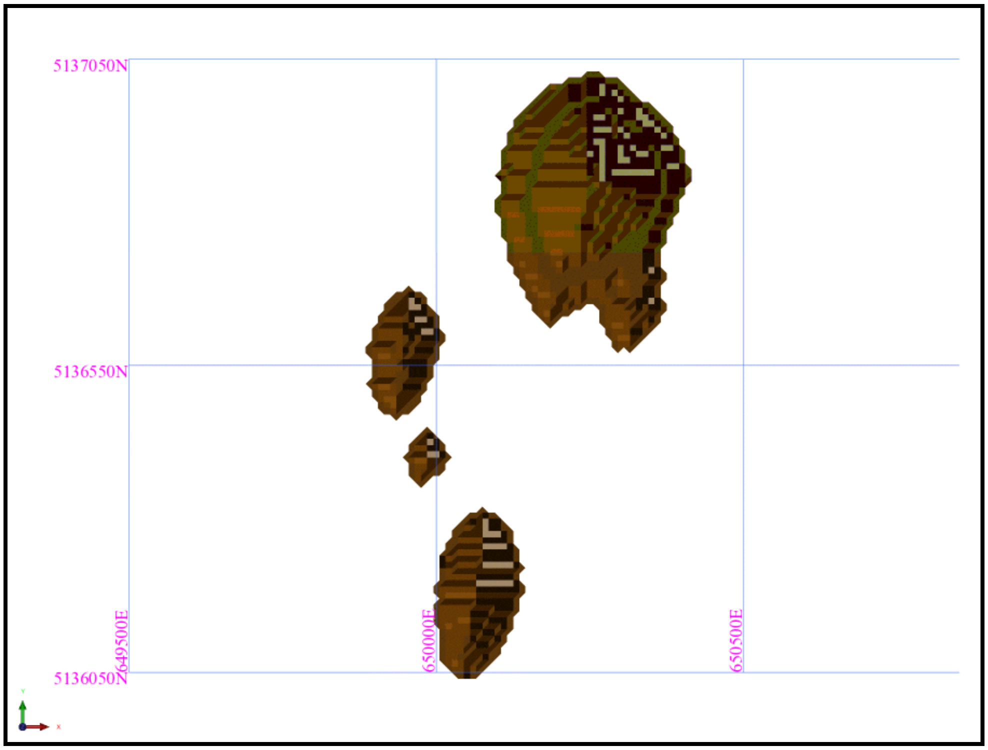


Figure 19.5 Best Case 3D Pit View Year 10

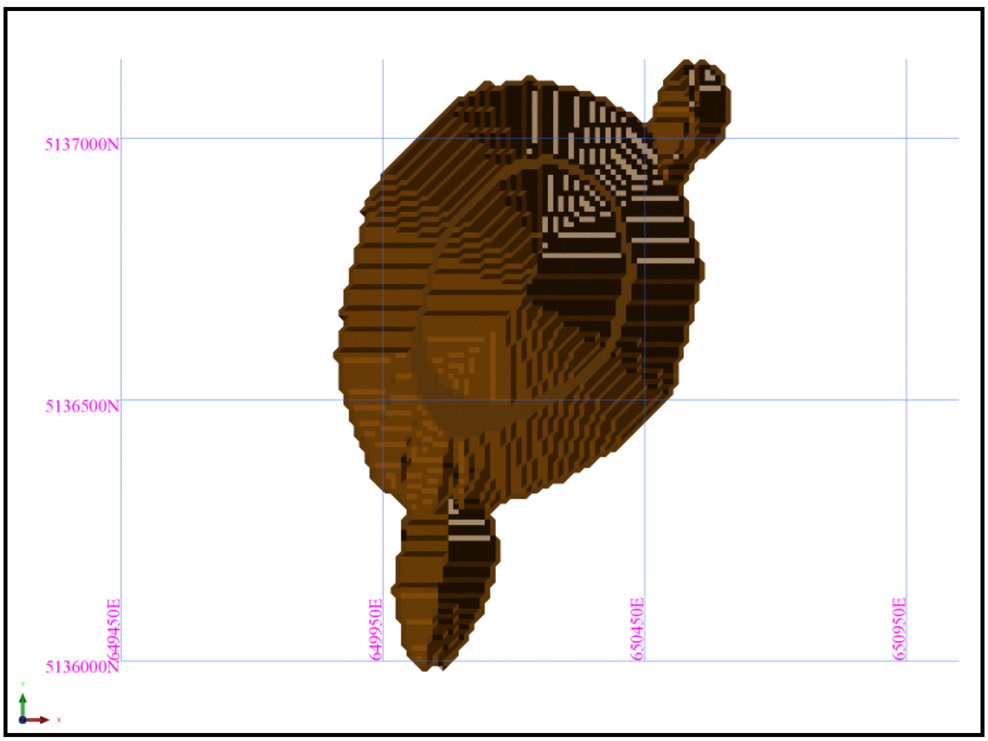
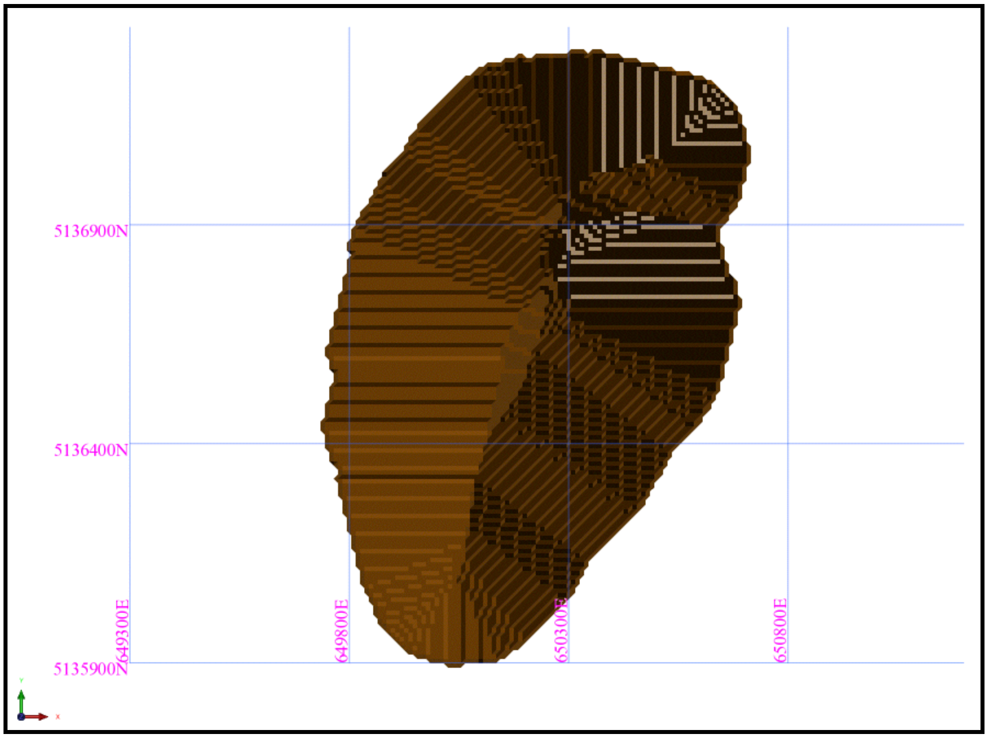


Figure 19.6 Best Case 3D Pit View Year 23



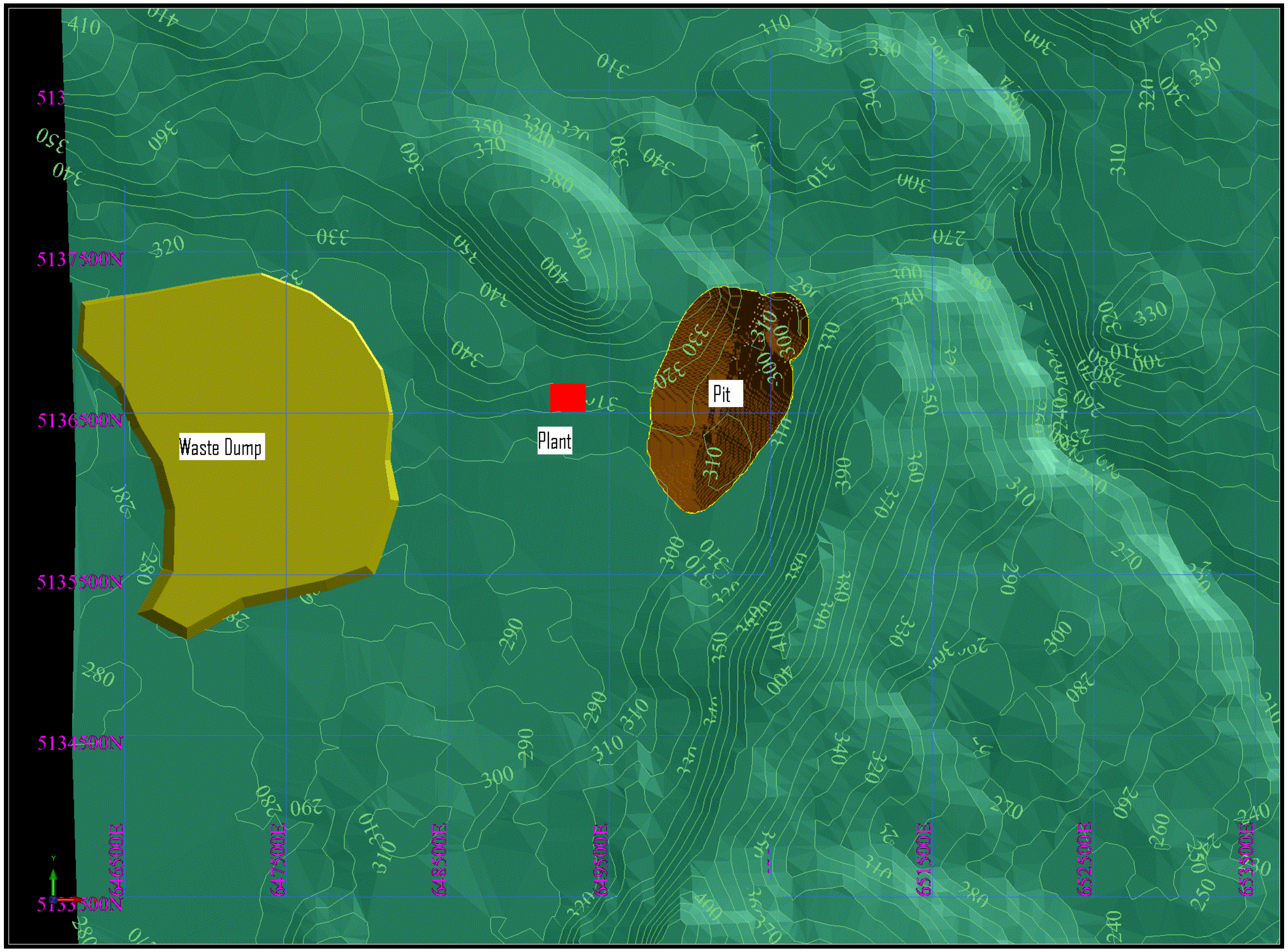
19.5 WASTE DUMPS

All the waste dump material is assumed to be non-acid generating for this scoping study, since there is nothing to be contrary indicated from work done to date.

The waste dump location is presented in Figure 19.7.

The waste dump is located on a relatively dry and flat area and angle is assumed to be 36^0. The maximum height of the waste dump is 50 m. For this scoping study, no roads or individual lifts are designed for the waste dump. Total volume of the waste dump is 80,000,000 m³ with a swell factor assumption of 30%.

Figure 19.7 Waste Dump Location



19.6 TAILINGS DAM

In selecting a potential tailings dam location, it is an advantage to use natural depressions or valleys to contain the tailings.

Three valley type tailings dams are proposed on the southwest side of the pit (Chainy Lakes) and plant location. The impoundment is located near the head of the drainage basin to minimize catchment and to minimize the cost of constructing surface water diversion structures.

The proposed site has the advantage of using a waste rock starter dam and building up as mining progresses. The final dams have 60 m height and the impoundment has a capacity of 121 Mm^3. At the end of operations, 100 Mm^3 of tailings will be deposited in the pond and the total number of free water will be 21 Mm^3, giving a final average tailings/water at an elevation of 357 m.

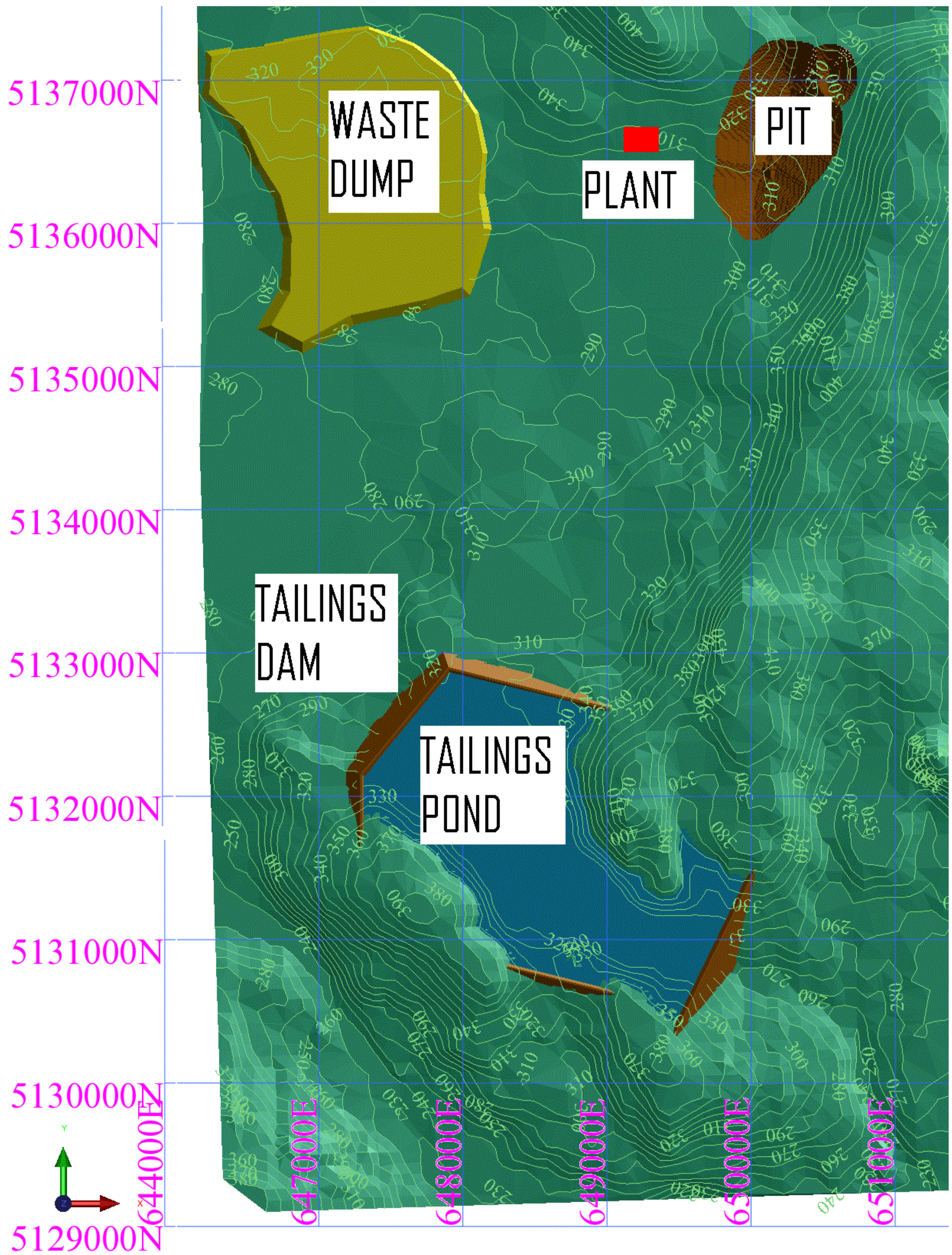
The dam construction material needed is calculated as 17.1 Mm^3 based on 15 m dam crest width and upstream downstream slope of 2H:1V and a 3 m freeboard.

There is enough borrow material around the valley for dam construction.

The proposed site needs to undergo a geotechnical site investigation.

The plant location has been assumed. No site evaluation was performed to determine the suitability of that location. Should ground conditions be favourable, this location offers a site that would be outside of the future mining and blasting limits expected for these pits and would provide downhill drainage for the tailings.

Figure 19.8 Tailings Dam Location



19.7 EQUIPMENT FLEET

From the economic point of view, most engineers' experience has been that once the production reaches higher than 40-50,000 t/d middle-sized equipment or larger should be selected. However, the middle sized or larger equipment selection is not realistic for the Sisson Brook open pit mine, because it is a small-sized mine, although its' daily production (ore and waste) is approximately 50,000 t/d in the first 10 years. For equipment selection, the production schedule and pit size, typical ramp width, bench height, mill location, distance between pit and dump (and mill) are used. The equipment fleet includes drills, excavation equipment and hauling equipment.

The equipment fleet is considered to be both electricity and diesel powered. This is due to the very close location of the project site relative to the power grid.

19.7.1 DRILLS

Drilling diameter is one of the most important parameters in the consideration of drills selection, which is determined with consideration of bench height. The planned bench height is 10 m, the same as the size of blocks. A suitable diameter matching the middle-sized mining bench should be less than 10 in. A larger hole diameter will cause a much higher powder factor and bad fragmentation. Table 19.4 tabulates the drill setting up from phase 1-4.

19.7.2 EXCAVATION EQUIPMENT

Two middle-sized shovels are selected to meet the requirements of daily production. However, two -three loaders are required; because they are easily moved, and very good for mucking out loosen material. In addition, four dozers are selected. Table 19.5 shows the equipment arrangement in the phase 1-4.

19.7.3 HAULING EQUIPMENT

The Caterpillar truck, one of most used hauling equipment in many surface mines of North America, is selected for the project. In Wardrop's experience, the Cat785 is 10% more effective than Cat777. If the Cat785 is selected, the ramp inside the pits and the road between pits and waste dump will be 100 ft or 30 m because the 150 t truck need more room on the ramp. It will cost much to build ramp, at the same time, negatively impact on ore mining. As the first priority, the 100 t truck Cat777 is selected. See Table 19.6

Another suggesting is made for the truck selection: if the crusher is located in the pits, two more trucks could be reduced in the phase1, phase2 and phase3, and one more truck is reduced in the phase 4.

Table 19.4 Drills Set Up in Phase 1-4

Drill	Phase 1 Year 1			Phase 2 Year 3-4			Phase 3 Year 5-20 (1 incr. in year 13)			Phase 4 Year 21-23 (1 incr. in year 20)		
No	m/y 10^3	h/y 10^3	Cum. Hrs. 10^3	m/y 10^3	h/y 10^3	Cum. Hrs. 10^3	m/y 10^3	h/y 10^3	Cum. Hrs. 10^3	m/y 10^3	h/y 10^3	Cum. Hrs. 10^3
D-1	144.48	5.160	11.20	144.48	5.16	20.64	100.00	4.50	63.0			
D-2	144.48	5.160	11.20	144.48	5.16	20.64	100.00	4.50	63.0			
D-3	144.48	5.160	11.20	144.48	5.16	20.64	100.00	4.50	63.0			
D-4							144.48	5.16	41.28	140.000	5.0	61.28
D-5										148.400	5.3	25.80

Table 19.5 Excavation Equipment Set Up in Phase 1-4

Shovel	Phase 1 Year 1-2			Phase 2 Year 3-4			Phase 3 Year 5-20 (4 incr. in year 13)			Phase 4 Year 21-23		
No	t/y 10^3	h/y 10^3	Cum. Hrs 10^3	t/y 10^3	h/y 10^3	Cum. Hrs. 10^3	t/y 10^3	h/y 10^3	Cum. Hrs 10^3	t/y 10^3	h/y 10^3	Cum. Hrs 10^3
Sh-01	8246	6.500	13.000	8246	6.5	26	8246	3	985			
Sh-02	8246	6.500	13.000	8246	6.5	26	8246	3	985			
Lo-01	1400	6.500	13.000	1400	6.5	26	1400	3	985			
Lo-02	1400	6.500	13.000	1400	6.5	26	1400	3	985			
Sh-03							8246	6.50	52	6340	5	72
Sh-04							8246	6.50	52	6340	5	72
Lo-03							1400	6.50	52	980	5	72
Lo-04							1400	6.50	52	980	5	72

Table 19.6 Trucks Set Up in Phase 1-4

Truck	Phase 1 Year 1-2			Phase 2 Year 3-4 (1 incr. in year 4)			Phase 3 Year 5-20 (4 incr. in year 12)			Phase 4 Year 21-23		
No	t/y 10^3	h/a 10^3	Cum. Hrs 10^3	t/y 10^3	h/y 10^3	Cum. Hrs 10^3	t/y 10^3	h/y 10^3	Cum. Hrs 10^3	t/y 10^3	h/y 10^3	Cum. Hrs 10^3
Tr-01	2400	7.6	1.52	2200	7	35	1.4	4.5	98.88			
Tr-02	2400	7.6	1.52	2200	7	35	1.4	4.5	98.88			
Tr-03	2400	7.6	1.52	2200	7	35	1.4	4.5	98.88			
Tr-04	2400	7.6	1.50	2200	7	35	1.4	4.5	98.88			
Tr-05	2400	7.6	1.52	2200	7	35	1.4	4.5	98.88			
Tr-06	2400	7.6	1.52	2200	7	35	1.4	4.5	98.88			
Tr-07	2400	7.6	1.52	2200	7	35	1.4	4.5	98.88			
Tr-08	2400	7.6	1.52	2200	7	35	1.4	4.5	98.88			84.6
Tr-09				2200	7.4	35	2.2	7.0	69.9	1.910	6.9	84.6
Tr-10							2.2	7.4	60.0	1.910	6.9	84.6
Tr-11							2.2	7.4	60.0	1.910	6.9	84.6
Tr-12							2.2	7.4	60.0	1.910	6.9	84.6

20.0 PROCESS METAL RECOVERIES

20.1 INTRODUCTION

The process description will be based on the annual design plant feed rate, i.e., Run-of-Mine (**ROM**) ore from the open pit, a treatment rate of 6,860,000 t/a, or 20,000 t/d, for 343 days per year. The selected unit processes are based on historical processing methods, as well as processing methods commonly employed at other mines recovering tungsten from the oxide mineral scheelite and molybdenum from the sulphide mineral molybdenite. In June 2007, a Gary Hawthorn conducted a limited amount of metallurgical testwork related to the recovery of tungsten and molybdenum on material from the Sisson Brook deposit. The testwork,performed at the Process Research Associates (**PRA**) laboratories in Vancouver, British Columbia (Hawthorn 2007), was of limited scope, and its results were not relevant to the design of the plant.

The metallurgical processing procedures selected, as indicated in the flowsheets, have been designed to enable the production of a saleable tungsten gravity concentrate product at a grade of 70% tungsten tri-oxide (WO3%), and a tungsten flotation concentrate at a grade of 50% WO3%. The processing procedures also enable the production of a saleable molybdenum flotation concentrate product containing 50% Mo. The life-of-mine average plant feed ore grade will be 0.063% WO3% and 0.024% Mo.

The unit processes selected for the recovery of the tungsten and molybdenum will involve conventional size reduction and mineral beneficiation methods. The plant tailings will be disposed of conventionally in the tailings pond facility. Water utilization will be based on maximizing the re-use of water as process water. Fresh water from the underground dewatering wells will be used for gland service, reagent preparation and the flushing water for the centrifugal gravity concentrators. Process water will be recovered from the tailings pond facility by reclamation of tailings pond water for recycling in the plant.

In the absence of metallurgical test data and results, a number of design parameters will be based on assumed information and best practice information. These items will be appropriately marked in the process design criteria.

The unit operations in the process plant will include the following:

- ROM ore dump pocket and reclaim
- primary crushing

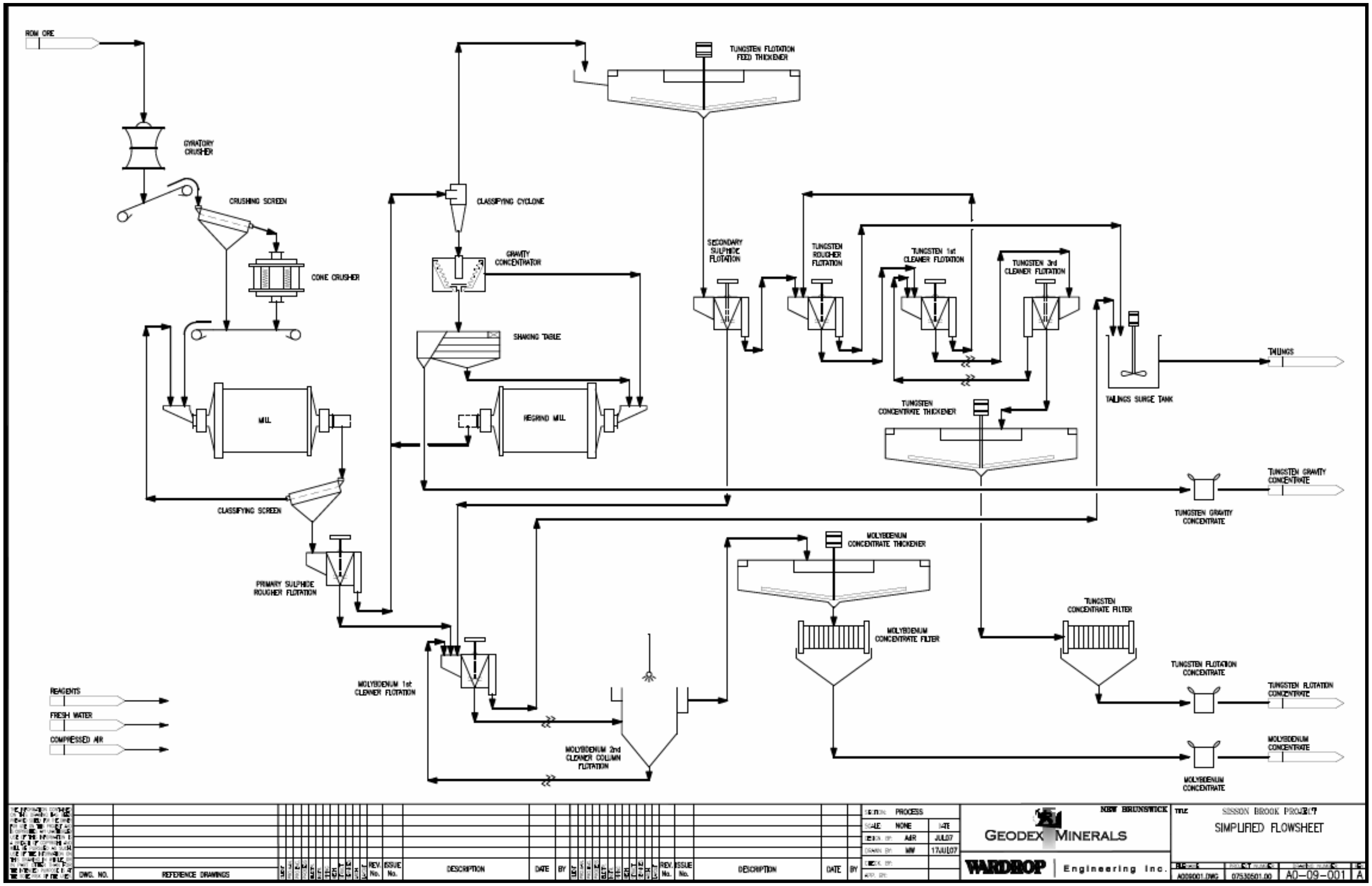
- stockpile for the primary crusher product/surge for the crushing circuit
- screening the secondary crusher feed
- secondary crushing
- screening the tertiary crusher feed
- tertiary crushing
- quaternary crushing
- rod mill grinding
- screen classification
- bulk primary sulphide rougher flotation
- cleaner stages of flotation producing molybdenite concentrate
- molybdenite concentrate thickening, filtration and dispatch
- cyclone classification of the sulphide flotation tailings
- gravity concentration of tungsten from cyclone underflow
- tungsten gravity concentrate collection, filtration and dispatch
- regrinding of the gravity concentration tailings
- secondary sulphide flotation
- tungsten flotation feed thickening
- tungsten rougher flotation
- cleaner stages of tungsten flotation
- tungsten flotation concentrate thickening, filtration and dispatch
- water reclamation from process thickeners
- tailings disposal by deposition in the tailings pond
- water reclamation from tailings pond
- fresh water circuit.

Overall and plant site details are included in Appendix A.

Figure 20.1 shows a simplified process flowsheet. The detailed process flowsheets are included in Appendix B, and refer to Drawings A0-09-002 to A0-09-011. The original equipment quantities chosen could be considered very conservative. Although the flowsheets indicate four cone crushers for both tertiary and quaternary crushing, only three have been included in the equipment costs, since three units in each circuit are deemed adequate. Similarly, although the flowsheets indicate four classification screens per grinding mill, only three will be included in the capital cost estimate units.

In respect to the enrichment circuit, the flowsheets show 1/3 more flotation cells, tables, and spirals than are included in the capital cost.

Figure 20.1 Simplified Flowsheet



At the conclusion of this section,

lists the process design criteria, which includes the sources of the information utilized to develop the process flowsheet. The design criteria are all based on the historical process information and best-available industry data. The design criteria incorporates vendor information has where applicable.

20.2 PLANT DESIGN

20.2.1 OPERATING SCHEDULE AND AVAILABILITY

The plant will be designed to operate on a two 12-hour shifts-per-day basis, 343 days per year.

The crusher plant availability will be 80%, while the grinding, gravity concentration and flotation circuit running time will be 95%. This will allow sufficient downtime for the scheduled maintenance of the equipment in the plant.

The plant feed rate will be 20,000 t/d, which will be delivered to the dump pocket.

20.2.2 ORE CHARACTERISTICS

The ore delivered to the plant is expected to have a specific gravity of 2.70 g/cm^3 and a bulk density of 1.75 t/m^3. The moisture content of the ore will be a nominal 5%.

The crushing/impact bond work index is assumed to be an industry-average value of 5.7 kWh/t; the rod mill bond work index is assumed to be 15.0 kWh/t, which is similar to the industry-average value of approximately 14.5 kWh/t. The abrasion index is assumed to be 0.26, also similar to the industry-average value.

The life-of-mine average head grade of the ore will be 0.063% WO3% and 0.024% Mo. These values were obtained from the production schedule of the proposed mining plan.

Three specific metal concentrates will be produced: a molybdenum flotation concentrate, a tungsten gravity concentrate, and a tungsten flotation concentrate. Table 5.1 shows the distribution of metal recoveries into the three respective concentrates, to be produced along with the respective assay grade values. Molybdenite losses in the tungsten concentrates, and tungsten losses in the molybdenite concetrate, have are not indicated since there has not been any testwork quantifying these amounts.

Table 20.1 Concentrate Recovery Distribution and Concentrate Grades

Metal	Concentrate: % Recovery			Concentrate: Grade, %		
	Molybdenum	Tungsten Gravity	Tungsten Flotation	Molybdenum	Tungsten Gravity	Tungsten Flotation
Tungsten	-	35.0	35.0	-	70.0	50.0
Molybdenum	85.0	-	-	50.0	-	-
Mass	0.034	0.030	0.042	-	-	-

The plant will be designed to produce the following amounts of concentrates: Molybdenite concentrate will at an average production rate of 2,455 t/a; tungsten gravity concentrate at an average rate of 2,166 t/a; and tungsten flotation concentrate at an average rate of 3,033 t/a.

20.2.3 PRIMARY CRUSHING

Ore from the open pit will be delivered to the primary crusher, and subsequently crushed to a suitable for feeding the cone crushers and screens. The primary crushing plant will be equipped with the following:

- gyratory crusher
- apron feeder
- conveyor belts
- dust collection system
- ore stockpile
- cranes.

The dump pocket, which will serve as the surge bin for the primary crusher, will take delivery of ROM ore from 200 t capacity haulage trucks. The ore will be fed to the crusher by dumping the ore directly from the trucks into the dump pocket. Provision will be made for ore to be dumped onto a temporary stockpile in the event of unscheduled crusher plant stoppages or breakdowns. To prevent oversize rocks from entering the feed hopper, the dump pocket will have a stationary grizzly equipped with 1,000 mm x 1,000 mm square apertures. A rock breaker will reduce any oversize rocks delivered to the plant. The dump pocket will have a nominal live capacity of 400 t, and the surge capacity in the dump pocket will ensure that a steady feed of ore will be provided for the gyratory crusher.

Primary crushing will be performed by a gyratory crusher, such as a Superior MK-II 48-74 or equivalent unit. The dump pocket will feed the gyratory crusher directly. The gyratory crusher will have a maximum feed opening of 1,000 mm, although the rock size will likely not exceed 500 mm. The gyratory crusher will crush the ROM ore to a rock size P_{80} of about 150 mm. The largest size of crushed rock will be about 200 mm. The crusher closed size setting will be 175 mm. The crushing rate will be about 1,046 t/h. Crushing will be done on a dry basis. The crushed material will be transferred by conveyor to a stockpile with a live capacity of 24,000 t, equivalent to the plant's single-day throughput.

20.2.4 SECONDARY CRUSHING

The secondary cone crusher will crush the gyratory crusher product to a suitable size for the subsequent tertiary and quaternary stages of crushing. The secondary crushing circuit will be equipped with the following:

- stockpile reclaim apron feeders
- conveyor belts
- cone crusher
- vibrating sizing screen
- metal detector
- belt magnet
- belt scale
- cone crusher dust collection system.

The crushed ore from the gyratory crusher will be discharged onto the conveyor feeding the ore stockpile. The crushed ore will be removed from the stockpile by two belt feeders, which will deliver the ore to the secondary crushing screen feed conveyor, feeding the secondary sizing screen ahead of the cone crusher. The sizing screen will be a double-deck vibrating screen. The top deck will have 25 mm apertures and the bottom deck will have 6 mm apertures. The vibrating screen will be 3,048 mm (w) by 6,096 mm (l). The crushing and screening operation will be conducted on a dry basis.

The screen undersize material — i.e., particles less than 6 mm in size — will be discharged onto the mill bin feed conveyor. Screen oversize material that is larger than 25 mm in size will be the feed material for the G5015, or equivalent, secondary stage cone crusher. The closed-side setting for the cone crusher will be 13 mm, which will result in a crushed ore P_{80} of 16 mm. The crushed ore from the cone crusher will be discharged onto a conveyor belt feeding the tertiary storage bin. A tripper will distribute the ore evenly throughout the tertiary storage bin. Four chutes will each feed a vibrating screen.

20.2.5 TERTIARY AND QUATERNARY CRUSHING

The tertiary crushing circuit will consist of vibrating screens which will size the material fed to the tertiary and the quaternary crushers. The main items of equipment in the tertiary and quaternary crushing circuit will be the following:

- conveyor belts
- vibrating sizing screens
- tertiary stage cone crushers
- quaternary stage cone crushers
- dust collection system.

The ore from the tertiary storage bin will be fed to three double-deck vibrating screens. A fourth screen and crusher are listed on the flowsheet, although three will likely be adequate for unit process. The screens will have a top deck of 25 mm, and the lower deck will have 6 mm apertures. The +25 mm material will be the feed for the tertiary cone crushers. Each tertiary cone crusher will be an HP800 shorthead crusher, or equivalent. The tertiary cone crushers will have a setting of 15 mm. The product from the tertiary crushers will be returned to the conveyor feeding the tertiary ore storage bin. The -25/+6 mm material will be discharged onto the conveyor belt feeding the quaternary storage bin. The -6 mm material will be discharged onto the mill bin feed conveyor.

The -25/+6 mm material will be conveyed to the quaternary storage bin, and a conveyor tripper will distribute the ore evenly across the quaternary storage bin. Three chutes will each feed a quaternary cone crusher — a fourth is once again shown on the flowsheet as a conservative measure. Each quaternary cone crusher will be an HP800 shorthead model, or equivalent, with a setting of 6 mm. The crusher product will discharge directly onto the mill bin feed conveyor. The mill feed bin conveyor will discharge the crushed material into one of four rod mill feed bins. A conveyor tripper will distribute the crushed material to the selected rod mill feed bin. The cone crusher production rate will be about 1,046 t/h. Each rod mill feed bin will have a live capacity of 5,000 t, which is roughly equivalent to the plant throughput for one mill for one day.

The tertiary screening/crushing and the quaternary crushing stages will both be conducted on a dry basis. A dust extraction system will control the dust generated by all the screens and the cone crushers. The dust collected by the system will be deposited onto the conveyor feeding the fine ore bin for subsequent processing.

20.2.6 GRINDING CIRCUIT

The grinding circuit will reduce the size of the crushed ore to the particle size required for the subsequent gravity concentration process. The grinding process will consist of four rod mills, each in closed circuit with classification screens. The grinding will be conducted as a wet process. The grinding circuit will be equipped with the following:

- conveyor belt feeders
- conveyor belts

- conveyor belt weigh scale
- rod mills
- mill discharge pumpbox
- classifying screen feed slurry pumps
- screen classifiers
- mass flow metre
- sampler system.

The four rod mill grinding circuits will be identical. The ore in each of the mill feed ore bins will be drawn out of the bin under controlled feed rate conditions using belt feeders. These feeders will discharge the material onto a conveyor belt feeding each mill. A belt scale will control the feed rate to each mill. Water will be added to the mill feed material to assist the grinding process. Process water will be used to dilute the feed to the density required for grinding, between 70 and 72%. Each mill will have a diameter of 4,570 mm and a length of 6,100 mm. Each mill will be equipped with a 1,865 kW motor and will operate at a critical speed of 72%.

The discharge from each mill flows into a mill discharge pump box. The slurry in the mill discharge pump box will be pumped to a set of classifying screens for classification. The screens selected for classification will be the Derrick Stacksizer screens. Each mill will require three 5-deck screening units. A fourth unit has been included in the equipment list, nominally as an operating spare, but this will probably not be required and has therefore not been included in the equipment cost. The cut size for the classifying screen will be at a size of P_{80} of 300 µm, and the circulating load will be 100%. The screen oversize will be returned to the mill feed chute as feed material and will have a pulp density of about 70%. The screen undersize from each mill circuit will be discharged into the primary sulphide flotation conditioning tank prior to the primary sulphide flotation process. The pulp density of the screen undersize slurry will be about 35% solids. Spray water will be added to the screens in order to assist with the screening/classification operation. The milling rate for each circuit will be 219 t/h of new feed. The feed rate to the primary sulphide flotation circuit will be 877 t/h, which amounts to the combined underflows from the classifying screens from each mill circuit.

Should the testwork program planned for 2007 deemed beneficial, provision will be made for the addition of flotation reagents to the grinding circuit prior to the flotation process.

Steel rods will be periodically added to the rod mills in order to maintain grinding efficiency and throughput. A rod charger will be used for this operation.

20.2.7 PRIMARY SULPHIDE AND MOLYBDENUM FLOTATION CIRCUIT

The milled ore will be subjected to the process of flotation in order to remove sulphide-bearing minerals, including molybdenite, from the ore. Conventional flotation cells will be used for the flotation circuit. The primary sulphide flotation will be equipped with the following:

- conditioning tank
- flotation reagent addition facilities
- sampling system
- rougher flotation cells
- cleaner flotation cells
- pumpboxes
- slurry and solution pumps.

The feed to the primary sulphide flotation circuit will be the combined screen underflow streams from the four classification screen clusters in the grinding circuit. The slurry will be conditioned in the primary sulphide conditioning tank at the design feed rate of 877 t/h. The sulphide conditioning tank will be equipped with an agitator sized for a retention time, or conditioning period, of five minutes. Flotation will be carried out at the natural pH value of the ore, and pH adjustment will therefore not be required. The collector reagent potassium alkyl xanthate (**PAX**) will be used together with the required amounts of the frother reagent, methyl-isobutyl-carbinol (**MIBC**). The collector reagent, as well as copper sulphate for the conditioning of particle surfaces, will be added to the conditioning tank. The frother will be added immediately prior to the conditioned slurry entering the first bank of flotation cells. The conditioned slurry will overflow the conditioning tank and feed the primary sulphide rougher flotation bank of cells.

The flowsheet shows the conservative equipment design, with approximately 1/3 more equipment in the flotation section. The amount of equipment listed in the text corresponds to the amount used in the cost estimate. This rougher bank consists of 8 flotation cells each of 70 m^3 in volume in order to afford the required retention time in the rougher circuit. Air injection will facilitate the flotation process. Sulphide minerals float into a bulk rougher sulphide concentrate. The primary sulphide rougher concentrate will be pumped to the molybdenum 1st cleaner flotation circuit. The primary sulphide flotation rougher tailings will be discharged to the regrind mill discharge distribution box which will split the flow into four streams leading to the individual regrind mill discharge pumpbox and gravity concentration circuit.

The molybdenum 1st cleaner flotation stage will serve to recover the molybdenite that has floated with the bulk sulphide material. Specific reagent addition prior to the cleaner stages will be provided for each stage. The concentrate from the molybdenum 1st cleaner circuit will feed a further four successive molybdenum cleaner stages, the final two of which will be column cleaner cells. The tailings from each molybdenum cleaner stage will be returned to the preceding cleaner stage. The concentrate from the final cleaning stage, molybdenum 2nd column cleaner cell, will report to the molybdenum concentrate thickener. There will be five molybdenum 1st cleaner flotation cells each with a volume of 15 m^3, four 2nd cleaner, three 3rd cleaner and three 4th cleaner cells each of 5 m^3 volume. The molybdenum 1st column cell will have a diameter of 1.2 m and a height of 4.8 m. The 2nd column cleaner will have a diameter of 0.7 m and a height of 2.8 m.

The tailings from the molybdenum 1st cleaner flotation stage will be pumped to the tailings surge tank for discharge to the tailings pond.

The collector reagents used in the primary sulphide flotation circuit will be copper sulphate as activator, and PAX as collector which will be added at the required dosage rates, with MIBC frother as required. Sodium cyanide may be required in the molybdenum cleaner flotation circuit for depressing the pyrite, but this will not be included in the design since its requirement not been confirmed by metallurgical testwork. Molybdenum flotation collector reagents have not yet been identified, but will probably include kerosene-type reagents.

Samplers will be installed to automatically sample the primary sulphide flotation feed and tailings streams for metallurgical accounting purposes. Sampling of some of the molybdenum cleaner stage circuit streams will be carried out for process control purposes.

20.2.8 TUNGSTEN GRAVITY CONCENTRATION AND REGRIND CIRCUIT

The tailings from the primary sulphide flotation stage will be distributed to feed four classification and gravity concentration circuits. The gravity concentration tailings will be reground in one of four rod mill regrind circuits. Each of the gravity circuits will be equipped with the following:

- pumpboxes
- sump and product pumps
- regrind rod mill
- classifying cyclone
- primary gravity concentration scalping screen
- continuous centrifugal concentrator
- primary gravity concentrate collection/surge tank
- gravity circuit sizing screen
- spiral concentrators
- fine and coarse fractions shaking table feed tanks

- table feed distribution box
- shaking tables
- gravity concentrate filter feed tank
- sampling system.

The primary sulphide flotation tailings will be pumped to a distribution box, which will split the flow into four streams for each of the regrind circuits. Each stream will be discharged into a pumpbox, which will feed a classification cyclone set to deliver a cut point of 37 micro metres (**µm**). The cyclone overflow from each stream will be discharged to the tungsten flotation thickener. Each cyclone underflow will have about 20% of the underflow stream diverted to constitute the feed to the tungsten gravity recovery circuit. The balance of the cyclone underflow stream will discharge into the gravity tailings pumpbox. The classification will be done using a cyclone cluster of five 250 mm diameter cyclones, of which three or four will be operational at any time. The cyclones have been designed to give a particle size cut-point of 37 µm.

The cyclone underflow material will be the coarse product — between 37 and 300 µm. A portion of the cyclone underflow, — 20% of the underflow stream — will be diverted to the centrifugal gravity concentrators for tungsten recovery. A scalping screen will remove oversize material from the feed to the concentrators. The centrifugal concentrator will be a CVD32, or other equivalent continuous type unit. The gravity concentrator tailings will be discharged to the gravity tailings pumpbox which will feed the regrind rod mill. The balance of the cyclone underflow material from each circuit will also be discharged into the gravity tailings pumpbox. The combined slurry will be pumped from the gravity tailings pumpbox to the regrind mill distributor box which will split the flows evenly among the four regrind mills.

The gravity concentrate from the centrifugal concentrator will be flushed into the primary gravity concentrators feed tank. This tank will be equipped with an agitator, which will act as a surge tank for the collection of all the gravity concentrate produced by the primary gravity centrifugal concentrators. The concentrate from the concentrate feed tank will be fed to a sizing screen. The flowsheet for the gravity cleaning portion of the circuit shows the conservative design. The equipment listed in the capital cost estimate matches the equipment discussed in this study, but is approximately 1/3 of the equipment on the flow diagram for the spirals and tables. The sizing screen will separate the coarse and fine material prior to further upgrading, also using gravity concentration methods. The screen will have 105 µm apertures. The screen underflow (i.e. the -105 µm material) will be discharged into a distribution box which will serve as the feeder tank for seven fine spiral concentrators. The screen overflow (i.e. the coarse +105 µm material) will be discharged into a distribution box feeding the coarse spiral concentrators. Water will be added to the spiral concentrators as required. The tailings from both spiral circuits will be discharged into the gravity tailings pumpbox. The concentrate from the fine spiral concentrators will be collected in a surge tank, or the fine table feed tank. This agitated tank will feed the distribution box controlling the feed to two streams, each stream having two shaking tables to upgrade the spiral concentrate. For each of the two streams, the first table will serve as the rougher table with the second table cleaning the rougher concentrate to produce the final grade gravity concentrate. Tailings from the second table will be returned to the first table. Tailings from the first table will be discharged to the gravity tailings pumpbox, and will then be pumped to the regrind circuit. The coarse fraction gravity circuit will be the same as the fines fraction gravity circuit as described above. The final table concentrate from both the fines and coarse circuits will have a final grade tungsten concentrate of 70% WO3%.

Samplers will be installed to automatically sample the primary sulphide flotation feed and tailings streams for metallurgical accounting purposes. Sampling of the molybdenum cleaner flotation circuit streams will be carried out for process control purposes. Similarly, sampling of the gravity streams will be conducted for process control, and for metallurgical accounting purposes.

Each regrind mill will be a rod mill with a diameter of 4,570 mm and a length of 6,100 mm. It will be equipped with a 1,865 kW motor. The circulating load in each regrind circuit will be 300%.

20.2.9 TUNGSTEN FLOTATION CIRCUIT

Tungsten recovery by flotation will be conducted on the finely milled ore following sulphide mineral removal by flotation. The equipment required in this section includes the following:

- flotation feed thickener
- process water handling system
- thickener underflow slurry pumps
- sulphide flotation conditioning tank
- sulphide rougher flotation cells
- tungsten flotation conditioning tanks
- tungsten rougher flotation cells
- tungsten cleaner flotation cells
- concentrate pumps
- pumpboxes
- sampling system.

The regrind classification cyclone will separate the fine sized material at -37 µm and this will be the feed to the tungsten flotation feed thickener. The thickener will thicken the cyclone overflow material from about 15% solids, to about 35% solids, which is more suitable for the subsequent flotation steps. Flocculant will be added to the thickener to aid the settling process. Thickener overflow solution will be recycled within the tungsten flotation circuit as required, and excess solution will be pumped to the process water tank for re-use throughout the plant.

To remove sulphide mineral particles that have been liberated in the regrind circuit, thickener underflow will be pumped to the secondary sulphide flotation circuit,ahead of the tungsten flotation stage. The secondary sulphide flotation circuit will consist of a conditioning tank and a rougher flotation stage. The residence time in the conditioning tank will be 5 minutes, and will enable the PAX and MIBC to be distributed throughout the slurry. The flowsheet for this portion of the circuit shows the conservative design. The number of flotation cells, discussed in the following paragraphs of this study match, the number indicated in the capital cost estimate, at approximately 1/3 of the original design. The secondary sulphide rougher flotation circuit will consist of three 70 m^3 volume cells. The concentrate will be pumped to the molybdenum 1st cleaner flotation circuit. The tailings from the secondary sulphide flotation stage will be discharged into the first of two tungsten flotation conditioning tanks where the appropriate reagents will be added.

The reagents required for tungsten flotation are as follows: soda ash will be used as a pH regulator as well as serving as a dispersant; sodium silicate will be added as a dispersant; and quebracho will be added as a depressant of the other oxide minerals. These reagents will be added to the first conditioning tank. Sodium oleate will be added as the collector reagent to the second conditioning tank. Each conditioning tank will have a retention time of 5 minutes.

The tungsten rougher flotation will be conducted in seven flotation cells, each with a volume of 70 m^3. The concentrate from the rougher flotation circuit will be pumped to the 1st cleaner stage for upgrading. The tailings from the tungsten rougher flotation circuit will be discharged to the final tailings thickener. Concentrate from the tungsten 1st cleaner cells will be further upgraded in the 2nd cleaner circuit. The concentrate from the 2nd cleaner circuit will be pumped to the tungsten 3rd cleaner circuit and this will constitute the final tungsten flotation concentrate. This concentrate will be pumped to the tungsten flotation concentrate thickener for dewatering. The tailings from the 3rd cleaner circuit will be returned to the preceding circuit, while the 2nd cleaner circuit will be returned to the 1st cleaner flotation stage. Similarly, the tailings from the 1st cleaner flotation stage will be returned to the rougher flotation stage. The cleaner circuit flotation cell volumes will be 15 m^3 for each of the three 1st cleaner cells, 5 m^3 for each of the three 2nd cleaner cells, and 5 m^3 for each of the three 3rd cleaner cells. Provision will be made for the staged addition of sodium oleate to the cleaner circuits should this be required.

For process control purposes, samplers will be installed to automatically sample the secondary sulphide flotation feed, concentrate and tailings streams. Sampling of the feed and tailings of the tungsten flotation concentrate circuit will be done for metallurgical control purposes. The cleaner stage circuit streams will also be sampled for process control purposes.

20.2.10 MOLYBDENUM FLOTATION CONCENTRATE HANDLING

The molybdenum flotation concentrate will be thickened, filtered and bagged prior to shipping off the property. The molybdenum concentrate handling circuit will be equipped with the following:

- concentrate thickener
- concentrate slurry pumps
- process water pumps
- thickener overflow water tank
- concentrate filter press
- concentrate storage and dispatch facilities
- dust collection system.

The molybdenum flotation concentrate produced in the 2nd column will be discharged to the molybdenum concentrate thickener. Flocculant will be added to the thickener feed to aid the settling process. The thickened concentrate will be pumped directly to the molybdenum concentrate filter press using the thickener underflow slurry pumps. The underflow density will be 60% solids. Since filtration with a filter press unit will be a batch process, to a limited extent the thickener will also act as a surge tank for the filtration operation. The filter press will dewater the concentrate to produce a concentrate with a moisture content of about 8**%**. The filtrate will be discharged to the process water tank. The filter press solids will be discharged onto the molybdenum concentrate conveyor to a concentrate bin where the concentrate will be bagged prior to dispatch off the property. A dust collection system will ensure that any dust generated in the concentrate handling area will be collected and recycled.

20.2.11 TUNGSTEN GRAVITY CONCENTRATE HANDLING

The tungsten gravity concentrate will be collected in a tank, filtered and bagged prior to dispatching the concentrate by truck. The tungsten gravity concentrate handling handling section will be equipped with the following:

- concentrate filter feed storage tank
- concentrate slurry pumps
- filter press
- bin feed conveyor
- bin with bagging facilities
- loadout scale
- dust collection facilities.

The tungsten gravity concentrate from both the fine and the coarse circuits will be collected in the tungsten gravity concentrate filter feed tank. This tank will be equipped with an agitator to keep the product in suspension prior to pumping this slurry to the tungsten concentrate filter press. The concentrate will be filtered to a moisture content value of 8%. The solids will be discharged onto the conveyor belt feeding the handling and bagging system. The concentrate will be bagged and periodically trucked to its destination. The filter press filtrate will be returned to the tungsten flotation concentrate thickener and the thickener overflow will be pumped to the process water tank for re-use.

20.2.12 TUNGSTEN FLOTATION CONCENTRATE HANDLING

The tungsten flotation concentrate will be filtered to reduce the moisture content. The tungsten flotation concentrate handling circuit will be equipped with the following, sharing the filter press and the tungsten bagging facilities with the tungsten gravity concentrate:

- concentrate slurry pumps
- filter press
- bin feed conveyor
- bin with bagging facilities
- loadout scale
- dust collection facilities.

The tungsten flotation concentrate thickener will act as a surge facility for feeding the tungsten concentrate filter press, which will also be used by the tungsten gravity concentrate. This flotation concentrate thickener surge capacity will be required since the filtration operation will be a batch process, and the low rate of flotation concentrate production will be handled by the thickener. The tungsten flotation concentrate will be filtered and dewatered to a moisture content of about 8% moisture. The concentrate will be discharged onto a conveyor belt which will deposit the material in the handling and bagging system. This bagging facility will also be shared by the tungsten gravity concentrate. Both gravity and flotation concentrate bags will be stored in their designated storage areas. The concentrates will periodically be loaded into trucks for dispatch off the property.

20.2.13 TAILINGS DISPOSAL

The tungsten flotation tailings, together with the molybdenum 1st cleaner tailings, will be pumped to the tailings pond. The tailings handling circuit will be equipped with the following:

- agitated tailings surge tank
- slurry pumps

- density/mass flow metre
- sampler.

The tungsten flotation tailings and the molybdenum 1st cleaner flotation tailings will constitute the final plant tailings. The tailings will be disposed of in the tailings pond. The tailings pond will be equipped with two water pumps for the return of tailings pond water as process water for re-use in the plant.

20.2.14 REAGENT PREPARATION

Chemical reagents will be added to the process stream to facilitate the separation and flotation processes. The preparation of the various reagents will require the following equipment:

- bulk handling system
- mixing and holding tanks
- metering pumps
- transfer pumps
- flocculant preparation facility
- safety equipment.

Various chemical reagents will be added to the flotation circuit to modify the mineral particle surfaces to enhance the floatability of the mineral particles into selective concentrate products. Fresh water will be used in the preparation of the various reagents that will be supplied in powder/solid form, and for the reagents which require dilution prior to their addition to the slurry streams. These prepared reagent solutions will be added to the points of addition of the various flotation circuits and streams using metering pumps. The solid reagents will generally be made up to a solution of 10% strength in a mixing tank, and then transferred to the holding tank from where the solution will be pumped to the point of addition. The reagents which will be prepared in this manner will be the PAX, copper sulphate, sodium silicate, quebracho, soda ash, and sodium oleate. The reagent MIBC will not be diluted and will be pumped directly from the bulk containers to the point of addition in the flotation circuit using metered pumps. Flocculant will be prepared in the standard manner as a dilute solution. Initially the dilution will be to a solution strength of 1.0% and will incorporate the required hydration time. This will be followed by diluting this flocculant solution to a strength of 0.10% prior to the addition to each of the thickeners.

Each reagent will be prepared within its own bundled area in order to contain spillage. A dedicated spillage pump will return spillage from the sump to the mixing tank of that reagent for re-use in the plant.

20.2.15 Water System

Fresh water will be required for the reagent preparation, as well as for gland service to the slurry pumps. Fresh water will be supplied from streams and wells. The water will be pumped to the fresh and firewater tank for storage and distribution. The fresh and firewater tank will have a diameter of 9.0 m and a height of 12.6 m, to accommodate the basic firewater storage requirement of 380 m^3, as well as allow for a similar amount of water to be available for plant requirements.

Process water will be re-used in the grinding section and elsewhere in the plant as required. Some process water generated in the individual flotation circuits as concentrate-thickener overflow solution will also be re-used in the respective flotation circuit. Process water will also be recovered from the tailings dam.

The supply of potable water will be from streams and wells situated in the vicinity of the processing facility.

20.3 Recommendations

As previously recommended, Knelson and SGS have a devised a test program in collaboration with Geodex in order to assist with the definition of the process design. The testwork program has been scheduled for late 2007 when the metallurgical test sample will be drilled and be made available for testing by Knelson and SGS. Gabbro and the volcanic-rock types will be the two basic rock types tested. The Knelson test program will focus on the gravity recoverable tungsten aspects of the ore, while the SGS test program will include the following aspects.

20.3.1 Mineralogy

Confirmation of the liberation sizes of the scheelite will confirm the inclusion of the gravity circuit in the flowsheet. The testwork will also indicate the grind size required in the primary grinding circuit, as well as the recommended nature of the grinding circuit. Similarly, the liberation characteristics and mineral associations of the molybdenite will confirm the design of the sulphide flotation circuit and the subsequent molybdenite cleaner flotation circuit.

20.3.2 Comminution

Basic work index tests will be conducted in order to determine the crushing and mill work index parameters, as well as the abrasion index. This information will assist with finalising the design of the crushing circuit and confirm the grinding circuit parameters.

20.3.3 Gravity Concentration

The two basic ore types will each be tested for its amenability to gravity recovery. Together with the mineralogical information, and the information generated by the Knelson testwork, the ore testing will assist with defining the gravity recovery circuit. Since this aspect affects the primary grind size, gravity concentration and upgrading circuit, as well as the subsequent regrind circuit, it is imperative to gain a clear understanding of this aspect of tungsten recovery.

20.3.4 Flotation

The flotation of sulphide minerals is relatively well understood. However, in this case, a molybdenum concentrate has to be produced from a relatively low grade ore. The presence of impurity sulphide minerals and their effect on the production of molybdenum concentrate requires characterization. The flotation of scheelite is also relatively well understood, but the production of a saleable grade of concentrate must be demonstrated. Again, the relatively low ore tungsten grade and the effect of impurity/gangue minerals must be assessed. The sequencing of reagents in the conditioning circuit can also have a major effect on the recovery of scheelite and the grade of the concentrate produced.

No upgrading by acid leaching or chemical reagents will be investigated.

20.3.5 Magnetic Separation

Once mineralogical information becomes available and suitable samples have been generated, the inclusion of magnetic separators in the circuit will be tested. The present flowsheet design does not incorporate magnetic separation.

20.3.6 Thickening

Some basic tests will be undertaken to provide data to assist with the sizing of the concentrate and tailings thickeners.

The above testwork program will provide the basic parameters for plant design. A more extensive testing program, which will include variability testing, will be required when the project is upgraded to a feasibility study. The testwork data generated by the program discussed above will then form the basis for the more extensive testwork program.

20.4 Opportunities

No historical testwork results were available to assist in the design of the processing facilities. The results from the Knelson and SGS test programs will enable a more definitive plant design to be formulated, which will reduce the capital cost accordingly. The mineralogical characterization of the ore types will enable the grinding circuit and the gravity concentration circuit to be optimized. It will also enable decisions regarding other aspects of processing (e.g. magnetic separation), which have not been included in the present flowsheet. At present, this does not seem to be required in the processing circuit, but confirmation is required from the SGS testwork program.

The present crushing circuit appears to be overdesigned; alternative crushing flowsheets should be investigated accordingly. The option of using high-pressure grinding rolls (**HPGR**) in the crushing/grinding circuit requires investigation.

The flotation process will also be better understood and will probably result in the design of a more compact circuit for both the molybdenum and the tungsten circuits. No provision has been made for on-stream x-ray analyses and the suitability of this type of analytical and process control procedure.

The need to the upgrade of the tungsten flotation concentrate by leaching or by high temperature drying/roasting has not been explored.

Table 20.2 Process Design Criteria

Source of Data	*Code*
Sisson Brook	*SB*
Historical Plant Data	*HD*
Industry / Experience	*W*
Metallurgical Testwork	*T*
Mass Balance	*MB*
Metallurgical Testwork	*T*
Vendor	*V*
All values are in metric units	

Description	Units	Values	Sources
General			
Type of Deposit	**Tungsten - Molybdenum deposit**		
Operating Schedule			
Shift/Day		2	SB
Hours/Shift	h	12	SB
Hours/Day	h/d	24	SB
Days/Year	d/y	343	SB
Plant Availability/Utilization			
Overall Plant Feed	t/y	6,860,000	SB
Daily Processing Rate	t/d	20,000	C
Crusher Plant Availability	%	80.0	W
Crushing Processing Rate	t/h	1,041.7	C
Grinding, Flotation and Gravity Plant Availability	%	95.0	W
Grinding, Flotation and Gravity Processing Rate	t/h	877.2	C
Production Parameters			
Ore Specific Gravity	g/cm^3	2.70	W
Ore Bulk Density	t/m^3	1.75	W
Ore Moisture Content	%	5.00	W

table continues…

Description	Units	Values	Sources
Head Grade:	% WO3	0.063	SB
	% Mo	0.024	SB
Recovery			
Tungsten - Gravity Concentrate	%	35.00	SB
Tungsten - Flotation Concentrate	%	35.00	SB
Tungsten - Total	%	70.00	SB
Molybdenum-Total	%	85.00	SB
Tungsten Concentrate Grade			
Gravity Concentrate	% WO3	70.00	W
Flotation Concentrate	% WO3	50.00	W
Overall Tungsten Concentrate	% WO3	58.33	C
Molybdenum Concentrate Grade			
Flotation Concentrate	% Mo	50.00	W
Mass Recovery			
Tungsten Gravity Concentrate	%	0.030	C
Tungsten Flotation Concentrate	%	0.042	C
Molybdenum Flotation Concentrate	%	0.034	C
Concentrate Production			
Tungsten Gravity Concentrate Production	t/y	2,166	C
Tungsten Flotation Concentrate Production	t/y	3,033	C
Total Tungsten Concentrate Production	t/y	5,199	C
Molybdenum Concentrate Production	t/y	2,455	C
Crushing			
Production Parameters			
Operating Schedule	shifts/d	1.60	SB
Operating Hours	h/shift	12	W
ROM Ore Plant Feed	t/d	20,000	SB
	t/h	833.3	C
Crushing Processing Rate	t/h	1041.7	C
Crushed Ore Bulk Density	t/m^3	1.75	W
Ore Transportation	method	Belt Conveyors	W
Impact Bond Work Index	kWh/t	5.7	W
Primary Crushing			
Crusher Feed Particle Size	mm	1000	W
Primary Crusher	type	Gyratory Crusher	W
	number	1	W
	model	S48-74 or equivalent	W
Product Size, P80	mm	175	W
Secondary Crushing			
Secondary Crusher Feed Sizing Screen	type	Vibrating; double-deck	W
Sizing Screen, Deck Apertures	mm	top deck 60; bottom deck 6	W
Sizing Screen Undersize, P80	mm	6	W
Secondary Crusher	type	Cone Crusher	W
	number	1	W
	model	G5015 or equivalent	V
Secondary Crusher Product Size, P80	mm	6	W
Tertiary Crushing			
Tertiary Crusher Feed Sizing Screen	type	Vibrating; double-deck	W
Sizing Screen, Deck Apertures	mm	top deck 25; bottom deck 6	W
Sizing Screen Undersize, P80	mm	6	W
Secondary Crusher	type	Cone Crusher	W

table continues…

Description	Units	Values	Sources
	number	4	W
	model	HP800 or equivalent	V
Secondary Crusher Product Size, P80	mm	6	W
Quaternary Crushing			
Quaternary Crusher	type	Cone Crusher	W
	number	1	W
	model	HP800 or equivalent	V
Secondary Crusher Product Size, P80	mm	6	W
Grinding			
Operating Schedule	shifts/day	1.90	SB
Operating Hours	h/shift	12	W
Production Rate	t/d	20000	SB
	t/h	877	C
Primary Grinding			
Total Mill Throughput	t/h	1754	C
Mill	type	Rod mill - open circuit	W
Mill Dimensions	m	4.57 x 5.10	W
Number of Rod Mills	number	4	W
Mill Discharge Slurry Density	%	70.0	W
Abrasion Index, Ai	-	0.26	W
Rods Wearing Rate	kg/kWh	0.12	W
Liner Wearing Rate	kg/kWh	0.01	W
Rod Mill Bond Work Index	kWh/t	15.0	W
Mill Feed Size, P80	µm	6,000	W
Mill Product Size, P80	µm	300	W
Recirculation Load	%	100	C
Classification	type	5 Deck Stacked Screen	V
	number	4 machines / circuit	V
Screen Feed/ Screen	t/h	1754	C
Screen Oversize/ Screen	t/h	877	C
Screen Undersize/ Screen	t/h	877	C
Flotation Circuit			
Sulphide Flotation			
Conditioning			
Slurry Density	%	29.0	W
Solids Feed Rate	t/h	877.2	C
Conditioning Tank Retention Time	min	4.3	W
Sulphide Rougher Flotation			
Cell Type		conventional mechanical	
Slurry Density	%	34.0 - 35.0	W
Solids Feed Rate	t/h	877	C
Residence Time: Plant	min	20.0	C
Mass Recovery - Rougher	%	20.0	W
Cell Volume	m3	70.0	W
Rougher Cells	number	12	C
Sulphide Cleaner Conditioning			
Slurry Density	%	35.0	W
Conditioning Tank Retention Time	min	5.0	W
Molybdenum Cleaner Flotation			
Cell Type		conventional mechanical	
Slurry Density	%	30-35	W

table continues…

Description	Units	Values	Sources
Plant Retention Time	min	20.0	W
Mass Recovery -1st Cleaner	%	20 of new feed to circuit	W
Bulk Sulphide Concentrate SG	-	3.30	W
Cell Volume	m^3	15	W
Cleaner Cells	number	8	W
Cell Type		conventional mechanical	
Slurry Density	%	25-30	W
Plant Retention Time	min	20.0	W
Mass Recovery - Cleaner	%	2.0	W
Bulk Sulphide Concentrate SG	-	3.30	W
Cell Volume	m^3	5.00	W
Cleaner Cells	number	6 (2nd Cleaner); 4 (3rd Cleaner); 4 (4th Cleaner)	W
Cell Type		column	
Slurry Density	%	20-25	W
Plant Retention Time	min	20.0	W
Mass Recovery - Cleaner	%	0.034	W
Bulk Sulphide Concentrate SG	-	3.30	W
Cell Volume	m	1.2Dx4.8; .70Dx2.80	W
Cleaner Cells	number	1 (5th Cleaner); 1 (6th Cleaner)	W
Tungsten Recovery Plant			
Gravity Recovery Circuit			
Classification	type	Cyclones	
Classifier Feed from Sulphide Flotation Circuit	t/h	702	C
Classifier Cut Size	μm	37	HD
Recirculating Load	%	300	W
Cyclone Feed	t/h	2806.8	MB
Cyclone Overflow	t/h	701.5	MB
Cyclone Underflow	t/h	2105.3	MB
Split to Gravity Circuit	%	20.0	V
Gravity Concentrators	number	4	V
	type	continuous centrifugal	V
Vibrating Screen	mm	600 x 2400	W
Fine Spirals	number	10	W
Coarse Spirals	number	10	W
Fine Shaking Tables	number	6	W
Coarse Shaking Tables	number	6	W
Gravity Concentrate Production	t/h	0.263	MB
Split to Coarse Cleaning Circuit	%	60.0%	W
Split to Fine Cleaning Circuit	%	40.0%	W
Recovery attributed to Coarse Cleaning Circuit	%	60.0%	W
Recovery attributed to fine Cleaning Circuit	%	40.0%	W
Gravity Tailings Regrind Mill			
Mill	type	Rod mill - closed circuit	W
Mill Size	m	4.57 x 6.10	W
Number of Regrind Rod Mills	number	4	W
Mill Discharge Slurry Density	% solids	70.0	W
Abrasion Index, Ai	-	0.26	W
Rods Wearing Rate	kg/kWh	0.12	W
Liner Wearing Rate	kg/kWh	0.10	W

table continues…

Description	Units	Values	Sources
Rod Mill Bond Work Index	kWh/t	15.0	W
Mill Feed Size, P80	µm	300	W
Mill Product Size, P80	µm	74	W
Flotation Recovery Circuit			
Flotation Feed Thickener			
Solids Feed Rate	t/h	701	C
Thickener	type	High Rate	W
Number of Thickeners	number	1	C
Slurry Feed Flowrate	m^3/h	3066	C
Thickener U/F Solids	%	40	W
Thickener Diameter	m	42	V
Secondary Sulphide Flotation Conditioning			
Slurry Density	%	40.0	W
Conditioning Tank Retention Time	min	5.0	W
Secondary Sulphide Flotation			
Cell Type		conventional mechanical	
Slurry Density	%	35-40	W
Residence Time: Plant	min	10	C
Mass Recovery -	%	2.5	W
Cell Volume	m3	70.0	W
Rougher Cells	number	5	C
Tungsten Flotation Conditioning			
Slurry Density	%	40.0	W
Solids Feed Rate	t/h	701	C
Number of tanks	number	2	
Conditioning Tank Retention Time	min/tank	5.0	W
Tungsten Rougher Flotation			
Cell Type		conventional mechanical	
Slurry Density	%	34.0 - 35.0	T
Plant Retention Time	min	25.0	C
Cell Volume	m3	70.0	W
Mass Recovery	%	2.5	
Rougher Cells	number	11	C
Tungsten Cleaner Flotation			
Cell Type		conventional mechanical	
Slurry Density	%	30-35	W
Plant Retention Time	min	25.0	W
Mass Recovery -1st Cleaner	%	1.0	W
Bulk Sulphide Concentrate SG	-	4.20	W
Cell Volume	m^3	15	W
Cleaner Cells	number	4	W
Cell Type		conventional mechanical	
Slurry Density	%	25-30	W
Plant Retention Time	min	20.0	W
Mass Recovery - Cleaner	%	0.04	W
Bulk Sulphide Concentrate SG	-	5.40	W
Cell Volume	m^3	5.00	W
Cleaner Cells	number	5 (2nd Cleaner); 4 (3rd Cleaner)	W
Thickener and Filtration Circuit			
Tungsten Concentrate Thickener			

table continues…

Description	Units	Values	Sources
Solids Feed Rate	t/h	0.368	C
Thickener	type	High Rate	W
Number of Thickeners	number	1	C
Thickener U/F Solids	%	70	W
Thickener Production	t/d	8.8	C
Thickener Diameter	m	5.0	
Tungsten Concentrate Filtration			
Filter	type	Filter press	V
Number of Filters	number	1	V
Solids Feed Rate	t/h	0.368	C
Size of Plates	mm	1000 x 1000	
Number of Filter Plates	number	10	V
Number of Filter Chambers	number	9	V
Filter Cake Moisture	%	8	W
Molybdenum Concentrate Thickener			
Solids Feed Rate	t/h	0.298	C
Thickener	type	High Rate	W
Number of Thickeners	number	1	C
Thickener U/F Solids	%	70	W
Thickener Production	t/d	7.2	C
Thickener Diameter	m	5.0	
Molybdenum Concentrate Filtration			
Filter	type	Filter press	V
Number of Filters	number	1	V
Solids Feed Rate	t/h	0.298	C
Size of Plates	mm	1000 x 1000	
Number of Filter Plates	number	5	V
Number of Filter Chambers	number	9	V
Filter Cake Moisture	%	8	W
Reagents			
Potassium Amyl Xanthate [PAX]			
Total Addition to Sulphide Flotation Circuit	g/t	350	SB
Addition to Rougher Flotation Stage	%	60.0	W
Addition to Cleaner Flotation Stage	%	10.0	W
Addition to Secondary Sulphide Flotation Stage	%	30.0	W
PAX Consumption:	kg/d	7,000	C
	kg/y	2,401,000	
PAX Solution Strength	%	10.0	
PAX SG	-	1.20	
Copper Sulphate [CuSO4.5H2O]			
Addition to Sulphide Flotation Circuit	g/t	160	SB
Copper Sulphate Consumption:	kg/d	3,200	C
	kg/y	1,097,600	
Copper Sulphate Solution Strength	%	10.0	
Copper Sulphate SG	-	1.10	
MIBC			
Addition to Sulphide Rougher Flotation Circuit	g/t	20	SB
Addition to Sulphide Cleaner Flotation Circuit	g/t	20	SB
Addition to Tungsten Flotation Circuit	g/t	20	SB
Total Addition of MIBC	g/t	60	C
MIBC Consumption:	kg/d	1,200	
	kg/wk	8,400	

table continues…

Description	Units	Values	Sources
	kg/y	411,600	
MIBC Solution Strength	%	100.0	
MIBC SG	-	0.85	
Flocculant			
Addition to Tungsten Flotation Feed Thickener	g/t of thickener feed	50	
Addition to Molybdenum Concentrate Thickener	g/t of thickener feed	100	W
Addition to Tungsten Concentrate Thickener	g/t of thickener feed	100	
Total Addition to Thickeners	kg/h	35	
Flocculant Consumption:	kg/d	801	C
	kg/y	274,818	
Flocculant Solution Strength	%	0.10	
Flocculant SG	-	0.80	
Quebracho			
Addition to Tungsten Flotation Circuit	g/t	300	SB
Quebracho Consumption:	kg/d	6,000	C
	kg/wk	42,000	
	kg/y	2,058,000	
Quebracho Solution Strength	%	10.0	
Quebracho SG	-	1.00	assumed
Soda Ash			
Addition to Tungsten Flotation Circuit	g/t	300	SB
Soda Ash Consumption:	kg/d	6,000	C
	kg/wk	42,000	
	kg/y	2,058,000	
Soda Ash Solution Strength	%	10.0	
Soda Ash SG	-	2.50	
Sodium Silicate			
Addition to Tungsten Flotation Circuit	g/t	350	SB
Sodium Silicate Consumption:	kg/d	7,000	C
	kg/wk	49,000	
	kg/y	2,401,000.0	
Sodium Silicate Solution Strength	%	10.0	
Sodium Silicate SG	-	2.40	
Sodium Oleate [Pamak 4]			
Addition to Tungsten Flotation Circuit	g/t	250	SB
Sodium Oleate Consumption:	kg/d	5,000	C
	kg/wk	35,000	
	kg/y	1,715,000	
Sodium Oleate Solution Strength	%	10.0	
Sodium Oleate SG	-	0.91	

21.0 SITE AND INFRASTRUCTURE

21.1 GENERAL

The infrastructure (e.g. existing/permanent roads, local and arterial highways, railway, and power grid) of the proposed operation is of sufficient quality to facilitate the regular transport of personnel, consumables and materials. Napadogan (10 km north) and Stanley (40 km east) are two potential settlements for permanent staff. A mine camp is not necessary for this operation.

The design approach for the Sisson Brook site and infrastructure incorporates the following:

- foundation design will address the opportunity to construct all buildings on bedrock where possible
- electrical power will be delivered from the power grids which is in the claim boundary of the property
- year-round access to the site provides that storage facilities for consumables will be sized according to the minimal requirements

21.2 GEOTECHNICAL CONDITIONS (SURFACE)

The geotechnical properties of the rocks, overburden and the available borrow fill material will be an issue affecting any future surface construction, stability of stockpiles and waste dumps. Any surface construction should include a thorough site investigation program to investigate the properties of the overburden and consider the geotechnical tests.

21.2.1 TESTING REQUIREMENTS FOR OVERBURDEN SOILS AND WEATHERED BEDROCK

The location and size of any ore stockpiles and waste dumps, and other properties of the overburden and the available borrow fill material, will be an issue affecting any future surface construction. Any surface construction should be prefaced by a thorough site investigation program to determine the properties of the overburden. This site investigation should include the tests discussed below.

CONSOLIDATION TESTS

Consolidation testing is used to determine the bearing capacity of the overburden material for foundations. The testing equipment is described in ASTM D2435. Loads are applied in several increments to the upper surface of the test sample, and the resulting deformations are recorded at selected time intervals. For soils, each increment of load is maintained until the primary consolidation is complete. Loads are applied in equal increments. Porous plates are placed on the top and base of the samples to permit the free addition or expulsion of water. The tests are normally performed at in-situ moisture conditions under stresses approximately equal to those which will be imposed by the combined overburden and foundation loads, until consolidation is complete. The samples are then submerged to show the effect of moisture increase and the tests continued under higher loads. Generally, these tests are continued to about twice the anticipated load due to overburden and structural loads with a rebound curve established by releasing the test load.

DIRECT SHEAR TESTS

Direct shear tests are run using a shear box, designed to receive one sample obtained by tube sampling. Generally, each sample is sheared under a normal load equivalent to the effective overburden pressure at the point of sampling. In some instances, samples are sheared at several normal loads to obtain the cohesion and angle of internal friction. When necessary, samples are saturated and/or consolidated prior to shearing, in order to approximate the anticipated field loading conditions.

PARTICLE SIZE ANALYSIS

Particle size analysis involves determining the percentage by weight of particles within different size ranges. The particle size distribution of a coarse-grained soil can be determined by passing a sample through a series of successively smaller mesh sizes. The particle size distribution is presented as a curve on a semi-logarithmic plot. The flatter the distribution curve, the larger the range of particle sizes in the soil.

PROCTOR TEST

A proctor test determines the compaction characteristics of a soil. The soil is compacted in a cylindrical mould using a standard compactive effort. After compaction, the bulk density and water content of the soil are determined and the dry density calculated. For a given soil, the process is repeated at least five times. Dry density is plotted on a graph against water content to determine the optimum water content at which the maximum value of dry density is obtained.

NATURAL MOISTURE CONTENT

A natural moisture content test determines the natural moisture content of a soil sample. The difference between the natural and optimum moisture content determines the type of compaction that will be required for fill materials.

LIQUID AND PLASTIC LIMITS (ATTERBERG LIMITS)

Depending on its moisture content, a soil may be in a liquid, plastic, semi-solid or solid state. The upper and lower limits of the range of water content over which a soil exhibits plastic behaviour are defined as the "liquid limit" and the "plastic limit".

STANDARD PENETRATION TEST

The standard penetration test, described in ASTM D1586, proscribes a drilling procedure where dynamically driven tube samples are obtained at intervals in the borehole. In most cases, the sample tubes are used to obtain a standard penetration resistance. "Undisturbed" samples of firmer soils are obtained with 3" O.D. sample tubes lined with 2.42" I.D. brass rings. The driving energy is derived from the number of blows from a 140 lb, 30" free-fall drop hammer required to advance the samplers 6". The SPT values are recorded as the number of blows per sample on the core logs.

21.3 RECOMMENDATIONS

The following recommendations are made as a result of this study:

- Additional data will be required before detailed design work can be undertaken, including:
  - the depth and type of overburden
  - a description of the groundwater elevation, flow and recharge potential
  - a description of the minor structures, RQD or breaks per metre, from the drill core. Any variation of these properties over the area of the pits should be noted
  - a sufficient number of readings should support each description
  - a rock mass classification procedure using both Barton's Q and Bieniawski's RMR systems should be applied to the drill core data collection procedure. The rock mass classification will form the basis for future design work
  - a field index test such as the pointload testing of drill core is recommended to examine any spatial variation of the strength of the rocktypes.
- Any surface construction will require a thorough site investigation program to investigate the properties of the overburden. The program should consider the following: consolidation tests, direct shear tests, particle size analysis, proctor testing, natural moisture content determination, liquid and plastic limits,

(Atterberg Limits) and Standard Penetration Test (SPTs - during the site investigation drilling).

21.4 GENERAL SITE FACILITIES

Currently the site has no facilities.

The following major developments and permanent facilities are proposed for the project:

- improved site roads and laydown areas
- stockpile areas for waste rock and overburden materials
- settlement pond for open pit drainage water
- bulk emulsion plant and explosives storage bunkers
- primary crusher and coarse ore stockpile conveying systems
- process plant
- power distribution system
- equipment service building with trades shops
- warehouse and maintenance offices
- administration complex with security, first aid facilities and vehicles
- water storage and distribution
- sewage treatment and garbage disposal
- diesel fuel storage and distribution

The general site layout is based on several criteria:

- compact footprint for minimal land disturbance
- effects of prevailing winds with regard to noise, dust, and drifting snow
- adequate setbacks from lakes, creeks, rivers, and other sensitive features
- efficient facility access for personnel and vehicles during construction and operations
- sufficient space around specific facilities to accommodate future expansion as practical
- separation of haul road traffic and site access vehicular traffic
- minimal visual and noise impact from operations on offices.

21.5 Access and Logistics

The Sisson Brook property is accessible from the nearby city of Fredericton by traveling west approximately 60 km via the Trans Canada Highway to the town of Nackawic and then northerly approximately 45 km on secondary highways and the Valley Forest Products forestry access road to the property center. Numerous secondary forestry access roads cross the property and these have been used by Geodex to provide access for exploration personnel, vehicles and drilling equipment. Four-wheel drive vehicles are required to travel some of the property roads but two-wheel drive access by car or truck is possible over most of the property.

The port city of St. John is located 200 km south of Sisson.

21.5.1 Project and Permanent Access

Access to the site will be by existing local road via Fredericksburg from the local highway (620) at Boyd’s Corner and continuing north.

21.6 Site Roads and Laydown Areas

Site roads will be constructed of crushed, compacted aggregate material. All aggregates will be developed by from the pit waste rock and feeding the rock to portable crushers.

Off-road mining vehicles will be restricted to separate and dedicated roads between the open pit, primary crusher ramp, rock stockpiles, and the equipment service building.

Plant site development will accommodate the mine buildings (to be constructed on structural engineered foundations, as well as for the temporary construction facilities and laydown area. The primary crusher ramp and other plant site features will be developed as construction areas become available.

A reinforced earth wall will be constructed at the primary crusher buildings to retain the ramp fill and provide conveyor access out the bottom of the building.

21.7 Water Supply and Distribution

Water is required for:

- fire protection
- process
- domestic potable uses.

A storage tank at the plant site will supply water for plant use. The capacity of the system for refilling the tank will be based on the process requirements.

The process will recycle water to the maximum extent possible. There will be a substantial net loss of water from pumping the fine tailings to the disposal area in the form of slurry. Surface runoff water will be used as a water supply for the plant.

Potable water will be from a drilled well after it has been tested and approved.

21.7.1 Process & Firefighting Water

Fresh water required for process and firefighting purposes will be stored in a single tank. The outlets for the tank will be arranged so that process operations can never draw down the level below the storage volume required for firefighting.

The storage capacity provided for process supply will be sufficient for 12 hours of operation based on the daily requirement.

21.7.2 Potable Water

An insulated, stainless steel, potable water storage tank will have a capacity of 50 m^3, sufficient for 0.5 day's requirement during the operating period.

The primary potable water consumption points will be the administration offices and washrooms.

Pumps will deliver water from the storage tanks to the various areas as required.

21.8 Ore Storage, Reclaim and Conveying Systems

Ore from the open pit will be transported by truck up a ramp and dumped through a grizzly in to the primary crusher.

Primary crushing will take place in a reinforced concrete structure housing a hopper, apron feeder, and mineral sizer or jaw crusher. The concrete structure will be enclosed and extended by structural steel to provide shelter for maintenance activities, and to support ancillary equipment and service units (operator's cab, compressors, hydraulics, electrical room, etc.). A steel structure will be erected over the dump hopper to provide shelter and reduce the amount of escaping dust.

Crushed ore will be conveyed to a transfer tower via an inclined conveyor gallery. In the tower, the ore will be loaded on the coarse ore conveyor leading to the process plant, or diverted to a coarse ore. Dust suppression and collection will be installed at transfer points on all conveying systems to minimize the release of dust and the build-up of dust in galleries and other enclosures.

Conveyor galleries will be enclosed, unheated structures, supported on steel bents and towers with concrete footings. To minimize field installation time, these galleries will be pre-assembled in 12 to 16 m long sections, complete with conveyor support stringers, idlers, walkways, lighting fixtures, cable trays, and pipe supports. Gallery sections will be designed with bolted flange connections for field erection. Fire suppression piping and power and control cabling will be routed through the galleries. Sheltered personnel access to the galleries will be provided between the plant complex and the tower and primary crusher.

There will be no shelter over the coarse ore stockpile. Ore will be reclaimed by loader and fed to the coarse ore conveyor that extends beyond the transfer tower to a loading hopper. Frozen lumps in the stockpile will be pushed aside and recycled through the primary crusher.

21.9 POWER

The electrical demand requirement of the Sisson Brook project is estimated at 30 MW. Power will be tapped into the electrical grid that has a transmission line crossing the property.

21.10 FUEL STORAGE AND DISTRIBUTION

Diesel oil will be the primary fuel used at site. Ambient conditions involve minimum design temperatures of -35°C. “Regular” or No. 2 grade diesel fuels are available with cloud points at approximately -37°C. For the mobile mining and other secondary equipment, Arctic grade fuels should be utilized for their cloud point of -41°C.

Tanker trucks will transport the fuel on a weekly basis. This is a hazardous fluid; all transportation and handling equipment and procedures will respect regulations and good practice. Diesel fuel is also critical to project operations; various measures will be incorporated into the storage and distribution systems to secure its supply. Diesel fuel requirements are estimated at 100 m^3 per week. Fuel storage will be two 6 m diameter by 9 m high field-erected steel storage tanks located at the plant site.

According to NFPA codes, fuel must not be dispensed to vehicles from the main bulk tanks; two fuel dispensing locations will therefore be provided. The first tank, located in front of the truck shops, will dispense only diesel fuel to mine operating vehicles; the second tank will dispense diesel fuel to other vehicles that do not use the mine haul roads.

Both locations will have dispensing pumps and a vehicle standing area outfitted with a drain leading to a sump, where any spills will be contained. The storage tanks at the fuel dispensing containment will be aboveground, as well as fire-resistant or fire-protected as required by code.

The diesel tanks will be replenished by branches from the main distribution ring. The gasoline tank will be replenished from a tanker truck with an on-board pump; alternatively, additional gasoline storage in one or more on-site tank containers can be implemented.

A canopy and windbreak can be provided to shelter the fuel dispensing operations, but fuel dispensing itself is a ventilation and fire/explosion hazard that is subject to regulatory restrictions. The extent to which the operation can be sheltered requires further study.

For mine equipment (including remote generators and pumps and lighting units) that cannot travel to the fuel dispensing station, a fuel dispensing truck will travel from the tank area to the stationary equipment for refuelling.

21.11 Administration Building

The Administration Complex is a two-story prefabricated modular-type construction. The current layout allows adequate space for management, administration, and engineering offices.

21.12 Assay Office

An assay lab is located next to the administration building.

21.13 Truckshop and Warehouse

The building is clad with pre-painted, insulated metal siding and roofing. In addition to the process and repair facilities, the building contains workshops, a machine shop warehouse, and offices for maintenance personnel.

First aid facilities and ambulance and fire truck parking are housed in the main complex adjacent to the truckshop.

The truckshop slab on grade is heated by the propane system and has imbedded rails for wear protection in tracked vehicle repair bays.

21.14 Ancillary Facilities

21.14.1 Aggregate Crushing & Concrete Batch Plants

To meet future needs (such as road maintenance and the development of building pads and other features) for crushed aggregate, the portable crusher and concrete batch plant used during construction may remain on-site. Raw materials used for crushing may be country rock from the open pit operation, if suitable.

21.14.2 Sewage Treatment Plant

The sewage treatment will be with septic field.

21.14.3 Container & general Freight Storage

A general laydown area will be built along the side of the plant site to serve as the main receiving point for truck traffic. Most goods and consumables transported over the road will be delivered in standard shipping containers (Seacans), these will be hauled out once unloaded as part of a back haul operation. The laydown area will accommodate approximately 50 of these containers.

The other large volume of consumables requiring storage will be haul truck tires. These tires will be stockpiled in the laydown area.

21.15 Mobile Equipment

The mobile equipment required to support non-mining-related activities are listed as part of the G&A mobile equipment fleet and are costed under G&A and Section K0 of the Capital Cost Estimate. The fleet excludes graders, backhoes, and bulldozers for non-production tasks, such as road maintenance and ditching, as these functions have been included in direct mining costs.

21.16 Fire Protection

All enclosed spaces in the main plant complex will be serviced by a sprinkler system and supplied with portable extinguishers. Sprinkler systems will be wet except where temperatures may fall below freezing, in which case dry systems will be used. Sprinkler coverage will include:

- process plant including recovery plant
- electrical room
- warehouse
- administration offices
- truck shop
- primary crusher building (partial) and belt conveyors
- fuel oil pumphouses
- interior fuel and lubricating oil storage spaces.

Multiple loop wet mains and external hydrants will be provided around the plant buildings.

A fire truck, with foam equipment and monitors for fighting fires at the fuel storage area, will be stationed on site. Hydrants will be strategically located on both sides of the storage area to accommodate these trucks as necessary.

Remote buildings, such as the explosives plant, will be equipped with portable extinguishers instead of hydrants or sprinklers. The fire truck will be equipped with water tanks for firefighting at these locations.

21.16.1 Fire Water Pumping

Main fire pumps will be installed in a fire pumproom adjacent to the water storage tank. Two of the pumps will be electric, served by a secure power supply from one of the two powerhouses or from an emergency generator located within the same building. The third pump will be a direct diesel-driven engine. A jockey pump will maintain the supply pressure in the network.

21.17 Solid & Liquid Waste Management

21.17.1 Types of Waste

Construction, mine waste, and process waste are discussed in relevant sections. Other wastes that must be considered include:

- sewage
- domestic wastes
- packaging materials
- used lubricating oils
- contaminated diesel fuel and storm water contaminated with diesel fuel
- other spent or contaminated fluids.

21.17.2 Waste Management

Domestic and packaging wastes will be collected and transported to an external disposal site. Materials contaminated with heavy metals or other unusable content will be transferred to the tailings pumping system.

The use of lubricating oil quantities will be minimized as much as possible by selecting mobile and other equipment that uses long-lasting lubricants and reduces waste quantities.

Spills at the truck loading/unloading points of the main tankfarm will drain directly to an oil trap for processing through a separator. Spills at the fuel dispensing pads and rainwater collected in the sumps of the fuel tank containments will be transferred to the same oil trap and recovery system by mobile pumping equipment. Spills at other locations where there is no containment will be soaked up by absorbent materials and incinerated.

Segregated storage will be provided in a low-fire-risk location for absorbent material containing used lubricants or other fluids that cannot be incinerated for environmental reasons. These materials will be transported off site to applicable licensed processing facilities.

Other spent or contaminated fluids will be classified by type and either treated with sewage or stored and transported off site to licensed processing facilities.

21.17.3 SEWAGE SYSTEM

The sewage treatment plant will likely use one or two septic fields.

Sewage will primarily be generated from the following areas:

- administration complex
- assay office
- process plant

Washrooms will be installed in the administration complex, mill and assay office.

21.18 SITE COMMUNICATION

In general, site networking communications will be provided by one common physical local area network (LAN), with virtual LAN segregation delivering service to other areas (I/C, security, accounting, maintenance, etc.).

A telephone PBX communication system complete with infrastructure will be provided.

22.0 MINE WATER AND WASTE MANAGEMENT

22.1 SURFACE WATER MANAGEMENT

The chief priority of Surface water control management will be to prevent surface water from coming into contact with mine workings. Should that occur it will be required to run through a settling pond system to remove excess sediments that may result from that contact prior to discharge to the environment.

A diversion channel is planned for diverting Sisson Brook to the west that feeds into an existing drainage and finally into McBean Brook.

Water within the mining boundary that comes into contact with mining activities will be directed to the nearest settling pond facility or into the tailings pond. Once the water has met the required discharge quality, it will then be released to the environment.

The capital cost estimate includes a provision for equipment to maintain these settling pond facilities. A utility backhoe and two articulated dump trucks, in addition to a compactor have been included in the capital and operating cost estimate.

22.2 OPEN PIT WATER MANAGEMENT

Pit water will be discharged into the settling pond system. Once the approved level of sediment is reached, the water will then be released. Current indications suggest that there is NAG material present.

22.3 PROCESSED CONTAINMENT FACILITY

The processed slurry fraction will be pumped from the process plant to the tailings storage area. This facility will be constructed in the second year of preproduction of mining with pre-stripped mine waste rock from the pit. The tailings pond location has been shown in Section 19.

The chemical composition of the slurry material was unknown for this study, but will be available after detailed metallurgical testwork is completed. If control of the seepage is required, a liner and grout curtain will be installed during construction of the facility. The final design will be determined from a detailed site investigation.

The sequencing of the dam is considered as years -1, 7 and 14 for this report. The entire structure is shown in the drawings as complete.

22.4 WASTE MATERIALS MANAGEMENT PLAN

The waste dumps were discussed in detail in Section 19. Drainage from the dumps will be directed to tailings impoundment. Excess sediments will be allowed to settle prior to discharge into the environment. It is expected that further work will be undertaken to determine the acid generating potential of any of the rock planned to be disturbed. Should PAG material be present, the mining plan will be modified to accommodate that material to ensure it does not produce acid.

23.0 PROJECT EXECUTION

23.1 INTRODUCTION

The project is likely to continue through pre-feasibility and feasibility to execution depending upon a favourable economic evaluation and successful funding of the project. The pre-feasibility/feasibility study will include a bulk sample and geotechnical drilling.

The execution of the project will also depend upon the following environmental issues:

- completing the environmental assessment process
- obtaining principal permits to allow construction to proceed
- commencing site construction activities and obtaining all secondary permits prior to major construction activities

Several other considerations that need to be addressed include:

- availability of experienced contractors
- measures to ensure safe working conditions and high productivity
- rotational work schedules for construction personnel
- high costs to transport, house, and support construction personnel on site
- deferral of capital expenditure (delayed cash flow)
- adequate fundraising and project execution approval from Geodex

- The overall project execution schedule is based on the above criteria and constraints. A strategy for procurement and logistics has been developed based on past experience with similar projects, and to meet the requirements for safety and logistical support.

23.2 EXISTING SITE DEVELOPMENT

Currently, the site has no facilities.

23.3 SCHEDULE

The execution schedule would assume that all project phases will progress without interruption. Critical to the pre-feasibility/feasibility study is a site works program that should be conducted in conjunction with the pre-feasibility/feasibility studies. This program will provide additional data for the study and for environmental permitting.

The pre-feasibility/feasibility study and associated site program will commence upon the favourable economics of this study. The project team will work with Geodex to finalize a detailed study. The feasibility study will also finalize the design concepts necessary for permitting. Environmental and socio-economic work will continue through in parallel with the feasibility study to initiate permitting at the earliest opportunity.

To meet scheduled timelines, federal and provincial permits will be pursued simultaneously. It is assumed that key permit applications will be submitted to the appropriate federal and provincial agencies, and that a consensus on all major issues will be reached with government regulators in advance.

The main construction period will extend approximately two years, followed by a commissioning period and production build-up of approximately one year.

Activities in Construction Year 1

- Clear trees
- Construct site roads
- Install permanent power supply
- Earthworks for preparing building foundations
- Crush and screen aggregate for concrete
- Commence foundation work
- Erect fuel tanks.

Activities in Construction Year 2

- Erect process plant and other buildings
- Install equipment
- Complete electrical, piping and ancillary services
- Commission Process and Plant facilities
- Build diversion channels
- Pre-stripping commences
- Erect tailings starter dam.

23.4 ENGINEERING & PROCUREMENT

Design and procurement activities must be scheduled with sufficient lead time to allow equipment and materials to be delivered to the selected marshalling point for the project selected during the feasibility study. To defer capital expenses and/or avoid damage to sensitive equipment (e.g., electrical, instrumentation, and x-ray equipment). Some major equipment will have significant lead times, requiring engineering and procurement to be scheduled accordingly.

Procurement for the project is driven by minimizing advance cash flow. Deferring cash commitments dictates an aggressive construction schedule after materials and equipment have arrived on site.

While materials and services for the project will be sought from worldwide sources, special attention should be given to regional suppliers who can meet price, delivery, and quality requirements, as well as provide spare parts and service.

Overall management, centralized procurement, and expediting activities should be conducted out of a single office. Bids on equipment packages should accommodate timely vendor information and the project's design schedule; advance equipment purchases should be avoided in order to defer payments in accordance with project parameters. Construction and supply packages should be awarded based on negotiation and clarification with the lowest bidders.

An aggressive in-shop QA/QC inspection effort will ensure quality and minimize site delays. Overseas QA/QC inspections will be performed by a project team or qualified third party. Once construction is underway, expedited responsibilities will be transferred to site to enable close communication with field staff and assist with winter road logistics.

CONTRACT ADMINISTRATION

The project team will tender and award design/supply/erect contracts, and execute the design/supply and delivery phases. The site construction management team will be responsible for receiving, forwarding, and erection.

PROJECT TEAM & RESOURCE PLANNING

Preferably, an integrated project team execute the future phases of the project, as well as the geotechnical and bulk sample programs, from the site. If an expedited schedule is required, advance engineering will be required prior to completion of the feasibility study.

The integrated project team will execute engineering, procurement, and project management from a selected project office.

23.5 CONSTRUCTION MANAGEMENT & CONTRACT PLANNING

CONSTRUCTION MANAGEMENT TEAM

The construction management team will be a typical EPCM approach, most of whose members will work a three-week-in/one-week-out rotation schedule. Most positions will have will be relieved by other on-site staff, depending on the position and level of construction activity.

CONTRACTOR SELECTION

Contractors should be chosen based on their ability, level of experience, track record, commitment to safety and environmental issues, as well as their ability to work independently. Both union and non-union contractors will likely be accepted on site. All contractors must have a labour relations plan in place prior to commencing work.

CONTRACTING STRATEGY

Principles by which contracts will be identified and structured are outlined below:

- construction and operations contracts will be structured with scopes of work that can be reasonably achieved and managed by local businesses
- Geodex will publish a business opportunities profile that will outline the goods and services required by the project. This profile will be provided to local communities in advance of its release to the general public, to give aboriginal and businesses communities an opportunity to respond

- to encourage the hiring and training of Aboriginals and area residents, Geodex will require all contractors to disclose their policies and practices regarding preferential hiring
- contracts for goods and/or services (e.g., operation, catering, safety, and medical aid) will be awarded to outside contractors when it is of economic benefit to Geodex
- during the operating phase, Geodex will retain direct control over mine production, ore processing, and provision of services (power, water, fuel). Contractors may supply a number of associated surface activities (e.g., mine pre-stripping).

CONSTRUCTION MANAGEMENT TEAM

Construction contracts will generally include design and supply elements (e.g., construction camp, pre-engineered buildings, fuel tanks, and bulk emulsion plants) when it is cost-effective to do so. Except for long-lead items, or those requiring specific design and/or fabrication control, contractors will supply minor equipment and materials.

Larger construction contracts will generally be awarded to contractors from outside the region; Geodox will, however, encourage these contractors to subcontract to local businesses and labour to the extent practicable. Smaller contracts that could be awarded to local businesses and aboriginal groups include:

- maintenance for the construction camp
- site surveying (for construction)
- freight forwarding
- site security during construction.

23.6 TEMPORARY CONSTRUCTION FACILITIES

It is assumed that the temporary construction facilities, including power, fuel, sewage, water, etc., will be provided by the contractor.

23.7 SAFETY & HEALTH MANAGEMENT PLAN

A project safety management system will be established and included in all tendered contracts. During the construction phase, all site work will be measured against safety guidelines.

23.8 Environmental Management Plan

An ISO Environmental Management System will be required for all site activities, including construction and mine operations.

23.9 Human Resources Management Plan

The Sisson Brook project will provide Maritimers significant opportunities for business development, economic growth, and lasting employment.

24.0 MINE CLOSURE

24.1 CLOSURE, DECOMMISSIONING, AND RECLAMATION

24.1.1 *INTRODUCTION*

The Sisson Project will be developed, operated, and closed with the objective of leaving the property in a condition that will mitigate potential environmental impacts and restore the land to its pre-mining land use and capability. When possible, closure and reclamation activities will be carried out concurrently with mine operation where possible and final closure and reclamation measures will be implemented at the time of mine closure.

24.1.2 *RECLAMATION UNITS*

For the purposes of reclamation planning the Sisson Project has been broken down into the following key components, or reclamation units:

- open pit
- waste rock
- tailings impoundment
- mine site facilities.

24.1.3 *RECLAMATION OBJECTIVES*

The following goals need to be met in order to achieve this primary objective:

- the long-term preservation of water quality within and downstream of decommissioned operations
- the long-term stability of engineered structures, including waste rock dumps, open pit, and tailings impoundment
- the removal and proper disposal of all access roads, structures, and equipment that will not be required after the end of the mine life
- the long-term stabilization of all exposed erodible materials
- the natural re-integration of disturbed areas into the surrounding landscape, and the restoration of a natural appearance to the disturbed areas after mining ceases, to the greatest extent possible
- the establishment of a self-sustaining cover of vegetation that is consistent with existing forestry and wildlife needs.

25.0 MARKETS

Wardrop recommends the use of an independent third party for market analysis in the feasibility study.

26.0 CONTRACTS

The geotechnical and environmental studies have been awarded to Golder Associates Ltd. and Rescan Environmental Services Ltd., respectively.

27.0 ENVIRONMENTAL CONSIDERATIONS

It is assumed that all necessary operating and reclamation permits will be obtained.

28.0 TAXES

This model is based on pre-tax income.

29.0 CAPITAL COST ESTIMATES

29.1 SUMMARY

The total estimated cost is CDN$353 million to design, construct, and commission the facilities described in this study with a 20% contingency, applied for this level of study.

A summary of the capital cost estimate is shown in Table 29.1, and details are included in Appendix C. Sustaining capital costs are discussed in Section 29.7.

Table 29.1 Capital Cost

Area	Description	Man Hours	Amount
Direct Works			
A	Overall Site	30,623	$5,699,360
B	Mining	2,393	$20,677,550
C	Crushed Ore Storage and Reclaim	221,205	$52,703,837
E	Grinding and Flotation	274,181	$105,317,610
F	Tailings	36,662	$24,027,710
G	Site Services and Utilities	5,799	$1,657,809
J	Ancillary Buildings	13,873	$7,441,595
K	Plant Mobile Equipment	275	$2,086,340
Indirect Works			
X	Project Indirects	109,810	$69,601,000
Y	Owners Costs		$5,000,000
Z	Contingency (20%)		$58,843,000
Estimated Total		**694,787**	**$353,056,212**

All costs are expressed in Q3 2007 Canadian dollars unless otherwise specified, with no allowance for currency or interest changes during construction. The estimate has been prepared at a scoping study level, which is considered within a +/-35% level of accuracy.

The estimate comprised the direct field costs of executing the project, plus the indirect costs associated with the design, construction, and commissioning of the new facilities.

29.2 BASIS OF ESTIMATE

The capital cost estimate was based on the following:

- Basic equipment list
- In-house database
- Preliminary project execution plan
- Project work breakdown structure (**WBS**).

29.3 MATERIAL TAKE-OFFS AND LABOUR CALCULATIONS

Engineering material take-offs were based on historical information and Wardrop's experience and in-house database.

29.3.1 INSTALLATION WORKHOURS

Installation workhours were based on historical and industry standard data.

29.3.2 INSTALLATION LABOUR COSTS

Labour cost estimates were calculated using typical wages and benefits for open shop contractors. The majority of the construction personnel are expected to come from New Brunswick. Recent wage rate information from this area was used to establish an estimated construction rate of $60.00/hr.

The total labour cost estimates were based on 10 h/d for three weeks, followed by a seven-day rotation, totalling 210 workhours in a four-week period. The following were included in the wage rate:

- base labour wage rate
- overtime premiums
- benefits and burdens
- Workers' Compensation premiums
- travel time (included in Indirects)
- travel costs (included in Indirects)
- appropriate crew mixes
- small tools and consumables
- contractor temporary facilities and services
- contractors' overhead and profit.

29.4 WORK BREAKDOWN STRUCTURE

Table 29.2 shows the WBS.

Table 29.2 Work Breakdown Structure (WBS)

Work Breakdown Structure (WBS)	
A – Overall Site	
A0	Overall Site
A1	Power Supply and Distribution
A2	Control System
A3	Communication
A4	Yard Lighting
B – Mining	
B0	Mining
C – Crushed ore Storage and Reclaim	
C0	Crushing Structures
C1	Crushing, Stockpile and Reclaim
E – Grinding and Flotation	
E0	Mill Building
E1	Grinding and Classification
E2	Flotation, Regrind and Gravity Concentration
E3	Concentrate Dewatering and Loadout
E4	Reagents
F – Tailings	
F1	Tailings Disposal and Reclaim
F2	Tailings Pond
F3	Diversion Channel
F4	Waste Dump
G – Site Services and Utilities	
G1	Potable and Fresh/Fire Water
G2	Process Water
G4	Gland Water
G5	Plant Air
G7	Sewage Treatment and Collection
J – Ancillary Buildings	
J1	Administration and Mine Dry
J2	Truckshop and Warehouses
J3	Assay Laboratory
J4	Fuel Storage and Distribution
J5	Cold Storage Warehouse
J6	Explosive Storage
K – Plant Mobile Equipment	
K0	Plant Mobile Fleet
M – Temporary Services	
M1	Construction Camp
X – Project Indirects	
X1	Construction Indirects
X2	Spare Parts
X3	Initial Fills and Warehouse Inventory
X4	Freight and Logistics
X5	EPCM
X6	Commissioning and Startup
Y – Owner's Cost	
Z – Contingencies	

29.4.1 A –Overall Site

This item includes:

- site preparation
- on-site roads
- 1km road from pit to waste dump
- assumed excavation depth of 2.5 m.

29.4.2 A1 – Power Supply and Distribution

This item includes:

- tapping off power from adjacent HV lines
- overhead lines
- an incoming substation.

29.4.3 A2 – Control System

This item includes:

- an allowance of CDN$913,800 for plant control system c/w hardware, communication devices and software.

29.4.4 A3 – Communication

This item includes:

- allowances for a telephone PBX
- communication infrastructure
- handheld radios.

29.4.5 B – Mining

This item includes:

- initial site clearing of pit
- surface mine mobile equipment purchase at Year -2 and Year -1.

29.4.6 C0 - Crushing Structures

This item includes:

- detailed excavation and backfill

- concrete work
- structural steel
- wall and roof cladding
- building Services allowance based on $/m²
- power and lighting allowance based on $/m².

Structures included in this item are:

- Primary Crushing Area
- Ore Stockpile Reclaim Tunnel
- Conveyor take-up tower
- Secondary Crushing
- Tertiary Crushing
- Quartenary Crushing.

29.4.7 C1- Crushing, Ore Stockpile and Reclaim

This item includes:

- process plant and chutwork for the four stages of crushing, including ore stockpile and reclaim
- percentage allowances for piping, instrumentation and electrical area motor wiring.

29.4.8 E0 – Mill Building

This item includes:

- Detailed excavation and backfill
- Concrete work
- Pre-engineered building c/w Wall and roof cladding
- Building services allowance
- Power and lighting allowance.

The estimated cost is based on $/m² of footprint prorated from previous project.

29.4.9 E – Grinding and Flotation

This item includes:

- Process plant and chutework

- Percentage allowances for piping, instrumentation and electrical area motor wiring.

29.4.10 F – Tailings

This item includes:

- initial Tailings Dam
- final Tailings Dam – included in Sustaining Capital
- diversion Channel – included in Sustaining Capital
- tailings Dam barge c/w building, pumps and walkway
- 6.5 km 600 mm HDPE Tailings line and Reclaim Line
- Initial clearing and grubbing of Waste Dump.

29.4.11 G -Utilities

This item includes costs for the infrastructure items required to support the mine and processing facilities. These included:

- potable and Fresh/Fire Water
- process Water
- gland Water
- plant Air
- sewage treatment and collection
- fuel storage and distribution.

29.4.12 J -Ancillary Buildings

Costs for the following item include:

- administration and Mine Dry
- truckshop and warehouse
- assay laboratory and equipment
- cold storage building
- fuel storage (7 days' capacity allowance)
- explosives storage facilities.

Costs for the emulsion plant building, including all equipment and building services, were the responsibility of the explosives' supplier.

29.4.13 K – Plant Mobile Equipment

Costs for the following item include:

- 4 x 4 suburbans
- 20 t flatbed truck
- 45 t mobile crane
- front-end loader (CAT 966)
- forklifts
- fusion machine

29.5 Indirect Cost Estimate

29.5.1 Owner's Costs

An Owner's cost allowance of CDN$5 million has been included in this estimate, for the Owner's overseeing team, site survey and geotechnical reports. It does not include permitting, legal costs or sunk costs.

29.5.2 EPCM

Engineering, Procurement and Construction Management costs were based on a traditional EPCM approach, and have been calculated based on an estimated 12% of Direct Costs.

29.5.3 Vendor Representatives

Provision for vendor representatives for major process, power, and instrumentation systems was included based on vendor recommendations and allowances.

29.5.4 Temporary Construction Facilities

All contractor-related temporary facilities and services were included in the hourly wage rate, with the exception of accommodation, travel and construction equipment, which have been estimated separately.

Costs for the temporary field office complex for EPCM staff were included, as were construction power and distribution costs associated with using the standby generators.

29.5.5 Construction Accommodation and Travel

Based on the assumption that workers will be staying in hotels at nearby towns, traveling about 1 hour to the site, this study includes allowances for turnarounds based on the estimation that 60% of the workers will be from out of town.

29.5.6 COMMISSIONING & START-UP

Allowances have been included allowing the retention of contractor forces and engineering personnel for three months into the commissioning phase.

29.5.7 SPARES & FIRST FILLS – NOT INCLUDED

All first fills, including diesel fuel, are included in working capital estimate but not in the capital cost estimate.

29.5.8 FREIGHT & TAXES

An 8% allowance for freight and logistics has been applied to material and equipment cost.

Neither Provincial Sales Tax nor the Federal GST were included in the estimate. Some equipment purchased outside of Canada may incur duties of approximately 15% to 20% of the equipment cost; equipment that cannot be manufactured in Canada Is not subject to duties. For the purposes of this study, duties have been excluded, due to the specialized nature of the equipment imported equipment.

29.5.9 CONTINGENCY

Wardrop has applied a 20% contingency to this estimate; as the project moves into pre-feasibility, a risk analysis to determine the accuracy of total direct and indirect costs would be advisable.

29.6 ASSUMPTIONS & EXCLUSIONS

29.6.1 ASSUMPTIONS

The following assumptions were made in preparing this estimate:

- all material purchases, equipment purchases, and installation subcontracts will be competitively tendered on a lump sum basis
- the project will proceed on an EPCM basis as per the execution schedule
- skilled tradespersons, supervisors, and contractors are available in New Brunswick
- quotes in U.S. dollars are converted to Canadian dollars at an exchange rate of 1.05.

29.6.2 EXCLUSIONS

The following costs are not included in the estimate:

- escalation (in financial model)

- interest during construction
- impact benefit agreement costs
- bonding and security deposits
- cost of schedule delays such as those caused by:
  - scope changes
  - unidentified ground and water conditions
  - labour disputes
  - environmental permitting activities
- cost of financing
- sustaining capital
- acquisition costs
- sunk costs
- additional studies prior to the start of detailed design
- working capital
- environmental assessments, permitting, and related costs.

29.7 SUSTAINING CAPITAL

Sustaining capital requirements that are scheduled to begin the first year of production include:

- mining sustaining capital includes replacement of mobile equipment, as required, as well as replacement of fixed facilities and non-mobile equipment
- tailings dam costs include annual costs to raise the dam and the construction of additional piping systems
- sustaining capital for surface mobile equipment includes replacement based on hours of use
- process plant and infrastructure sustaining capital is estimated to be $500,000 per year

30.0 OPERATING COST ESTIMATE

30.1 MINING

The mining cost estimate was based on Wardrop's experience with respect to quantities and representative costs (Table 30.1).

Table 30.1 Unit Mining Costs

Plant Process Rate (tonnes/day)	Unit Mining Cost (CDN$/tonne)
20,000	1.30

30.2 PROCESSING

The processing cost is shown in Table 30.2.

Table 30.2 Unit Processing Costs

Plant Process Rate (tonnes/day)	Unit Processing Cost (CDN$/ore tonne)
20,000	5.33

These costs estimates are based on data from similar molybdenum operations. The costs in Table 30.2 include labour, operating maintenance consumables and power, but exclude G&A costs.

30.3 GENERAL AND ADMINISTRATIVE

The General and Administrative cost estimated is based on Wardrop's experience.

Table 30.3 General and Administrative Unit Costs

Plant Production Rate (Ore tonnes/day)	G&A Cost (CDN$/ore tonne processed)
20,000	1.09

The categories and their associated costs have been outlined in Table 30.4.

Table 30.4 General and Administrative Summary

General and Administrative Summary	
Category	**Annual Cost**
G&A Labour	$2,673,000
Site Operation and Maintenance Supplies	$500,000
Communications	$500,000
Public Relations	$500,000
Recruitment and Training	$500,000
Safety and Medical Supplies	$50,000
Computer Hardware and Software	$100,000
Office Supplies	$200,000
Outside Consultants	$100,000
Legal and Audit Fees	$200,000
Environmental Monitoring Expenses	$1,500,000
Insurance	$650,000
Total G&A Annual Cost	**$7,473,000**

The G&A labour breakdown is shown in Table 9.5.

Table 30.5 General and Administrative Labour Breakdown

G&A Labour Detail	Quantity	Annual Cost	Annual Salary
General Manager	1	$175,000	$175,000
Secretary	1	$40,000	$40,000
Office Manager	1	$100,000	$100,000
Secretary	1	$40,000	$40,000
Accountant	1	$75,000	$75,000
Payroll Clerk	1	$50,000	$50,000
Accountants Clerk	1	$40,000	$40,000
Purchasing Supervisor	1	$80,000	$80,000
Buyer	1	$70,000	$70,000
Warehouse Supervisor	1	$70,000	$70,000
Warehouse Attendant	2	$50,000	$100,000
Site Maintenance	1	$50,000	$50,000
Computer Technician	1	$65,000	$65,000
Environmental Manager	1	$90,000	$90,000
Environmental Technician	2	$70,000	$140,000
Human Resources Manager	1	$80,000	$80,000
Secretary	1	$40,000	$40,000
Personnel Manager	1	$80,000	$80,000
Clerk	1	$40,000	$40,000
Personnel Assistant	1	$50,000	$50,000
Safety and Training Officer	1	$80,000	$80,000
First Aid	1	$50,000	$50,000
Janitors	1	$35,000	$35,000
Security Manager	1	$120,000	$120,000
Security Supervisors	1	$80,000	$80,000
Security Officers	2	$70,000	$140,000
Subtotal			**$1,980,000**
Staff Burden		35%	$693,00
Total	**29**		**$2,673,00**

31.0 FINANCIAL EVALUATION

31.1 INTRODUCTION

The scope of the Preliminary Economic Assessment included the development of a spreadsheet designed to evaluate the sensitivity of the project to various inputs. Modifying these inputs would allow the impact of updated field results to be examined quickly as to their impact on the overall project. It would also allow Geodex to set priorities and determine how best to target their exploration program to enhance. The spreadsheet is attached as Appendix D.

The schedules themselves were fixed in terms of tonnes of ore and waste. The economic parameters used to define the pit designs were fixed based on the most accurate information available at the time.

The financial evaluation spreadsheet calculated the NPV assuming a discount rate of 8%, but the rate is adjustable in the spreadsheet. The NPV and the IRR were calculated for each of the options and shown in a summary table. All the calculations are pre-tax.

31.2 OPERATING COST ESTIMATE

The operating costs reflected the expected operating conditions, and economies of scale. Wardrop has made estimates of what Geodex could expect as reasonable operating costs. No escalation of operating costs due to inflation was considered in the evaluation.

The mining unit cost was applied to the ore and waste tonnage on an annual basis to arrive at the annual mining cost. Mining considered starting in Year 1.

The processing cost was applied to the ore on an annual basis.

The G&A annual cost was calculated, the details of which are shown in Section 30. This value was applied annually to the ore tonnage to calculate the G&A cost.

The sum of these three costs was considered the Total Operating Cost.

31.3 CAPITAL COST ESTIMATE

Capital costs were estimated on an annual basis for the following categories:

Direct Costs

- Overall Site
- Mining Equipment
- Crushing
- Grinding and Flotation
- Tailings
- Site Services and Utilites
- Ancillary Buildings
- Plant Mobile Equipment

Indirect Costs

- Owners Costs
- Contingency

The details surrounding these costs are explained in Section 29 of the report. A detailed breakdown is shown as Appendix C. The costs were applied in the year that they were expected to be levied. Major cost items were distributed over several years to consider the construction time if it was required.

A summary of the capital requirements has been shown in Table 31.1

Table 31.1 Capital Cost Summary

Description	Cost (Cdn$)
Direct Costs	
Overall Site	5,699
Mining Equipment	20,678
Crushing	52,704
Grinding & Flotation	105,318
Tailings	24,028
Site Services & Utilities	1,658
Ancillary Buildings	7,442
Plant Mobile Equipment	2,086
Indirect Costs	69,601
Owners Costs	5,000
Contingency	58,843
Total	**353,056**

31.4 REVENUE

Revenue for tungsten is based on the two streams of scheelite concentrate (Table 31.2) and adjusted for losses, insurance, representations, transportation costs, and royalties.

Table 31.2 Tungsten Concentrate Properties

	% Grade WO3%	% Recovery
Gravity (G1)	70%	35%
Flotation	50%	35%
		70%

Securities and Exchange Commission (**SEC**) requirements state that, in the absence of client-supplied metal price forecasting, metal pricing is established using the average metal price and exchange rate over three years. For this scoping study, the base case revenue is calculated using 80% of three-year average prices for molybdenum and tungsten.

Scheelite (tungsten) concentrate prices are based on 80% of three-year average discounted ammonium paratungstate (APT, 79%) price. Since tungsten concentrate grades are not 79%, the prices were discounted for 70% gravity and 50% flotation concentrates..

- US$164.8/mtu for gravity concentrate
- US$117.6/mtu for flotation concentrate

Revenue for molybdenum is determined by grade, molybdenum price and 85% mill recovery; it is adjusted for losses, insurance, representations, transportation cost, and royalties.

The base case molybdenum price is US$21.6/lb. A roasting charge for US$0.11/lb of Mo contained in concentrate to convert MoS_2 to MoO_3 and a conversion loss of 1.5% is applied. Since the current plant does not anticipate the on-site production of MoO_3, the conversion charges are estimated to be equal to those a third-party processor would charge.

The other deductions are as follows (Table 31.3):

Table 31.3 Tungsten and Molybdenum Deductions

Tungsten and Molybdenum Deductions		
Transport Cost		
Tungsten	150	US$/wet metric tonne concentrate
Molybdenum	150	US$/wet metric tonne concentrate
Losses, Insurance, Representation for tungsten & molybdenum		
Losses	0.50%	Net smelter return
Insurance	0.15%	Net smelter return
Representation	0.5	US$/wet metric tonne

Net revenue= Net smelter return (NSR)-royalty (if any)

Net smelter return (NSR) = NIV – losses – representation -transportation

Net Invoice value (NIV) = Gross revenue - smelting

31.5 NET PRESENT VALUE AND IRR SUMMARY

The financial analysis for the scoping study is based on a discount rate of 8%. The base case analysis achieves a positive NPV value (Table 31.4). The project has a payback period of 2.7 years.

Table 31.4 IRR & NPV Results @ 8% Discount Rate for Different Cases

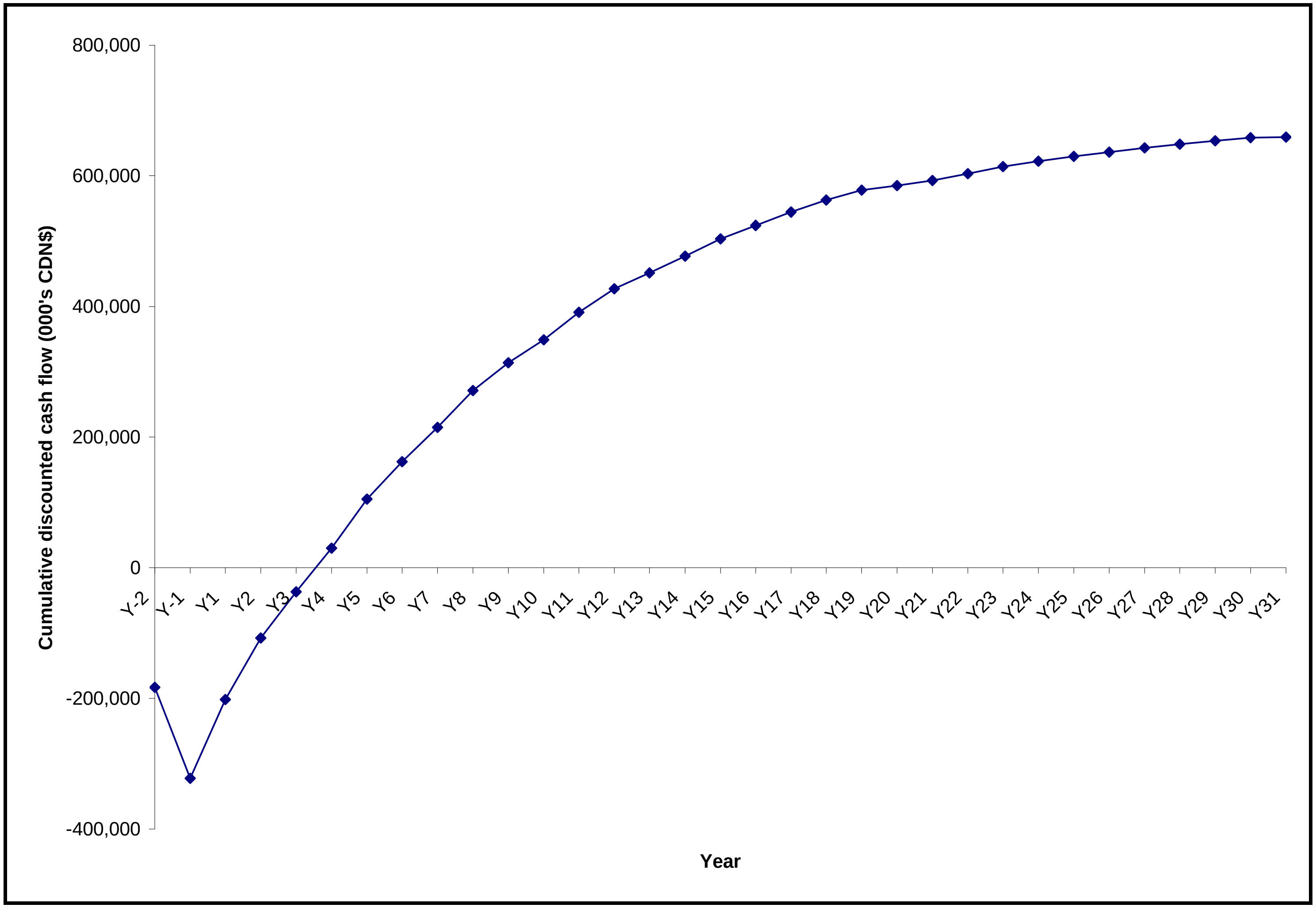
Case	Molybdenum Price ($US/lb)	Tungsten Price ($US/mtu)		NPV ($CDN)	IRR (%)
	Mo in Mo03	Flotation Concentrate W03	Gravity Concentrate W03	000's	
Base Case	**21.6**	**117.6**	**164.8**	**692,688**	**29.8**
Three Year Average	27.0	146.9	205.6	1,118,238	40.6
Current Price	32.3	150.9	211.3	1,000,828	37.7
70% of Base Case	15.1	82.3	115.4	186,494	15.0

Figure 31.1 was developed to show the cumulative cash flow for the base case. The details of the cash flow are included in Appendix D.

Salvage costs are based on 10% of the initial direct process capital cost.

Reclamation costs are not provided in this study. An allowance of CDN$29 million is included in the financial evaluation which is equal to the salvage value of equipment and working capital recovery at end of mine life.

Figure 31.1 Cumulative Discounted Cashflow for the Base Case



31.6 SENSITIVITY

Sensitivities to initial capital cost, operating cost, exchange rate and the metal prices and the IRR are considered.

Base case parameters are listed in Table 31.5.

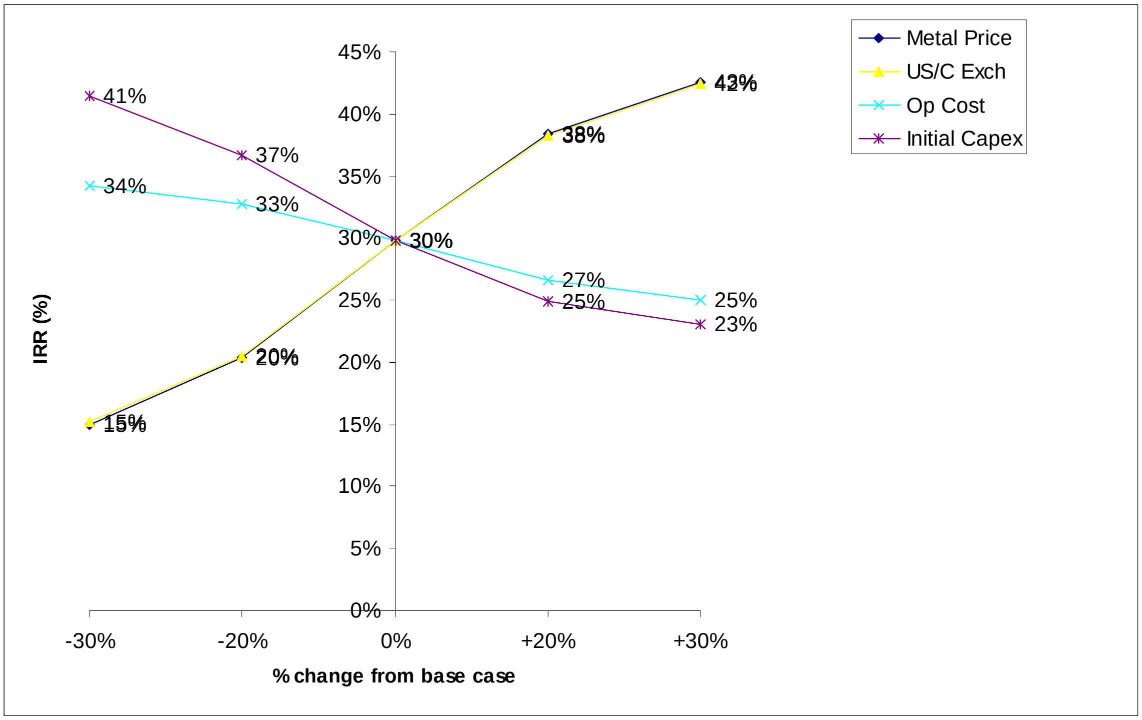
Table 31.5 Base Case Parameters

Base Case Parameters	
Molybdenum price (US$/lb)	21.6
Tungsten price	
Flotation concentrate (US$/mtu)	117.6
Gravity concentrate (US$/mtu)	164.8
Initial capital cost (Million CDN$)	353
Operating costs	
Processing cost (CDN$/tonne milled)	5.33
Mining cost (CDN$/tonne mined)	1.30
G&A (CDN$1.09/tonne milled)	1.09
Exchange rate (US/C)	1.17

Table 31.6 IRR by Percent Change of Base Case

IRR Value					
Percent of base case	-30%	-20%	0%	+20%	+30%
Metal price	15%	20%	30%	38%	43%
US/C Exch	15%	20%	30%	38%	42%
Op Cost	34%	33%	30%	27%	25%
Initial Capex	41%	37%	30%	25%	23%

Figure 31.2 IRR Percent Change from Base Case



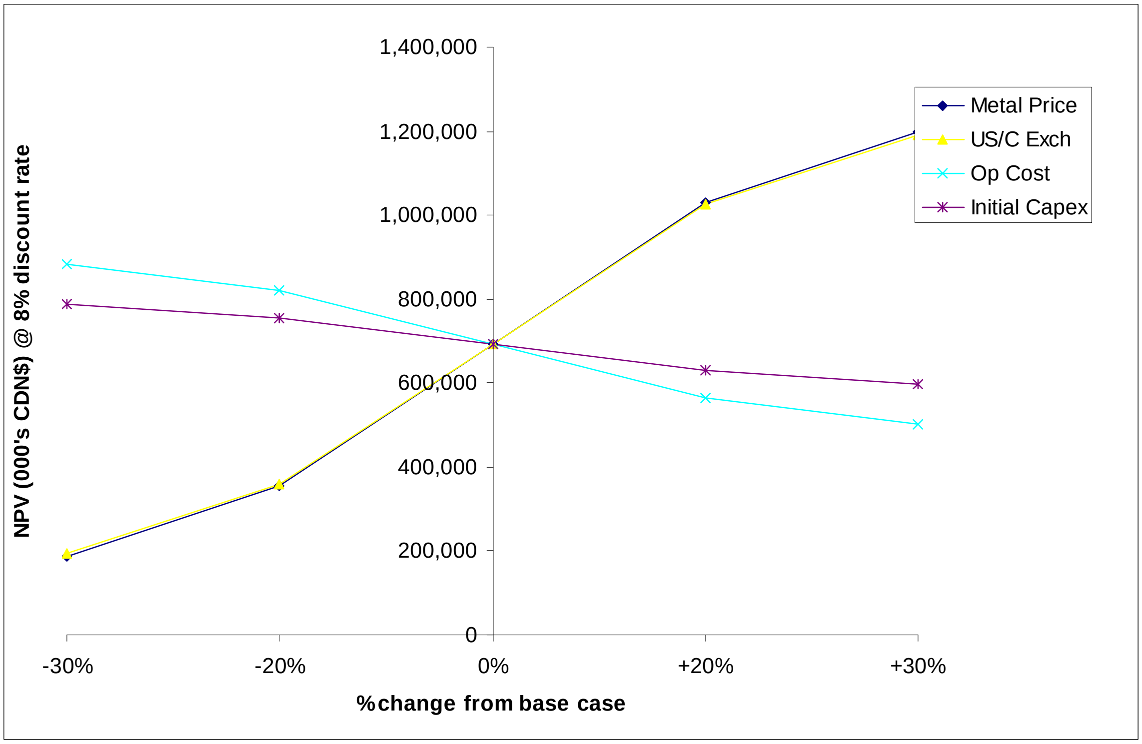
An initial capital cost increase of $70 million dollars (20% of base case) decreases the IRR by 5%. An operating cost increase of 30% decreases the IRR by 5%. A metal price decrease of 30% decreases the IRR by 15%. An exchange rate decrease of 20% created a 10% decrease in the IRR results.

Table 31.6 NPV by Percent Change of Base Case

NPV Value (000 CDN$) @ 8% discount rate					
Percent of base case	-30%	-20%	0%	+20%	+30%
Metal price	186,494	355,225	692,688	1,030,150	1,198,881
US/C Exch	192,661	359,337	692,688	1,026,039	1,192,714
Op Cost	883,631	819,983	692,688	565,392	501,744
Initial Capex	787,556	755,933	692,688	629,442	597,819

Within the range of variations of the base case parameters, the project is shown to be economically viable based on all the assumptions made in this report. As the tables and charts show the project is most sensitive to change in metal price and exchange rate.

Figure 31.3 NPV Percent Change from Base Case



31.7 FINANCIAL RESULTS

The results of the analysis indicated that the 20,000 t/d production rate, with a 31 year mine life, using base case prices of molybdenum and tungsten, creates a project with a 30% IRR and a CDN$692 million NPV. The project has an operating cost of CDN$9.3/t milled ore, and it has a pay back period of 2.7 years.

Sensitivity to metal prices highlights the importance of metal prices on the IRR.

Taking into account the assumptions of this study, the project needs further development and engineering studies to raise the status of the resource, determine metallurgical parameters and develop a feasible mine model to the Preliminary Feasibility level.

32.0 INTERPRETATION AND CONCLUSIONS

This scoping level or preliminary economic assessment of the Sisson Brook Project indicates that based, on the assumed parameters, an open pit mine operating at 20,000 t/d would be a profitable and viable financial investment.

The results are significantly robust to justify continued development by proceeding with preliminary feasibility studies.

Primary areas of study would be:

- rrilling and resource modelling to advance the status of the resources above the inferred level
- metallurgical testing to determine ore recovery, concentrate characteristics and other metallurgical parameters
- geotechnical studies to enable pit design and infrastructure layout
- capital and operating cost studies
- mine design and production scheduling
- environmental studies including base line sampling
- all other work required to enable a decision to be made to proceed (or not) to the feasibility study level.

33.0 RECOMMENDATIONS

33.1 DETAILED MINE DESIGN AND SCHEDULING

The pit shells resulting from pit optimization do not consider operational constraints such as berms and ramps; therefore, the numbers provided in this report do not yet represent a practical mine design but approximate to the mineable reserve. Detailed mine design and scheduling incorporating the additional drilling results are required.

33.2 GEOTECHNICAL DESIGN

Arbitrary geotechnical assumptions were made for the purposes of this scoping study. Geotechnical assessment work needs to be performed to determine the mining geotechnical parameters to ensure that those assumptions are valid. In addition, hydrological studies must be undertaken to determine the pumping requirements in the pit and what surface drainage would be required. Golder Associated Ltd. is carrying out further geotechnical analysis.

33.3 ENVIRONMENTAL STUDIES

It is assumed that all necessary operating and reclamation permits will be obtained. Rescan Environmental Services Ltd. is working on the development of environmental studies.

33.4 PROCESS AND METAL RECOVERIES

Knelson Research and Technology Centre and SGS Canada Inc. have collaboratively developed a test program in order to assist with the definition of the process design. The testwork program has been scheduled for late 2007, when the metallurgical test sample will be drilled and be made available for testing by Knelson and SGS.

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35.0 CERTIFICATES OF QUALIFIED PERSONS

I, Michael P. Cullen, P. Geo. do hereby certify that as the author of Sections 2-18 of this **TECHNICAL REPORT ON THE SISSON BROOK PROJECT, NEW BRUNSWICK, CANADA**, dated November 9, 2007, I hereby make the following statements:

- I am currently employed as a Senior Geologist by: Mercator Geological Services Limited with offices located at 65 Queen Street, Dartmouth, Nova Scotia, Canada B2Y 1G4
- I graduated with a Masters Degree in Science (Geology) from Dalhousie University in 1984. In addition, I obtained a Bachelor of Science degree (Honours, Geology) in 1980 from Mount Allison University.
- I am a registered member in good standing of the Association of Professional Geoscientists of Nova Scotia, registration number 064.
- I have worked as a geologist in Canada and internationally since graduation from university.
- 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
- I am one of the qualified persons responsible for the preparation of Sections 2-18 of this “Technical Report on the Sisson Brook Project, New Brunswick, Canada”, dated November 9, 2007
- I visited the Sisson Brook on June 6, 2006 in company with Geodex staff and company consultants at which time surface drill core was examined and exposures of bedrock units in the Zone III and Zone I deposit areas were viewed. Drill core from Zone III was subsequently viewed at the Geodex core logging facility and I participated in several Sisson Brook project meetings with Geodex staff during 2006 and 2007 at the company’s Fredericton offices.
- I have no prior involvement with the property that is the subject of the Technical Report.
- I am not aware of any material fact or material change with respect to the subject matter of sections 2-18 of the Technical Report, for which I am responsible, that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.

- I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.
- I have read National Instrument 43-101 and Form 43-101F1, and believe that sections 2-18 of this Technical Report, for which I am responsible, have been prepared in compliance with that instrument and form.
- I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Signed and dated this 9th day of November, 2007 at Dartmouth, Nova Scotia.

"Original Document, Revision 03 signed and sealed
by Michael P. Cullen, M.Sc., P.Geo."

Michael P. Cullen, M. Sc., P.Geo.
Senior Geologist
Mercator Geological Services Limited.

I, Marinus Andre de Ruijter, of Delta, British Columbia, do hereby certify that as the author of Section “Mill and Process Plant” of this **TECHNICAL REPORT ON THE SISSON BROOK PROJECT, NEW BRUNSWICK, CANADA**, dated November 9, 2007, I hereby make the following statements:

- I am a Senior Metallurgical Engineer with Wardrop Engineering Inc. with a business address at #800 – 555 W. Hastings St., Vancouver, B.C.
- I am a graduate of the University of Witwatersrand, Johannesburg, South Africa (B.Sc. - Physics, Mathematics, 1970; B.Eng., 1973; M.Eng., 1979).
- I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (Registration #31031).
- I have practiced my profession continuously since graduation, except during the years 2000 to 2004.
- 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 purpose of NI 43-101.
- My relevant experience includes gravity concentration and flotation research and development work on cassiterite, wolframite, and chromite ores, and engineering design work on scheelite ores.
- I am responsible for the preparation of Section “Mill and Process Plant” of this technical report titled “Technical Report on the Sisson Brook Project, New Brunswick, Canada “, dated November 9, 2007.
- I have no prior involvement with the Property that is the subject of the Technical Report.
- As of the date of this Certificate, to my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
- I am independent of the Issuer as defined by Section 1.4 of the Instrument.
- I have read National Instrument 43-101 and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

Signed and dated this 9th day of November, 2007 at Vancouver, British Columbia

“Original Document, Revision 03 signed and sealed by M.A. de Ruijter, P.Eng..”

M.A. de Ruijter, P.Eng.
Senior Metallurgical Engineer
Wardrop Engineering Inc.

I, Michael Andrew Nichols, of Vancouver, British Columbia, do hereby certify that as the author of this **TECHNICAL REPORT ON THE SISSON BROOK PROJECT, NEW BRUNSWICK, CANADA**, dated November 9, 2007, do hereby make the following statements:

- I am a Chief Mining Engineer with Wardrop Engineering Inc. with a business address at 800-555 West Hastings Street, Vancouver, British Columbia, V6B 1M1.
- I am a graduate of Camborne School of Mines, England, (ACSM, 1973).
- I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (Registration #125865).
- I have practiced my profession as a Mining Engineer for 30 years.
- 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 meet the requirements of a “qualified person” as defined in NI 43-101.
- I am responsible for the preparation of Section(s) 1 ,19, and (21–35) of this technical report titled “Technical Report on the Sisson Brook Project, New Brunswick, Canada“, dated November 9, 2007.
- I have no prior involvement with the Property that is the subject of the Technical Report.
- As of the date of this Certificate, to my knowledge, information, and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
- I am independent of the Issuer as defined by Section 1.4 of the Instrument.
- I have read National Instrument 43-101 and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

Signed and dated this 9th day of November, 2007 at Vancouver, British Columbia

“Original Document, Revision 03 signed and sealed by Michael Andrew Nichols, P.Eng.”

Michael Andrew Nichols, P.Eng.
Chief Mining Engineer
Wardrop Engineering Inc.

APPENDIX A

PLANT SITE DETAIL

THE INFORMATION CONTAINED ON THIS DRAWING HAS BEEN PREPARED SOLELY FOR THE OWNER FOR USE ON THIS PROJECT AND IS COPYRIGHTED. ANY UNAUTHORIZED USE OF THIS INFORMATION IS A BREACH OF COPYRIGHT AND WILL BE PURSUED AS SUCH. USE OF THE INFORMATION ON THIS DRAWING IN WHOLE OR IN PART OTHER THAN FOR THE INTENDED PURPOSE IS AT THE SOLE RISK OF THE USER.

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SCALE:	1:15000	DATE
DESIGN. BY:	J.DIAZ	SEP07
DRAWN BY:	J.DIAZ	SEP07
CHECK. BY:		
APP. BY:		

NEW BRUNSWICK

GEODEX MINERALS

WARDROP Engineering Inc.

TITLE

SISSON BROOK PROJECT

GENERAL ARRANGEMENT
OVERALL SITE PLAN

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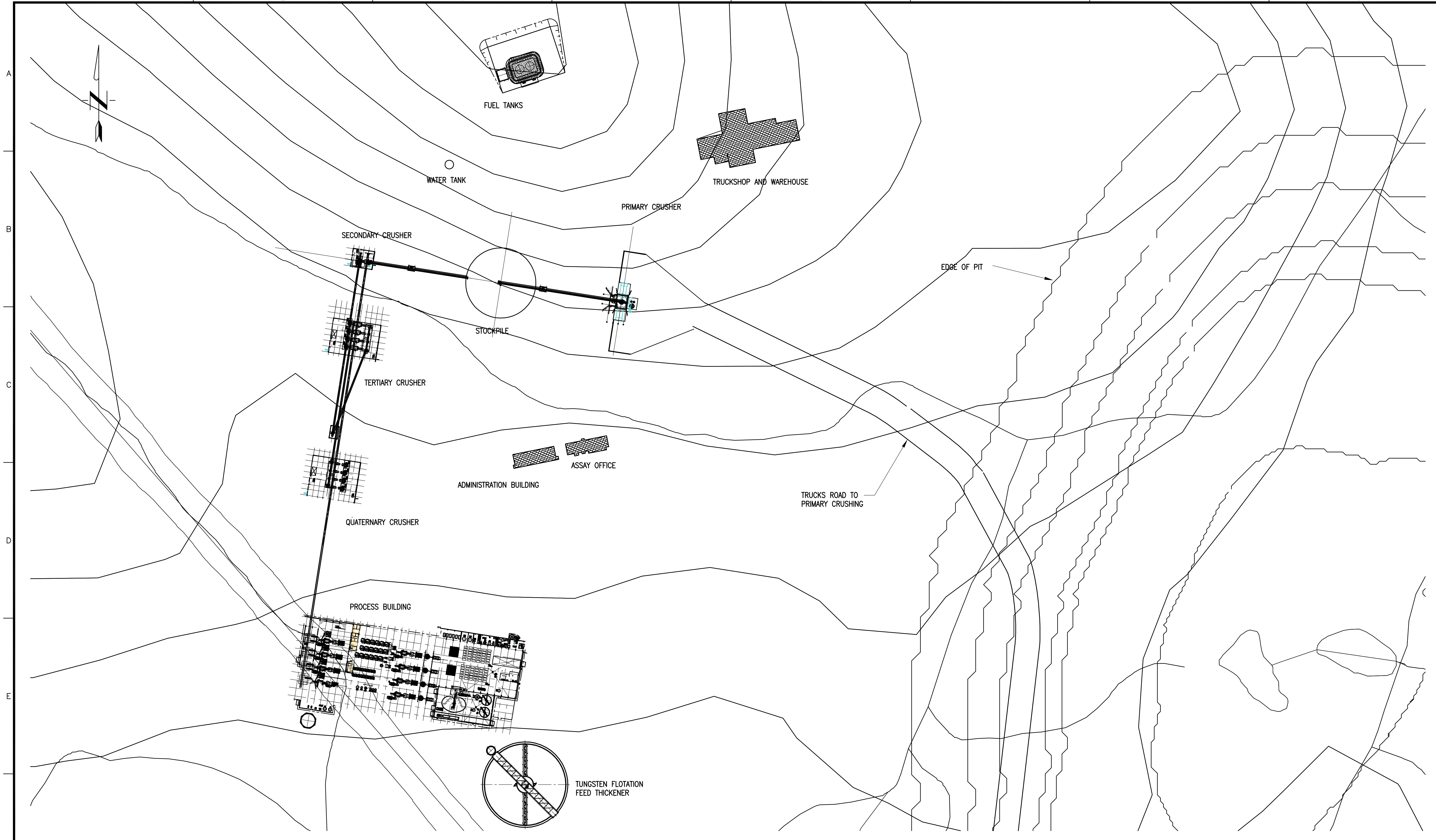

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GEODEX MINERALS

WARDROP Engineering Inc.

TITLE SISSON BROOK PROJECT

PLANT SITE
GENERAL ARRANGEMENT
PLAN

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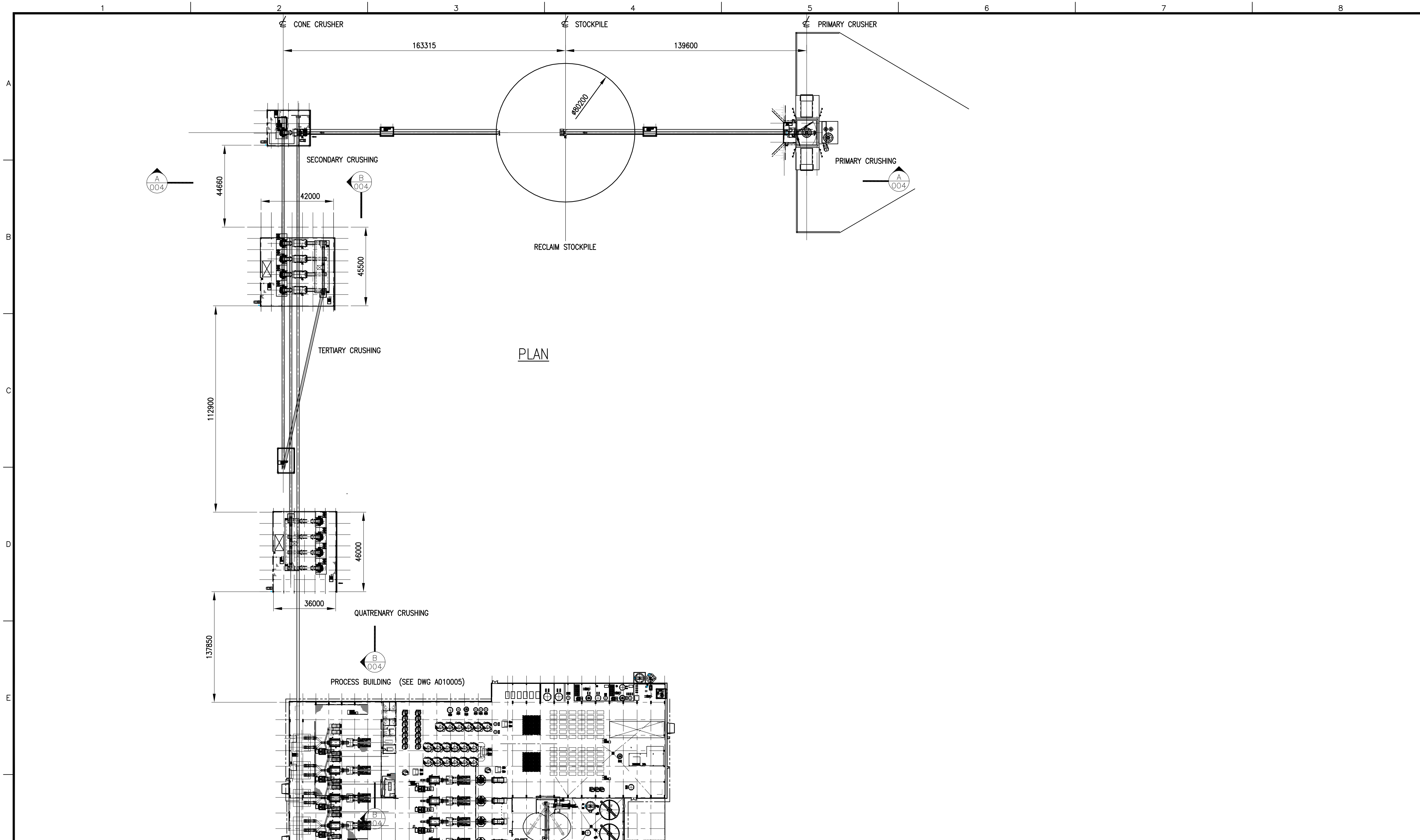

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NEW BRUNSWICK

GEODEX MINERALS

WARDROP Engineering Inc.

TITLE SISSON BROOK PROJECT

GENERAL ARRANGEMENT PLAN

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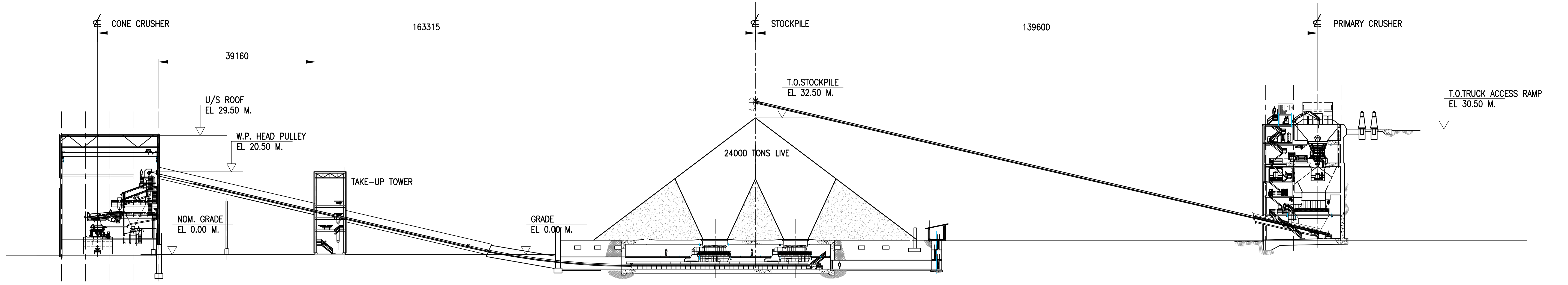
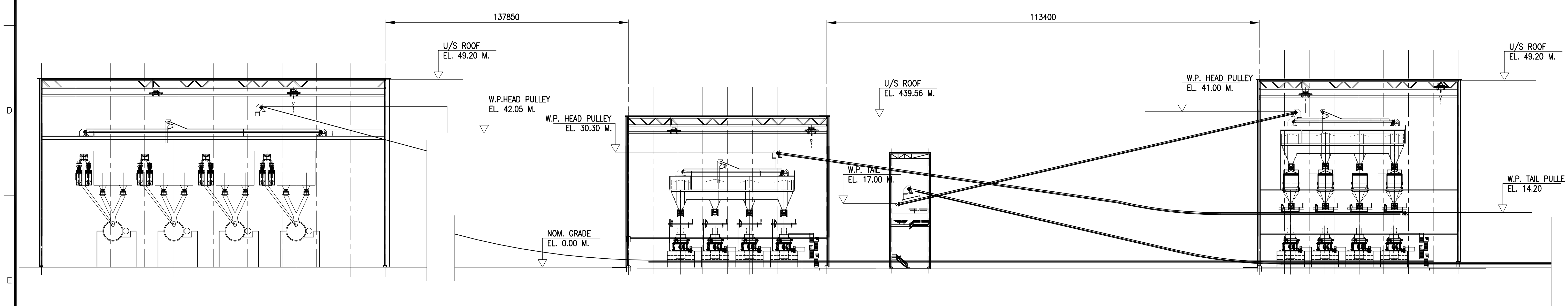


SECTION A 003



SECTION B 003

DWG. NO.	REFERENCE DRAWINGS

REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
A	1	ISSUED FOR CLIENT APPROVAL	19OCT07	JD

CLIENT · PRO.MAN. · PRO.ENG. · PROCESS · ELECTR. · INSTR. · PIPING · MECH. · STRUCT. · SERVICES · ARCH. · LAYOUT

SECTION:	LAYOUT	
SCALE:	1:500	DATE
DESIGN. BY:	JD	SEP07
DRAWN BY:	JD	SEP07
CHECK. BY:		
APP. BY:		

NEW BRUNSWICK

GEODEX MINERALS

WARDROP Engineering Inc.

TITLE SISSON BROOK PROJECT

GENERAL ARRANGEMENT SECTIONS

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
A010004.DWG	07530501.00	A0-10-004	A

D-METRIC

07/10/19 10:54

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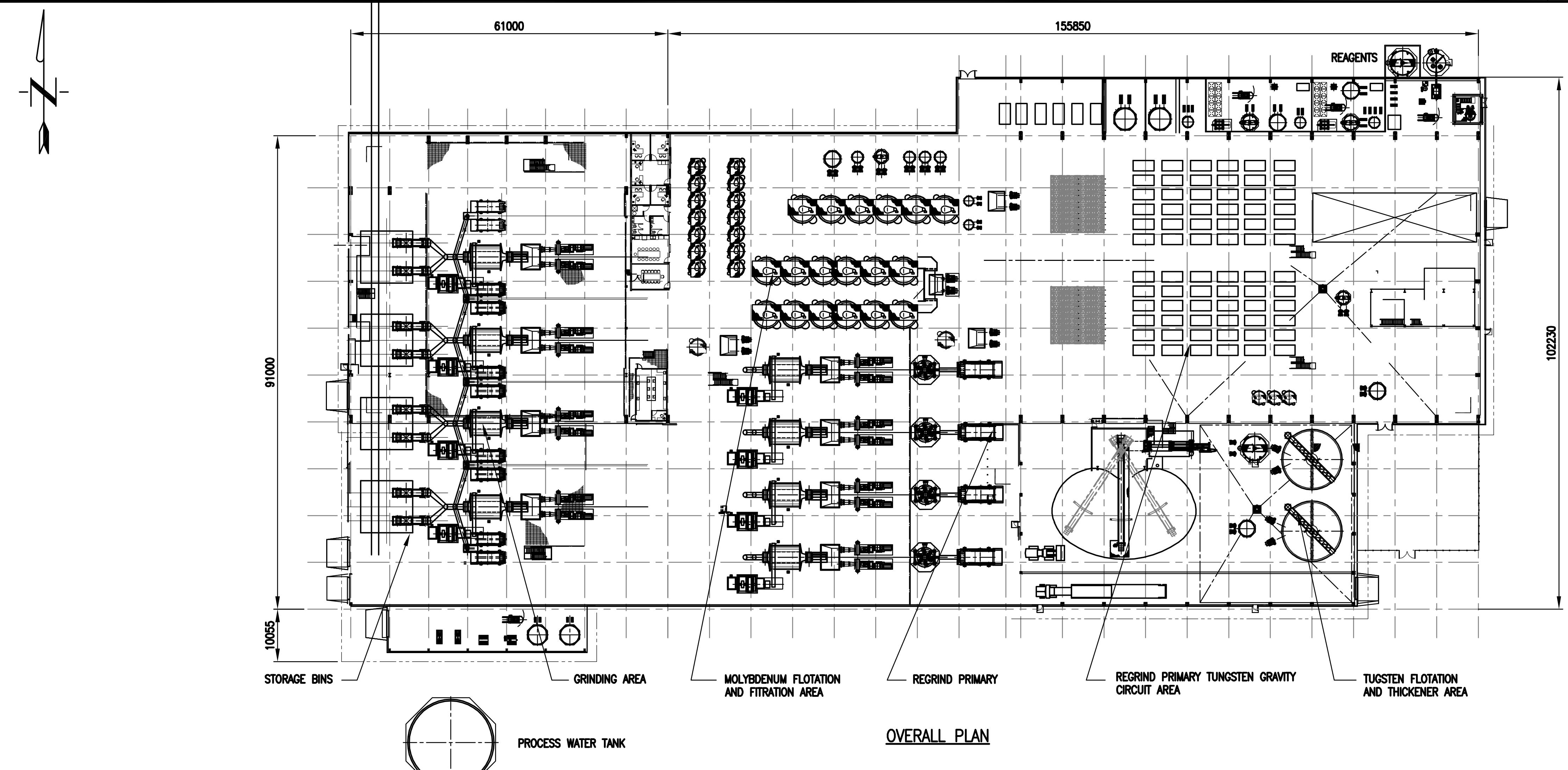

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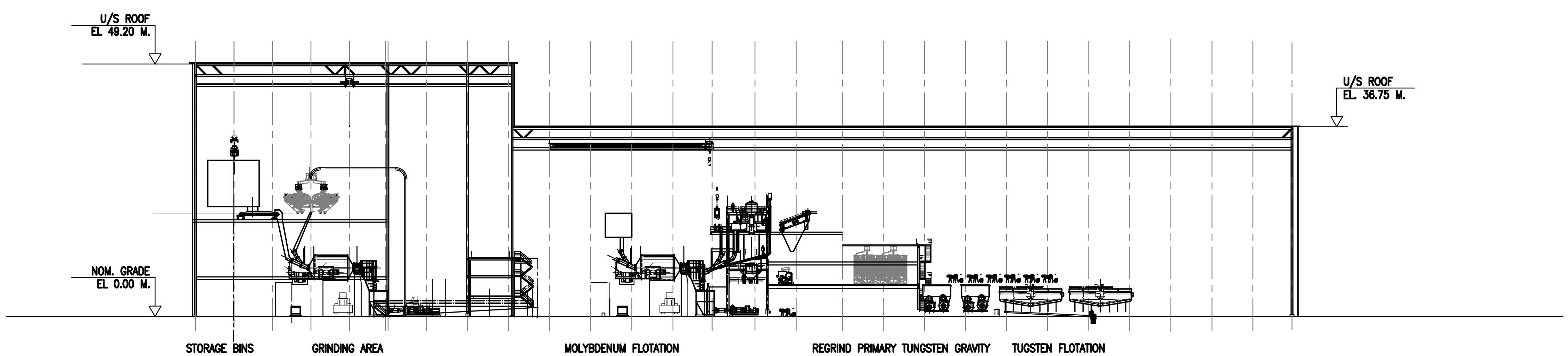

ELEVATION

D-METRIC

DWG. NO.	REFERENCE DRAWINGS	CLIENT	PROJ.MAN.	PROJ.ENG.	PROCESS	ELECTR.	INSTR.	PIPING	MECH.	STRUCT.	SERVICES	ARCH.	LAYOUT	REV. No.	ISSUE No.	DESCRIPTION	DATE	BY

CLIENT	PROJ.MAN.	PROJ.ENG.	PROCESS	ELECTR.	INSTR.	PIPING	MECH.	STRUCT.	SERVICES	ARCH.	LAYOUT	REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
												A	1	ISSUED FOR CLIENT APPROVAL	19OCT07	JD

SECTION: LAYOUT		
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DESIGN. BY: J.DIAZ	SEP07	
DRAWN BY: J.DIAZ	SEP07	
CHECK. BY:		
APP. BY:		

NEW BRUNSWICK

GEODEX MINERALS

WARDROP Engineering Inc.

TITLE SISSON BROOK PROJECT

GENERAL ARRANGEMENT
PROCESS BUILDING
PLAN AND ELEVATION

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
A010005.DWG	07530501.00	A0-10-005	A

07/10/19 10:56

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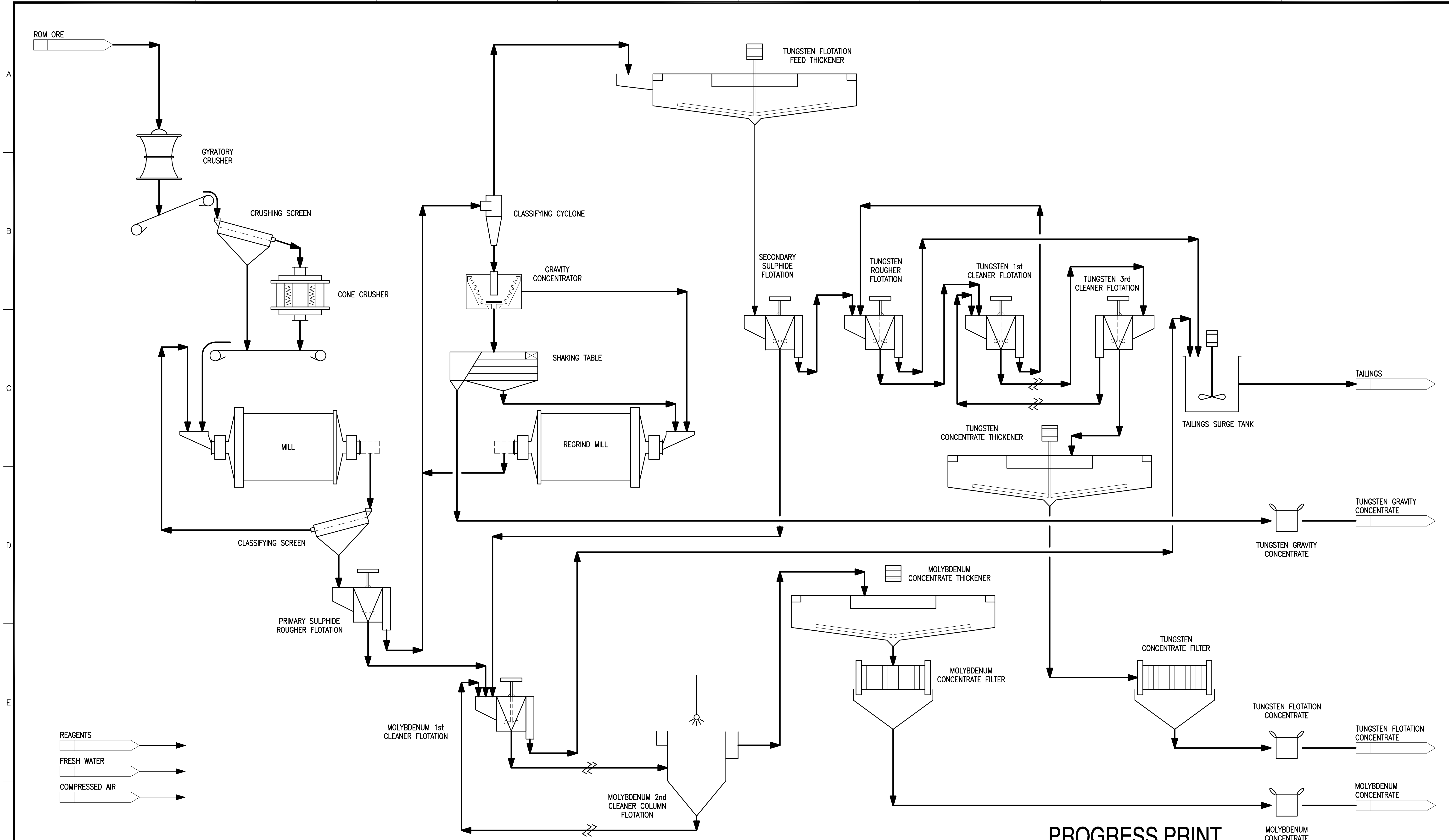
APPENDIX B

PROCESS FLOWSHEET



PROGRESS PRINT

DWG. NO.	REFERENCE DRAWINGS

REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
A	1	ISSUED FOR CLIENT APPROVAL	19OCT07	JD

SECTION: PROCESS		
SCALE: NONE		DATE
DESIGN. BY:	AdR	JUL07
DRAWN BY:	FH	02OCT07
CHECK. BY:		
APP. BY:		

NEW BRUNSWICK

GEODEX MINERALS

WARDROP Engineering Inc.

TITLE SISSON BROOK PROJECT

SIMPLIFIED FLOWSHEET

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
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D–METRIC

07/10/19 10:05

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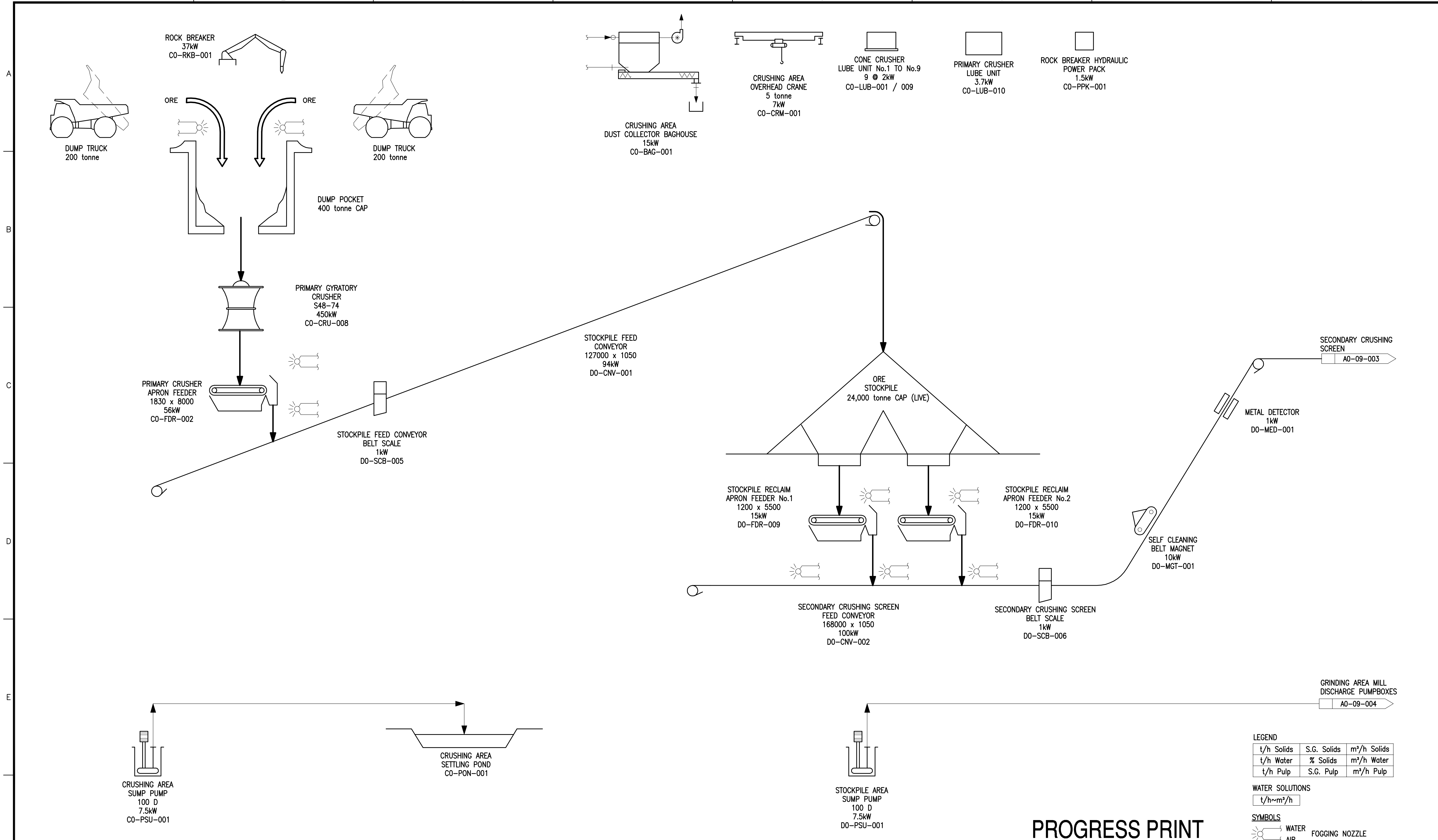

PROGRESS PRINT

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DWG. NO.	REFERENCE DRAWINGS

REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
A	1	ISSUED FOR CLIENT APPROVAL	19OCT07	JD

SECTION:	PROCESS	
SCALE:	NONE	DATE
DESIGN. BY:	JD	SEP07
DRAWN BY:	FH	02OCT07
CHECK. BY:		
APP. BY:		

NEW BRUNSWICK

GEODEX MINERALS

WARDROP Engineering Inc.

TITLE SISSON BROOK PROJECT

ORE RECEIVING AND PRIMARY CRUSHING PROCESS FLOW DIAGRAM No.1

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
A009002.DWG	07530501.00	A0-09-002	A

D-METRIC

07/10/19 10:06

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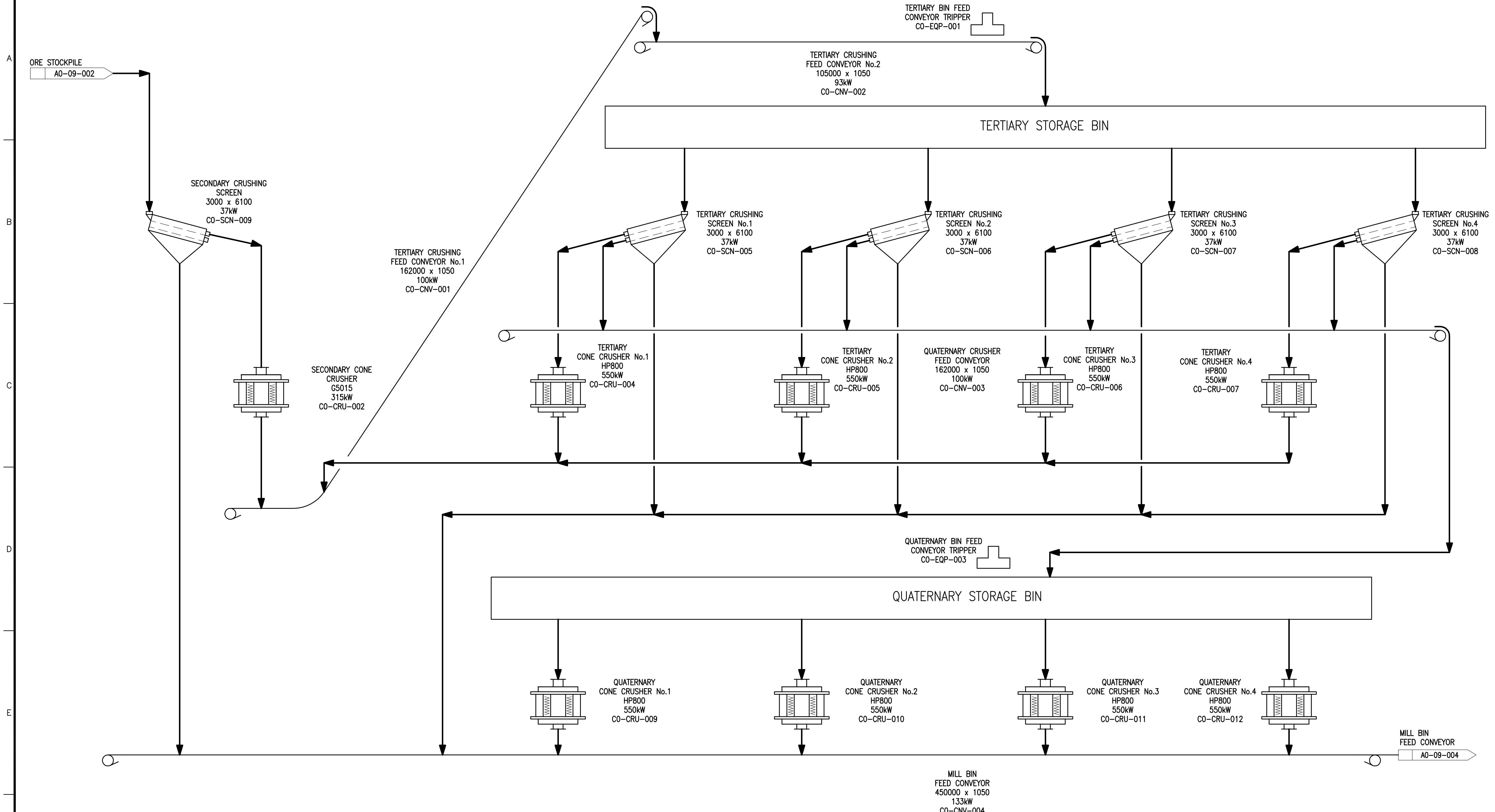

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DWG. NO.	REFERENCE DRAWINGS	REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
		A	1	ISSUED FOR CLIENT APPROVAL	19OCT07	JD

SECTION: PROCESS		
SCALE:	NONE	DATE
DESIGN. BY:	AdR	JUL07
DRAWN BY:	FH	02OCT07
CHECK. BY:		
APP. BY:		

NEW BRUNSWICK

GEODEX MINERALS

WARDROP Engineering Inc.

TITLE SISSON BROOK PROJECT

FINE CRUSHING CIRCUIT
PROCESS FLOW DIAGRAM No.2

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
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D-METRIC 07/10/19 10:08

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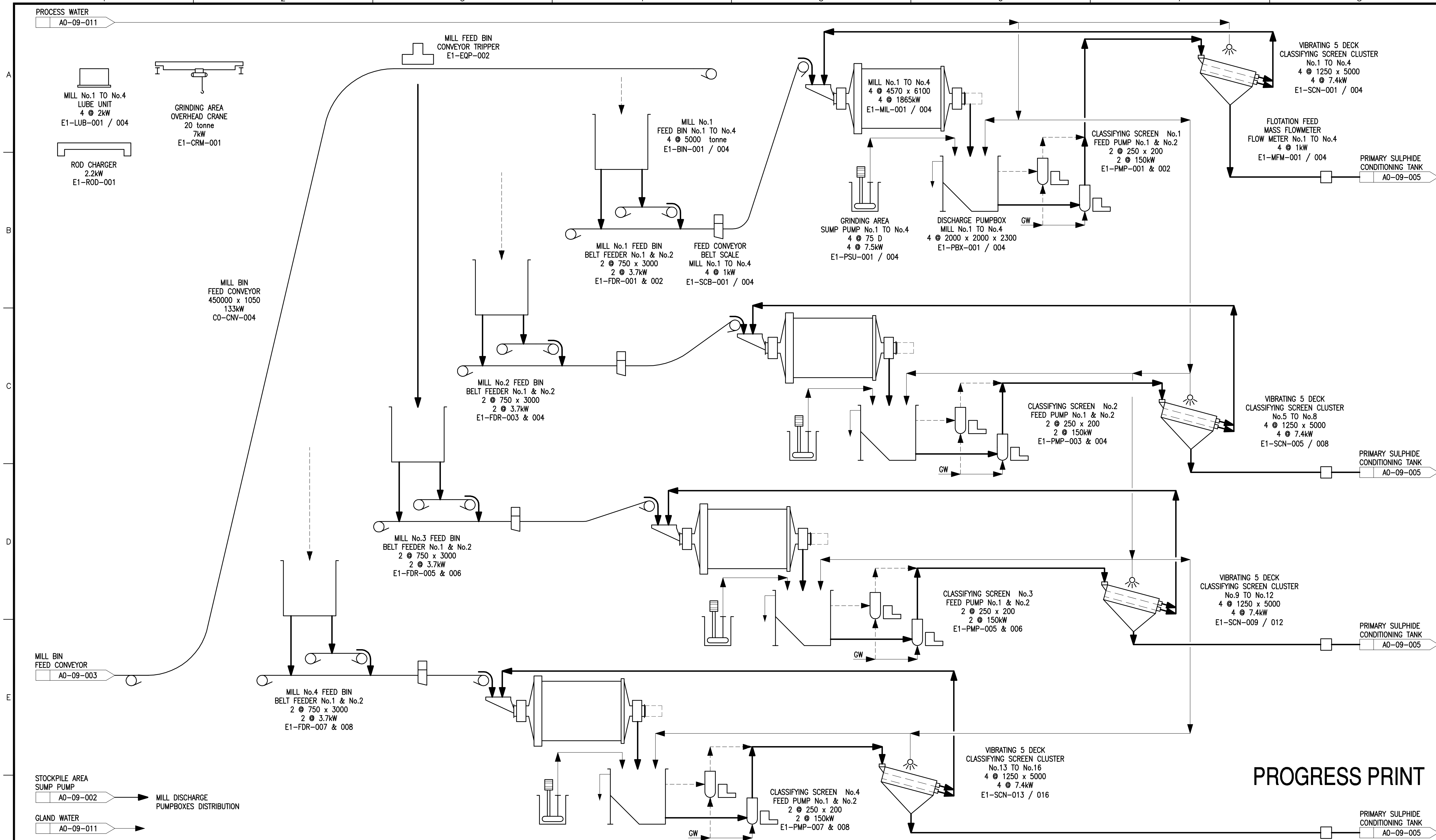

DWG. NO.	REFERENCE DRAWINGS

REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
A	1	ISSUED FOR CLIENT APPROVAL	19OCT07	JD

SECTION: PROCESS
SCALE: NONE
DESIGN. BY: AdR — DATE: JUL07
DRAWN BY: FH — 02OCT07
CHECK. BY:
APP. BY:

GEODEX MINERALS — NEW BRUNSWICK
WARDROP Engineering Inc.

TITLE: SISSON BROOK PROJECT
GRINDING & CLASSIFYING PROCESS FLOW DIAGRAM No.3

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
A009004.DWG	07530501.00	A0-09-004	A

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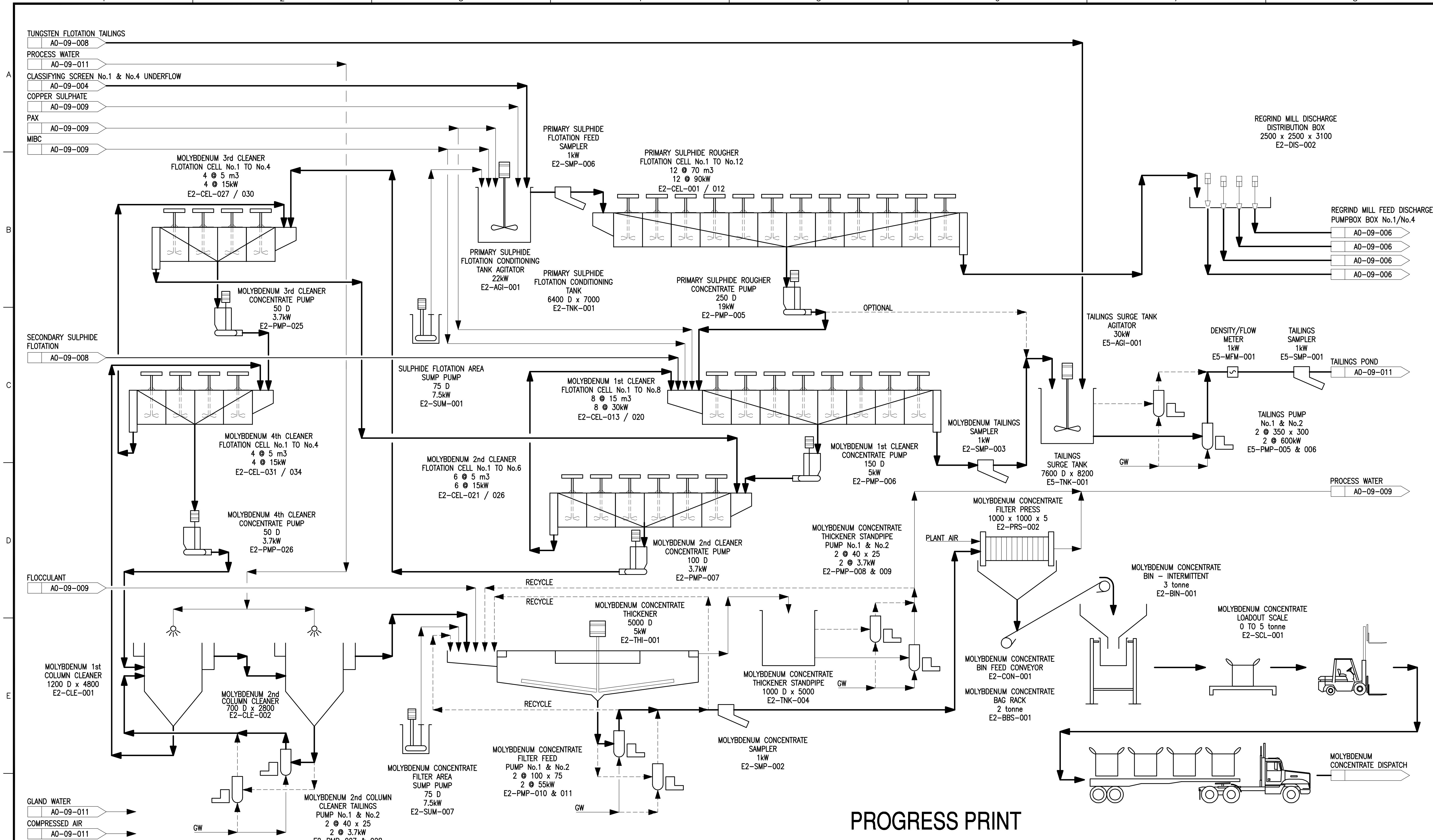

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DWG. NO.	REFERENCE DRAWINGS

REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
A	1	ISSUED FOR CLIENT APPROVAL	19OCT07	JD

CLIENT, PRO.MAN., PROCESS, ELECTR., INSTR., PIPING, MECH., STRUCT., SERVICES, ARCH., LAYOUT

SECTION: PROCESS
SCALE: NONE — DATE
DESIGN. BY: AdR — JUL07
DRAWN BY: FH — 02OCT07
CHECK. BY:
APP. BY:

NEW BRUNSWICK
GEODEX MINERALS
WARDROP Engineering Inc.

TITLE: SISSON BROOK PROJECT
MOLYBDENUM FLOTATION & FILTRATION CIRCUIT
PROCESS FLOW DIAGRAM No.4

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
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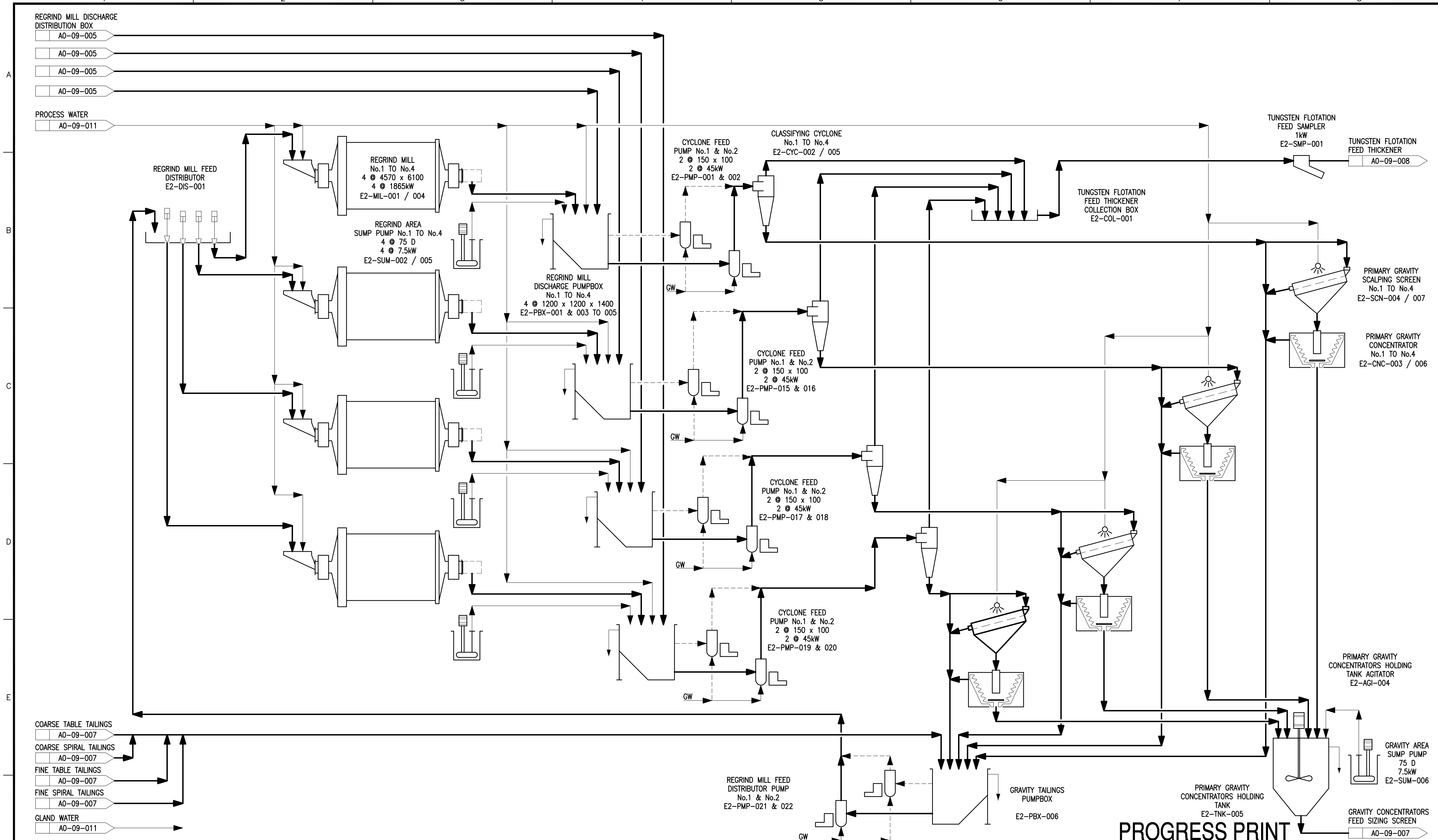

DWG. NO.	REFERENCE DRAWINGS	REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
		A	1	ISSUED FOR CLIENT APPROVAL	19OCT07	JD

CLIENT, PRO.MAN., PRO.ENG., PROCESS, ELECTR., INSTR., PIPING, MECH., STRUCT., SERVICES, ARCH., LAYOUT

SECTION: PROCESS		
SCALE: NONE		DATE
DESIGN. BY:	AdR	AUG07
DRAWN BY:	FH	02OCT07
CHECK. BY:		
APP. BY:		

NEW BRUNSWICK

GEODEX MINERALS

WARDROP Engineering Inc.

TITLE SISSON BROOK PROJECT

REGRIND & PRIMARY TUNGSTEN GRAVITY CIRCUIT PROCESS FLOW DIAGRAM No.5

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
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07/10/19 10:32

D-METRIC

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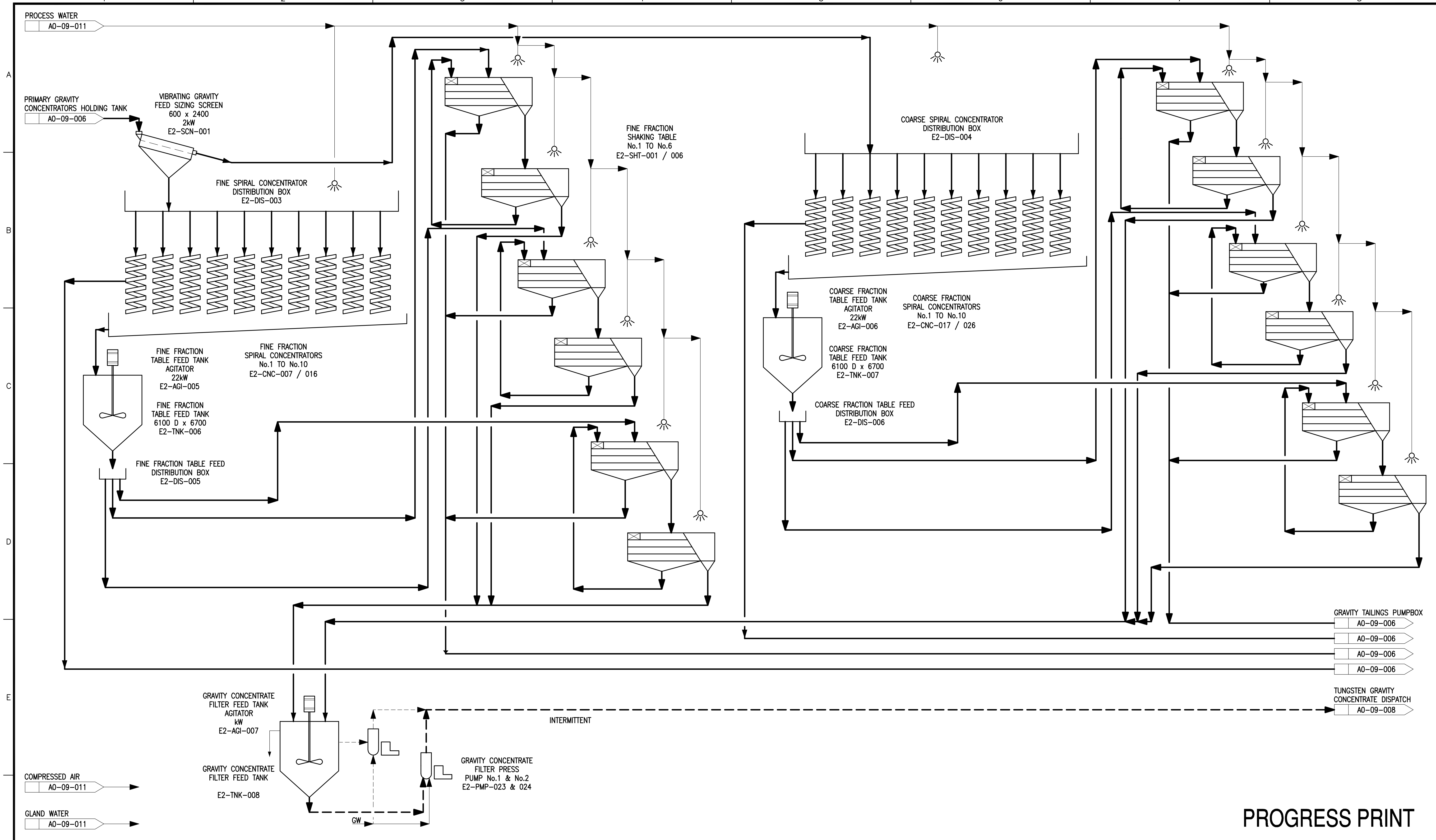

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DWG. NO.	REFERENCE DRAWINGS	REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
		A	1	ISSUED FOR CLIENT APPROVAL	19OCT07	JD

SECTION: PROCESS		
SCALE: NONE		DATE
DESIGN. BY:	AdR	JUL07
DRAWN BY:	FH	02OCT07
CHECK. BY:		
APP. BY:		

NEW BRUNSWICK

GEODEX MINERALS

WARDROP Engineering Inc.

TITLE SISSON BROOK PROJECT

TUNGSTEN GRAVITY CIRCUIT PROCESS FLOW DIAGRAM No.6

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
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D-METRIC

07/10/19 10:32

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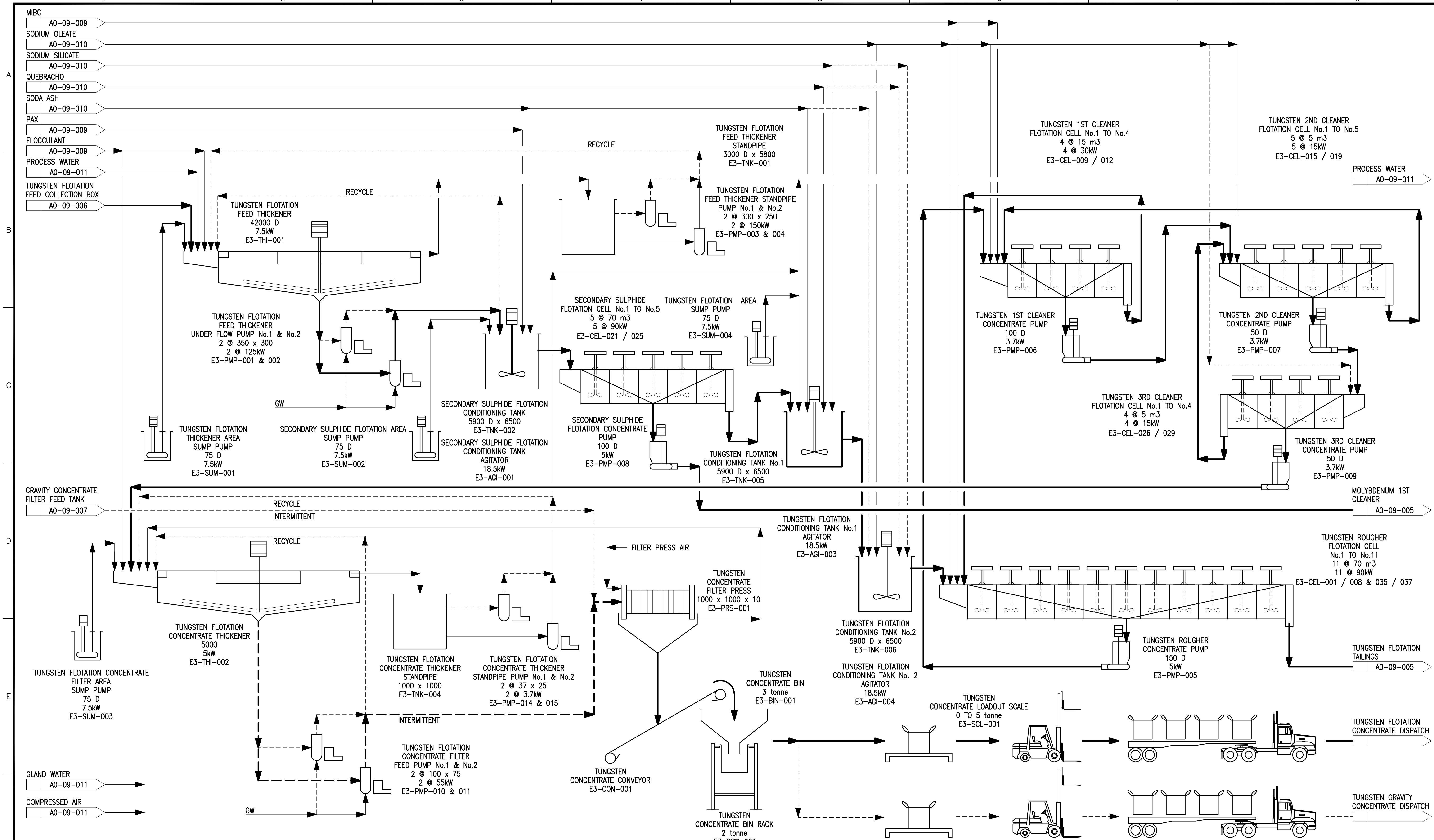

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DWG. No.	REFERENCE DRAWINGS	REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
		A	1	ISSUED FOR CLIENT APPROVAL	19OCT07	JD

SECTION: PROCESS
SCALE: NONE — DATE
DESIGN. BY: AdR — JUL07
DRAWN BY: FH — 02OCT07
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APP. BY:

NEW BRUNSWICK

GEODEX MINERALS

WARDROP Engineering Inc.

TITLE: SISSON BROOK PROJECT

TUNGSTEN FLOTATION CIRCUIT PROCESS FLOW DIAGRAM No.7

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
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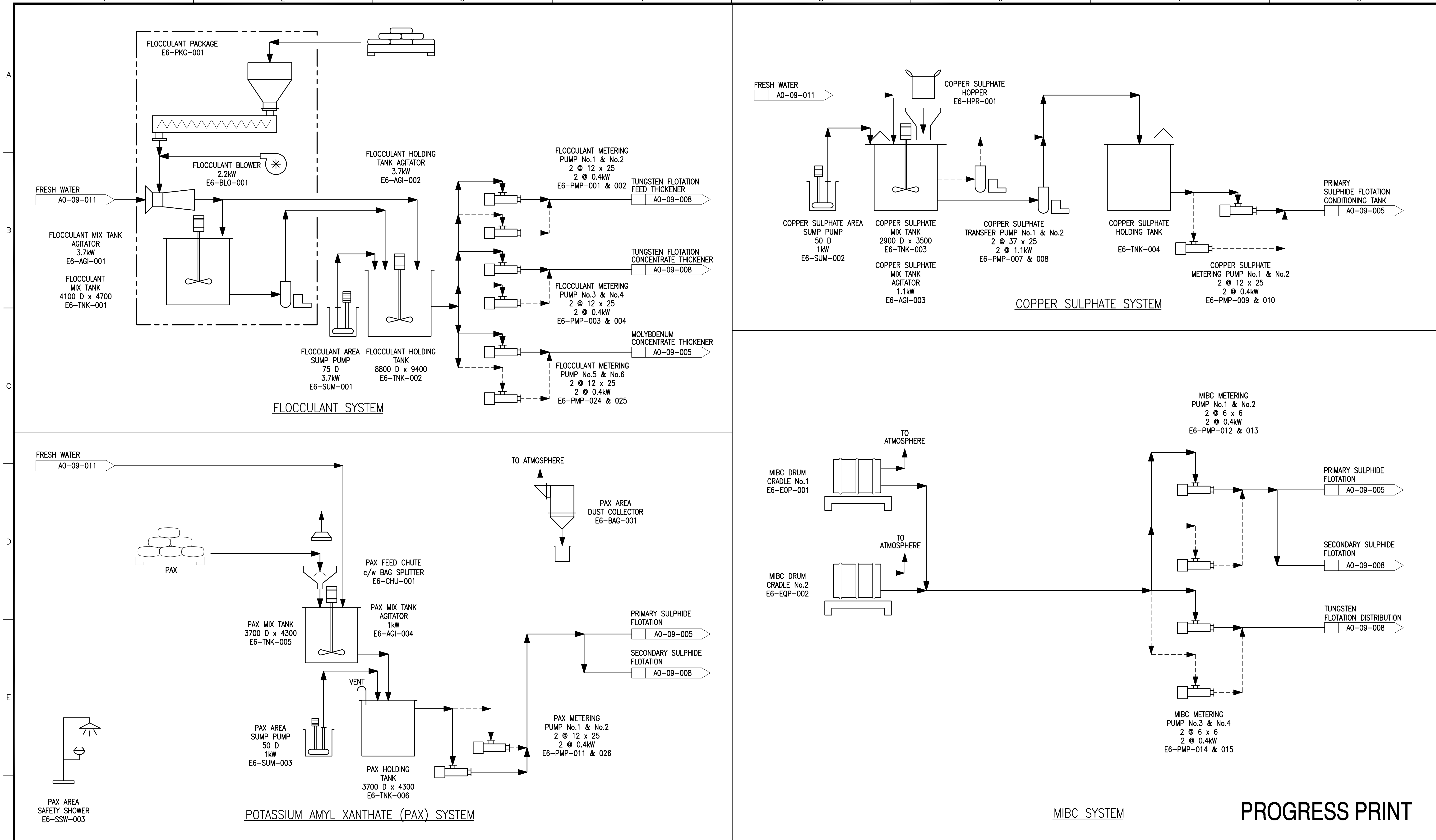

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DWG. NO.	REFERENCE DRAWINGS	REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
		A	1	ISSUED FOR CLIENT APPROVAL	19OCT07	JD

SECTION:	PROCESS	
SCALE:	NONE	DATE
DESIGN. BY:	AdR	JUL07
DRAWN BY:	FH	02OCT07
CHECK. BY:		
APP. BY:		

NEW BRUNSWICK
GEODEX MINERALS
WARDROP Engineering Inc.

TITLE
SISSON BROOK PROJECT
REAGENTS
(SHEET 1)
PROCESS FLOW DIAGRAM No.8

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
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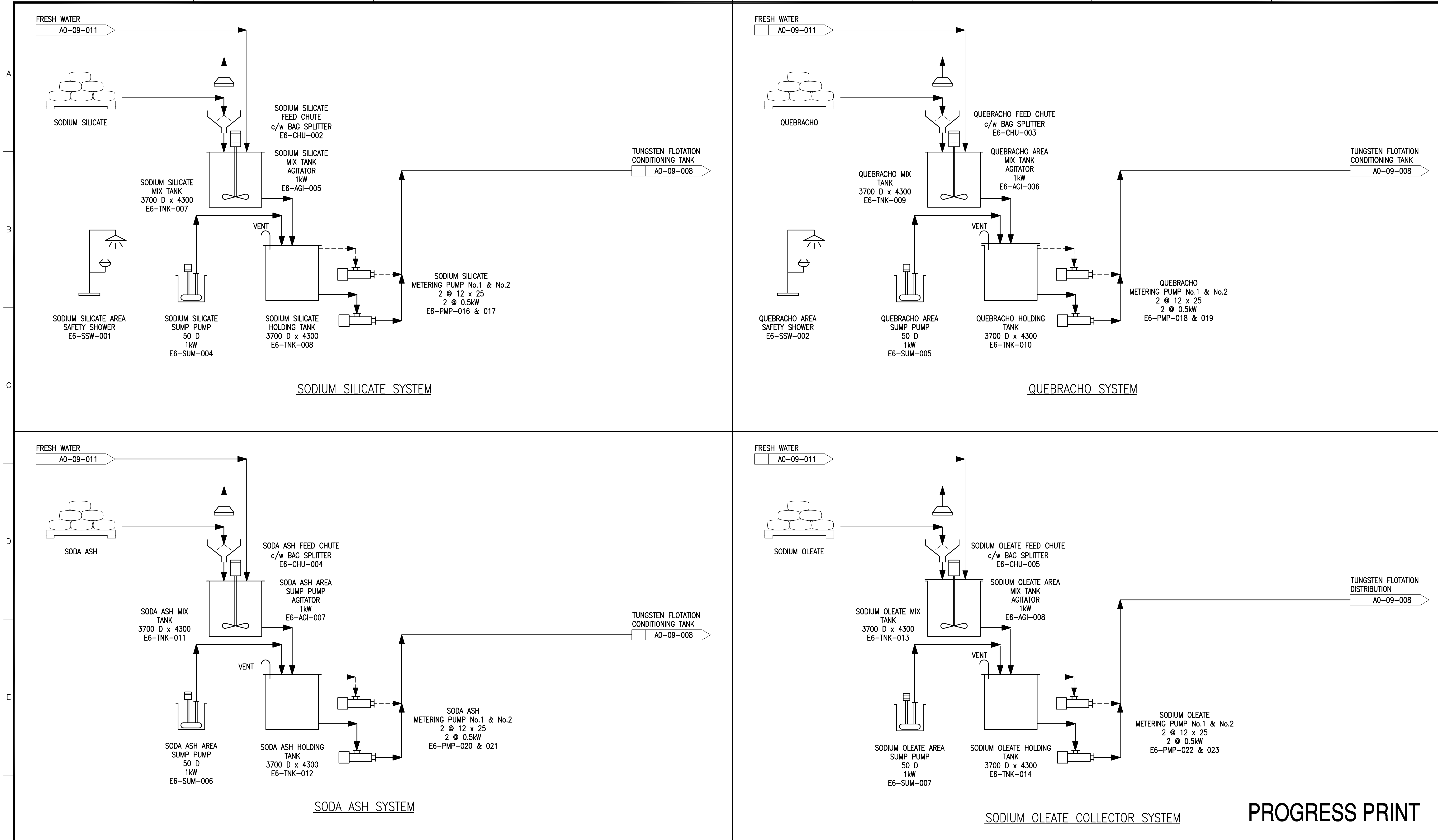

PROGRESS PRINT

DWG. NO.	REFERENCE DRAWINGS

REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
A	1	ISSUED FOR CLIENT APPROVAL	19OCT07	JD

SECTION:	PROCESS	
SCALE:	NONE	DATE
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DRAWN BY:	MW	17JUL07
CHECK. BY:		
APP. BY:		

NEW BRUNSWICK

GEODEX MINERALS

WARDROP Engineering Inc.

TITLE SISSON BROOK PROJECT

REAGENTS (SHEET 2) PROCESS FLOW DIAGRAM No.9

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
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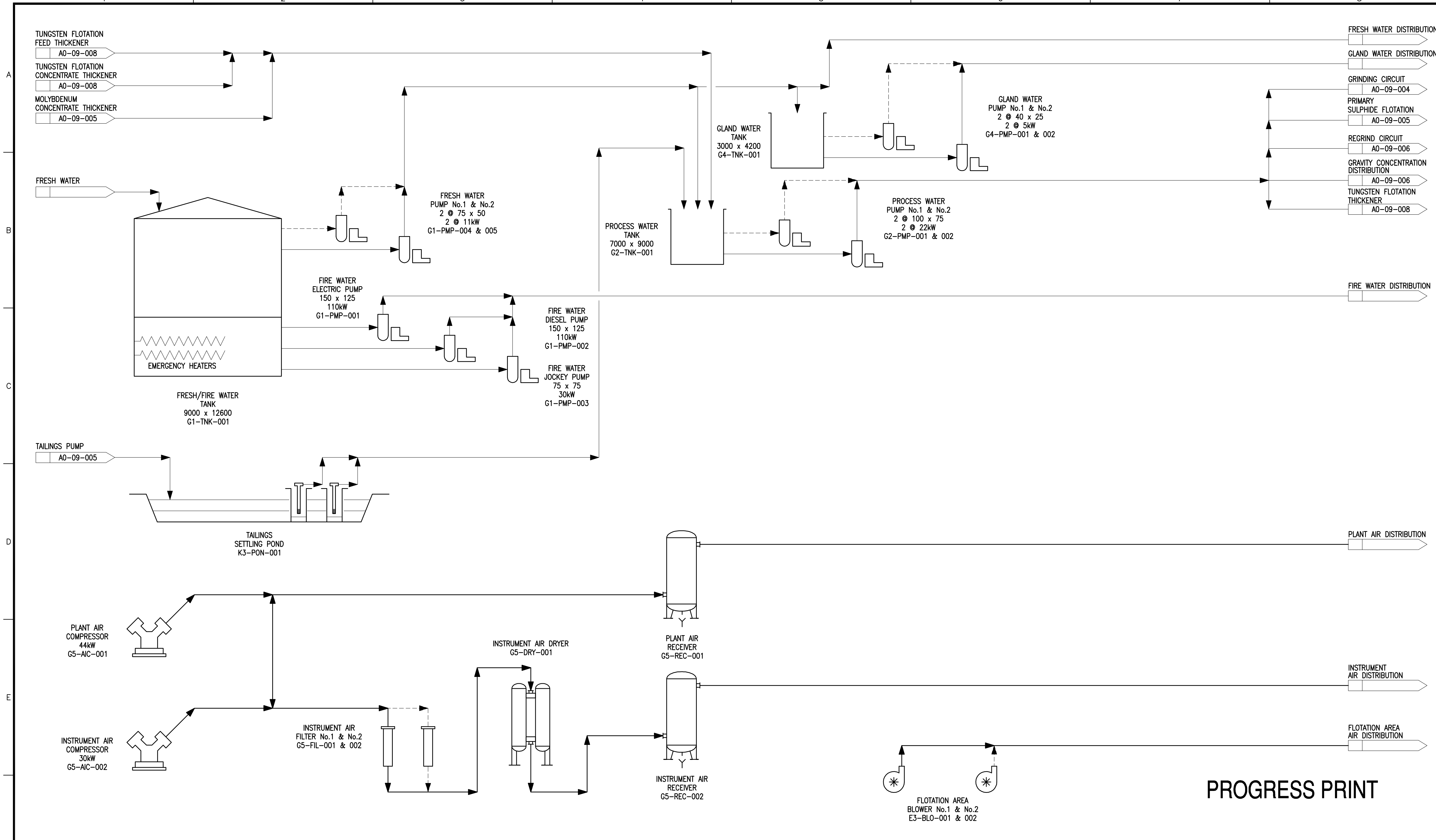

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D-METRIC

DWG. NO.	REFERENCE DRAWINGS

CLIENT	PRO.MAN.	PRO.ENG.	PROCESS	ELECTR.	INSTR.	PIPING	MECH.	STRUCT.	SERVICES	ARCH.	LAYOUT	REV. No.	ISSUE No.	DESCRIPTION	DATE	BY
												A	1	ISSUED FOR CLIENT APPROVAL	19OCT07	JD

SECTION:	PROCESS	
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DESIGN. BY:	AdR	JUL07
DRAWN BY:	MW	17JUL07
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NEW BRUNSWICK

GEODEX MINERALS

WARDROP Engineering Inc.

TITLE SISSON BROOK PROJECT

UTILITIES
PROCESS FLOW DIAGRAM No.10

FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
A009011.DWG	07530501.00	A0-09-011	A

07/10/19 10:40

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APPENDIX C

CAPITAL COST ESTIMATION

WARDROP

Project No: 07530501

Client: Geodex Minerals

Sisson Brook Project

Scoping Study - Major Summary

GEODEX MINERALS

Report Date: **09-Nov-07**

Rev C

		Labour Manhour	Labour Cost	Material Cost	Construction Equipment Cost	Process Equipment Cost	Total Cost (CAD)
Direct Works							
A	Overall Site	30,623	1,837,360	50,000	839,500	2,972,500	5,699,360
B	Mining	2,393	143,550	0	20,000	20,514,000	20,677,550
C	Crushed Ore Storage and Reclaim	221,205	13,272,296	16,002,842	1,349,771	22,078,929	52,703,837
E	Grinding and Flotation	274,181	16,450,862	36,265,045	2,069,790	50,531,913	105,317,610
F	Tailings	36,662	2,199,690	3,074,500	15,659,020	3,094,500	24,027,710
G	Site Services and Utilities	5,766	345,965	57,123	67,374	1,187,347	1,657,809
J	Ancillary Buildings	13,873	832,376	4,477,636	63,583	2,068,000	7,441,595
K	Plant Mobile Equipment	275	16,500	0	0	2,069,840	2,086,340
M	Temporary Services	0	0	0	0	0	0
	Direct Works Subtotal	**584,977**	**35,098,599**	**59,927,146**	**20,069,038**	**104,517,030**	**219,611,812**
Indirects							
X	Project Indirects	109,810	6,588,600	63,012,800	0	0	69,601,400
Y	Owners Costs	0	0	5,000,000	0	0	5,000,000
Z	Contingencies	0	0	58,843,000	0	0	58,843,000
	Indirects Subtotal	**109,810**	**6,588,600**	**126,855,800**	**0**	**0**	**133,444,400**
Scoping Study Total		**694,787**	**41,687,199**	**186,782,946**	**20,069,038**	**104,517,030**	**353,056,212**

WARDROP

GEODEX MINERALS

Project No: 07530501 | **Sisson Brook Project**

Client: Geodex Minerals | **Scoping Study - Section Summary** | **Report Date:** | **Rev C**

Area Code	Section Number	Description	Labour Manhour	Labour Cost	Material Cost	Construction Eqpt Cost	Process Eqpt Cost	Total Cost (CAD)
1 - Direct Costs								
	2	Earthworks	16,445	986,700	0	919,500	0	1,906,200
	2.1	Tailings Dam (Initial)	0	0	0	15,400,000	0	15,400,000
	4	Civil	7,646	458,766	793,850	315,050	0	1,567,666
	6	Concrete	53,458	3,207,487	4,693,610	217,680	0	8,118,777
	8	Structural Steel	225,472	13,528,340	43,406,873	2,362,082	0	59,297,295
	10	Architectural	33,182	1,990,914	6,363,508	176,861	818,000	9,349,283
	12	Mechanical	152,426	9,145,550	585,260	372,049	65,230,294	75,333,153
	13	Piping	41,933	2,515,960	3,029,197	199,611	6,947,389	12,692,158
	14	Building Services	14,542	872,520	622,200	36,610	0	1,531,330
	17	Instrumentation and Controls	5,534	332,041	52,249	12,884	3,575,113	3,972,287
	18	Electrical	31,671	1,900,270	380,399	36,710	5,362,395	7,679,773
	20	Surface Mobile Equipment	275	16,500	0	0	2,069,840	2,086,340
	40	Mining	413	24,750	0	20,000	0	44,750
	42	Mining Mobile Equipment	1,980	118,800	0	0	20,514,000	20,632,800
		1 - Direct Costs Subtotal	**584,977**	**35,098,599**	**59,927,146**	**20,069,038**	**104,517,030**	**219,611,812**
2 - Indirect Costs								
	91	Construction Indirects	109,810	6,588,600	24,019,400	0	0	30,608,000
	92	Initial Fills	0	0	3,042,000	0	0	3,042,000
	93	Spares	0	0	0	0	0	0
	94	Freight and Logistics	0	0	9,182,000	0	0	9,182,000
	95	Commissioning and Start-up	0	0	518,400	0	0	518,400
	96	EPCM	0	0	26,251,000	0	0	26,251,000
	98	Owners Costs	0	0	5,000,000	0	0	5,000,000
		2 - Indirect Costs Subtotal	**109,810**	**6,588,600**	**68,012,800**	**0**	**0**	**74,601,400**
3 - Contingencies								
	99	Contingency	0	0	58,843,000	0	0	58,843,000
		3 - Contingencies Subtotal	**0**	**0**	**58,843,000**	**0**	**0**	**58,843,000**
Scoping Study Total			**694,787**	**41,687,199**	**186,782,946**	**20,069,038**	**104,517,030**	**353,056,212**

WARDROP

GEODEX MINERALS

Project No: 07530501 | Sisson Brook Project

Client: Geodex Minerals | Scoping Study- Summary | Report Date: 09-Nov-07 | Rev C

Area		Labour Manhour	Labour Cost	Material Cost	Construction Eqpt Cost	Process Eqpt Cost	Total Cost (CAD)
A - Overall Site		**30,623**	**1,837,360**	**50,000**	**839,500**	**2,972,500**	**5,699,360**
A0	*Overall Site*	*14,795*	*887,700*	*0*	*839,500*	*0*	*1,727,200*
A1	*Power Supply And Distribution*	*11,292*	*677,500*	*0*	*0*	*1,425,000*	*2,102,500*
A2	*Control System*	*286*	*17,160*	*0*	*0*	*980,000*	*997,160*
A3	*Communication*	*2,583*	*155,000*	*50,000*	*0*	*317,500*	*522,500*
A4	*Yard Lighting*	*1,667*	*100,000*	*0*	*0*	*250,000*	*350,000*
B - Mining		**2,393**	**143,550**	**0**	**20,000**	**20,514,000**	**20,677,550**
B0	*Mining*	*2,393*	*143,550*	*0*	*20,000*	*20,514,000*	*20,677,550*
C - Crushed Ore Storage and Reclaim		**221,205**	**13,272,296**	**16,002,842**	**1,349,771**	**22,078,929**	**52,703,837**
C0	*Crushing Structures*	*150,969*	*9,058,131*	*15,665,018*	*1,169,393*	*0*	*25,892,542*
C1	*Crushing, Stockpile and Reclaim*	*70,236*	*4,214,165*	*337,824*	*180,378*	*22,078,929*	*26,811,296*
E - Grinding and Flotation		**274,181**	**16,450,862**	**36,265,045**	**2,069,790**	**50,531,913**	**105,317,610**
E0	*Mill Building*	*179,816*	*10,788,960*	*35,963,200*	*1,892,800*	*0*	*48,644,960*
E1	*Grinding And Classification*	*45,829*	*2,749,765*	*191,733*	*92,619*	*16,748,323*	*19,782,440*
E2	*Flotation, Regrind And Gravity Concentration*	*30,471*	*1,828,255*	*40,836*	*35,428*	*22,888,413*	*24,792,932*
E3	*Concentrate Dewatering And Loadout*	*12,140*	*728,417*	*22,448*	*24,032*	*9,598,106*	*10,373,003*
E4	*Reagents*	*5,924*	*355,466*	*46,828*	*24,911*	*1,297,071*	*1,724,276*
F - Tailings		**36,662**	**2,199,690**	**3,074,500**	**15,659,020**	**3,094,500**	**24,027,710**
F1	*Tailings Disposal And Reclaim*	*35,012*	*2,100,690*	*3,074,500*	*179,020*	*3,094,500*	*8,448,710*
F2	*Tailings Pond*	*0*	*0*	*0*	*15,400,000*	*0*	*15,400,000*
F3	*Diversion Channel*	*0*	*0*	*0*	*0*	*0*	*0*

Area		Labour Manhour	Labour Cost	Material Cost	Construction Eqpt Cost	Process Eqpt Cost	Total Cost (CAD)
F4	*Waste Dump*	*1,650*	*99,000*	*0*	*80,000*	*0*	*179,000*
G - Site Services and Utilities		**5,766**	**345,965**	**57,123**	**67,374**	**1,187,347**	**1,657,809**
G1	*Potable and Fresh/Fire Water*	*3,690*	*221,396*	*48,303*	*9,557*	*483,967*	*763,223*
G2	*Process Water*	*933*	*55,969*	*6,720*	*1,793*	*120,480*	*184,961*
G4	*Gland Water*	*351*	*21,055*	*2,100*	*624*	*41,700*	*65,479*
G5	*Plant Air*	*517*	*31,046*	*0*	*900*	*346,200*	*378,146*
G7	*Sewage Treatment And Collection*	*275*	*16,500*	*0*	*54,500*	*195,000*	*266,000*
J - Ancillary Buildings		**13,873**	**832,376**	**4,477,636**	**63,583**	**2,068,000**	**7,441,595**
J1	*Administration And Mine Dry*	*6,006*	*360,343*	*1,943,837*	*23,730*	*0*	*2,327,909*
J2	*Truckshop And Warehouse*	*4,627*	*277,597*	*2,033,800*	*33,603*	*1,000,000*	*3,345,000*
J3	*Assay Laboratory*	*1,844*	*110,616*	*500,000*	*0*	*500,000*	*1,110,616*
J4	*Fuel Storage And Distribution*	*660*	*39,600*	*0*	*2,500*	*250,000*	*292,100*
J5	*Cold Storage Warehouse*	*517*	*31,020*	*0*	*3,000*	*218,000*	*252,020*
J6	*Explosive Storage*	*220*	*13,200*	*0*	*750*	*100,000*	*113,950*
K - Plant Mobile Equipment		**275**	**16,500**	**0**	**0**	**2,069,840**	**2,086,340**
K0	*Plant Mobile Fleet*	*275*	*16,500*	*0*	*0*	*2,069,840*	*2,086,340*
M - Temporary Services		**0**	**0**	**0**	**0**	**0**	**0**
M1	*Construction Camp*	*0*	*0*	*0*	*0*	*0*	*0*
X - Project Indirects		**109,810**	**6,588,600**	**63,012,800**	**0**	**0**	**69,601,400**
X1	*Construction Indirects*	*109,810*	*6,588,600*	*24,019,400*	*0*	*0*	*30,608,000*

Area		Labour Manhour	Labour Cost	Material Cost	Construction Eqpt Cost	Process Eqpt Cost	Total Cost (CAD)
X2	*Spare Parts*	*0*	*0*	*3,042,000*	*0*	*0*	*3,042,000*
X3	*Initial Fills & Warehouse Inventory*	*0*	*0*	*0*	*0*	*0*	*0*
X4	*Freight And Logistic*	*0*	*0*	*9,182,000*	*0*	*0*	*9,182,000*
X5	*EPCM*	*0*	*0*	*518,400*	*0*	*0*	*518,400*
X6	*Commisioning And Startup*	*0*	*0*	*26,251,000*	*0*	*0*	*26,251,000*
Y - Owners Costs		**0**	**0**	**5,000,000**	**0**	**0**	**5,000,000**
Y0	*Owner's Costs*	*0*	*0*	*5,000,000*	*0*	*0*	*5,000,000*
Z - Contingencies		**0**	**0**	**58,843,000**	**0**	**0**	**58,843,000**
Z1	*Contingency (Risk)*	*0*	*0*	*58,843,000*	*0*	*0*	*58,843,000*
Scoping Study Total		**694,787**	**41,687,199**	**186,782,946**	**20,069,038**	**104,517,030**	**353,056,212**

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
A0. - Overall Site																
A0.	1.00	2	Overall Site Allowances - no soils information; assumed average 2.5m deep for cut and fill	-	-	-	-	-	-	-	-	-	-	-	-	-
A0.	2.00	2	Plantsite clear and grub	4. ha	82.50	330.00	60.00	19,800	0.00	0	4,000.00	16,000	0.00	0	8,950.00	35,800
A0.	2.01	2	Plantsite Strip topsoil 300 mm thick	12,000. m3	0.03	396.00	60.00	23,760	0.00	0	3.50	42,000	0.00	0	5.48	65,760
A0.	2.02	2	Plantsite cut and fill suitable material	50,000. m3	0.06	2,750.00	60.00	165,000	0.00	0	4.00	200,000	0.00	0	7.30	365,000
A0.	2.03	2	Plantsite cut and fill rippable rock	25,000. m3	0.08	1,925.00	60.00	115,500	0.00	0	5.50	137,500	0.00	0	10.12	253,000
A0.	2.04	2	Plantsite cut and fill Blasting	25,000. m3	0.14	3,575.00	60.00	214,500	0.00	0	5.50	137,500	0.00	0	14.08	352,000
A0.	3.00	2	Plantsite roads clear and grub	1. ha	82.50	82.50	60.00	4,950	0.00	0	4,000.00	4,000	0.00	0	8,950.00	8,950
A0.	3.01	2	Plantsite roads cut and fill suitable material	12,500. m3	0.06	687.50	60.00	41,250	0.00	0	4.00	50,000	0.00	0	7.30	91,250
A0.	3.02	2	Plantsite roads cut and fill rippable rock	6,250. m3	0.08	481.25	60.00	28,875	0.00	0	5.50	34,375	0.00	0	10.12	63,250
A0.	3.03	2	Plantsite roads cut and fill Blasting	6,250. m3	0.14	893.75	60.00	53,625	0.00	0	5.50	34,375	0.00	0	14.08	88,000
A0.	3.04	2	Plantsite roads granular surfacing	3,000. m3	0.07	198.00	60.00	11,880	0.00	0	9.00	27,000	0.00	0	12.96	38,880
A0.	3.05	2	Plantsite roads compaction	10,000. m2	0.06	550.00	60.00	33,000	0.00	0	0.35	3,500	0.00	0	3.65	36,500
A0.	4.00	2	Road from pit to waste dump, 1km long clear and grub	1. ha	82.50	82.50	60.00	4,950	0.00	0	4,000.00	4,000	0.00	0	8,950.00	8,950
A0.	4.01	2	Road from pit to waste dump, 1km long cut and fill suitable material	12,500. m3	0.06	687.50	60.00	41,250	0.00	0	4.00	50,000	0.00	0	7.30	91,250
A0.	4.02	2	Road from pit to waste dump, 1km long cut and fill rippable rock	6,250. m3	0.08	481.25	60.00	28,875	0.00	0	5.50	34,375	0.00	0	10.12	63,250
A0.	4.03	2	Road from pit to waste dump, 1km long cut and fill Blasting	6,250. m3	0.14	893.75	60.00	53,625	0.00	0	5.50	34,375	0.00	0	14.08	88,000
A0.	4.04	2	Road from pit to waste dump, 1km long granular surfacing	3,000. m3	0.08	231.00	60.00	13,860	0.00	0	9.00	27,000	0.00	0	13.62	40,860
A0.	4.05	2	Road from pit to waste dump, 1km long compaction	10,000. m2	0.06	550.00	60.00	33,000	0.00	0	0.35	3,500	0.00	0	3.65	36,500
					A0. - Overall Site Subtotal	**14,795.00**		**887,700**		**0**		**839,500**		**0**		**1,727,200**
A1. - Power Supply And Distribution																
A1.	1.00	18	Tap-off HV power lines allowance	1. lot	2,500.00	2,500.00	60.00	150,000	0.00	0	0.00	0	350,000.00	350,000	500,000.00	500,000
A1.	2.00	18	HV overhead lines allowance	1. lot	458.33	458.33	60.00	27,500	0.00	0	0.00	0	75,000.00	75,000	102,500.00	102,500
A1.	3.00	18	Incoming substation allowance	1. lot	8,333.33	8,333.33	60.00	500,000	0.00	0	0.00	0	1,000,000.00	1,000,000	1,500,000.00	1,500,000
					A1. - Power Supply And Distribution Subtotal	**11,291.67**		**677,500**		**0**		**0**		**1,425,000**		**2,102,500**

A2. - Control System

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
A2.	1.00	17	Plant Control system c/w hardware, communication devices and software	1. lot	220.00	220.00	60.00	13,200	0.00	0	0.00	0	900,000.00	900,000	913,200.00	913,200
A2.	2.00	17	UPS allowance	1. lot	44.00	44.00	60.00	2,640	0.00	0	0.00	0	60,000.00	60,000	62,640.00	62,640
A2.	3.00	17	Control room furniture	1. lot	22.00	22.00	60.00	1,320	0.00	0	0.00	0	20,000.00	20,000	21,320.00	21,320
			A2. - Control System Subtotal			**286.00**		**17,160**		**0**		**0**		**980,000**		**997,160**
A3. - Communication																
A3.	1.00	18	Telephone PBX (allowance)	1. lot	1,666.67	1,666.67	60.00	100,000	0.00	0	0.00	0	300,000.00	300,000	400,000.00	400,000
A3.	2.00	18	Communication infrastructure (allowance)	1. lot	916.67	916.67	60.00	55,000	50,000.00	50,000	0.00	0	0.00	0	105,000.00	105,000
A3.	3.00	18	Handheld Radios (allowance)	25. ea	0.00	0.00	60.00	0	0.00	0	0.00	0	700.00	17,500	700.00	17,500
			A3. - Communication Subtotal			**2,583.33**		**155,000**		**50,000**		**0**		**317,500**		**522,500**
A4. - Yard Lighting																
A4.	1.00	12	Yard Lighting Allowance (12 locations)	1. ea	1,666.67	1,666.67	60.00	100,000	0.00	0	0.00	0	250,000.00	250,000	350,000.00	350,000
			A4. - Yard Lighting Subtotal			**1,666.67**		**100,000**		**0**		**0**		**250,000**		**350,000**
B0. - Mining																
B0.	1.00	40	Surface Mining - Included in Sustaining Capital	-	-	-	-	-	-	-	-	-	-	.	-	-
B0.	2.00	40	Surface Mining - clear and grub (Initial Area - 20% of total area required)	5. ha	82.50	412.50	60.00	24,750	0.00	0	4,000.00	20,000	0.00	0	8,950.00	44,750
B0.	3.00	42	Surface Mining - Mobile Equipment	1. lot	1,980.00	1,980.00	60.00	118,800	0.00	0	0.00	0	20,514,000.00	20,514,000	20,632,800.00	20,632,800
			B0. - Mining Subtotal			**2,392.50**		**143,550**		**0**		**20,000**		**20,514,000**		**20,677,550**
C0. - Crushing Structures																
C0.	1.00	4	Primary Crusher Area - detail excavation	700. m3	0.08	53.90	60.00	3,234	0.00	0	4.50	3,150	0.00	0	9.12	6,384
C0.	1.01	4	Primary Crusher Area - detail excavation rock allowance	200. m3	0.14	28.60	60.00	1,716	0.00	0	6.00	1,200	0.00	0	14.58	2,916
C0.	1.02	4	Primary Crusher Area - Backfill	200. m3	0.08	15.40	60.00	924	0.00	0	5.00	1,000	0.00	0	9.62	1,924
C0.	1.03	4	Primary Crusher Area - Granular fill behind MSE wall	20,000. m3	0.10	1,980.00	60.00	118,800	5.00	100,000	3.50	70,000	0.00	0	14.44	288,800
C0.	1.04	4	Primary Crusher Area - Drainage rocks behind MSE wall	1,000. m3	0.08	77.00	60.00	4,620	10.00	10,000	3.50	3,500	0.00	0	18.12	18,120
C0.	1.05	4	Primary Crusher Area - MSE retaining wall; wire frames	1,500. m2	1.38	2,062.50	60.00	123,750	380.00	570,000	15.00	22,500	0.00	0	477.50	716,250
C0.	1.06	4	Primary Crusher Area - Access ramp including spread and compact - to be completed at a later date by Mining	-	-	-	-	-	-	-	-	-	-	.	-	-
C0.	1.07	6	Primary Crusher Area - Concrete slab on grade	350. m3	4.95	1,732.50	60.00	103,950	385.00	134,750	15.00	5,250	0.00	0	697.00	243,950

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
C0.	1.08	6	Primary Crusher Area - Concrete wall	850. m3	9.35	7,947.50	60.00	476,850	450.00	382,500	25.00	21,250	0.00	0	1,036.00	880,600
C0.	1.09	6	Primary Crusher Area - Concrete slab, elevated	300. m3	8.80	2,640.00	60.00	158,400	450.00	135,000	25.00	7,500	0.00	0	1,003.00	300,900
C0.	1.10	6	Primary Crusher Area - Concrete apron slab	210. m3	4.95	1,039.50	60.00	62,370	385.00	80,850	20.00	4,200	0.00	0	702.00	147,420
C0.	1.11	6	Primary Crusher Area - Concrete wheel stops	26. m3	5.94	154.44	60.00	9,266	390.00	10,140	20.00	520	0.00	0	766.40	19,926
C0.	1.12	6	Primary Crusher Area - anchor bolts	1,000. kg	0.07	71.50	60.00	4,290	4.70	4,700	0.50	500	0.00	0	9.49	9,490
C0.	1.13	6	Primary Crusher Area - embedded metals	3,000. kg	0.07	214.50	60.00	12,870	4.20	12,600	0.50	1,500	0.00	0	8.99	26,970
C0.	1.14	6	Primary Crusher Area - rock anchors allowance	250. no	0.77	192.50	60.00	11,550	120.00	30,000	1.00	250	0.00	0	167.20	41,800
C0.	1.15	8	Primary Crusher Area - Crusher Steel <30 kg	24. t	24.75	594.00	60.00	35,640	4,520.00	108,480	250.00	6,000	0.00	0	6,255.00	150,120
C0.	1.16	8	Primary Crusher Area - Crusher Steel >31 - 60 kg	19. t	22.77	432.63	60.00	25,958	3,520.00	66,880	250.00	4,750	0.00	0	5,136.20	97,588
C0.	1.17	8	Primary Crusher Area - Crusher Steel >60 - 90 kg	8. t	22.00	176.00	60.00	10,560	3,070.00	24,560	250.00	2,000	0.00	0	4,640.00	37,120
C0.	1.18	8	Primary Crusher Area - Crusher Steel > 90 kg	36. t	19.80	712.80	60.00	42,768	2,880.00	103,680	250.00	9,000	0.00	0	4,318.00	155,448
C0.	1.19	8	Primary Crusher Area - Crusher Steel Grating - 1 1/2"	350. m2	1.49	519.75	60.00	31,185	162.75	56,963	12.00	4,200	0.00	0	263.85	92,348
C0.	1.20	8	Primary Crusher Area - Crusher Checkplate	58. m	1.49	86.13	60.00	5,168	195.00	11,310	12.00	696	0.00	0	296.10	17,174
C0.	1.21	8	Primary Crusher Area - Crusher Steel Handrail / Kickplate	80. ea	1.60	127.60	60.00	7,656	175.00	14,000	8.00	640	0.00	0	278.70	22,296
C0.	1.22	8	Primary Crusher Area - Crusher Steel Stairs	60. m	3.96	237.60	60.00	14,256	250.00	15,000	40.00	2,400	0.00	0	527.60	31,656
C0.	1.23	8	Primary Crusher Area - Crusher Stairs Support Steel	2. t	24.75	49.50	60.00	2,970	4,520.00	9,040	300.00	600	0.00	0	6,305.00	12,610
C0.	1.24	8	Primary Crusher Area - Dust Control Support Steel	1. t	24.75	24.75	60.00	1,485	4,520.00	4,520	360.00	360	0.00	0	6,365.00	6,365
C0.	1.25	8	Primary Crusher Area - Crusher Bin Platework See Concrete	-	-	-	-	-	-	-	-	-	-	.	-	-
C0.	1.26	8	Primary Crusher Area - Crusher Bin Liner See Concrete	-	-	-	-	-	-	-	-	-	-	.	-	-
C0.	1.27	8	Primary Crusher Area - Elevated Slab Q-Deck	68. m2	0.79	53.86	60.00	3,231	30.00	2,040	2.00	136	0.00	0	79.52	5,407
C0.	1.28	10	Primary Crusher Area - Wall cladding	510. m2	1.06	538.56	60.00	32,314	90.00	45,900	6.00	3,060	0.00	0	159.36	81,274
C0.	1.29	10	Primary Crusher Area - Roof cladding	96. m2	1.06	101.38	60.00	6,083	110.00	10,560	6.00	576	0.00	0	179.36	17,219
C0.	1.30	10	Primary Crusher Area - mandoors single	4. ea	13.20	52.80	60.00	3,168	1,500.00	6,000	20.00	80	0.00	0	2,312.00	9,248
C0.	1.31	4	Primary Crusher Area - Control room including furniture	1. lot	132.00	132.00	60.00	7,920	75,000.00	75,000	2,500.00	2,500	0.00	0	85,420.00	85,420
C0.	2.00	4	Stockpile Reclaim tunnel - Excavate	22,000. m3	0.08	1,694.00	60.00	101,640	0.00	0	6.00	132,000	0.00	0	10.62	233,640
C0.	2.01	4	Stockpile Reclaim tunnel - Backfill	2,000. m3	0.08	154.00	60.00	9,240	0.00	0	6.00	12,000	0.00	0	10.62	21,240
C0.	2.02	4	Stockpile Reclaim tunnel - Backfill Granular material	2,000. m3	0.08	154.00	60.00	9,240	6.00	12,000	3.50	7,000	0.00	0	14.12	28,240
C0.	2.03	6	Stockpile Reclaim tunnel - Grade Slab (Floor)	690. m3	4.95	3,415.50	60.00	204,930	400.00	276,000	20.00	13,800	0.00	0	717.00	494,730
C0.	2.04	6	Stockpile Reclaim tunnel - Walls	700. m3	8.47	5,929.00	60.00	355,740	500.00	350,000	25.00	17,500	0.00	0	1,033.20	723,240

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
C0.	2.05	6	Stockpile Reclaim tunnel - Elevated Slab (Roof)	820. m3	7.92	6,494.40	60.00	389,664	500.00	410,000	35.00	28,700	0.00	0	1,010.20	828,364
C0.	2.06	6	Stockpile Reclaim tunnel - End Walls	45. m3	8.47	381.15	60.00	22,869	500.00	22,500	25.00	1,125	0.00	0	1,033.20	46,494
C0.	2.07	6	Escape Tunnel Multiplate Floor - Leanmix	54. m3	2.97	160.38	60.00	9,623	250.00	13,500	15.00	810	0.00	0	443.20	23,933
C0.	2.08	6	Stairwell Foundations Foundations	12. m3	5.94	71.28	60.00	4,277	385.00	4,620	20.00	240	0.00	0	761.40	9,137
C0.	2.09	6	Stairwell Foundations Reclaim Tunnel Embeds	6,000. kg	0.06	363.00	60.00	21,780	4.70	28,200	0.50	3,000	0.00	0	8.83	52,980
C0.	2.10	6	Stairwell Foundations Reclaim Tunnel A/Bolts	2,500. kg	0.07	178.75	60.00	10,725	4.70	11,750	0.50	1,250	0.00	0	9.49	23,725
C0.	2.11	6	Stairwell Foundations Sump	4. m3	7.48	29.92	60.00	1,795	385.00	1,540	25.00	100	0.00	0	858.80	3,435
C0.	2.12	6	Stockpile Steel <30 kg	4.6 t	24.75	113.85	60.00	6,831	4,520.00	20,792	0.00	0	0.00	0	6,005.00	27,623
C0.	2.13	6	Stockpile Steel >31 - 60 kg	6.2 t	22.77	141.17	60.00	8,470	3,220.00	19,964	0.00	0	0.00	0	4,586.20	28,434
C0.	2.14	6	Stockpile Steel >60 - 90 kg	7. t	22.00	154.00	60.00	9,240	2,870.00	20,090	0.00	0	0.00	0	4,190.00	29,330
C0.	2.15	6	Stockpile Steel > 90 kg	18.3 t	19.80	362.34	60.00	21,740	2,580.00	47,214	0.00	0	0.00	0	3,768.00	68,954
C0.	2.16	6	Handrail	52. m	1.60	82.94	60.00	4,976	180.00	9,360	15.00	780	0.00	0	290.70	15,116
C0.	2.17	6	Removable Handrail	11. m	1.87	20.57	60.00	1,234	250.00	2,750	15.00	165	0.00	0	377.20	4,149
C0.	2.18	6	Ladder c/w Cage	4. m	2.48	9.90	60.00	594	350.00	1,400	10.00	40	0.00	0	508.50	2,034
C0.	2.19	8	Stairs	6. m	5.94	35.64	60.00	2,138	300.00	1,800	50.00	300	0.00	0	706.40	4,238
C0.	2.20	6	Grating	203. m2	1.38	279.13	60.00	16,748	4,500.00	913,500	0.00	0	0.00	0	4,582.50	930,248
C0.	2.21	6	Reclaim Tunnel Multiplate	60. m	33.00	1,980.00	60.00	118,800	5,000.00	300,000	200.00	12,000	0.00	0	7,180.00	430,800
C0.	2.22	6	Reclaim Tunnel Steel	25. t	24.75	618.75	60.00	37,125	4,000.00	100,000	360.00	9,000	0.00	0	5,845.00	146,125
C0.	2.23	6	Reclaim Tunnel Platforms	250. m2	1.60	398.75	60.00	23,925	200.00	50,000	15.00	3,750	0.00	0	310.70	77,675
C0.	2.24	8	Reclaim Tunnel Stairs	12. m	5.94	71.28	60.00	4,277	300.00	3,600	50.00	600	0.00	0	706.40	8,477
C0.	2.25	6	Escape Tunnel Multiplate	40. m	8.91	356.40	60.00	21,384	1,250.00	50,000	150.00	6,000	0.00	0	1,934.60	77,384
C0.	2.26	6	Steel Inserts - Stockpile to Feeders	10. t	33.00	330.00	60.00	19,800	4,500.00	45,000	360.00	3,600	0.00	0	6,840.00	68,400
C0.	3.00	4	Secondary Crusher Structure size 24 x 20 x 29.5m high	-	-	-	-	-	-	-	-	-	-	-	-	-
C0.	3.01	4	Secondary Crusher Structure - Excavate	630. m3	0.08	48.51	60.00	2,911	0.00	0	6.00	3,780	0.00	0	10.62	6,691
C0.	3.02	4	Secondary Crusher Structure - Excavate in rippable rock 25%	160. m3	0.14	22.88	60.00	1,373	0.00	0	5.00	800	0.00	0	13.58	2,173
C0.	3.03	4	Secondary Crusher Structure - Backfill granular	200. m3	0.08	15.40	60.00	924	6.00	1,200	3.50	700	0.00	0	14.12	2,824
C0.	3.04	6	Secondary Crusher Structure - Concrete Column footings	170. m3	8.25	1,402.50	60.00	84,150	410.00	69,700	25.00	4,250	0.00	0	930.00	158,100
C0.	3.05	6	Secondary Crusher Structure - Concrete Pedestals	10. m3	9.35	93.50	60.00	5,610	450.00	4,500	25.00	250	0.00	0	1,036.00	10,360
C0.	3.06	6	Secondary Crusher Structure - Concrete Slab on grade	140. m3	4.95	693.00	60.00	41,580	385.00	53,900	25.00	3,500	0.00	0	707.00	98,980

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C0.	3.07	6	Secondary Crusher Structure - Concrete Curbs	10. m3	7.70	77.00	60.00	4,620	450.00	4,500	25.00	250	0.00	0	937.00	9,370
C0.	3.08	6	Secondary Crusher Structure - Concrete Regind Mill Bases	80. m3	4.95	396.00	60.00	23,760	385.00	30,800	25.00	2,000	0.00	0	707.00	56,560
C0.	3.09	6	Secondary Crusher Structure - Concrete Equipment Bases	10. m3	5.94	59.40	60.00	3,564	410.00	4,100	25.00	250	0.00	0	791.40	7,914
C0.	3.10	6	Secondary Crusher Structure - Concrete anchor bolts allowance	1,800. kg	0.07	128.70	60.00	7,722	4.70	8,460	0.50	900	0.00	0	9.49	17,082
C0.	3.11	8	Secondary Crusher Structure - columns W310 x 180 @180kg/m	70. t	19.80	1,386.00	60.00	83,160	2,880.00	201,600	250.00	17,500	0.00	0	4,318.00	302,260
C0.	3.12	8	Secondary Crusher Structure - Ext wall bracing @24kg/m2	70. t	24.75	1,732.50	60.00	103,950	4,520.00	316,400	250.00	17,500	0.00	0	6,255.00	437,850
C0.	3.13	8	Secondary Crusher Structure - Roof framing @39kg/m2	20. t	24.75	495.00	60.00	29,700	4,520.00	90,400	250.00	5,000	0.00	0	6,255.00	125,100
C0.	3.14	8	Secondary Crusher Structure - Trusses @200kg/m	30. t	19.80	594.00	60.00	35,640	2,880.00	86,400	250.00	7,500	0.00	0	4,318.00	129,540
C0.	3.15	8	Secondary Crusher Structure - Platform support steel @171kg/m2	70. t	22.77	1,593.90	60.00	95,634	3,520.00	246,400	250.00	17,500	0.00	0	5,136.20	359,534
C0.	3.16	8	Secondary Crusher Structure - Crane beams @200kg/m	10. t	19.80	198.00	60.00	11,880	2,880.00	28,800	250.00	2,500	0.00	0	4,318.00	43,180
C0.	3.17	8	Secondary Crusher Structure - handrails	40. m	1.10	44.00	60.00	2,640	160.00	6,400	25.00	1,000	0.00	0	251.00	10,040
C0.	3.18	8	Secondary Crusher Structure - Gratings	360. m2	1.10	396.00	60.00	23,760	180.00	64,800	5.00	1,800	0.00	0	251.00	90,360
C0.	3.19	8	Secondary Crusher Structure - stair treads	90. ea	1.10	99.00	60.00	5,940	80.00	7,200	25.00	2,250	0.00	0	171.00	15,390
C0.	3.20	10	Secondary Crusher Structure - Roof cladding	480. m2	1.06	506.88	60.00	30,413	110.00	52,800	6.00	2,880	0.00	0	179.36	86,093
C0.	3.21	10	Secondary Crusher Structure - Wall cladding	2,596. m2	1.06	2,741.38	60.00	164,483	90.00	233,640	6.00	15,576	0.00	0	159.36	413,699
C0.	3.22	10	Secondary Crusher Structure - Truck doors	1. ea	22.00	22.00	60.00	1,320	18,000.00	18,000	150.00	150	0.00	0	19,470.00	19,470
C0.	3.23	10	Secondary Crusher Structure - Mandoors single	2. ea	8.80	17.60	60.00	1,056	1,500.00	3,000	20.00	40	0.00	0	2,048.00	4,096
C0.	3.24	10	Secondary Crusher Structure - Mandoors double	2. ea	13.20	26.40	60.00	1,584	2,000.00	4,000	25.00	50	0.00	0	2,817.00	5,634
C0.	3.25	14	Secondary Crusher Structure - Building Services, HVAC & fire protection	480. m2	1.10	528.00	60.00	31,680	10.00	4,800	0.50	240	0.00	0	76.50	36,720
C0.	3.26	18	Secondary Crusher Structure - Electrical lighting	480. m2	1.10	528.00	60.00	31,680	5.00	2,400	0.50	240	0.00	0	71.50	34,320
C0.	4.00	4	Teritiary Crusher Structure size 54 x 32.5 x 43.95m high	-	-	-	-	-	-	-	-	-	-	-	-	-
C0.	4.01	4	Teritiary Crusher Structure - Excavate	2,220. m3	0.08	170.94	60.00	10,256	0.00	0	6.00	13,320	0.00	0	10.62	23,576
C0.	4.02	4	Teritiary Crusher Structure - Excavate in rippable rock 25%	560. m3	0.14	80.08	60.00	4,805	0.00	0	5.00	2,800	0.00	0	13.58	7,605
C0.	4.03	4	Teritiary Crusher Structure - Backfill granular	800. m3	0.08	61.60	60.00	3,696	6.00	4,800	3.50	2,800	0.00	0	14.12	11,296
C0.	4.04	6	Teritiary Crusher Structure - Concrete Column footings	140. m3	8.25	1,155.00	60.00	69,300	410.00	57,400	25.00	3,500	0.00	0	930.00	130,200
C0.	4.05	6	Teritiary Crusher Structure - Concrete Pedestals	10. m3	9.35	93.50	60.00	5,610	450.00	4,500	25.00	250	0.00	0	1,036.00	10,360
C0.	4.06	6	Teritiary Crusher Structure - Concrete Slab on grade	440. m3	4.95	2,178.00	60.00	130,680	385.00	169,400	25.00	11,000	0.00	0	707.00	311,080

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C0.	4.07	6	Teritiary Crusher Structure - Concrete Curbs	10. m3	7.70	77.00	60.00	4,620	450.00	4,500	25.00	250	0.00	0	937.00	9,370
C0.	4.08	6	Teritiary Crusher Structure - Concrete Regind Mill Bases	290. m3	4.95	1,435.50	60.00	86,130	425.00	123,250	25.00	7,250	0.00	0	747.00	216,630
C0.	4.09	6	Teritiary Crusher Structure - Concrete Equipment Bases	30. m3	5.94	178.20	60.00	10,692	425.00	12,750	25.00	750	0.00	0	806.40	24,192
C0.	4.10	6	Teritiary Crusher Structure - Concrete anchor bolts allowance	1,500. kg	0.07	107.25	60.00	6,435	4.70	7,050	0.50	750	0.00	0	9.49	14,235
C0.	4.11	8	Teritiary Crusher Structure - columns W310 x 180 @180kg/m	60. t	19.80	1,188.00	60.00	71,280	2,880.00	172,800	250.00	15,000	0.00	0	4,318.00	259,080
C0.	4.12	8	Teritiary Crusher Structure - Ext wall bracing @24kg/m2	160. t	24.75	3,960.00	60.00	237,600	4,520.00	723,200	250.00	40,000	0.00	0	6,255.00	1,000,800
C0.	4.13	8	Teritiary Crusher Structure - Roof framing @39kg/m2	70. t	24.75	1,732.50	60.00	103,950	4,520.00	316,400	250.00	17,500	0.00	0	6,255.00	437,850
C0.	4.14	8	Teritiary Crusher Structure - Trusses @200kg/m	70. t	19.80	1,386.00	60.00	83,160	2,880.00	201,600	250.00	17,500	0.00	0	4,318.00	302,260
C0.	4.15	8	Teritiary Crusher Structure - Platform support steel @171kg/m2	70. t	22.77	1,593.90	60.00	95,634	3,520.00	246,400	250.00	17,500	0.00	0	5,136.20	359,534
C0.	4.16	8	Teritiary Crusher Structure - Crane beams @200kg/m	30. t	19.80	594.00	60.00	35,640	2,880.00	86,400	250.00	7,500	0.00	0	4,318.00	129,540
C0.	4.17	8	Teritiary Crusher Structure - handrails	40. m	1.10	44.00	60.00	2,640	160.00	6,400	25.00	1,000	0.00	0	251.00	10,040
C0.	4.18	8	Teritiary Crusher Structure - Gratings	2,430. m2	1.10	2,673.00	60.00	160,380	180.00	437,400	5.00	12,150	0.00	0	251.00	609,930
C0.	4.19	8	Teritiary Crusher Structure - stair treads	60. ea	1.10	66.00	60.00	3,960	80.00	4,800	25.00	1,500	0.00	0	171.00	10,260
C0.	4.20	10	Teritiary Crusher Structure - Roof cladding	1,760. m2	1.06	1,858.56	60.00	111,514	110.00	193,600	6.00	10,560	0.00	0	179.36	315,674
C0.	4.21	10	Teritiary Crusher Structure - Wall cladding	8,746.1 m2	1.06	9,235.88	60.00	554,153	90.00	787,149	6.00	52,477	0.00	0	159.36	1,393,778
C0.	4.22	10	Teritiary Crusher Structure - Truck doors	1. ea	22.00	22.00	60.00	1,320	18,000.00	18,000	150.00	150	0.00	0	19,470.00	19,470
C0.	4.23	10	Teritiary Crusher Structure - Mandoors single	2. ea	8.80	17.60	60.00	1,056	1,500.00	3,000	20.00	40	0.00	0	2,048.00	4,096
C0.	4.24	10	Teritiary Crusher Structure - Mandoors double	2. ea	13.20	26.40	60.00	1,584	2,000.00	4,000	25.00	50	0.00	0	2,817.00	5,634
C0.	4.25	14	Teritiary Crusher Structure - Building Services, HVAC & fire protection	1,760. m2	1.10	1,936.00	60.00	116,160	10.00	17,600	0.50	880	0.00	0	76.50	134,640
C0.	4.26	18	Teritiary Crusher Structure - Electrical lighting	1,760. m2	1.10	1,936.00	60.00	116,160	5.00	8,800	0.50	880	0.00	0	71.50	125,840
C0.	5.00	4	Quatenary Crusher Structure size 54 x 39.5 x 49.2m high	-	-	-	-	-	-	-	-	-	-	-	-	-
C0.	5.01	4	Quatenary Crusher Structure - Excavate	2,680. m3	0.08	206.36	60.00	12,382	0.00	0	6.00	16,080	0.00	0	10.62	28,462
C0.	5.02	4	Quatenary Crusher Structure - Excavate in rippable rock 25%	670. m3	0.14	95.81	60.00	5,749	0.00	0	5.00	3,350	0.00	0	13.58	9,099
C0.	5.03	4	Quatenary Crusher Structure - Backfill granular	900. m3	0.08	69.30	60.00	4,158	6.00	5,400	3.50	3,150	0.00	0	14.12	12,708
C0.	5.04	6	Quatenary Crusher Structure - Concrete Column footings	300. m3	8.25	2,475.00	60.00	148,500	410.00	123,000	25.00	7,500	0.00	0	930.00	279,000
C0.	5.05	6	Quatenary Crusher Structure - Concrete Pedestals	10. m3	9.35	93.50	60.00	5,610	450.00	4,500	25.00	250	0.00	0	1,036.00	10,360
C0.	5.06	6	Quatenary Crusher Structure - Concrete Slab on grade	540. m3	4.95	2,673.00	60.00	160,380	385.00	207,900	25.00	13,500	0.00	0	707.00	381,780

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C0.	5.07	6	Quatenary Crusher Structure - Concrete Curbs	10. m3	7.70	77.00	60.00	4,620	450.00	4,500	25.00	250	0.00	0	937.00	9,370
C0.	5.08	6	Quatenary Crusher Structure - Concrete Regind Mill Bases	80. m3	4.95	396.00	60.00	23,760	425.00	34,000	25.00	2,000	0.00	0	747.00	59,760
C0.	5.09	6	Quatenary Crusher Structure - Concrete Equipment Bases	30. m3	5.94	178.20	60.00	10,692	425.00	12,750	25.00	750	0.00	0	806.40	24,192
C0.	5.10	6	Quatenary Crusher Structure - Concrete anchor bolts allowance	3,300. kg	0.07	235.95	60.00	14,157	4.70	15,510	0.50	1,650	0.00	0	9.49	31,317
C0.	5.11	8	Quatenary Crusher Structure - columns W310 x 180 @180kg/m	160. t	19.80	3,168.00	60.00	190,080	2,880.00	460,800	250.00	40,000	0.00	0	4,318.00	690,880
C0.	5.12	8	Quatenary Crusher Structure - Ext wall bracing @24kg/m2	190. t	24.75	4,702.50	60.00	282,150	4,520.00	858,800	250.00	47,500	0.00	0	6,255.00	1,188,450
C0.	5.13	8	Quatenary Crusher Structure - Roof framing @39kg/m2	90. t	24.75	2,227.50	60.00	133,650	4,520.00	406,800	250.00	22,500	0.00	0	6,255.00	562,950
C0.	5.14	8	Quatenary Crusher Structure - Trusses @200kg/m	100. t	19.80	1,980.00	60.00	118,800	2,880.00	288,000	250.00	25,000	0.00	0	4,318.00	431,800
C0.	5.15	8	Quatenary Crusher Structure - Platform support steel @171kg/m2	70. t	22.77	1,593.90	60.00	95,634	3,520.00	246,400	250.00	17,500	0.00	0	5,136.20	359,534
C0.	5.16	8	Quatenary Crusher Structure - Crane beams @200kg/m	30. t	19.80	594.00	60.00	35,640	2,880.00	86,400	250.00	7,500	0.00	0	4,318.00	129,540
C0.	5.17	8	Quatenary Crusher Structure - handrails	40. m	1.10	44.00	60.00	2,640	160.00	6,400	25.00	1,000	0.00	0	251.00	10,040
C0.	5.18	8	Quatenary Crusher Structure - Gratings	2,430. m2	1.10	2,673.00	60.00	160,380	180.00	437,400	5.00	12,150	0.00	0	251.00	609,930
C0.	5.19	8	Quatenary Crusher Structure - stair treads	60. ea	1.10	66.00	60.00	3,960	80.00	4,800	25.00	1,500	0.00	0	171.00	10,260
C0.	5.20	10	Quatenary Crusher Structure - Roof cladding	2,140. m2	1.06	2,259.84	60.00	135,590	110.00	235,400	6.00	12,840	0.00	0	179.36	383,830
C0.	5.21	10	Quatenary Crusher Structure - Wall cladding	9,200.4 m2	1.06	9,715.62	60.00	582,937	90.00	828,036	6.00	55,202	0.00	0	159.36	1,466,176
C0.	5.22	10	Quatenary Crusher Structure - Truck doors	1. ea	22.00	22.00	60.00	1,320	18,000.00	18,000	150.00	150	0.00	0	19,470.00	19,470
C0.	5.23	10	Quatenary Crusher Structure - Mandoors single	2. ea	8.80	17.60	60.00	1,056	1,500.00	3,000	20.00	40	0.00	0	2,048.00	4,096
C0.	5.24	10	Quatenary Crusher Structure - Mandoors double	2. ea	13.20	26.40	60.00	1,584	2,000.00	4,000	25.00	50	0.00	0	2,817.00	5,634
C0.	5.25	14	Quatenary Crusher Structure - Building Services, HVAC & fire protection	2,140. m2	1.10	2,354.00	60.00	141,240	10.00	21,400	0.50	1,070	0.00	0	76.50	163,710
C0.	5.26	18	Quatenary Crusher Structure - Electrical lighting	2,140. m2	1.10	2,354.00	60.00	141,240	5.00	10,700	0.50	1,070	0.00	0	71.50	153,010
C0.	6.00	4	Conveyor Take-up Tower size 10 x 14 x 30m high	-	-	-	-	-	-	-	-	-	-	-	-	-
C0.	6.01	4	Conveyor Take-up Tower - Excavate	220. m3	0.08	16.94	60.00	1,016	0.00	0	6.00	1,320	0.00	0	10.62	2,336
C0.	6.02	4	Conveyor Take-up Tower - Excavate in rippable rock 25%	60. m3	0.14	8.58	60.00	515	0.00	0	5.00	300	0.00	0	13.58	815
C0.	6.03	4	Conveyor Take-up Tower - Backfill granular	900. m3	0.08	69.30	60.00	4,158	6.00	5,400	3.50	3,150	0.00	0	14.12	12,708
C0.	6.04	6	Conveyor Take-up Tower - Concrete Column footings	60. m3	8.25	495.00	60.00	29,700	410.00	24,600	25.00	1,500	0.00	0	930.00	55,800
C0.	6.05	6	Conveyor Take-up Tower - Concrete Pedestals	10. m3	9.35	93.50	60.00	5,610	450.00	4,500	25.00	250	0.00	0	1,036.00	10,360
C0.	6.06	6	Conveyor Take-up Tower - Concrete Slab on grade	50. m3	4.95	247.50	60.00	14,850	385.00	19,250	25.00	1,250	0.00	0	707.00	35,350

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
C0.	6.07	6	Conveyor Take-up Tower - Concrete Curbs	10. m3	7.70	77.00	60.00	4,620	450.00	4,500	25.00	250	0.00	0	937.00	9,370
C0.	6.08	6	Conveyor Take-up Tower - Concrete Regind Mill Bases	80. m3	4.95	396.00	60.00	23,760	425.00	34,000	25.00	2,000	0.00	0	747.00	59,760
C0.	6.09	6	Conveyor Take-up Tower - Concrete Equipment Bases	10. m3	5.94	59.40	60.00	3,564	425.00	4,250	25.00	250	0.00	0	806.40	8,064
C0.	6.10	6	Conveyor Take-up Tower - Concrete anchor bolts allowance	600. kg	0.07	42.90	60.00	2,574	4.70	2,820	0.50	300	0.00	0	9.49	5,694
C0.	6.11	8	Conveyor Take-up Tower - columns W310 x 180 @180kg/m	30. t	19.80	594.00	60.00	35,640	2,880.00	86,400	250.00	7,500	0.00	0	4,318.00	129,540
C0.	6.12	8	Conveyor Take-up Tower - Ext wall bracing @24kg/m2	150. t	24.75	3,712.50	60.00	222,750	4,520.00	678,000	250.00	37,500	0.00	0	6,255.00	938,250
C0.	6.13	8	Conveyor Take-up Tower - Roof framing @39kg/m2	10. t	24.75	247.50	60.00	14,850	4,520.00	45,200	250.00	2,500	0.00	0	6,255.00	62,550
C0.	6.14	8	Conveyor Take-up Tower - Trusses @200kg/m	10. t	19.80	198.00	60.00	11,880	2,880.00	28,800	250.00	2,500	0.00	0	4,318.00	43,180
C0.	6.15	8	Conveyor Take-up Tower - Platform support steel @171kg/m2	30. t	22.77	683.10	60.00	40,986	3,520.00	105,600	250.00	7,500	0.00	0	5,136.20	154,086
C0.	6.16	8	Conveyor Take-up Tower - handrails	40. m	1.10	44.00	60.00	2,640	160.00	6,400	25.00	1,000	0.00	0	251.00	10,040
C0.	6.17	8	Conveyor Take-up Tower - Gratings	150. m2	1.10	165.00	60.00	9,900	180.00	27,000	5.00	750	0.00	0	251.00	37,650
C0.	6.18	8	Conveyor Take-up Tower - stair treads	60. ea	1.10	66.00	60.00	3,960	80.00	4,800	25.00	1,500	0.00	0	171.00	10,260
C0.	6.19	10	Conveyor Take-up Tower - Roof cladding	150. m2	1.06	158.40	60.00	9,504	110.00	16,500	6.00	900	0.00	0	179.36	26,904
C0.	6.20	10	Conveyor Take-up Tower - Wall cladding	3,000. m2	1.06	3,168.00	60.00	190,080	90.00	270,000	6.00	18,000	0.00	0	159.36	478,080
C0.	6.21	10	Conveyor Take-up Tower - Truck doors	1. ea	22.00	22.00	60.00	1,320	18,000.00	18,000	150.00	150	0.00	0	19,470.00	19,470
C0.	6.22	10	Conveyor Take-up Tower - Mandoors single	2. ea	8.80	17.60	60.00	1,056	1,500.00	3,000	20.00	40	0.00	0	2,048.00	4,096
C0.	6.23	10	Conveyor Take-up Tower - Mandoors double	2. ea	13.20	26.40	60.00	1,584	2,000.00	4,000	25.00	50	0.00	0	2,817.00	5,634
C0.	6.24	14	Conveyor Take-up Tower - Building Services, HVAC & fire protection	2,840. m2	1.10	3,124.00	60.00	187,440	10.00	28,400	0.50	1,420	0.00	0	76.50	217,260
C0.	6.25	18	Conveyor Take-up Tower - Electrical lighting	2,840. m2	1.10	3,124.00	60.00	187,440	5.00	14,200	0.50	1,420	0.00	0	71.50	203,060
C0.	7.00	4	Crushing Area Settling Pond 16 x16 x 2.5m - Excavation	650. m3	0.06	35.75	60.00	2,145	1.00	650	3.50	2,275	0.00	0	7.80	5,070
C0.	7.01	4	Crushing Area Settling Pond 16 x16 x 2.5m - Backfill - Excavated Material	100. m3	0.07	6.60	60.00	396	1.00	100	3.50	350	0.00	0	8.46	846
C0.	7.02	4	Crushing Area Settling Pond 16 x16 x 2.5m - Backfill - Granular Material	100. m3	0.10	9.90	60.00	594	6.00	600	3.50	350	0.00	0	15.44	1,544
C0.	7.03	4	Crushing Area Settling Pond 16 x16 x 2.5m - Liner 40 Mil	725. m2	0.11	79.75	60.00	4,785	12.00	8,700	1.00	725	0.00	0	19.60	14,210
			C0. - Crushing Structures Subtotal			**150,968.85**		**9,058,131**		**15,665,018**		**1,169,393**		**0**		**25,892,542**

C1. - Crushing, Stockpile and Reclaim

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
C1.	8.00	12	Rock Breaker [C0-RKB-001]	1. ea	385.00	385.00	60.00	23,100	0.00	0	350.00	350	326,633.00	326,633	350,083.00	350,083

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
C1.	9.00	12	Rock Breaker Hydraulic Power Pack Included [C0-PPK-001]	-	-	-	-	-	-	-	-	-	-	-	-	-
C1.	10.00	12	Primary Gyratory Crusher Metso 42-65 [C0-CRU-008]	1. ea	3,025.00	3,025.00	60.00	181,500	0.00	0	2,500.00	2,500	1,720,000.00	1,720,000	1,904,000.00	1,904,000
C1.	11.00	12	Primary Gyratory Crusher Motor c/w Drive Guard 600 Kw [C0-CRU-008]	1. ea	220.00	220.00	60.00	13,200	0.00	0	300.00	300	236,000.00	236,000	249,500.00	249,500
C1.	11.01	12	Primary Gyratory Crusher Discharge Pocket [C0-CHU]	13,348. kg	0.06	734.14	60.00	44,048	0.50	6,674	0.12	1,602	4.50	60,066	8.42	112,390
C1.	11.02	12	Primary Gyratory Crusher Discharge Pocket Liner [C0-CHU]	12,627. kg	0.07	833.38	60.00	50,003	0.50	6,314	0.12	1,515	5.50	69,449	10.08	127,280
C1.	11.03	12	Primary Crusher Apron Feeder Feed Chute [C0-CHU]	4,429. kg	0.06	243.60	60.00	14,616	0.50	2,215	0.12	531	4.50	19,931	8.42	37,292
C1.	11.04	12	Primary Crusher Apron Feeder Feed Chute Liner [C0-CHU]	13,722. kg	0.07	905.65	60.00	54,339	0.50	6,861	0.12	1,647	5.50	75,471	10.08	138,318
C1.	12.00	12	Primary Crusher Apron Feeder [C0-FDR-002]	1. ea	407.00	407.00	60.00	24,420	400.00	400	300.00	300	416,625.00	416,625	441,745.00	441,745
C1.	13.00	12	Primary Crusher Apron Feeder Hydraulic Power Pack Included [C0-PPK-002]	-	-	-	-	-	-	-	-	-	-	-	-	-
C1.	13.01	12	Primary Crusher Apron Feeder Dribble Chute [C0-CHU]	2,873. kg	0.06	158.02	60.00	9,481	0.50	1,437	0.12	345	4.50	12,929	8.42	24,191
C1.	13.02	12	Primary Crusher Apron Feeder Dribble Chute Liner [C0-CHU]	3,647. kg	0.07	240.70	60.00	14,442	0.50	1,824	0.12	438	5.50	20,059	10.08	36,762
C1.	13.03	12	Primary Crusher Apron Feeder Head Chute [C0-CHU]	5,177. kg	0.06	284.74	60.00	17,084	0.50	2,589	0.12	621	4.50	23,297	8.42	43,590
C1.	14.00	12	Stockpile Feed Conveyor 1050 Wide Open Belt Type C/W Walkway & Bents [C0-CON-001]	127. m	17.05	2,165.35	60.00	129,921	0.00	0	75.00	9,525	3,750.00	476,250	4,848.00	615,696
C1.	14.01	12	Stockpile Feed Conveyor Head Chute [C0-CHU]	9,000. kg	0.06	495.00	60.00	29,700	0.50	4,500	0.12	1,080	4.50	40,500	8.42	75,780
C1.	14.02	12	Stockpile Feed Conveyor Head Chute Liner [C0-CHU]	15,000. kg	0.07	990.00	60.00	59,400	0.50	7,500	0.12	1,800	5.50	82,500	10.08	151,200
C1.	15.00	12	Stockpile Feed Belt Scale [D0-SCB-005]	1. ea	44.00	44.00	60.00	2,640	50.00	50	10.00	10	45,000.00	45,000	47,700.00	47,700
C1.	15.01	12	Stockpile Reclaim Apron Feeder No. 1 Feed Chute [C0-CHU]	4,429. kg	0.06	243.60	60.00	14,616	0.50	2,215	0.12	531	4.50	19,931	8.42	37,292
C1.	15.02	12	Stockpile Reclaim Apron Feeder No. 1 Feed Chute Liner [C0-CHU]	13,722. kg	0.07	905.65	60.00	54,339	0.50	6,861	0.12	1,647	5.50	75,471	10.08	138,318
C1.	16.00	12	Stockpile Reclaim Apron Feeder No. 1 [D0-FDR-009]	1. ea	407.00	407.00	60.00	24,420	400.00	400	300.00	300	416,625.00	416,625	441,745.00	441,745
C1.	16.01	12	Stockpile Reclaim Apron Feeder No. 1 Dribble Chute [C0-CHU]	2,873. kg	0.06	158.02	60.00	9,481	0.50	1,437	0.12	345	4.50	12,929	8.42	24,191
C1.	16.02	12	Stockpile Reclaim Apron Feeder No. 1 Dribble Chute Liner [C0-CHU]	3,647. kg	0.07	240.70	60.00	14,442	0.50	1,824	0.12	438	5.50	20,059	10.08	36,762
C1.	16.03	12	Stockpile Reclaim Apron Feeder No. 1 Head Chute [C0-CHU]	5,177. kg	0.06	284.74	60.00	17,084	0.50	2,589	0.12	621	4.50	23,297	8.42	43,590

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
C1.	16.04	12	Stockpile Reclaim Apron Feeder No. 2 Feed Chute [C0-CHU]	4,429. kg	0.06	243.60	60.00	14,616	0.50	2,215	0.12	531	4.50	19,931	8.42	37,292
C1.	16.05	12	Stockpile Reclaim Apron Feeder No. 2 Feed Chute Liner [C0-CHU]	13,722. kg	0.07	905.65	60.00	54,339	0.50	6,861	0.12	1,647	5.50	75,471	10.08	138,318
C1.	17.00	12	Stockpile Reclaim Apron Feeder No. 2 [D0-FDR-009]	1. ea	407.00	407.00	60.00	24,420	400.00	400	300.00	300	416,625.00	416,625	441,745.00	441,745
C1.	17.01	12	Stockpile Reclaim Apron Feeder No. 2 Dribble Chute [C0-CHU]	2,873. kg	0.06	158.02	60.00	9,481	0.50	1,437	0.12	345	4.50	12,929	8.42	24,191
C1.	17.02	12	Stockpile Reclaim Apron Feeder No. 2 Dribble Chute Liner [C0-CHU]	3,647. kg	0.07	240.70	60.00	14,442	0.50	1,824	0.12	438	5.50	20,059	10.08	36,762
C1.	17.03	12	Stockpile Reclaim Apron Feeder No. 2 Head Chute [C0-CHU]	5,177. kg	0.06	284.74	60.00	17,084	0.50	2,589	0.12	621	4.50	23,297	8.42	43,590
C1.	18.00	12	Secondary Crushing Sizing Screen Feed Conveyor 1050 Wide Open Belt Type C/W Walkway & Bents [D0-CON-002]	168. m	17.05	2,864.40	60.00	171,864	0.00	0	70.00	11,760	3,500.00	588,000	4,593.00	771,624
C1.	18.01	12	Secondary Crushing Sizing Screen Feed Conveyor Head Chute [C0-CHU]	800. kg	0.06	44.00	60.00	2,640	0.50	400	0.12	96	4.50	3,600	8.42	6,736
C1.	18.02	12	Secondary Crushing Sizing Screen Feed Conveyor Head Chute Liner [C0-CHU]	500. kg	0.07	33.00	60.00	1,980	0.50	250	0.12	60	5.50	2,750	10.08	5,040
C1.	19.00	12	Primary Sizing Screen Belt Scale [D0-SCB-006]	1. ea	44.00	44.00	60.00	2,640	50.00	50	10.00	10	45,000.00	45,000	47,700.00	47,700
C1.	20.00	12	Self Cleaning Belt Magnet 10Kw	1. ea	44.00	44.00	60.00	2,640	0.00	0	500.00	500	50,000.00	50,000	53,140.00	53,140
C1.	21.00	12	Metal Detector	1. ea	44.00	44.00	60.00	2,640	0.00	0	500.00	500	20,000.00	20,000	23,140.00	23,140
C1.	21.01	12	Secondary Crushing Screen Feed Chute [C0-CHU]	1,200. kg	0.06	66.00	60.00	3,960	0.50	600	0.12	144	4.50	5,400	8.42	10,104
C1.	21.02	12	Secondary Crushing Screen Feed Chute Liner [C0-CHU]	1,000. kg	0.07	66.00	60.00	3,960	0.50	500	0.12	120	5.50	5,500	10.08	10,080
C1.	22.00	12	Secondary Crushing Screen [C0-SCN-009]	1. ea	275.00	275.00	60.00	16,500	0.00	0	1,000.00	1,000	150,000.00	150,000	167,500.00	167,500
C1.	22.01	12	Secondary Crushing Screen Oversize Discharge Chute [C0-CHU]	1,200. kg	0.06	66.00	60.00	3,960	0.50	600	0.12	144	4.50	5,400	8.42	10,104
C1.	22.02	12	Secondary Crushing Screen Oversize Discharge Chute Liner [C0-CHU]	1,000. kg	0.07	66.00	60.00	3,960	0.50	500	0.12	120	5.50	5,500	10.08	10,080
C1.	23.00	12	Secondary Crushing Cone Crusher Metso HP800 c/w Lube Units 550 Kw [C0-CRU-003]	1. ea	924.00	924.00	60.00	55,440	0.00	0	300.00	300	1,320,000.00	1,320,000	1,375,740.00	1,375,740
C1.	23.01	12	Secondary Crushing Cone Crusher Discharge Chute [C0-CHU]	3,000. kg	0.06	165.00	60.00	9,900	0.50	1,500	0.12	360	4.50	13,500	8.42	25,260
C1.	23.02	12	Secondary Crushing Cone Crusher Discharge Chute Liner [C0-CHU]	4,500. kg	0.07	297.00	60.00	17,820	0.50	2,250	0.12	540	5.50	24,750	10.08	45,360
C1.	24.00	12	Tertiary Crushing Feed Conveyor No 1 1050 Wide Open Belt Type C/W Walkway & Bents [C0-CON-006]	162. m	17.05	2,762.10	60.00	165,726	0.00	0	70.00	11,340	3,500.00	567,000	4,593.00	744,066

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
C1.	24.01	12	Tertiary Crushing Feed Conveyor No 1 Head Chute [C0-CHU]	800. kg	0.06	44.00	60.00	2,640	0.50	400	0.12	96	4.50	3,600	8.42	6,736
C1.	24.02	12	Tertiary Crushing Feed Conveyor No 1 Head Chute Liner [C0-CHU]	500. kg	0.07	33.00	60.00	1,980	0.50	250	0.12	60	5.50	2,750	10.08	5,040
C1.	25.00	12	Tertiary Crushing Feed Conveyor No 2 1050 Wide Open Belt Type C/W Walkway & Bents [C0-CON-007]	105. m	17.05	1,790.25	60.00	107,415	0.00	0	75.00	7,875	3,750.00	393,750	4,848.00	509,040
C1.	26.00	12	Tertiary Storage Feed Bin Tripper C/W Rails And Supports [C0-CON-007]	1. ea	66.00	66.00	60.00	3,960	0.00	0	150.00	150	25,000.00	25,000	29,110.00	29,110
C1.	27.00	12	Tertiary Storage Feed Bin 25 X 8.5 X 6.5 H 12Mm Plates [C0-BIN]	85,600. kg	0.06	4,708.00	60.00	282,480	0.50	42,800	0.10	8,560	3.50	299,600	7.40	633,440
C1.	27.01	12	Tertiary Storage Feed Bin Liner 20Mm Plates [C0-BIN]	116,500. kg	0.07	7,689.00	60.00	461,340	0.50	58,250	0.20	23,300	4.00	466,000	8.66	1,008,890
C1.	28.00	12	Tertiary Screen No.1, 3000x6100 [C0-SCN-005]	1. ea	275.00	275.00	60.00	16,500	0.00	0	1,000.00	1,000	150,000.00	150,000	167,500.00	167,500
C1.	28.01	12	Tertiary Screen No.1 Discharge Chute [C0-CHU]	2,200. kg	0.06	121.00	60.00	7,260	0.50	1,100	0.12	264	4.50	9,900	8.42	18,524
C1.	28.02	12	Tertiary Screen No.1 Discharge Chute Liner [C0-CHU]	3,000. kg	0.07	198.00	60.00	11,880	0.50	1,500	0.12	360	5.50	16,500	10.08	30,240
C1.	29.00	12	Tertiary Screen No.2, 3000x6100 [C0-SCN-006]	1. ea	275.00	275.00	60.00	16,500	0.00	0	1,000.00	1,000	150,000.00	150,000	167,500.00	167,500
C1.	29.01	12	Tertiary Screen No.2 Discharge Chute [C0-CHU]	2,200. kg	0.06	121.00	60.00	7,260	0.50	1,100	0.12	264	4.50	9,900	8.42	18,524
C1.	29.02	12	Tertiary Screen No.2 Discharge Chute Liner [C0-CHU]	3,000. kg	0.07	198.00	60.00	11,880	0.50	1,500	0.12	360	5.50	16,500	10.08	30,240
C1.	30.00	12	Tertiary Screen No.3, 3000x6100 [C0-SCN-007]	1. ea	275.00	275.00	60.00	16,500	0.00	0	1,000.00	1,000	150,000.00	150,000	167,500.00	167,500
C1.	30.01	12	Tertiary Screen No.3 Discharge Chute [C0-CHU]	2,200. kg	0.06	121.00	60.00	7,260	0.50	1,100	0.12	264	4.50	9,900	8.42	18,524
C1.	30.02	12	Tertiary Screen No.3 Discharge Chute Liner [C0-CHU]	3,000. kg	0.07	198.00	60.00	11,880	0.50	1,500	0.12	360	5.50	16,500	10.08	30,240
C1.	31.00	12	Tertiary Screen No.4 3000x6100, *** Deleted *** [C0-SCN-008]	-	-	-	-	-	-	-	-	-	-	-	-	-
C1.	31.01	12	Tertiary Screen No.4 Discharge Chute [C0-CHU]	2,200. kg	0.06	121.00	60.00	7,260	0.50	1,100	0.12	264	4.50	9,900	8.42	18,524
C1.	31.02	12	Tertiary Screen No.4 Discharge Chute Liner [C0-CHU]	3,000. kg	0.07	198.00	60.00	11,880	0.50	1,500	0.12	360	5.50	16,500	10.08	30,240
C1.	32.00	12	Tertiary Cone Crusher No.1 Metso HP800 c/w Lube Units 550 Kw [C0-CRU-004]	1. ea	924.00	924.00	60.00	55,440	0.00	0	300.00	300	1,320,000.00	1,320,000	1,375,740.00	1,375,740
C1.	32.01	12	Tertiary Cone Crusher No.1 Discharge Chute [C0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
C1.	32.02	12	Tertiary Cone Crusher No.1 Discharge Chute Liner [C0-CHU]	1,000. kg	0.07	66.00	60.00	3,960	0.50	500	0.12	120	5.50	5,500	10.08	10,080
C1.	33.00	12	Tertiary Cone Crusher No.2 Metso HP800 c/w Lube Units 550 Kw [C0-CRU-005]	1. ea	924.00	924.00	60.00	55,440	0.00	0	300.00	300	1,320,000.00	1,320,000	1,375,740.00	1,375,740
C1.	33.01	12	Tertiary Cone Crusher No.2 Discharge Chute [C0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
C1.	33.02	12	Tertiary Cone Crusher No.2 Discharge Chute Liner [C0-CHU]	1,000. kg	0.07	66.00	60.00	3,960	0.50	500	0.12	120	5.50	5,500	10.08	10,080

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
C1.	34.00	12	Tertiary Cone Crusher No.3 Metso HP800 c/w Lube Units 550 Kw [C0-CRU-006]	1. ea	924.00	924.00	60.00	55,440	0.00	0	300.00	300	1,320,000.00	1,320,000	1,375,740.00	1,375,740
C1.	34.01	12	Tertiary Cone Crusher No.3 Discharge Chute [C0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
C1.	34.02	12	Tertiary Cone Crusher No.3 Discharge Chute Liner [C0-CHU]	1,000. kg	0.07	66.00	60.00	3,960	0.50	500	0.12	120	5.50	5,500	10.08	10,080
C1.	35.00	12	Tertiary Cone Crusher No.4 Metso HP800 c/w Lube Units 550 Kw, *** Deleted *** [C0-CRU-007]	-	-	-	-	-	-	-	-	-	-	.	-	-
C1.	35.01	12	Tertiary Cone Crusher No.4 Discharge Chute, *** Deleted *** [C0-CHU]	-	-	-	-	-	-	-	-	-	-	.	-	-
C1.	35.02	12	Tertiary Cone Crusher No.4 Discharge Chute Liner, *** Deleted *** [C0-CHU]	-	-	-	-	-	-	-	-	-	-	.	-	-
C1.	36.00	12	Quartenary Crushing Feed Conveyor No 1 1050 Wide Open Belt Type C/W Walkway & Bents [C0-CON-008]	162. m	17.05	2,762.10	60.00	165,726	0.00	0	70.00	11,340	3,500.00	567,000	4,593.00	744,066
C1.	36.01	12	Quartenary Crushing Feed Conveyor No 1 Head Chute [C0-CHU]	800. kg	0.06	44.00	60.00	2,640	0.50	400	0.12	96	4.50	3,600	8.42	6,736
C1.	36.02	12	Quartenary Crushing Feed Conveyor No 1 Head Chute Liner [C0-CHU]	500. kg	0.07	33.00	60.00	1,980	0.50	250	0.12	60	5.50	2,750	10.08	5,040
C1.	37.00	12	Quartenary Storage Feed Bin Tripper C/W Rails And Supports [C0-CON-008]	1. ea	22.00	22.00	60.00	1,320	0.00	0	150.00	150	25,000.00	25,000	26,470.00	26,470
C1.	37.01	12	Quaternary Storage Feed Bin 33.5 X 8.5 X 6.5 H 12Mm Plates [C0-BIN]	85,600. kg	0.06	4,708.00	60.00	282,480	0.50	42,800	0.12	10,272	4.50	385,200	8.42	720,752
C1.	37.02	12	Quaternary Storage Feed Bin Liner 20Mm Plates [C0-BIN]	116,500. kg	0.07	7,689.00	60.00	461,340	0.50	58,250	0.20	23,300	4.00	466,000	8.66	1,008,890
C1.	38.00	12	Quaternary Cone Crusher No.1 Metso HP800 c/w Lube Units 550 Kw [C0-CRU-009]	1. ea	924.00	924.00	60.00	55,440	0.00	0	300.00	300	1,320,000.00	1,320,000	1,375,740.00	1,375,740
C1.	38.01	12	Quaternary Cone Crusher No.1 Discharge Chute [C0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
C1.	38.02	12	Quaternary Cone Crusher No.1 Discharge Chute Liner [C0-CHU]	1,000. kg	0.07	66.00	60.00	3,960	0.50	500	0.12	120	5.50	5,500	10.08	10,080
C1.	39.00	12	Quaternary Cone Crusher No.2 Metso HP800 c/w Lube Units 550 Kw [C0-CRU-010]	1. ea	924.00	924.00	60.00	55,440	0.00	0	300.00	300	1,320,000.00	1,320,000	1,375,740.00	1,375,740
C1.	39.01	12	Quaternary Cone Crusher No.2 Discharge Chute [C0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
C1.	39.02	12	Quaternary Cone Crusher No.2 Discharge Chute Liner [C0-CHU]	1,000. kg	0.07	66.00	60.00	3,960	0.50	500	0.12	120	5.50	5,500	10.08	10,080
C1.	40.00	12	Quaternary Cone Crusher No.3 Metso HP800 c/w Lube Units 550 Kw [C0-CRU-011]	1. ea	924.00	924.00	60.00	55,440	0.00	0	300.00	300	1,320,000.00	1,320,000	1,375,740.00	1,375,740

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C1.	40.01	12	Quaternary Cone Crusher No.3 Discharge Chute [C0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
C1.	40.02	12	Quaternary Cone Crusher No.3 Discharge Chute Liner [C0-CHU]	1,000. kg	0.07	66.00	60.00	3,960	0.50	500	0.12	120	5.50	5,500	10.08	10,080
C1.	41.00	12	Quaternary Cone Crusher No.4 Metso HP800 c/w Lube Units 550 Kw, *** Deleted *** [C0-CRU-012]	-	-	-	-	-	-	-	-	-	-	.	-	-
C1.	41.01	12	Quaternary Cone Crusher No.4 Discharge Chute, *** Deleted *** [C0-CHU]	-	-	-	-	-	-	-	-	-	-	.	-	-
C1.	41.02	12	Quaternary Cone Crusher No.4 Discharge Chute Liner, *** Deleted *** [C0-CHU]	-	-	-	-	-	-	-	-	-	-	.	-	-
C1.	42.00	12	Crushing Area Over Head Crane 7Kw, 5 tonne [C0-CRM-001]	1. ea	88.00	88.00	60.00	5,280	0.00	0	250.00	250	120,000.00	120,000	125,530.00	125,530
C1.	43.00	12	Crushing Area Dust Collector Baghouse [C0-BAG-001]	1. ea	132.00	132.00	60.00	7,920	0.00	0	2,500.00	2,500	127,000.00	127,000	137,420.00	137,420
C1.	44.00	12	Crushing Area Dust Collector Baghouse Ducting	1. ea	385.00	385.00	60.00	23,100	0.00	0	5,000.00	5,000	25,000.00	25,000	53,100.00	53,100
C1.	45.00	12	Crushing Area Sump Pump [C0-PSU-001]	1. ea	27.50	27.50	60.00	1,650	0.00	0	100.00	100	14,000.00	14,000	15,750.00	15,750
C1.	46.00	12	Stockpile Area Sump Pump [D0-PSU-001]	1. ea	27.50	27.50	60.00	1,650	0.00	0	100.00	100	14,000.00	14,000	15,750.00	15,750
C1.	47.00	13	Piping Allowance 5.0%	1. lot	3,107.79	3,107.79	60.00	186,467	14,947.98	14,948	7,981.31	7,981	1,162,250.62	1,162,251	1,371,647.37	1,371,647
C1.	48.00	17	Instrumentation Allowance 3.0%	1. lot	1,864.67	1,864.67	60.00	111,880	8,968.79	8,969	4,788.79	4,789	697,350.37	697,350	822,988.42	822,988
C1.	49.00	18	Electrical Allowance 5.0%	1. lot	3,107.79	3,107.79	60.00	186,467	14,947.98	14,948	7,981.31	7,981	1,162,250.62	1,162,251	1,371,647.37	1,371,647
			C1. - Crushing, Stockpile and Reclaim Subtotal			**70,236.08**		**4,214,165**		**337,824**		**180,378**		**22,078,929**		**26,811,296**

E0. - Mill Building

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E0.	1.00	8	Mill Building consist of Grinding Area 61 x 91 x 49.2 and flotation area 147 x 91 x 36.75m high	18,928. m2	9.50	179,816.00	60.00	10,788,960	1,900.00	35,963,200	100.00	1,892,800	0.00	0	2,570.00	48,644,960
			E0. - Mill Building Subtotal			**179,816.00**		**10,788,960**		**35,963,200**		**1,892,800**		**0**		**48,644,960**

E1. - Grinding And Classification

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E1.	1.00	12	Mill Bin Feed Conveyor 1050 wide Open belt type c/w walkway & bents [D0-CON-010]	450. m	14.85	6,682.50	60.00	400,950	0.00	0	65.00	29,250	3,250.00	1,462,500	4,206.00	1,892,700
E1.	2.00	12	Bin Feed Conveyor Tripper [D0-CHU-001]	1. ea	66.00	66.00	60.00	3,960	0.00	0	150.00	150	25,000.00	25,000	29,110.00	29,110
E1.	2.01	12	Mill Bin Feed Conveyor Head Chute [D0-CHU]	1,000. kg	0.06	55.00	60.00	3,300	0.50	500	0.12	120	4.50	4,500	8.42	8,420
E1.	2.02	12	Mill Bin Feed Conveyor Head Chute Liner [D0-CHU]	750. kg	0.07	49.50	60.00	2,970	0.50	375	0.12	90	5.50	4,125	10.08	7,560
E1.	3.00	12	Mill No.1 Feed Bin, 5000 tonne [D0-BIN-001]	32,000. kg	0.06	1,760.00	60.00	105,600	0.50	16,000	0.12	3,840	4.50	144,000	8.42	269,440
E1.	3.01	12	Mill No.2 Feed Bin, 5000 tonne [D0-BIN-002]	32,000. kg	0.06	1,760.00	60.00	105,600	0.50	16,000	0.12	3,840	4.50	144,000	8.42	269,440

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E1.	3.02	12	Mill No.3 Feed Bin, 5000 tonne [D0-BIN-003]	32,000. kg	0.06	1,760.00	60.00	105,600	0.50	16,000	0.12	3,840	4.50	144,000	8.42	269,440
E1.	3.03	12	Mill No.4 Feed Bin, 5000 tonne [D0-BIN-004]	32,000. kg	0.06	1,760.00	60.00	105,600	0.50	16,000	0.12	3,840	4.50	144,000	8.42	269,440
E1.	4.00	12	Mill No.1 Feed Bin Belt Feeder No.1 3.7kW, 750x3000 [D0-FDR-001]	1. ea	132.00	132.00	60.00	7,920	0.00	0	0.00	0	30,000.00	30,000	37,920.00	37,920
E1.	4.01	12	Mill No.1 Feed Bin Belt Feeder No.1 Discharge Chute [D0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
E1.	4.02	12	Mill No.1 Feed Bin Belt Feeder No.1 Discharge Chute Liner [D0-CHU]	2,500. kg	0.07	165.00	60.00	9,900	0.50	1,250	0.12	300	5.50	13,750	10.08	25,200
E1.	5.00	12	Mill No.1 Feed Bin Belt Feeder No.2 3.7kW, 750x3000 [D0-FDR-002]	1. ea	132.00	132.00	60.00	7,920	0.00	0	0.00	0	30,000.00	30,000	37,920.00	37,920
E1.	5.01	12	Mill No.1 Feed Bin Belt Feeder No.2 Discharge Chute [D0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
E1.	5.02	12	Mill No.1 Feed Bin Belt Feeder No.2 Discharge Chute Liner [D0-CHU]	2,500. kg	0.07	165.00	60.00	9,900	0.50	1,250	0.12	300	5.50	13,750	10.08	25,200
E1.	6.00	12	Mill No.2 Feed Bin Belt Feeder No.1 3.7kW, 750x3000 [D0-FDR-003]	1. ea	132.00	132.00	60.00	7,920	0.00	0	0.00	0	30,000.00	30,000	37,920.00	37,920
E1.	6.01	12	Mill No.2 Feed Bin Belt Feeder No.1 Discharge Chute [D0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
E1.	6.02	12	Mill No.2 Feed Bin Belt Feeder No.1 Discharge Chute Liner [D0-CHU]	2,500. kg	0.07	165.00	60.00	9,900	0.50	1,250	0.12	300	5.50	13,750	10.08	25,200
E1.	7.00	12	Mill No.2 Feed Bin Belt Feeder No.2 3.7kW, 750x3000 [D0-FDR-004]	1. ea	132.00	132.00	60.00	7,920	0.00	0	0.00	0	30,000.00	30,000	37,920.00	37,920
E1.	7.01	12	Mill No.2 Feed Bin Belt Feeder No.2 Discharge Chute [D0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
E1.	7.02	12	Mill No.2 Feed Bin Belt Feeder No.2 Discharge Chute Liner [D0-CHU]	2,500. kg	0.07	165.00	60.00	9,900	0.50	1,250	0.12	300	5.50	13,750	10.08	25,200
E1.	8.00	12	Mill No.3 Feed Bin Belt Feeder No.1 3.7kW, 750x3000 [D0-FDR-005]	1. ea	132.00	132.00	60.00	7,920	0.00	0	0.00	0	30,000.00	30,000	37,920.00	37,920
E1.	8.01	12	Mill No.3 Feed Bin Belt Feeder No.1 Discharge Chute [D0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
E1.	8.02	12	Mill No.3 Feed Bin Belt Feeder No.1 Discharge Chute Liner [D0-CHU]	2,500. kg	0.07	165.00	60.00	9,900	0.50	1,250	0.12	300	5.50	13,750	10.08	25,200
E1.	9.00	12	Mill No.3 Feed Bin Belt Feeder No.2 3.7kW, 750x3000 [D0-FDR-006]	1. ea	132.00	132.00	60.00	7,920	0.00	0	0.00	0	30,000.00	30,000	37,920.00	37,920
E1.	9.01	12	Mill No.3 Feed Bin Belt Feeder No.2 Discharge Chute [D0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630

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E1.	9.02	12	Mill No.3 Feed Bin Belt Feeder No.2 Discharge Chute Liner [D0-CHU]	2,500. kg	0.07	165.00	60.00	9,900	0.50	1,250	0.12	300	5.50	13,750	10.08	25,200
E1.	10.00	12	Mill No4 Feed Bin Belt Feeder No.1 3.7kW, 750x3000 [D0-FDR-007]	1. ea	132.00	132.00	60.00	7,920	0.00	0	0.00	0	30,000.00	30,000	37,920.00	37,920
E1.	10.01	12	Mill No4 Feed Bin Belt Feeder No.1 Discharge Chute [D0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
E1.	10.02	12	Mill No4 Feed Bin Belt Feeder No.1 Discharge Chute Liner [D0-CHU]	2,500. kg	0.07	165.00	60.00	9,900	0.50	1,250	0.12	300	5.50	13,750	10.08	25,200
E1.	11.00	12	Mill No4 Feed Bin Belt Feeder No.2 3.7kW, 750x3000 [D0-FDR-008]	1. ea	132.00	132.00	60.00	7,920	0.00	0	0.00	0	30,000.00	30,000	37,920.00	37,920
E1.	11.01	12	Mill No4 Feed Bin Belt Feeder No.2 Discharge Chute [D0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
E1.	11.02	12	Mill No4 Feed Bin Belt Feeder No.2 Discharge Chute Liner [D0-CHU]	2,500. kg	0.07	165.00	60.00	9,900	0.50	1,250	0.12	300	5.50	13,750	10.08	25,200
E1.	12.00	12	Feed Conveyor Belt Scale Mill No.1 1kW [D0-SCB-001]	1. ea	44.00	44.00	60.00	2,640	50.00	50	10.00	10	45,000.00	45,000	47,700.00	47,700
E1.	12.01	12	Feed Conveyor Belt Scale Mill No.2 1kW [D0-SCB-002]	1. ea	44.00	44.00	60.00	2,640	50.00	50	10.00	10	45,000.00	45,000	47,700.00	47,700
E1.	12.02	12	Feed Conveyor Belt Scale Mill No.3 1kW [D0-SCB-003]	1. ea	44.00	44.00	60.00	2,640	50.00	50	10.00	10	45,000.00	45,000	47,700.00	47,700
E1.	12.03	12	Feed Conveyor Belt Scale Mill No.4 1kW [D0-SCB-004]	1. ea	44.00	44.00	60.00	2,640	50.00	50	10.00	10	45,000.00	45,000	47,700.00	47,700
E1.	13.00	12	Mill No.1 C/W Lube Units 1865kW, 4570x6100 [E1-MIL-001]	1. ea	2,200.00	2,200.00	60.00	132,000	0.00	0	300.00	300	2,403,000.00	2,403,000	2,535,300.00	2,535,300
E1.	13.01	12	Mill No.1 Belt Feeder No.2 Discharge Chute [D0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
E1.	13.02	12	Mill No.1 Belt Feeder No.2 Discharge Chute Liner [D0-CHU]	2,500. kg	0.07	165.00	60.00	9,900	0.50	1,250	0.12	300	5.50	13,750	10.08	25,200
E1.	14.00	12	Mill No.2 C/W Lube Units 1865kW, 4570x6100 [E1-MIL-002]	1. ea	2,200.00	2,200.00	60.00	132,000	0.00	0	300.00	300	2,403,000.00	2,403,000	2,535,300.00	2,535,300
E1.	14.01	12	Mill No.2 Belt Feeder No.2 Discharge Chute [D0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
E1.	14.02	12	Mill No.2 Belt Feeder No.2 Discharge Chute Liner [D0-CHU]	2,500. kg	0.07	165.00	60.00	9,900	0.50	1,250	0.12	300	5.50	13,750	10.08	25,200
E1.	15.00	12	Mill No.3 C/W Lube Units 1865kW, 4570x6100 [E1-MIL-003]	1. ea	2,200.00	2,200.00	60.00	132,000	0.00	0	300.00	300	2,403,000.00	2,403,000	2,535,300.00	2,535,300
E1.	15.01	12	Mill No.3 Belt Feeder No.2 Discharge Chute [D0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
E1.	15.02	12	Mill No.3 Belt Feeder No.2 Discharge Chute Liner [D0-CHU]	2,500. kg	0.07	165.00	60.00	9,900	0.50	1,250	0.12	300	5.50	13,750	10.08	25,200
E1.	16.00	12	Mill No.4 C/W Lube Units 1865kW, 4570x6100 [E1-MIL-004]	1. ea	2,200.00	2,200.00	60.00	132,000	0.00	0	300.00	300	2,403,000.00	2,403,000	2,535,300.00	2,535,300

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E1.	16.01	12	Mill No.4 Belt Feeder No.2 Discharge Chute [D0-CHU]	1,500. kg	0.06	82.50	60.00	4,950	0.50	750	0.12	180	4.50	6,750	8.42	12,630
E1.	16.02	12	Mill No.4 Belt Feeder No.2 Discharge Chute Liner [D0-CHU]	2,500. kg	0.07	165.00	60.00	9,900	0.50	1,250	0.12	300	5.50	13,750	10.08	25,200
E1.	17.00	12	Rod Charger 2.2kW, included [E1-ROD-001]	-	-	-	-	-	-	-	-	-	-	-	-	-
E1.	18.00	12	Discharge Pumpbox Mill No.1, 2000x2000x2300 [E1-PBX-001]	2,800. kg	0.06	154.00	60.00	9,240	0.50	1,400	0.12	336	4.50	12,600	8.42	23,576
E1.	18.01	12	Discharge Pumpbox Mill No.2, 2000x2000x2300 [E1-PBX-002]	2,800. kg	0.06	154.00	60.00	9,240	0.50	1,400	0.12	336	4.50	12,600	8.42	23,576
E1.	18.02	12	Discharge Pumpbox Mill No.3, 2000x2000x2300 [E1-PBX-003]	2,800. kg	0.06	154.00	60.00	9,240	0.50	1,400	0.12	336	4.50	12,600	8.42	23,576
E1.	18.03	12	Discharge Pumpbox Mill No.4, 2000x2000x2300 [E1-PBX-004]	2,800. kg	0.06	154.00	60.00	9,240	0.50	1,400	0.12	336	4.50	12,600	8.42	23,576
E1.	19.00	12	Classifying Screen No.1 Feed Pump No.1 150kW, 250x200 [E1-PMP-001]	1. ea	110.00	110.00	60.00	6,600	0.00	0	500.00	500	75,000.00	75,000	82,100.00	82,100
E1.	19.01	12	Classifying Screen No.1 Feed Pump No.2 150kW, 250x200 [E1-PMP-002]	1. ea	110.00	110.00	60.00	6,600	0.00	0	500.00	500	75,000.00	75,000	82,100.00	82,100
E1.	19.02	12	Classifying Screen No.2 Feed Pump No.1 150kW, 250x200 [E1-PMP-003]	1. ea	110.00	110.00	60.00	6,600	0.00	0	500.00	500	75,000.00	75,000	82,100.00	82,100
E1.	19.03	12	Classifying Screen No.2 Feed Pump No.2 150kW, 250x200 [E1-PMP-004]	1. ea	110.00	110.00	60.00	6,600	0.00	0	500.00	500	75,000.00	75,000	82,100.00	82,100
E1.	19.04	12	Classifying Screen No.3 Feed Pump No.1 150kW, 250x200 [E1-PMP-005]	1. ea	110.00	110.00	60.00	6,600	0.00	0	500.00	500	75,000.00	75,000	82,100.00	82,100
E1.	19.05	12	Classifying Screen No.3 Feed Pump No.2 150kW, 250x200 [E1-PMP-006]	1. ea	110.00	110.00	60.00	6,600	0.00	0	500.00	500	75,000.00	75,000	82,100.00	82,100
E1.	19.06	12	Classifying Screen No.4 Feed Pump No.1 150kW, 250x200 [E1-PMP-007]	1. ea	110.00	110.00	60.00	6,600	0.00	0	500.00	500	75,000.00	75,000	82,100.00	82,100
E1.	19.07	12	Classifying Screen No.4 Feed Pump No.2 150kW, 250x200 [E1-PMP-008]	1. ea	110.00	110.00	60.00	6,600	0.00	0	500.00	500	75,000.00	75,000	82,100.00	82,100
E1.	20.00	12	Vibrating 5 Deck Classifying Screen Cluster No.1 7.4kW, 1250x5000 [E1-SCN-001]	1. ea	220.00	220.00	60.00	13,200	0.00	0	500.00	500	65,000.00	65,000	78,700.00	78,700
E1.	20.01	12	Vibrating 5 Deck Classifying Screen Cluster No.1 underpan [E1-CHU]	5,000. kg	0.06	275.00	60.00	16,500	0.50	2,500	0.12	600	4.50	22,500	8.42	42,100
E1.	20.02	12	Vibrating 5 Deck Classifying Screen Cluster No.1 underpan liner [E1-CHU]	7,500. kg	0.07	495.00	60.00	29,700	0.50	3,750	0.12	900	5.50	41,250	10.08	75,600
E1.	21.00	12	Vibrating 5 Deck Classifying Screen Cluster No.2 7.4kW, 1250x5000 [E1-SCN-002]	1. ea	220.00	220.00	60.00	13,200	0.00	0	500.00	500	65,000.00	65,000	78,700.00	78,700

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E1.	21.01	12	Vibrating 5 Deck Classifying Screen Cluster No.2 underpan [E1-CHU]	5,000. kg	0.06	275.00	60.00	16,500	0.50	2,500	0.12	600	4.50	22,500	8.42	42,100
E1.	21.02	12	Vibrating 5 Deck Classifying Screen Cluster No.2 underpan liner [E1-CHU]	7,500. kg	0.07	495.00	60.00	29,700	0.50	3,750	0.12	900	5.50	41,250	10.08	75,600
E1.	22.00	12	Vibrating 5 Deck Classifying Screen Cluster No.3 7.4kW, 1250x5000 [E1-SCN-003]	1. ea	220.00	220.00	60.00	13,200	0.00	0	500.00	500	65,000.00	65,000	78,700.00	78,700
E1.	22.01	12	Vibrating 5 Deck Classifying Screen Cluster No.3 underpan [E1-CHU]	5,000. kg	0.06	275.00	60.00	16,500	0.50	2,500	0.12	600	4.50	22,500	8.42	42,100
E1.	22.02	12	Vibrating 5 Deck Classifying Screen Cluster No.3 underpan liner [E1-CHU]	7,500. kg	0.07	495.00	60.00	29,700	0.50	3,750	0.12	900	5.50	41,250	10.08	75,600
E1.	23.00	12	Vibrating 5 Deck Classifying Screen Cluster No.4 7.4kW, 1250x5000 [E1-SCN-004]	1. ea	220.00	220.00	60.00	13,200	0.00	0	500.00	500	65,000.00	65,000	78,700.00	78,700
E1.	23.01	12	Vibrating 5 Deck Classifying Screen Cluster No.4 underpan [E1-CHU]	5,000. kg	0.06	275.00	60.00	16,500	0.50	2,500	0.12	600	4.50	22,500	8.42	42,100
E1.	23.02	12	Vibrating 5 Deck Classifying Screen Cluster No.4 underpan liner [E1-CHU]	7,500. kg	0.07	495.00	60.00	29,700	0.50	3,750	0.12	900	5.50	41,250	10.08	75,600
E1.	24.00	12	Vibrating 5 Deck Classifying Screen Cluster No.5 7.4kW, 1250x5000 [E1-SCN-005]	1. ea	220.00	220.00	60.00	13,200	0.00	0	500.00	500	65,000.00	65,000	78,700.00	78,700
E1.	24.01	12	Vibrating 5 Deck Classifying Screen Cluster No.5 underpan [E1-CHU]	5,000. kg	0.06	275.00	60.00	16,500	0.50	2,500	0.12	600	4.50	22,500	8.42	42,100
E1.	24.02	12	Vibrating 5 Deck Classifying Screen Cluster No.5 underpan liner [E1-CHU]	7,500. kg	0.07	495.00	60.00	29,700	0.50	3,750	0.12	900	5.50	41,250	10.08	75,600
E1.	25.00	12	Vibrating 5 Deck Classifying Screen Cluster No.6 7.4kW, 1250x5000 [E1-SCN-006]	1. ea	220.00	220.00	60.00	13,200	0.00	0	500.00	500	65,000.00	65,000	78,700.00	78,700
E1.	25.01	12	Vibrating 5 Deck Classifying Screen Cluster No.6 underpan [E1-CHU]	5,000. kg	0.06	275.00	60.00	16,500	0.50	2,500	0.12	600	4.50	22,500	8.42	42,100
E1.	25.02	12	Vibrating 5 Deck Classifying Screen Cluster No.6 underpan liner [E1-CHU]	7,500. kg	0.07	495.00	60.00	29,700	0.50	3,750	0.12	900	5.50	41,250	10.08	75,600
E1.	26.00	12	Vibrating 5 Deck Classifying Screen Cluster No.7 7.4kW, 1250x5000 [E1-SCN-007]	1. ea	220.00	220.00	60.00	13,200	0.00	0	500.00	500	65,000.00	65,000	78,700.00	78,700
E1.	26.01	12	Vibrating 5 Deck Classifying Screen Cluster No.7 underpan [E1-CHU]	5,000. kg	0.06	275.00	60.00	16,500	0.50	2,500	0.12	600	4.50	22,500	8.42	42,100
E1.	26.02	12	Vibrating 5 Deck Classifying Screen Cluster No.7 underpan liner [E1-CHU]	7,500. kg	0.07	495.00	60.00	29,700	0.50	3,750	0.12	900	5.50	41,250	10.08	75,600
E1.	27.00	12	Vibrating 5 Deck Classifying Screen Cluster No.8 7.4kW, 1250x5000 [E1-SCN-008]	1. ea	220.00	220.00	60.00	13,200	0.00	0	500.00	500	65,000.00	65,000	78,700.00	78,700

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E1.	27.01	12	Vibrating 5 Deck Classifying Screen Cluster No.8 underpan [E1-CHU]	5,000. kg	0.06	275.00	60.00	16,500	0.50	2,500	0.12	600	4.50	22,500	8.42	42,100
E1.	27.02	12	Vibrating 5 Deck Classifying Screen Cluster No.8 underpan liner [E1-CHU]	7,500. kg	0.07	495.00	60.00	29,700	0.50	3,750	0.12	900	5.50	41,250	10.08	75,600
E1.	28.00	12	Vibrating 5 Deck Classifying Screen Cluster No.9 7.4kW, 1250x5000 [E1-SCN-009]	1. ea	220.00	220.00	60.00	13,200	0.00	0	500.00	500	65,000.00	65,000	78,700.00	78,700
E1.	28.01	12	Vibrating 5 Deck Classifying Screen Cluster No.9 underpan [E1-CHU]	5,000. kg	0.06	275.00	60.00	16,500	0.50	2,500	0.12	600	4.50	22,500	8.42	42,100
E1.	28.02	12	Vibrating 5 Deck Classifying Screen Cluster No.9 underpan liner [E1-CHU]	7,500. kg	0.07	495.00	60.00	29,700	0.50	3,750	0.12	900	5.50	41,250	10.08	75,600
E1.	29.00	12	Vibrating 5 Deck Classifying Screen Cluster No.10 7.4kW, 1250x5000 [E1-SCN-010]	1. ea	220.00	220.00	60.00	13,200	0.00	0	500.00	500	65,000.00	65,000	78,700.00	78,700
E1.	29.01	12	Vibrating 5 Deck Classifying Screen Cluster No.10 underpan [E1-CHU]	5,000. kg	0.06	275.00	60.00	16,500	0.50	2,500	0.12	600	4.50	22,500	8.42	42,100
E1.	29.02	12	Vibrating 5 Deck Classifying Screen Cluster No.10 underpan liner [E1-CHU]	7,500. kg	0.07	495.00	60.00	29,700	0.50	3,750	0.12	900	5.50	41,250	10.08	75,600
E1.	30.00	12	Vibrating 5 Deck Classifying Screen Cluster No.11 7.4kW, 1250x5000 [E1-SCN-011]	1. ea	220.00	220.00	60.00	13,200	0.00	0	500.00	500	65,000.00	65,000	78,700.00	78,700
E1.	30.01	12	Vibrating 5 Deck Classifying Screen Cluster No.11 underpan [E1-CHU]	5,000. kg	0.06	275.00	60.00	16,500	0.50	2,500	0.12	600	4.50	22,500	8.42	42,100
E1.	30.02	12	Vibrating 5 Deck Classifying Screen Cluster No.11 underpan liner [E1-CHU]	7,500. kg	0.07	495.00	60.00	29,700	0.50	3,750	0.12	900	5.50	41,250	10.08	75,600
E1.	31.00	12	Vibrating 5 Deck Classifying Screen Cluster No.12 7.4kW, 1250x5000 [E1-SCN-012]	1. ea	220.00	220.00	60.00	13,200	0.00	0	500.00	500	65,000.00	65,000	78,700.00	78,700
E1.	31.01	12	Vibrating 5 Deck Classifying Screen Cluster No.12 underpan [E1-CHU]	5,000. kg	0.06	275.00	60.00	16,500	0.50	2,500	0.12	600	4.50	22,500	8.42	42,100
E1.	31.02	12	Vibrating 5 Deck Classifying Screen Cluster No.12 underpan liner [E1-CHU]	7,500. kg	0.07	495.00	60.00	29,700	0.50	3,750	0.12	900	5.50	41,250	10.08	75,600
E1.	32.00	12	Vibrating 5 Deck Classifying Screen Cluster No.13 7.4kW, *** Deleted *** [E1-SCN-013]	-	-	-	-	-	-	-	-	-	-	.	-	-
E1.	32.01	12	Vibrating 5 Deck Classifying Screen Cluster No.13 underpan, *** Deleted *** [E1-CHU]	-	-	-	-	-	-	-	-	-	-	.	-	-
E1.	32.02	12	Vibrating 5 Deck Classifying Screen Cluster No.13 underpan liner, *** Deleted *** [E1-CHU]	-	-	-	-	-	-	-	-	-	-	.	-	-
E1.	33.00	12	Vibrating 5 Deck Classifying Screen Cluster No.14 7.4kW, *** Deleted *** [E1-SCN-014]	-	-	-	-	-	-	-	-	-	-	.	-	-

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E1.	33.01	12	Vibrating 5 Deck Classifying Screen Cluster No.14 underpan, *** Deleted *** [E1-CHU]	-	-	-	-	-	-	-	-	-	-	-	-	-
E1.	33.02	12	Vibrating 5 Deck Classifying Screen Cluster No.14 underpan liner, *** Deleted *** [E1-CHU]	-	-	-	-	-	-	-	-	-	-	-	-	-
E1.	34.00	12	Vibrating 5 Deck Classifying Screen Cluster No.15 7.4kW, *** Deleted *** [E1-SCN-015]	-	-	-	-	-	-	-	-	-	-	-	-	-
E1.	34.01	12	Vibrating 5 Deck Classifying Screen Cluster No.15 underpan, *** Deleted *** [E1-CHU]	-	-	-	-	-	-	-	-	-	-	-	-	-
E1.	34.02	12	Vibrating 5 Deck Classifying Screen Cluster No.15 underpan liner, *** Deleted *** [E1-CHU]	-	-	-	-	-	-	-	-	-	-	-	-	-
E1.	35.00	12	Vibrating 5 Deck Classifying Screen Cluster No.16 7.4kW, *** Deleted *** [E1-SCN-016]	-	-	-	-	-	-	-	-	-	-	-	-	-
E1.	35.01	12	Vibrating 5 Deck Classifying Screen Cluster No.16 underpan, *** Deleted *** [E1-CHU]	-	-	-	-	-	-	-	-	-	-	-	-	-
E1.	35.02	12	Vibrating 5 Deck Classifying Screen Cluster No.16 underpan liner, *** Deleted *** [E1-CHU]	-	-	-	-	-	-	-	-	-	-	-	-	-
E1.	36.00	12	Grinding Area Sump Pump No.1 7.5kW, 75 D [E1-PSU-001]	1. ea	27.50	27.50	60.00	1,650	0.00	0	100.00	100	14,000.00	14,000	15,750.00	15,750
E1.	37.00	12	Grinding Area Sump Pump No.2 7.5kW, 75 D [E1-PSU-002]	1. ea	27.50	27.50	60.00	1,650	0.00	0	100.00	100	14,000.00	14,000	15,750.00	15,750
E1.	38.00	12	Grinding Area Sump Pump No.3 7.5kW, 75 D [E1-PSU-003]	1. ea	27.50	27.50	60.00	1,650	0.00	0	100.00	100	14,000.00	14,000	15,750.00	15,750
E1.	39.00	12	Grinding Area Sump Pump No.4 7.5kW, 75 D [E1-PSU-004]	1. ea	27.50	27.50	60.00	1,650	0.00	0	100.00	100	14,000.00	14,000	15,750.00	15,750
E1.	40.00	12	Grinding Area Over Head Crane 7kW, 20 tonne [E1-CRM-001]	1. ea	176.00	176.00	60.00	10,560	0.00	0	250.00	250	220,000.00	220,000	230,810.00	230,810
E1.	41.00	13	Piping Allowance 5.0%	1. lot	2,027.85	2,027.85	60.00	121,671	8,483.75	8,484	4,098.20	4,098	741,076.25	741,076	875,329.20	875,329
E1.	42.00	17	Instrumentation Allowance 3.0%	1. lot	1,216.71	1,216.71	60.00	73,003	5,090.25	5,090	2,458.92	2,459	444,645.75	444,646	525,197.52	525,198
E1.	43.00	18	Electrical Allowance 5.0%	1. lot	2,027.85	2,027.85	60.00	121,671	8,483.75	8,484	4,098.20	4,098	741,076.25	741,076	875,329.20	875,329
			E1. - Grinding And Classification Subtotal			**45,829.41**		**2,749,765**		**191,733**		**92,619**		**16,748,323**		**19,782,440**

E2. - Flotation, Regrind And Gravity Concentration

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E2.	1.00	12	Primary Sulphide Flotation Conditioning Tank, 6400 Dx7000 [E2-TNK-001]	8,500. kg	0.06	467.50	60.00	28,050	0.50	4,250	0.12	1,020	4.50	38,250	8.42	71,570
E2.	2.00	12	Primary Sulphide Flotation Conditioning Tank Agitator 22kW [E2-AGI-001]	1. ea	110.00	110.00	60.00	6,600	0.00	0	150.00	150	28,000.00	28,000	34,750.00	34,750

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E2.	3.00	12	Primary Sulphide Flotation Feed Sampler 1kW [E2-SMP-006]	1. ea	59.40	59.40	60.00	3,564	50.00	50	50.00	50	37,000.00	37,000	40,664.00	40,664
E2.	4.00	12	Sulphide Flotation Area Sump Pump 7.5kW, 75 D [E2-SUM-001]	1. ea	33.00	33.00	60.00	1,980	0.00	0	100.00	100	11,000.00	11,000	13,080.00	13,080
E2.	5.00	12	Primary Sulphide Rougher Flotation Cell No.1 90kW, 70 m3 [E2-CEL-001]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E2.	6.00	12	Primary Sulphide Rougher Flotation Cell No.2 90kW, 70 m3 [E2-CEL-002]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E2.	7.00	12	Primary Sulphide Rougher Flotation Cell No.3 90kW, 70 m3 [E2-CEL-003]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E2.	8.00	12	Primary Sulphide Rougher Flotation Cell No.4 90kW, 70 m3 [E2-CEL-004]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E2.	9.00	12	Primary Sulphide Rougher Flotation Cell No.5 90kW, 70 m3 [E2-CEL-005]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E2.	10.00	12	Primary Sulphide Rougher Flotation Cell No.6 90kW, 70 m3 [E2-CEL-006]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E2.	11.00	12	Primary Sulphide Rougher Flotation Cell No.7 90kW, 70 m3 [E2-CEL-007]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E2.	12.00	12	Primary Sulphide Rougher Flotation Cell No.8 90kW, 70 m3 [E2-CEL-008]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E2.	13.00	12	Primary Sulphide Rougher Flotation Cell No.9 90kW 70 m3, *** Deleted *** [E2-CEL-009]	-	-	-	-	-	-	-	-	-	-	.	-	-
E2.	14.00	12	Primary Sulphide Rougher Flotation Cell No.10 90kW 70 m3, *** Deleted *** [E2-CEL-010]	-	-	-	-	-	-	-	-	-	-	.	-	-
E2.	15.00	12	Primary Sulphide Rougher Flotation Cell No.11 90kW 70 m3, *** Deleted *** [E2-CEL-011]	-	-	-	-	-	-	-	-	-	-	.	-	-
E2.	16.00	12	Primary Sulphide Rougher Flotation Cell No.12 90kW 70 m3, *** Deleted *** [E2-CEL-012]	-	-	-	-	-	-	-	-	-	-	.	-	-
E2.	17.00	12	Regrind Mill Discharge Distribution Box, 2500x2500x3100 [E2-DIS-002]	3,000. kg	0.06	165.00	60.00	9,900	0.50	1,500	0.12	360	4.50	13,500	8.42	25,260
E2.	18.00	12	Primary Sulphide Rougher Concentrate Pump 19kW, 250 D [E2-PMP-005]	1. ea	132.00	132.00	60.00	7,920	0.00	0	150.00	150	27,500.00	27,500	35,570.00	35,570
E2.	19.00	12	Molybdenum 1St Cleaner Flotation Cell No.1 30kW, 15 m3 [E2-CEL-013]	1. ea	110.00	110.00	60.00	6,600	0.00	0	300.00	300	175,000.00	175,000	181,900.00	181,900
E2.	20.00	12	Molybdenum 1St Cleaner Flotation Cell No.2 30kW, 15 m3 [E2-CEL-014]	1. ea	110.00	110.00	60.00	6,600	0.00	0	300.00	300	175,000.00	175,000	181,900.00	181,900

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E2.	21.00	12	Molybdenum 1St Cleaner Flotation Cell No.3 30kW, 15 m3 [E2-CEL-015]	1. ea	110.00	110.00	60.00	6,600	0.00	0	300.00	300	175,000.00	175,000	181,900.00	181,900
E2.	22.00	12	Molybdenum 1St Cleaner Flotation Cell No.4 30kW, 15 m3 [E2-CEL-016]	1. ea	110.00	110.00	60.00	6,600	0.00	0	300.00	300	175,000.00	175,000	181,900.00	181,900
E2.	23.00	12	Molybdenum 1St Cleaner Flotation Cell No.5 30kW, 15 m3 [E2-CEL-017]	1. ea	110.00	110.00	60.00	6,600	0.00	0	300.00	300	175,000.00	175,000	181,900.00	181,900
E2.	24.00	12	Molybdenum 1St Cleaner Flotation Cell No.6 30kW 15 m3, *** Deleted *** [E2-CEL-018]	-	-	-	-	-	-	-	-	-	-	-	-	-
E2.	25.00	12	Molybdenum 1St Cleaner Flotation Cell No.7 30kW 15 m3, *** Deleted *** [E2-CEL-019]	-	-	-	-	-	-	-	-	-	-	-	-	-
E2.	26.00	12	Molybdenum 1St Cleaner Flotation Cell No.8 30kW 15 m3, *** Deleted *** [E2-CEL-020]	-	-	-	-	-	-	-	-	-	-	-	-	-
E2.	27.00	12	Molybdenum Tailings Sampler 1kW [E2-SMP-003]	1. ea	59.40	59.40	60.00	3,564	50.00	50	50.00	50	37,000.00	37,000	40,664.00	40,664
E2.	28.00	12	Molybdenum 1St Cleaner Concentrate Pump 5kW, 150 D [E2-PMP-006]	1. ea	110.00	110.00	60.00	6,600	0.00	0	350.00	350	50,000.00	50,000	56,950.00	56,950
E2.	29.00	12	Molybdenum 2Nd Cleaner Flotation Cell No.1 15kW, 5 m3 [E2-CEL-021]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E2.	30.00	12	Molybdenum 2Nd Cleaner Flotation Cell No.2 15kW, 5 m3 [E2-CEL-022]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E2.	31.00	12	Molybdenum 2Nd Cleaner Flotation Cell No.3 15kW, 5 m3 [E2-CEL-023]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E2.	32.00	12	Molybdenum 2Nd Cleaner Flotation Cell No.4 15kW, 5 m3 [E2-CEL-024]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E2.	33.00	12	Molybdenum 2Nd Cleaner Flotation Cell No.5 15kW 5 m3, *** Deleted *** [E2-CEL-025]	-	-	-	-	-	-	-	-	-	-	-	-	-
E2.	34.00	12	Molybdenum 2Nd Cleaner Flotation Cell No.6 15kW 5 m3, *** Deleted *** [E2-CEL-026]	-	-	-	-	-	-	-	-	-	-	-	-	-
E2.	35.00	12	Molybdenum 2Nd Cleaner Concentrate Pump 15kW 5 m3, 100 D [E2-PMP-007]	1. ea	110.00	110.00	60.00	6,600	0.00	0	350.00	350	40,000.00	40,000	46,950.00	46,950
E2.	36.00	12	Molybdenum 3Rd Cleaner Flotation Cell No.1 15kW 5 m3, 5 m3 [E2-CEL-027]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E2.	37.00	12	Molybdenum 3Rd Cleaner Flotation Cell No.2 15kW 5 m3, 5 m3 [E2-CEL-028]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E2.	38.00	12	Molybdenum 3Rd Cleaner Flotation Cell No.3 15kW 5 m3, 5 m3 [E2-CEL-029]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E2.	39.00	12	Molybdenum 3Rd Cleaner Flotation Cell No.4 15kW 5 m3, *** Deleted *** [E2-CEL-030]	-	-	-	-	-	-	-	-	-	-	-	-	-

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E2.	40.00	12	Molybdenum 3Rd Cleaner Concentrate Pump 15kW 5 m3, 50 D [E2-PMP-025]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790
E2.	41.00	12	Molybdenum 4Th Cleaner Flotation Cell No.1 15kW 5 m3, 5 m3 [E2-CEL-031]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E2.	42.00	12	Molybdenum 4Th Cleaner Flotation Cell No.2 15kW 5 m3, 5 m3 [E2-CEL-032]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E2.	43.00	12	Molybdenum 4Th Cleaner Flotation Cell No.3 15kW 5 m3, 5 m3 [E2-CEL-033]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E2.	44.00	12	Molybdenum 4Th Cleaner Flotation Cell No.4 15kW 5 m3, *** Deleted *** [E2-CEL-034]	-	-	-	-	-	-	-	-	-	-	-	-	-
E2.	45.00	12	Molybdenum 4Th Cleaner Concentrate Pump 3.7kW, 50 D [E2-PMP-026]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790
E2.	46.00	12	Molybdenum 1St Column Cleaner, 1200 Dx4800 [E2-CLE-001]	1. ea	88.00	88.00	60.00	5,280	0.00	0	750.00	750	75,000.00	75,000	81,030.00	81,030
E2.	47.00	12	Molybdenum 2Nd Column Cleaner, 700 Dx2800 [E2-CLE-002]	1. ea	88.00	88.00	60.00	5,280	0.00	0	750.00	750	58,000.00	58,000	64,030.00	64,030
E2.	48.00	12	Molybdenum 2Nd Column Cleaner Tailings Pump No.1 3.7kW, 40x25 [E2-PMP-027]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790
E2.	49.00	12	Molybdenum 2Nd Column Cleaner Tailings Pump No.2 3.7kW, 40x25 [E2-PMP-028]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790
E2.	50.00	12	Molybdenum Concentrate Thickener 5kW, 5000 D [E2-THI-001]	1. ea	440.00	440.00	60.00	26,400	0.00	0	0.00	0	200,000.00	200,000	226,400.00	226,400
E2.	51.00	12	Molybdenum Concentrate Filter Area Sump Pump 7.5kW, 75 D [E2-SUM-007]	1. ea	33.00	33.00	60.00	1,980	0.00	0	100.00	100	11,000.00	11,000	13,080.00	13,080
E2.	52.00	12	Molybdenum Concentrate Filter Feed Pump No.1 55kW, 100x75 [E2-PMP-010]	1. ea	165.00	165.00	60.00	9,900	0.00	0	100.00	100	30,000.00	30,000	40,000.00	40,000
E2.	53.00	12	Molybdenum Concentrate Filter Feed Pump No.2 55kW, 100x75 [E2-PMP-011]	1. ea	165.00	165.00	60.00	9,900	0.00	0	100.00	100	30,000.00	30,000	40,000.00	40,000
E2.	54.00	12	Molybdenum Concentrate Sampler 1kW [E2-SMP-002]	1. ea	59.40	59.40	60.00	3,564	50.00	50	50.00	50	37,000.00	37,000	40,664.00	40,664
E2.	55.00	12	Molybdenum Concentrate Thickener Standpipe, 1000 Dx5000 [E2-TNK-004]	2,500. kg	0.06	137.50	60.00	8,250	0.50	1,250	0.12	300	4.50	11,250	8.42	21,050
E2.	56.00	12	Molybdenum Concentrate Thickener Standpipe Pump No.1 3.7kW, 40x25 [E2-PMP-008]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790
E2.	57.00	12	Molybdenum Concentrate Thickener Standpipe Pump No.2 3.7kW, 40x25 [E2-PMP-009]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790

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E2.	58.00	12	Molybdenum Concentrate Filter Press Concentrate Pressure Filter Capacity 1.45dmt/hr c/w Plates, Cloths, Service Platform, Piping & Valves, Hydraulic Power unit, Filter Cake Chute, Load Cell Weighing System,, Cloth Damage Detedtor & Control System, 1000x1000x5 [E2-PRS-002]	1. ea	660.00	660.00	60.00	39,600	250.00	250	500.00	500	550,000.00	550,000	590,350.00	590,350
E2.	59.00	12	Molybdenum Concentrate Filter Press Conveyor 300 wide [E2-CON]	10. m	16.50	165.00	60.00	9,900	0.00	0	100.00	1,000	4,000.00	40,000	5,090.00	50,900
E2.	60.00	12	Molybdenum Concentrate Bin - Intermittent, 3 tonne [E2-BIN-001]	2,000. kg	0.06	110.00	60.00	6,600	0.50	1,000	0.12	240	4.50	9,000	8.42	16,840
E2.	61.00	12	Molybdenum Concentrate Bagging System to Dry 1.3 tph Moly Concentrate 4.5ft dia x24ft Long SS Rotary Dryer c/w Gate Valve, Flexwall Conveyor to Storage Hopper 200 ft3 Storage Bin Bin Vibrator, Pulsed Air Valve Platform Scale Powered Roller Conveyor to F/Lift area [E2-BBS-001]	1. ea	660.00	660.00	60.00	39,600	250.00	250	350.00	350	525,000.00	525,000	565,200.00	565,200
E2.	62.00	12	Regrind Mill Feed Distributor [E2-DIS-001]	3,000. kg	0.06	165.00	60.00	9,900	0.50	1,500	0.12	360	4.50	13,500	8.42	25,260
E2.	63.00	12	Regrind Mill No.1 C/W Lube Units 1865kW, 4570x6100 [E2-MIL-001]	1. ea	2,200.00	2,200.00	60.00	132,000	0.00	0	300.00	300	2,403,000.00	2,403,000	2,535,300.00	2,535,300
E2.	64.00	12	Regrind Mill No.2 1865kW, 4570x6100 [E2-MIL-002]	1. ea	2,200.00	2,200.00	60.00	132,000	0.00	0	300.00	300	2,403,000.00	2,403,000	2,535,300.00	2,535,300
E2.	65.00	12	Regrind Mill No.3 1865kW, 4570x6100 [E2-MIL-003]	1. ea	2,200.00	2,200.00	60.00	132,000	0.00	0	300.00	300	2,403,000.00	2,403,000	2,535,300.00	2,535,300
E2.	66.00	12	Regrind Mill No.4 1865kW, 4570x6100 [E2-MIL-004]	1. ea	2,200.00	2,200.00	60.00	132,000	0.00	0	300.00	300	2,403,000.00	2,403,000	2,535,300.00	2,535,300
E2.	67.00	12	Regrind Mill Discharge Pumpbox No.1, 1200x1200x1400 [E2-PBX-001]	1,000. kg	0.06	55.00	60.00	3,300	0.50	500	0.12	120	4.50	4,500	8.42	8,420
E2.	68.00	12	Regrind Mill Discharge Pumpbox No.2, 1200x1200x1400 [E2-PBX-003]	1,000. kg	0.06	55.00	60.00	3,300	0.50	500	0.12	120	4.50	4,500	8.42	8,420
E2.	69.00	12	Regrind Mill Discharge Pumpbox No.3, 1200x1200x1400 [E2-PBX-004]	1,000. kg	0.06	55.00	60.00	3,300	0.50	500	0.12	120	4.50	4,500	8.42	8,420
E2.	70.00	12	Regrind Mill Discharge Pumpbox No.4, 1200x1200x1400 [E2-PBX-005]	1,000. kg	0.06	55.00	60.00	3,300	0.50	500	0.12	120	4.50	4,500	8.42	8,420
E2.	71.00	12	Cyclone Feed Pump No.1 45kW, 150x100 [E2-PMP-001]	1. ea	99.00	99.00	60.00	5,940	0.00	0	100.00	100	20,000.00	20,000	26,040.00	26,040
E2.	72.00	12	Cyclone Feed Pump No.2 45kW, 150x100 [E2-PMP-002]	1. ea	99.00	99.00	60.00	5,940	0.00	0	100.00	100	20,000.00	20,000	26,040.00	26,040
E2.	73.00	12	Cyclone Feed Pump No.1 45kW, 150x100 [E2-PMP-015]	1. ea	99.00	99.00	60.00	5,940	0.00	0	100.00	100	20,000.00	20,000	26,040.00	26,040
E2.	74.00	12	Cyclone Feed Pump No.2 45kW, 150x100 [E2-PMP-016]	1. ea	99.00	99.00	60.00	5,940	0.00	0	100.00	100	20,000.00	20,000	26,040.00	26,040
E2.	75.00	12	Cyclone Feed Pump No.1 45kW, 150x100 [E2-PMP-017]	1. ea	99.00	99.00	60.00	5,940	0.00	0	100.00	100	20,000.00	20,000	26,040.00	26,040
E2.	76.00	12	Cyclone Feed Pump No.2 45kW, 150x100 [E2-PMP-018]	1. ea	99.00	99.00	60.00	5,940	0.00	0	100.00	100	20,000.00	20,000	26,040.00	26,040

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E2.	77.00	12	Cyclone Feed Pump No.1 45kW, 150x100 [E2-PMP-019]	1. ea	99.00	99.00	60.00	5,940	0.00	0	100.00	100	20,000.00	20,000	26,040.00	26,040
E2.	78.00	12	Cyclone Feed Pump No.2 45kW, 150x100 [E2-PMP-020]	1. ea	99.00	99.00	60.00	5,940	0.00	0	100.00	100	20,000.00	20,000	26,040.00	26,040
E2.	79.00	12	Classifying Cyclone No.1 [E2-CYC-002]	1. ea	44.00	44.00	60.00	2,640	50.00	50	75.00	75	40,000.00	40,000	42,765.00	42,765
E2.	80.00	12	Classifying Cyclone No.2 [E2-CYC-003]	1. ea	44.00	44.00	60.00	2,640	50.00	50	75.00	75	40,000.00	40,000	42,765.00	42,765
E2.	81.00	12	Classifying Cyclone No.3 [E2-CYC-004]	1. ea	44.00	44.00	60.00	2,640	50.00	50	75.00	75	40,000.00	40,000	42,765.00	42,765
E2.	82.00	12	Classifying Cyclone No.4 [E2-CYC-005]	1. ea	44.00	44.00	60.00	2,640	50.00	50	75.00	75	40,000.00	40,000	42,765.00	42,765
E2.	83.00	12	Tungsten Flotation Feed Thickener Collection Box [E2-COL-001]	3,000. kg	0.06	165.00	60.00	9,900	0.50	1,500	0.12	360	4.50	13,500	8.42	25,260
E2.	84.00	12	Tungsten Flotation Feed Sampler 1kW [E2-SMP-001]	1. ea	59.40	59.40	60.00	3,564	50.00	50	50.00	50	37,000.00	37,000	40,664.00	40,664
E2.	85.00	12	Primary Gravity Scalping Screen No.1 [E2-SCN-004]	1. ea	132.00	132.00	60.00	7,920	50.00	50	50.00	50	38,500.00	38,500	46,520.00	46,520
E2.	86.00	12	Primary Gravity Scalping Screen No.2 [E2-SCN-005]	1. ea	132.00	132.00	60.00	7,920	50.00	50	50.00	50	38,500.00	38,500	46,520.00	46,520
E2.	87.00	12	Primary Gravity Scalping Screen No.3 [E2-SCN-006]	1. ea	132.00	132.00	60.00	7,920	50.00	50	50.00	50	38,500.00	38,500	46,520.00	46,520
E2.	88.00	12	Primary Gravity Scalping Screen No.4 [E2-SCN-007]	1. ea	132.00	132.00	60.00	7,920	50.00	50	50.00	50	38,500.00	38,500	46,520.00	46,520
E2.	89.00	12	Primary Gravity Concentrator No.1 32kW [E2-CNC-003]	1. ea	275.00	275.00	60.00	16,500	50.00	50	100.00	100	100,000.00	100,000	116,650.00	116,650
E2.	90.00	12	Primary Gravity Concentrator No.2 32kW [E2-CNC-004]	1. ea	275.00	275.00	60.00	16,500	50.00	50	100.00	100	100,000.00	100,000	116,650.00	116,650
E2.	91.00	12	Primary Gravity Concentrator No.3 32kW [E2-CNC-005]	1. ea	275.00	275.00	60.00	16,500	50.00	50	100.00	100	100,000.00	100,000	116,650.00	116,650
E2.	92.00	12	Primary Gravity Concentrator No.4 32kW [E2-CNC-006]	1. ea	275.00	275.00	60.00	16,500	50.00	50	100.00	100	100,000.00	100,000	116,650.00	116,650
E2.	93.00	12	Primary Gravity Concentrators Holding Tank [E2-TNK-005]	3,500. kg	0.06	192.50	60.00	11,550	0.50	1,750	0.12	420	4.50	15,750	8.42	29,470
E2.	94.00	12	Primary Gravity Concentrators Holding Tank Agitator [E2-AGI-004]	1. ea	110.00	110.00	60.00	6,600	0.00	0	150.00	150	28,000.00	28,000	34,750.00	34,750
E2.	95.00	12	Gravity Tailings Pumpbox [E2-PBX-006]	1,000. kg	0.06	55.00	60.00	3,300	0.50	500	0.12	120	4.50	4,500	8.42	8,420
E2.	96.00	12	Regrind Mill Feed Distributor Pump No.1 [E2-PMP-021]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790
E2.	97.00	12	Regrind Mill Feed Distributor Pump No.2 [E2-PMP-022]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790
E2.	98.00	12	Regrind Area Sump Pump No.1 7.5kW, 75 D [E2-SUM-002]	1. ea	33.00	33.00	60.00	1,980	0.00	0	100.00	100	11,000.00	11,000	13,080.00	13,080
E2.	99.00	12	Regrind Area Sump Pump No.2 7.5kW, 75 D [E2-SUM-003]	1. ea	33.00	33.00	60.00	1,980	0.00	0	100.00	100	11,000.00	11,000	13,080.00	13,080
E2.	100.00	12	Regrind Area Sump Pump No.3 7.5kW, 75 D [E2-SUM-004]	1. ea	33.00	33.00	60.00	1,980	0.00	0	100.00	100	11,000.00	11,000	13,080.00	13,080
E2.	101.00	12	Regrind Area Sump Pump No.4 7.5kW, 75 D [E2-SUM-005]	1. ea	33.00	33.00	60.00	1,980	0.00	0	100.00	100	11,000.00	11,000	13,080.00	13,080
E2.	102.00	12	Gravity Area Sump Pump 7.5kW, 75 D [E2-SUM-006]	1. ea	33.00	33.00	60.00	1,980	0.00	0	100.00	100	11,000.00	11,000	13,080.00	13,080

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E2.	103.00	12	Molybdenum Concentrate Thickener Area Sump Pump 3.7kW, 40x25 [E2-PMP-029]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790
E2.	104.00	12	Vibrating Gravity Feed Sizing Screen 2kW, 600x2400 [E2-SCN-001]	1. ea	154.00	154.00	60.00	9,240	50.00	50	100.00	100	96,216.12	96,216	105,606.12	105,606
E2.	105.00	12	Fine Fraction Shaking Table No.1 [E2-SHT-001]	1. ea	132.00	132.00	60.00	7,920	50.00	50	50.00	50	37,000.00	37,000	45,020.00	45,020
E2.	106.00	12	Fine Fraction Shaking Table No.2 [E2-SHT-002]	1. ea	132.00	132.00	60.00	7,920	50.00	50	50.00	50	37,000.00	37,000	45,020.00	45,020
E2.	107.00	12	Fine Fraction Shaking Table No.3 [E2-SHT-003]	1. ea	132.00	132.00	60.00	7,920	50.00	50	50.00	50	37,000.00	37,000	45,020.00	45,020
E2.	108.00	12	Fine Fraction Shaking Table No.4 [E2-SHT-004]	1. ea	132.00	132.00	60.00	7,920	50.00	50	50.00	50	37,000.00	37,000	45,020.00	45,020
E2.	109.00	12	Fine Fraction Shaking Table No.5, *** Deleted *** [E2-SHT-005]	-	-	-	-	-	-	-	-	-	-	-	-	-
E2.	110.00	12	Fine Fraction Shaking Table No.6, *** Deleted *** [E2-SHT-006]	-	-	-	-	-	-	-	-	-	-	-	-	-
E2.	111.00	12	Fine Spiral Concentrator Distribution Box Included [E2-DIS-003]	1. ea	44.00	44.00	60.00	2,640	0.00	0	0.00	0	0.00	0	2,640.00	2,640
E2.	112.00	12	Fine Fraction Spiral Concentrators One Bank Of 10 Single Spiral Assemblies In A Frame C/W Feed Distributor, Hoses, Product Boxes And Launders [E2-CNC-007]	1. lot	88.00	88.00	60.00	5,280	0.00	0	0.00	0	54,600.00	54,600	59,880.00	59,880
E2.	113.00	12	Fine Fraction Table Feed Tank, 61000 Dx6700 [E2-TNK-006]	7,800. kg	0.06	429.00	60.00	25,740	0.50	3,900	0.12	936	4.50	35,100	8.42	65,676
E2.	114.00	12	Fine Fraction Table Feed Tank Agitator 22kW [E2-AGI-005]	1. ea	110.00	110.00	60.00	6,600	0.00	0	150.00	150	28,000.00	28,000	34,750.00	34,750
E2.	115.00	12	Fine Fraction Table Feed Distribution Box [E2-DIS-005]	3,000. kg	0.06	165.00	60.00	9,900	0.50	1,500	0.12	360	4.50	13,500	8.42	25,260
E2.	116.00	12	Coarse Spiral Concentrator Distribution Box Included [E2-DIS-004]	1. lot	44.00	44.00	60.00	2,640	0.00	0	0.00	0	0.00	0	2,640.00	2,640
E2.	117.00	12	Coarse Fraction Spiral Concentrators One Bank Of 10 Single Spiral Assemblies In A Frame C/W Feed Distributor, Hoses, Product Boxes And Launders [E2-CNC-017]	1. ea	88.00	88.00	60.00	5,280	0.00	0	0.00	0	54,600.00	54,600	59,880.00	59,880
E2.	118.00	12	Coarse Fraction Shaking Table No.1 [E2-SHT-007]	1. ea	132.00	132.00	60.00	7,920	50.00	50	50.00	50	37,000.00	37,000	45,020.00	45,020
E2.	119.00	12	Coarse Fraction Shaking Table No.2 [E2-SHT-008]	1. ea	132.00	132.00	60.00	7,920	50.00	50	50.00	50	37,000.00	37,000	45,020.00	45,020
E2.	120.00	12	Coarse Fraction Shaking Table No.3 [E2-SHT-009]	1. ea	132.00	132.00	60.00	7,920	50.00	50	50.00	50	37,000.00	37,000	45,020.00	45,020
E2.	121.00	12	Coarse Fraction Shaking Table No.4 [E2-SHT-010]	1. ea	132.00	132.00	60.00	7,920	50.00	50	50.00	50	37,000.00	37,000	45,020.00	45,020
E2.	122.00	12	Coarse Fraction Shaking Table No.5, *** Deleted *** [E2-SHT-011]	-	-	-	-	-	-	-	-	-	-	-	-	-
E2.	123.00	12	Coarse Fraction Shaking Table No.6, *** Deleted *** [E2-SHT-012]	-	-	-	-	-	-	-	-	-	-	-	-	-

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E2.	124.00	12	Coarse Fraction Table Feed Tank, 61000 Dx6700 [E2-TNK-007]	7,800. kg	0.06	429.00	60.00	25,740	0.50	3,900	0.12	936	4.50	35,100	8.42	65,676
E2.	125.00	12	Coarse Fraction Table Feed Tank Agitator 22kW [E2-AGI-006]	1. ea	110.00	110.00	60.00	6,600	0.00	0	150.00	150	28,000.00	28,000	34,750.00	34,750
E2.	126.00	12	Coarse Fraction Table Feed Distribution Box [E2-DIS-006]	3,000. kg	0.06	165.00	60.00	9,900	0.50	1,500	0.12	360	4.50	13,500	8.42	25,260
E2.	127.00	12	Gravity Concentrate Filter Feed Tank [E2-TNK-008]	7,800. kg	0.06	429.00	60.00	25,740	0.50	3,900	0.12	936	4.50	35,100	8.42	65,676
E2.	128.00	12	Gravity Concentrate Filter Feed Tank Agitator [E2-AGI-007]	1. ea	88.00	88.00	60.00	5,280	0.00	0	75.00	75	15,000.00	15,000	20,355.00	20,355
E2.	129.00	12	Gravity Concentrate Filter Press Pump No.1 [E2-PMP-023]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790
E2.	130.00	12	Gravity Concentrate Filter Press Pump No.2 [E2-PMP-024]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790
E2.	131.00	12	Gravity Concentrate Filter Press Concentrate Pressure Filter Capacity 1.45dmt/hr c/w Plates, Cloths, Service Platform, Piping & Valves, Hydraulic Power unit, Filter Cake Chute, Load Cell Weighing System,, Cloth Damage Detedtor & Control System, 1000x1000x5 [E2-PRS-001]	1. ea	660.00	660.00	60.00	39,600	250.00	250	500.00	500	550,000.00	550,000	590,350.00	590,350
E2.	132.00	12	Gravity Concentrate Filter Press Discharge Conveyor 300 wide [E2-CON]	10. m	16.50	165.00	60.00	9,900	0.00	0	100.00	1,000	4,000.00	40,000	5,090.00	50,900
E2.	133.00	12	Tungsten Gravity Concentrate Bin, 3 tonne [E2-BIN-004]	2,000. kg	0.06	110.00	60.00	6,600	0.50	1,000	0.12	240	4.50	9,000	8.42	16,840
E2.	134.00	12	Tungsten Gravity Concentrate Bagging System to Dry 1.3 tph Moly Concentrate 4.5ft dia x24ft Long SS Rotary Dryer Bin Vibrator, Pulsed Air Valve Platform Scale Powered Roller Conveyor to F/Lift area [E2-BBS-002]	1. ea	660.00	660.00	60.00	39,600	250.00	250	350.00	350	525,000.00	525,000	565,200.00	565,200
E2.	135.00	13	Piping Allowance 12.0%	1. lot	2,972.77	2,972.77	60.00	178,366	3,984.00	3,984	3,456.36	3,456	2,233,015.93	2,233,016	2,418,822.61	2,418,823
E2.	136.00	17	Instrumentation Allowance 5.0%	1. lot	1,238.66	1,238.66	60.00	74,319	1,660.00	1,660	1,440.15	1,440	930,423.31	930,423	1,007,842.76	1,007,843
E2.	137.00	18	Electrical Allowance 6.0%	1. lot	1,486.39	1,486.39	60.00	89,183	1,992.00	1,992	1,728.18	1,728	1,116,507.97	1,116,508	1,209,411.31	1,209,411
			E2. - Flotation, Regrind And Gravity Concentration Subtotal			**30,470.91**		**1,828,255**		**40,836**		**35,428**		**22,888,413**		**24,792,932**

E3. - Concentrate Dewatering And Loadout

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E3.	1.00	12	Tungsten Flotation Feed Thickener 7.5kW, 42000 D [E3-THI-001]	1. ea	1,430.00	1,430.00	60.00	85,800	0.00	0	0.00	0	1,200,000.00	1,200,000	1,285,800.00	1,285,800
E3.	2.00	12	Tungsten Flotation Feed Thickener Standpipe, 3000 Dx5800 [E3-TNK-001]	4,200. kg	0.06	231.00	60.00	13,860	0.50	2,100	0.12	504	4.50	18,900	8.42	35,364
E3.	3.00	12	Tungsten Flotation Feed Thickener Standpipe Pump No.1 150kW, 300x250 [E3-PMP-003]	1. ea	132.00	132.00	60.00	7,920	0.00	0	350.00	350	90,000.00	90,000	98,270.00	98,270

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E3.	4.00	12	Tungsten Flotation Feed Thickener Standpipe Pump No.2 3.7kW, 300x250 [E3-PMP-004]	1. ea	132.00	132.00	60.00	7,920	0.00	0	350.00	350	90,000.00	90,000	98,270.00	98,270
E3.	5.00	12	Tungsten Flotation Feed Thickener Under Flow Pump No.1 125kW, 350x300 [E3-PMP-001]	1. ea	132.00	132.00	60.00	7,920	0.00	0	350.00	350	90,000.00	90,000	98,270.00	98,270
E3.	6.00	12	Tungsten Flotation Feed Thickener Under Flow Pump No.2 125kW, 350x300 [E3-PMP-002]	1. ea	132.00	132.00	60.00	7,920	0.00	0	350.00	350	90,000.00	90,000	98,270.00	98,270
E3.	7.00	12	Tungsten Flotation Area Sump Pump 7.5kW, 75 D [E3-SUM-004]	1. ea	33.00	33.00	60.00	1,980	0.00	0	100.00	100	11,000.00	11,000	13,080.00	13,080
E3.	8.00	12	Secondary Sulphide Flotation Conditioning Tank, 5900 Dx6500 [E3-TNK-002]	7,500. kg	0.06	412.50	60.00	24,750	0.50	3,750	0.12	900	4.50	33,750	8.42	63,150
E3.	9.00	12	Secondary Sulphide Flotation Conditioning Tank Agitator 18.5kW [E3-AGI-001]	1. ea	110.00	110.00	60.00	6,600	0.00	0	150.00	150	28,000.00	28,000	34,750.00	34,750
E3.	10.00	12	Secondary Sulphide Flotation Cell No.1 90kW, 70 m3 [E3-CEL-021]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E3.	11.00	12	Secondary Sulphide Flotation Cell No.2 90kW, 70 m3 [E3-CEL-022]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E3.	12.00	12	Secondary Sulphide Flotation Cell No.3 90kW, 70 m3 [E3-CEL-023]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E3.	13.00	12	Secondary Sulphide Flotation Cell No.4 90kW 70 m3, *** Deleted *** [E3-CEL-024]	-	-	-	-	-	-	-	-	-	-	.	-	-
E3.	14.00	12	Secondary Sulphide Flotation Cell No.5 90kW 70 m3, *** Deleted *** [E3-CEL-025]	-	-	-	-	-	-	-	-	-	-	.	-	-
E3.	14.01	12	Secondary Sulphide launder [E3-CHU]	1,000. kg	0.06	55.00	60.00	3,300	0.50	500	0.12	120	4.50	4,500	8.42	8,420
E3.	15.00	12	Secondary Sulphide Flotation Area Sump Pump 7.5kW, 75 D [E3-SUM-002]	1. ea	33.00	33.00	60.00	1,980	0.00	0	100.00	100	11,000.00	11,000	13,080.00	13,080
E3.	16.00	12	Secondary Sulphide Flotation Concentrate Pump 5kW, 100 D [E3-PMP-008]	1. ea	88.00	88.00	60.00	5,280	0.00	0	350.00	350	45,000.00	45,000	50,630.00	50,630
E3.	17.00	12	Tungsten Flotation Conditioning Tank No.1, 5900 Dx6500 [E3-TNK-005]	7,500. kg	0.06	412.50	60.00	24,750	0.50	3,750	0.12	900	4.50	33,750	8.42	63,150
E3.	18.00	12	Tungsten Flotation Conditioning Tank No.2, 5900 Dx6500 [E3-TNK-006]	7,500. kg	0.06	412.50	60.00	24,750	0.50	3,750	0.12	900	4.50	33,750	8.42	63,150
E3.	19.00	12	Tungsten Flotation Conditioning Tank No.1 Agitator 18.5kW [E3-AGI-003]	1. ea	110.00	110.00	60.00	6,600	0.00	0	150.00	150	28,000.00	28,000	34,750.00	34,750
E3.	20.00	12	Tungsten Flotation Conditioning Tank No. 2 Agitator 18.5kW [E3-AGI-004]	1. ea	110.00	110.00	60.00	6,600	0.00	0	150.00	150	28,000.00	28,000	34,750.00	34,750
E3.	21.00	12	Tungsten Rougher Flotation Cell No.1 90kW, 70 m3 [E3-CEL-001]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E3.	22.00	12	Tungsten Rougher Flotation Cell No.2 90kW, 70 m3 [E3-CEL-002]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E3.	23.00	12	Tungsten Rougher Flotation Cell No.3 90kW, 70 m3 [E3-CEL-003]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E3.	24.00	12	Tungsten Rougher Flotation Cell No.4 90kW, 70 m3 [E3-CEL-004]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E3.	25.00	12	Tungsten Rougher Flotation Cell No.5 90kW, 70 m3 [E3-CEL-005]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E3.	26.00	12	Tungsten Rougher Flotation Cell No.6 90kW, 70 m3 [E3-CEL-006]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E3.	27.00	12	Tungsten Rougher Flotation Cell No.7 90kW, 70 m3 [E3-CEL-007]	1. ea	192.50	192.50	60.00	11,550	0.00	0	750.00	750	295,000.00	295,000	307,300.00	307,300
E3.	28.00	12	Tungsten Rougher Flotation Cell No.8 90kW 70 m3, *** Deleted *** [E3-CEL-008]	-	-	-	-	-	-	-	-	-	-	.	-	-
E3.	29.00	12	Tungsten Rougher Flotation Cell No.9 90kW 70 m3, *** Deleted *** [E3-CEL-035]	-	-	-	-	-	-	-	-	-	-	.	-	-
E3.	30.00	12	Tungsten Rougher Flotation Cell No.10 90kW 70 m3, *** Deleted *** [E3-CEL-036]	-	-	-	-	-	-	-	-	-	-	.	-	-
E3.	31.00	12	Tungsten Rougher Flotation Cell No.11 90kW 70 m3, *** Deleted *** [E3-CEL-037]	-	-	-	-	-	-	-	-	-	-	.	-	-
E3.	31.01	12	Tungsten Rougher launder [E3-CHU]	1,000. kg	0.06	55.00	60.00	3,300	0.50	500	0.12	120	4.50	4,500	8.42	8,420
E3.	32.00	12	Tungsten Rougher Concentrate Pump 5kW, 150 D [E3-PMP-005]	1. ea	88.00	88.00	60.00	5,280	0.00	0	350.00	350	50,000.00	50,000	55,630.00	55,630
E3.	33.00	12	Tungsten 1St Cleaner Flotation Cell No.1 30kW, 15 m3 [E3-CEL-009]	1. ea	110.00	110.00	60.00	6,600	0.00	0	300.00	300	175,000.00	175,000	181,900.00	181,900
E3.	34.00	12	Tungsten 1St Cleaner Flotation Cell No.2 30kW, 15 m3 [E3-CEL-010]	1. ea	110.00	110.00	60.00	6,600	0.00	0	300.00	300	175,000.00	175,000	181,900.00	181,900
E3.	35.00	12	Tungsten 1St Cleaner Flotation Cell No.3 30kW, 15 m3 [E3-CEL-011]	1. ea	110.00	110.00	60.00	6,600	0.00	0	300.00	300	175,000.00	175,000	181,900.00	181,900
E3.	36.00	12	Tungsten 1St Cleaner Flotation Cell No.4 30kW 15 m3, *** Deleted *** [E3-CEL-012]	-	-	-	-	-	-	-	-	-	-	.	-	-
E3.	36.01	12	Tungsten 1St Cleaner launder [E3-CHU]	1,000. kg	0.06	55.00	60.00	3,300	0.50	500	0.12	120	4.50	4,500	8.42	8,420
E3.	37.00	12	Tungsten 1St Cleaner Concentrate Pump 3.7kW, 100 D [E3-PMP-006]	1. ea	88.00	88.00	60.00	5,280	0.00	0	350.00	350	45,000.00	45,000	50,630.00	50,630
E3.	38.00	12	Tungsten 2Nd Cleaner Flotation Cell No.1 15kW, 5 m3 [E3-CEL-015]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060

WARDROP

Project No: 07530501

Client: Geodex Minerals

GEODEX MINERALS

Sisson Brook Project

Scoping Study - Total Unit Cost Report

Report Date: Rev C

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E3.	39.00	12	Tungsten 2Nd Cleaner Flotation Cell No.2 15kW, 5 m3 [E3-CEL-016]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E3.	40.00	12	Tungsten 2Nd Cleaner Flotation Cell No.3 15kW, 5 m3 [E3-CEL-017]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E3.	41.00	12	Tungsten 2Nd Cleaner Flotation Cell No.4 15kW 5 m3 5 m3, *** Deleted *** [E3-CEL-018]	-	-	-	-	-	-	-	-	-	-	-	-	-
E3.	42.00	12	Tungsten 2Nd Cleaner Flotation Cell No.5 15kW 5 m3 5 m3, *** Deleted *** [E3-CEL-019]	-	-	-	-	-	-	-	-	-	-	-	-	-
E3.	42.01	12	Tungsten 2Nd Cleaner launder 15kW 5 m3 5 m3 [E3-CHU]	1,000. kg	0.06	55.00	60.00	3,300	0.50	500	0.12	120	4.50	4,500	8.42	8,420
E3.	43.00	12	Tungsten 2Nd Cleaner Concentrate Pump 15kW 5 m3 5 m3, 50 D [E3-PMP-007]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790
E3.	44.00	12	Tungsten 3Rd Cleaner Flotation Cell No.1 15kW 5 m3 5 m3, 5 m3 [E3-CEL-026]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E3.	45.00	12	Tungsten 3Rd Cleaner Flotation Cell No.2 15kW 5 m3 5 m3, 5 m3 [E3-CEL-027]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E3.	46.00	12	Tungsten 3Rd Cleaner Flotation Cell No.3 15kW 5 m3 5 m3, 5 m3 [E3-CEL-028]	1. ea	66.00	66.00	60.00	3,960	0.00	0	100.00	100	85,000.00	85,000	89,060.00	89,060
E3.	47.00	12	Tungsten 3Rd Cleaner Flotation Cell No.4 15kW 5 m3 5 m3, *** Deleted *** [E3-CEL-029]	-	-	-	-	-	-	-	-	-	-	-	-	-
E3.	47.01	12	Tungsten 3Rd Cleaner launder [E3-CHU]	1,000. kg	0.06	55.00	60.00	3,300	0.50	500	0.12	120	4.50	4,500	8.42	8,420
E3.	48.00	12	Tungsten 3Rd Cleaner Concentrate Pump 3.7kW, 50 D [E3-PMP-009]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790
E3.	49.00	12	Tungsten Flotation Concentrate Thickener 5kW, 5000 [E3-THI-002]	1. ea	440.00	440.00	60.00	26,400	0.00	0	0.00	0	200,000.00	200,000	226,400.00	226,400
E3.	50.00	12	Tungsten Flotation Thickener Area Sump Pump 7.5kW, 75 D [E3-SUM-001]	1. ea	33.00	33.00	60.00	1,980	0.00	0	100.00	100	11,000.00	11,000	13,080.00	13,080
E3.	51.00	12	Tungsten Flotation Concentrate Filter Feed Pump No.1 55kW, 100x75 [E3-PMP-010]	1. ea	165.00	165.00	60.00	9,900	0.00	0	100.00	100	35,000.00	35,000	45,000.00	45,000
E3.	52.00	12	Tungsten Flotation Concentrate Filter Feed Pump No.2 19kW, 100x75 [E3-PMP-011]	1. ea	165.00	165.00	60.00	9,900	0.00	0	100.00	100	35,000.00	35,000	45,000.00	45,000
E3.	53.00	12	Tungsten Flotation Concentrate Thickener Standpipe, 1000x1000 [E3-TNK-004]	1,700. kg	0.06	93.50	60.00	5,610	0.50	850	0.12	204	4.50	7,650	8.42	14,314
E3.	54.00	12	Tungsten Flotation Concentrate Thickener Standpipe Pump No.1 3.7kW, 37x25 [E3-PMP-014]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790
E3.	55.00	12	Tungsten Flotation Concentrate Thickener Standpipe Pump No.2 3.7kW, 75x50 [E3-PMP-015]	1. ea	44.00	44.00	60.00	2,640	0.00	0	150.00	150	15,000.00	15,000	17,790.00	17,790

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E3.	56.00	12	Tungsten concentrate Filter Press Concentrate Pressure Filter Capacity 1.45dmt/hr c/w Plates, Cloths, Service Platform, Piping & Valves, Hydraulic Power unit, Filter Cake Chute, Load Cell Weighing System,, Cloth Damage Detedtor & Control System, 1000x1000x10 [E3-PRS-001]	1. ea	660.00	660.00	60.00	39,600	250.00	250	500.00	500	550,000.00	550,000	590,350.00	590,350
E3.	57.00	12	Tungsten Concentrate Filter Press Conveyor 300 wide [E3-CON]	10. m	16.50	165.00	60.00	9,900	0.00	0	100.00	1,000	4,000.00	40,000	5,090.00	50,900
E3.	58.00	12	Tungsten Concentrate Bin, 3 tonne [E3-BIN-001]	2,000. kg	0.06	110.00	60.00	6,600	0.50	1,000	0.12	240	4.50	9,000	8.42	16,840
E3.	59.00	12	Tungsten Flotation Concentrate Bagging System to Dry 1.3 tph Moly Concentrate 4.5ft dia x24ft Long SS Rotary Dryer Bin Vibrator, Pulsed Air Valve Platform Scale Powered Roller Conveyor to F/Lift area [E3-BBS-001]	1. ea	660.00	660.00	60.00	39,600	250.00	250	350.00	350	525,000.00	525,000	565,200.00	565,200
E3.	60.00	12	Tungsten Flotation Concentrate Filter Area Sump Pump 7.5kW, 75 D [E3-SUM-003]	1. ea	33.00	33.00	60.00	1,980	0.00	0	100.00	100	11,000.00	11,000	13,080.00	13,080
E3.	61.00	12	Flotation Area Blower No.1 30kW [E3-BLO-001]	1. ea	176.00	176.00	60.00	10,560	100.00	100	250.00	250	225,000.00	225,000	235,910.00	235,910
E3.	62.00	12	Flotation Area Blower No.2 30kW [E3-BLO-002]	1. ea	176.00	176.00	60.00	10,560	100.00	100	250.00	250	225,000.00	225,000	235,910.00	235,910
E3.	63.00	13	Piping Allowance 11.0%	1. lot	1,037.64	1,037.64	60.00	62,258	2,024.00	2,024	2,166.78	2,167	865,403.00	865,403	931,852.27	931,852
E3.	64.00	17	Instrumentation Allowance 5.0%	1. lot	471.66	471.66	60.00	28,299	920.00	920	984.90	985	393,365.00	393,365	423,569.22	423,569
E3.	65.00	18	Electrical Allowance 6.0%	1. lot	565.99	565.99	60.00	33,959	1,104.00	1,104	1,181.88	1,182	472,038.00	472,038	508,283.06	508,283
			E3. - Concentrate Dewatering And Loadout Subtotal			**12,140.28**		**728,417**		**22,448**		**24,032**		**9,598,106**		**10,373,003**

E4. - Reagents

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E4.	1.00	12	Flocculant Package [E6-PKG-001]	1. ea	88.00	88.00	60.00	5,280	0.00	0	0.00	0	45,000.00	45,000	50,280.00	50,280
E4.	1.01	12	Flocculant Blower 2.2kW [E6-BLO-001]	1. ea	44.00	44.00	60.00	2,640	100.00	100	150.00	150	6,500.00	6,500	9,390.00	9,390
E4.	1.02	12	Flocculant Mix Tank, 4100 Dx4700 [E6-TNK-001]	4,500. kg	0.06	247.50	60.00	14,850	0.50	2,250	0.12	540	4.50	20,250	8.42	37,890
E4.	1.03	12	Flocculant Mix Tank Agitator 3.7kW [E6-AGI-001]	1. ea	38.50	38.50	60.00	2,310	0.00	0	25.00	25	11,000.00	11,000	13,335.00	13,335
E4.	1.04	12	Flocculant Holding Tank, 8800 Dx9400 [E6-TNK-002]	14,000. kg	0.06	770.00	60.00	46,200	0.50	7,000	0.12	1,680	4.50	63,000	8.42	117,880
E4.	1.05	12	Flocculant Holding Tank Agitator 3.7kW [E6-AGI-002]	1. ea	38.50	38.50	60.00	2,310	0.00	0	25.00	25	11,000.00	11,000	13,335.00	13,335
E4.	1.06	12	Flocculant Metering Pump No.1 0.4kW, 12x25 [E6-PMP-001]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	1.07	12	Flocculant Metering Pump No.2 0.4kW, 12x25 [E6-PMP-002]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	1.08	12	Flocculant Metering Pump No.3 0.4kW, 12x25 [E6-PMP-003]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E4.	1.09	12	Flocculant Metering Pump No.4 0.4kW, 12x25 [E6-PMP-004]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	1.10	12	Flocculant Metering Pump No.5 0.4kW, 12x25 [E6-PMP-024]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	1.11	12	Flocculant Metering Pump No.6 0.4kW, 12x25 [E6-PMP-025]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	2.00	12	Flocculant Area Sump Pump 3.7kW, 75 D [E6-PSU-001]	1. ea	22.00	22.00	60.00	1,320	0.00	0	100.00	100	11,000.00	11,000	12,420.00	12,420
E4.	2.01	12	Copper Sulphate Hopper [E6-HPR-001]	1. ea	88.00	88.00	60.00	5,280	100.00	100	500.00	500	20,000.00	20,000	25,880.00	25,880
E4.	2.02	12	Copper Sulphate Mix Tank, 2900 Dx3500 [E6-TNK-003]	3,100. kg	0.06	170.50	60.00	10,230	0.50	1,550	0.12	372	4.50	13,950	8.42	26,102
E4.	2.03	12	Copper Sulphate Mix Tank Agitator 1.1kW [E6-AGI-003]	1. ea	27.50	27.50	60.00	1,650	0.00	0	25.00	25	6,000.00	6,000	7,675.00	7,675
E4.	2.04	12	Copper Sulphate Transfer Pump No.1 1.1kW, 37x25 [E6-PMP-007]	1. ea	22.00	22.00	60.00	1,320	0.00	0	75.00	75	7,500.00	7,500	8,895.00	8,895
E4.	2.05	12	Copper Sulphate Transfer Pump No.2 1.1kW, 3 x25 [E6-PMP-008]	1. ea	22.00	22.00	60.00	1,320	0.00	0	75.00	75	7,500.00	7,500	8,895.00	8,895
E4.	2.06	12	Copper Sulphate Holding Tank [E6-TNK-004]	3,500. kg	0.06	192.50	60.00	11,550	0.50	1,750	0.12	420	4.50	15,750	8.42	29,470
E4.	2.07	12	Copper Sulphate Metering Pump No.1 0.4kW, 12x25 [E6-PMP-009]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	2.08	12	Copper Sulphate Metering Pump No.2 0.4kW, 12x25 [E6-PMP-010]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	2.09	12	Copper Sulphate Area Sump Pump 1kW, 50 D [E6-PSU-002]	1. ea	27.50	27.50	60.00	1,650	0.00	0	100.00	100	14,000.00	14,000	15,750.00	15,750
E4.	3.00	12	PAX Feed Chute C/W Bag Splitter [E6-CHU-001]	1,700. kg	0.06	93.50	60.00	5,610	0.50	850	0.12	204	4.50	7,650	8.42	14,314
E4.	3.01	12	PAX Holding Tank, 3700 Dx4300 [E6-TNK-006]	3,500. kg	0.06	192.50	60.00	11,550	0.50	1,750	0.12	420	4.50	15,750	8.42	29,470
E4.	3.02	12	PAX Metering Pump No.1 0.4kW, 12x25 [E6-PMP-011]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	3.03	12	PAX Metering Pump No.2 0.4kW, 12x25 [E6-PMP-026]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	3.04	12	PAX Mix Tank Agitator 1kW [E6-AGI-004]	1. ea	27.50	27.50	60.00	1,650	0.00	0	25.00	25	6,000.00	6,000	7,675.00	7,675
E4.	3.05	12	PAX Mix Tank, 3700 Dx4300 [E6-TNK-005]	3,500. kg	0.06	192.50	60.00	11,550	0.50	1,750	0.12	420	4.50	15,750	8.42	29,470
E4.	3.06	12	PAX Area Dust Collector [E6-BAG-001]	1. ea	132.00	132.00	60.00	7,920	0.00	0	5,000.00	5,000	100,000.00	100,000	112,920.00	112,920
E4.	3.07	12	PAX Area Sump Pump 1kW, 50 D [E6-PSU-003]	1. ea	27.50	27.50	60.00	1,650	0.00	0	100.00	100	14,000.00	14,000	15,750.00	15,750
E4.	3.08	12	PAX Area Safety Shower [E6-SSW-003]	1. ea	17.60	17.60	60.00	1,056	0.00	0	50.00	50	3,500.00	3,500	4,606.00	4,606
E4.	4.00	12	MIBC Drum Cradle No.1 [E6-EQP-001]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	5,000.00	5,000	6,370.00	6,370
E4.	4.01	12	MIBC Drum Cradle No.2 [E6-EQP-002]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	5,000.00	5,000	6,370.00	6,370
E4.	4.02	12	MIBC Metering Pump No.1 0.4kW, 6x6 [E6-PMP-012]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
E4.	4.03	12	MIBC Metering Pump No.2 0.4kW, 6x6 [E6-PMP-013]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	4.04	12	MIBC Metering Pump No.3 0.4kW, 6x6 [E6-PMP-014]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	4.05	12	MIBC Metering Pump No.4 0.4kW, 6x6 [E6-PMP-015]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	5.00	12	Sodium Silicate Feed Chute C/W Bag Splitter [E6-CHU-002]	1,700. kg	0.06	93.50	60.00	5,610	0.50	850	0.12	204	4.50	7,650	8.42	14,314
E4.	5.01	12	Sodium Silicate Mix Tank, 3700 Dx4300 [E6-TNK-007]	3,500. kg	0.06	192.50	60.00	11,550	0.50	1,750	0.12	420	4.50	15,750	8.42	29,470
E4.	5.02	12	Sodium Silicate Mix Tank Agitator 1kW [E6-AGI-005]	1. ea	27.50	27.50	60.00	1,650	0.00	0	25.00	25	6,000.00	6,000	7,675.00	7,675
E4.	5.03	12	Sodium Silicate Holding Tank, 3700 Dx4300 [E6-TNK-008]	3,500. kg	0.06	192.50	60.00	11,550	0.50	1,750	0.12	420	4.50	15,750	8.42	29,470
E4.	5.04	12	Sodium Silicate Metering Pump No.1 0.5kW, 12x25 [E6-PMP-016]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	5.05	12	Sodium Silicate Metering Pump No.2 0.5kW, 12x25 [E6-PMP-017]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	5.06	12	Sodium Silicate Sump Pump 1kW, 50 D [E6-PSU-004]	1. ea	27.50	27.50	60.00	1,650	0.00	0	100.00	100	14,000.00	14,000	15,750.00	15,750
E4.	5.07	12	Sodium Silicate Area Safety Shower [E6-SSW-001]	1. ea	17.60	17.60	60.00	1,056	0.00	0	50.00	50	3,500.00	3,500	4,606.00	4,606
E4.	6.00	12	Quebracho Feed Chute C/W Bag Splitter [E6-CHU-003]	1,700. kg	0.06	93.50	60.00	5,610	0.50	850	0.12	204	4.50	7,650	8.42	14,314
E4.	6.01	12	Quebracho Mix Tank, 3700 Dx4300 [E6-TNK-009]	3,500. kg	0.06	192.50	60.00	11,550	0.50	1,750	0.12	420	4.50	15,750	8.42	29,470
E4.	6.02	12	Quebracho Area Mix Tank Agitator 1kW [E6-AGI-006]	1. ea	27.50	27.50	60.00	1,650	0.00	0	25.00	25	6,000.00	6,000	7,675.00	7,675
E4.	6.03	12	Quebracho Holding Tank, 3700 Dx4300 [E6-TNK-010]	3,500. kg	0.06	192.50	60.00	11,550	0.50	1,750	0.12	420	4.50	15,750	8.42	29,470
E4.	6.04	12	Quebracho Metering Pump No.1 0.5kW, 12x25 [E6-PMP-018]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	6.05	12	Quebracho Metering Pump No.2 0.5kW, 12x25 [E6-PMP-019]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	6.06	12	Quebracho Area Sump Pump 1kW, 50 D [E6-PSU-005]	1. ea	27.50	27.50	60.00	1,650	0.00	0	100.00	100	14,000.00	14,000	15,750.00	15,750
E4.	6.07	12	Quebracho Area Safety Shower [E6-SSW-002]	1. ea	17.60	17.60	60.00	1,056	0.00	0	50.00	50	3,500.00	3,500	4,606.00	4,606
E4.	7.00	12	Soda Ash Feed Chute C/W Bag Splitter [E6-CHU-004]	1,700. kg	0.06	93.50	60.00	5,610	0.50	850	0.12	204	4.50	7,650	8.42	14,314
E4.	7.01	12	Soda Ash Mix Tank, 3700 Dx4300 [E6-TNK-011]	3,500. kg	0.06	192.50	60.00	11,550	0.50	1,750	0.12	420	4.50	15,750	8.42	29,470
E4.	7.02	12	Soda Ash Mix Tank Agitator 1kW [E6-AGI-007]	1. ea	27.50	27.50	60.00	1,650	0.00	0	25.00	25	6,000.00	6,000	7,675.00	7,675
E4.	7.03	12	Soda Ash Holding Tank, 3700 Dx4300 [E6-TNK-012]	3,500. kg	0.06	192.50	60.00	11,550	0.50	1,750	0.12	420	4.50	15,750	8.42	29,470
E4.	7.04	12	Soda Ash Metering Pump No.1 0.5kW, 12x25 [E6-PMP-020]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	7.05	12	Soda Ash Metering Pump No.2 0.5kW, 12x25 [E6-PMP-021]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370

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E4.	7.06	12	Soda Ash Area Sump Pump 1kW, 50 D [E6-PSU-006]	1. ea	27.50	27.50	60.00	1,650	0.00	0	100.00	100	14,000.00	14,000	15,750.00	15,750
E4.	8.00	12	Sodium Oleate Feed Chute C/W Bag Splitter [E6-CHU-005]	1,700. kg	0.06	93.50	60.00	5,610	0.50	850	0.12	204	4.50	7,650	8.42	14,314
E4.	8.01	12	Sodium Oleate Mix Tank, 3700 Dx4300 [E6-TNK-013]	3,500. kg	0.06	192.50	60.00	11,550	0.50	1,750	0.12	420	4.50	15,750	8.42	29,470
E4.	8.02	12	Sodium Oleate Area Mix Tank Agitator 1kW [E6-AGI-008]	1. ea	27.50	27.50	60.00	1,650	0.00	0	25.00	25	6,000.00	6,000	7,675.00	7,675
E4.	8.03	12	Sodium Oleate Holding Tank, 3700 Dx4300 [E6-TNK-014]	3,500. kg	0.06	192.50	60.00	11,550	0.50	1,750	0.12	420	4.50	15,750	8.42	29,470
E4.	8.04	12	Sodium Oleate Metering Pump No.1 0.5kW, 12x25 [E6-PMP-022]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	8.05	12	Sodium Oleate Metering Pump No.2 0.5kW, 12x25 [E6-PMP-023]	1. ea	22.00	22.00	60.00	1,320	0.00	0	50.00	50	3,000.00	3,000	4,370.00	4,370
E4.	8.06	12	Sodium Oleate Area Sump Pump 1kW, 50 D [E6-PSU-007]	1. ea	27.50	27.50	60.00	1,650	0.00	0	100.00	100	14,000.00	14,000	15,750.00	15,750
E4.	9.00	13	Piping Allowance 35.0%	1. lot	492.40	492.40	60.00	29,544	12,075.00	12,075	5,698.70	5,699	371,376.92	371,377	418,694.37	418,694
E4.	10.00	17	Instrumentation Allowance 8.0%	1. lot	112.55	112.55	60.00	6,753	112.55	113	1,302.56	1,303	84,886.15	84,886	93,054.12	93,054
E4.	11.00	18	Electrical Allowance 10.0%	1. lot	140.68	140.68	60.00	8,441	140.68	141	1,628.20	1,628	106,107.69	106,108	116,317.65	116,318
				E4. - Reagents Subtotal		**5,924.43**		**355,466**		**46,828**		**24,911**		**1,297,071**		**1,724,276**

F1. - Tailings Disposal And Reclaim

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
F1.	1.00	12	Tailings Surge Tank, 7600 Dx8200 [E5-TNK-001]	11,000. kg	0.06	605.00	60.00	36,300	0.50	5,500	0.12	1,320	4.50	49,500	8.42	92,620
F1.	2.00	12	Tailings Surge Tank Agitator 30kW [E5-AGI-001]	1. ea	110.00	110.00	60.00	6,600	0.00	0	150.00	150	35,000.00	35,000	41,750.00	41,750
F1.	3.00	12	Density/Flow meter 1kW [E5-MFM-001]	1. ea	44.00	44.00	60.00	2,640	0.00	0	50.00	50	10,000.00	10,000	12,690.00	12,690
F1.	4.00	12	Tailings Pump Pump No 1 600kW, 350 Dx300 [E5-PMP-003]	1. ea	550.00	550.00	60.00	33,000	750.00	750	0.00	0	425,000.00	425,000	458,750.00	458,750
F1.	5.00	12	Tailings Pump Pump No 2 600kW, 350 Dx300 [E5-PMP-004]	1. ea	550.00	550.00	60.00	33,000	750.00	750	0.00	0	425,000.00	425,000	458,750.00	458,750
F1.	6.00	12	Tailings Pump No.1 600kW, 350x300 [E5-PMP-005]	1. ea	550.00	550.00	60.00	33,000	750.00	750	0.00	0	425,000.00	425,000	458,750.00	458,750
F1.	7.00	12	Tailings Pump No.2 600kW, 350x300 [E5-PMP-006]	1. ea	550.00	550.00	60.00	33,000	750.00	750	0.00	0	425,000.00	425,000	458,750.00	458,750
F1.	8.00	13	Piping allowance (pump area)	1. lot	275.00	275.00	60.00	16,500	55,000.00	55,000	3,000.00	3,000		0	74,500.00	74,500
F1.	9.00	13	Tailings line 600mm dia HDPE SDR11	6,500. m	2.09	13,585.00	60.00	815,100	225.00	1,462,500	10.00	65,000	0.00	0	360.40	2,342,600
F1.	10.00	13	Reclaim line 600mm dia HDPE SDR11 uninsulated	6,500. m	2.09	13,585.00	60.00	815,100	225.00	1,462,500	10.00	65,000	0.00	0	360.40	2,342,600

WARDROP

Project No: 07530501

Client: Geodex Minerals

Sisson Brook Project

Scoping Study - Total Unit Cost Report

Report Date: Rev C

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
F1.	11.00	13	Reclaim Barge 44' x 28' x 5' deep Includes Steel Barge Hull, Inlet Screens,Winch Stands, Deck Fittings,Hand Rails, 20" (500mm) Pipe Header, Check & Isolating Valves each Pump Surge Anticipator Valve & Auto Drain Valve [Includes Steel Barge Hull, Inlet Screens,Winch Stands, Deck Fittings,Hand Rails, 20" (500mm) Pipe Header, Check & Isolating Valves each Pump Surge Anticipator Valve & Auto Drain Valve]	1. lot	4,207.50	4,207.50	60.00	252,450	6,000.00	6,000	40,000.00	40,000	1,300,000.00	1,300,000	1,598,450.00	1,598,450
F1.	11.01	13	Vertical turbine pumps (2400 Usgm @ 330ft TDH) 3 operating 1 spare (4no), *** included ***	-	-	-	-	-	-	-	-	-	-	-	-	-
F1.	11.02	13	Vertical turbine pump motors 186 kW (4no), *** included ***	-	-	-	-	-	-	-	-	-	-	-	-	-
F1.	11.03	13	Discharge heads c/w shafting & column to Bowl units (4no), *** included ***	-	-	-	-	-	-	-	-	-	-	-	-	-
F1.	11.04	13	Building 14ft x 40ft x 9ft Eave Pre-Engineered (16ft High) includes Structural Frame, Wall & Roof Cladding, R20 Insulation, Partition Wall, Doors, Liner, Equipment Door, Louvers & Exhaust Fans, Floor grating/Decking, Roof hatches Electric Hoist, 4 Fire Extinguishers (4) (1no), *** included ***	-	-	-	-	-	-	-	-	-	-	-	-	-
F1.	12.00	17	Instrumentation Allowance 6.0%	1. lot	200.00	200.00	60.00	12,000	35,000.00	35,000	1,500.00	1,500		0	48,500.00	48,500
F1.	13.00	18	Electrical Allowance 4.0%	1. lot	200.00	200.00	60.00	12,000	45,000.00	45,000	3,000.00	3,000		0	60,000.00	60,000
			F1. - Tailings Disposal And Reclaim Subtotal			**35,011.50**		**2,100,690**		**3,074,500**		**179,020**		**3,094,500**		**8,448,710**

F2. - Tailings Pond

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
F2.	1.00	2.1	Initail starter dam and diversion channels	1. ea	0.00	0.00	60.00	0	0.00	0	15,400,000.00	15,400,000	0.00	0	15,400,000.00	15,400,000
F2.	2.00	2.1	Final Dam - in Sustaining Capital	-	-	-	-	-	-	-	-	-	-	-	-	-
			F2. - Tailings Pond Subtotal			**0.00**		**0**		**0**		**15,400,000**		**0**		**15,400,000**

F3. - Diversion Channel

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
F3.	1.00	2.1	Diversion Channel - in Sustaining Capital	-	-	-	-	-	-	-	-	-	-	-	-	-
			F3. - Diversion Channel Subtotal			**0.00**		**0**		**0**		**0**		**0**		**0**

F4. - Waste Dump

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
F4.	1.00	2	Waste dump clear and grub (Initial Area - 20% of total area required, remaining in Sustaining)	20. ha	82.50	1,650.00	60.00	99,000	0.00	0	4,000.00	80,000	0.00	0	8,950.00	179,000
			F4. - Waste Dump Subtotal			**1,650.00**		**99,000**		**0**		**80,000**		**0**		**179,000**

G1. - Potable and Fresh/Fire Water

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
G1.	1.00	12	Fresh/Fire Water Tank 11000 dia x 11000mm [G1-TNK-001]	22,000. kg	0.06	1,210.00	60.00	72,600	0.50	11,000	0.12	2,640	4.50	99,000	8.42	185,240
G1.	1.00	12	Potable Water Tank 3000 dia x 4000mm [G2-TNK]	3,350. kg	0.06	184.25	60.00	11,055	0.50	1,675	0.12	402	4.50	15,075	8.42	28,207
G1.	2.00	12	Potable Water Distribution Pump No.1 16.8kW 75 x 38mm [G4-PMP-]	1. ea	60.50	60.50	60.00	3,630	0.00	0	50.00	50	10,750.00	10,750	14,430.00	14,430
G1.	2.00	12	Fire Water Diesel Pump 223.65kW 150 x 100mm [G1-PMP-002]	1. ea	412.50	412.50	60.00	24,750	0.00	0	500.00	500	100,000.00	100,000	125,250.00	125,250
G1.	3.00	12	Potable Water Distribution Pump No.2 16.8kW 75 x 38mm [G4-PMP-]	1. ea	60.50	60.50	60.00	3,630	0.00	0	50.00	50	10,750.00	10,750	14,430.00	14,430
G1.	3.00	12	Fresh Water Distribution Pump No.1 44.7kW 100 x 75mm [G1-PMP-004]	1. ea	121.00	121.00	60.00	7,260	0.00	0	100.00	100	25,000.00	25,000	32,360.00	32,360
G1.	4.00	12	Fresh Water Distribution Pump No.2 44.7kW 100 x 75mm [G1-PMP-005]	1. ea	121.00	121.00	60.00	7,260	0.00	0	100.00	100	25,000.00	25,000	32,360.00	32,360
G1.	4.00	13	Piping Allowance 10.0%	1. lot	12.11	12.11	60.00	726	167.50	168	50.20	50	3,657.50	3,658	4,601.53	4,602
G1.	5.00	12	Fire Water Jockey Pump 16.8kW 75 x 38mm [G1-PMP-003]	1. ea	60.50	60.50	60.00	3,630	0.00	0	50.00	50	7,500.00	7,500	11,180.00	11,180
G1.	5.00	17	Instrumentation Allowance 3.0%	1. lot	3.63	3.63	60.00	218	50.25	50	15.06	15	1,097.25	1,097	1,380.46	1,380
G1.	6.00	18	Electrical Allowance 2.0%	1. lot	2.42	2.42	60.00	145	33.50	34	10.04	10	731.50	732	920.31	920
G1.	6.00	12	Fire Water Electric Pump 223.65kW 150 x 100mm [G1-PMP-001]	1. ea	412.50	412.50	60.00	24,750	0.00	0	500.00	500	100,000.00	100,000	125,250.00	125,250
G1.	7.00	12	Chlorinator Package	1. ea	132.00	132.00	60.00	7,920	2,000.00	2,000	2,500.00	2,500	30,000.00	30,000	42,420.00	42,420
G1.	8.00	13	Piping Allowance 6.0% Pump Area	1. ea	271.89	271.89	60.00	16,313	780.00	780	383.40	383	33,243.60	33,244	50,720.22	50,720
G1.	9.00	17	Field Instruments - Allowance 4.0% Pump Area	1. ea	98.78	98.78	60.00	5,927	80.00	80	255.60	256	22,162.40	22,162	28,424.80	28,425
G1.	10.00	18	Electrical - Motor Wiring	10. ea	36.30	363.00	60.00	21,780	2,242.50	22,425	134.55	1,346	0.00	0	4,555.05	45,551
G1.	11.00	18	Electrical - Non-Motor Wiring	1. lot	72.60	72.60	60.00	4,356	4,485.00	4,485	269.10	269	0.00	0	9,110.10	9,110
G1.	12.00	18	Electrical - Infrastructure (Tray, Lighting, Misc Power)	1. lot	90.75	90.75	60.00	5,445	5,606.25	5,606	336.38	336	0.00	0	11,387.63	11,388
			G1. - Potable and Fresh/Fire Water Subtotal			**3,689.93**		**221,396**		**48,303**		**9,557**		**483,967**		**763,223**

G2. - Process Water

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
G2.	1.00	12	Process Water Tank, 7000x9000 [G2-TNK-001]	11,200. kg	0.06	616.00	60.00	36,960	0.50	5,600	0.12	1,344	4.50	50,400	8.42	94,304
G2.	2.00	12	Process Water Pump No.1 22kW, 100x75 [G2-PMP-001]	1. ea	132.00	132.00	60.00	7,920	0.00	0	75.00	75	25,000.00	25,000	32,995.00	32,995
G2.	3.00	12	Process Water Pump No.2 22kW, 100x75 [G2-PMP-002]	1. lot	132.00	132.00	60.00	7,920	0.00	0	75.00	75	25,000.00	25,000	32,995.00	32,995

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
G2.	4.00	13	Piping Allowance 10.0%	1. lot	26.41	26.41	60.00	1,584	560.00	560	149.40	149	10,040.00	10,040	12,333.73	12,334
G2.	5.00	17	Instrumentation Allowance 5.0%	1. lot	13.20	13.20	60.00	792	280.00	280	74.70	75	5,020.00	5,020	6,166.87	6,167
G2.	6.00	18	Electrical Allowance 5.0%	1. lot	13.20	13.20	60.00	792	280.00	280	74.70	75	5,020.00	5,020	6,166.87	6,167
			G2. - Process Water Subtotal			**932.81**		**55,969**		**6,720**		**1,793**		**120,480**		**184,961**

G4. - Gland Water

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
G4.	1.00	12	Gland Water Tank, 3000x4200 [G4-TNK-001]	3,500. kg	0.06	192.50	60.00	11,550	0.50	1,750	0.12	420	4.50	15,750	8.42	29,470
G4.	2.00	12	Gland Water Pump No.1 5kW, 40x25 [G4-PMP-001]	1. lot	66.00	66.00	60.00	3,960	0.00	0	50.00	50	9,500.00	9,500	13,510.00	13,510
G4.	3.00	12	Gland Water Pump No.2 5kW, 40x25 [G4-PMP-002]	1. lot	66.00	66.00	60.00	3,960	0.00	0	50.00	50	9,500.00	9,500	13,510.00	13,510
G4.	4.00	13	Piping Allowance 10.0%	1. lot	13.21	13.21	60.00	792	175.00	175	52.00	52	3,475.00	3,475	4,494.33	4,494
G4.	5.00	17	Instrumentation Allowance 5.0%	1. lot	6.60	6.60	60.00	396	87.50	88	26.00	26	1,737.50	1,738	2,247.17	2,247
G4.	6.00	18	Electrical Allowance 5.0%	1. lot	6.60	6.60	60.00	396	87.50	88	26.00	26	1,737.50	1,738	2,247.17	2,247
			G4. - Gland Water Subtotal			**350.91**		**21,055**		**2,100**		**624**		**41,700**		**65,479**

G5. - Plant Air

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
G5.	1.00	12	Plant Air Compressor 44kW [G5-AIC-001]	1. lot	132.00	132.00	60.00	7,920	0.00	0	300.00	300	125,000.00	125,000	133,220.00	133,220
G5.	2.00	12	Plant Air Receiver [G5-REC-001]	1. lot	44.00	44.00	60.00	2,640	0.00	0	50.00	50	10,000.00	10,000	12,690.00	12,690
G5.	3.00	12	Instrument Air Compressor 30kW [G5-AIC-002]	1. lot	132.00	132.00	60.00	7,920	0.00	0	300.00	300	125,000.00	125,000	133,220.00	133,220
G5.	4.00	12	Instrument Air Filter No.1 [G5-FIL-001]	1. lot	17.60	17.60	60.00	1,056	0.00	0	0.00	0	3,000.00	3,000	4,056.00	4,056
G5.	5.00	12	Instrument Air Filter No.2 [G5-FIL-002]	1. lot	17.60	17.60	60.00	1,056	0.00	0	0.00	0	3,000.00	3,000	4,056.00	4,056
G5.	6.00	12	Instrument Air Dryer [G5-DRY-001]	1. lot	44.00	44.00	60.00	2,640	0.00	0	50.00	50	12,500.00	12,500	15,190.00	15,190
G5.	7.00	12	Instrument Air Receiver [G5-REC-002]	1. lot	44.00	44.00	60.00	2,640	0.00	0	50.00	50	10,000.00	10,000	12,690.00	12,690
G5.	8.00	13	Piping Allowance 10.0%	1. lot	43.12	43.12	60.00	2,587	0.00	0	75.00	75	28,850.00	28,850	31,512.20	31,512
G5.	9.00	17	Instrumentation Allowance 5.0%	1. lot	21.56	21.56	60.00	1,294	0.00	0	37.50	38	14,425.00	14,425	15,756.10	15,756
G5.	10.00	18	Electrical Allowance 5.0%	1. lot	21.56	21.56	60.00	1,294	0.00	0	37.50	38	14,425.00	14,425	15,756.10	15,756
			G5. - Plant Air Subtotal			**517.44**		**31,046**		**0**		**900**		**346,200**		**378,146**

G7. - Sewage Treatment And Collection

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
G7.	1.00	13	Rotating Biologiical Contactor (RBC) unit	1. lot	275.00	275.00	60.00	16,500	0.00	0	2,500.00	2,500	195,000.00	195,000	214,000.00	214,000
G7.	2.00	12	Sewage Porta toilets (isolated areas) allow for collection service only once a week over 2 years	104. wk	0.00	0.00	60.00	0	0.00	0	500.00	52,000	0.00	0	500.00	52,000
			G7. - Sewage Treatment And Collection Subtotal			**275.00**		**16,500**		**0**		**54,500**		**195,000**		**266,000**

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
J1. - Administration And Mine Dry																
J1.	1.00	4	Detail Excavation and backfill	200. m3	0.33	66.00	60.00	3,960	0.00	0	5.50	1,100	0.00	0	25.30	5,060
J1.	2.00	6	Concrete dunnage on grade, *** included ***	-	-	-	-	-	-	-	-	-	-	-	-	-
J1.	3.00	10	Adminitration and Mine Dry Facilities - Based on quotation received for Design, Manafacture and Installation c/w Int walls & surfaces, wdws & Drs, electrical & mechanical systems and millwork & cabinetry	-	-	-	-	-	-	-	-	-	-	-	-	-
J1.	4.00	10	Office and Infirmary 8 units	1. lot	0.00	0.00	60.00	0	679,795.20	679,795	0.00	0	0.00	0	679,795.20	679,795
J1.	5.00	10	Dirty and Clean Locker Rooms 7 units including showers	1. lot	0.00	0.00	60.00	0	886,877.59	886,878	0.00	0	0.00	0	886,877.59	886,878
J1.	6.00	14	Building Services - Allowance	1. lot	5,500.00	5,500.00	60.00	330,000	350,000.00	350,000	21,000.00	21,000	0.00	0	701,000.00	701,000
J1.	7.00	18	Electrical - Motor Wiring	1. lot	303.25	303.25	60.00	18,195	18,733.70	18,734	1,124.03	1,124	0.00	0	38,052.59	38,053
J1.	8.00	18	Electrical - Non-Motor Wiring	1. lot	60.65	60.65	60.00	3,639	3,746.74	3,747	224.81	225	0.00	0	7,610.52	7,611
J1.	9.00	18	Electrical - Infrastructure (Tray, Lighting, Misc Power)	1. lot	75.81	75.81	60.00	4,549	4,683.42	4,683	281.01	281	0.00	0	9,513.15	9,513
			J1. - Administration And Mine Dry Subtotal			**6,005.71**		**360,343**		**1,943,837**		**23,730**		**0**		**2,327,909**
J2. - Truckshop And Warehouse																
J2.	1.00	4	Detail Excavation and backfill	700. m3	0.33	231.00	60.00	13,860	0.00	0	5.50	3,850	0.00	0	25.30	17,710
J2.	2.00	6	Concrete slab on grade and footings	400. m3	4.95	1,980.00	60.00	118,800	385.00	154,000	20.00	8,000	0.00	0	702.00	280,800
J2.	3.00	10	Maintenance and Warehouse -	2,023. m2	0.00	0.00	60.00	0	750.00	1,517,250	0.00	0	0.00	0	750.00	1,517,250
J2.	4.00	14	Building Services - Allowance	1. lot	1,100.00	1,100.00	60.00	66,000	200,000.00	200,000	12,000.00	12,000	0.00	0	278,000.00	278,000
J2.	5.00	18	Electrical - Motor Wiring	1. lot	907.32	907.32	60.00	54,439	112,103.24	112,103	6,726.20	6,726	0.00	0	173,268.87	173,269
J2.	6.00	18	Electrical - Non-Motor Wiring	1. lot	181.46	181.46	60.00	10,888	22,420.65	22,421	1,345.24	1,345	0.00	0	34,653.77	34,654
J2.	7.00	18	Electrical - Infrastructure (Tray, Lighting, Misc Power)	1. lot	226.83	226.83	60.00	13,610	28,025.81	28,026	1,681.55	1,682	0.00	0	43,317.22	43,317
J2.	8.00	12	Tools, equipment and systems including lube oil waste, coolant, etc	1. lot	0.00	0.00	60.00	0	0.00	0	0.00	0	1,000,000.00	1,000,000	1,000,000.00	1,000,000
			J2. - Truckshop And Warehouse Subtotal			**4,626.62**		**277,597**		**2,033,800**		**33,603**		**1,000,000**		**3,345,000**
J3. - Assay Laboratory																
J3.	1.00	10	Assay Laboratory Structure	1. lot	1,568.60	1,568.60	60.00	94,116	500,000.00	500,000	0.00	0	0.00	0	594,116.00	594,116
J3.	2.00	10	Assay Laboratory equipment	1. lot	275.00	275.00	60.00	16,500	0.00	0	0.00	0	500,000.00	500,000	516,500.00	516,500
			J3. - Assay Laboratory Subtotal			**1,843.60**		**110,616**		**500,000**		**0**		**500,000**		**1,110,616**

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
J4. - Fuel Storage And Distribution																
J4.	1.00	12	Fuel Storage And Distribution - tank, containment, liner, 7 days capacity allowance	1. lot	660.00	660.00	60.00	39,600	0.00	0	2,500.00	2,500	250,000.00	250,000	292,100.00	292,100
			J4. - Fuel Storage And Distribution Subtotal			**660.00**		**39,600**		**0**		**2,500**		**250,000**		**292,100**
J5. - Cold Storage Warehouse																
J5.	1.00	10	Cold Storage Warehouse	1. lot	385.00	385.00	60.00	23,100	0.00	0	2,500.00	2,500	200,000.00	200,000	225,600.00	225,600
J5.	2.00	10	Fence area including gates	1. lot	132.00	132.00	60.00	7,920	0.00	0	500.00	500	18,000.00	18,000	26,420.00	26,420
			J5. - Cold Storage Warehouse Subtotal			**517.00**		**31,020**		**0**		**3,000**		**218,000**		**252,020**
J6. - Explosive Storage																
J6.	1.00	10	Explosive Storage Area allowance	1. ea	220.00	220.00	60.00	13,200	0.00	0	750.00	750	100,000.00	100,000	113,950.00	113,950
			J6. - Explosive Storage Subtotal			**220.00**		**13,200**		**0**		**750**		**100,000**		**113,950**
K0. - Plant Mobile Fleet																
K0.	1.00	20	G & A - General Manager 4 x 4 suburban	1. ea	0.00	0.00	60.00	0	0.00	0	0.00	0	56,200.00	56,200	56,200.00	56,200
K0.	2.00	20	G & A - Warehouse Truck 10 tonne truck	1. ea	0.00	0.00	60.00	0	0.00	0	0.00	0	56,200.00	56,200	56,200.00	56,200
K0.	3.00	20	G & A - Security Shift truck 4 x 4 suburban	1. ea	0.00	0.00	60.00	0	0.00	0	0.00	0	56,200.00	56,200	56,200.00	56,200
K0.	4.00	20	Mill Dept - Mill Superintendent 4 x 4 pickup	1. ea	0.00	0.00	60.00	0	0.00	0	0.00	0	56,200.00	56,200	56,200.00	56,200
K0.	5.00	20	Mill Dept - Shift Foreman 4 x 4 pickup	1. ea	0.00	0.00	60.00	0	0.00	0	0.00	0	56,200.00	56,200	56,200.00	56,200
K0.	6.00	20	Mill Dept - Mill Maintenance Superintendent35000 4 x 4 pickup	1. ea	0.00	0.00	60.00	0	0.00	0	0.00	0	56,200.00	56,200	56,200.00	56,200
K0.	7.00	20	Mill Dept - Electrical Vehicle 4 x 4 pickup	1. ea	0.00	0.00	60.00	0	0.00	0	0.00	0	56,200.00	56,200	56,200.00	56,200
K0.	8.00	20	Mill Dept - Maintenance Vehicle 4 x 4 pickup	1. ea	0.00	0.00	60.00	0	0.00	0	0.00	0	56,200.00	56,200	56,200.00	56,200
K0.	9.00	20	Mill Dept - 20-tonne Flat Bed Truck with 5-tonne Crane	1. ea	44.00	44.00	60.00	2,640	0.00	0	0.00	0	168,600.00	168,600	171,240.00	171,240
K0.	10.00	20	Mill Dept - 45-tonne Mobile Crane (NEW)	1. ea	88.00	88.00	60.00	5,280	0.00	0	0.00	0	485,000.00	485,000	490,280.00	490,280
K0.	11.00	20	Mill Dept - Cat 966 Front End Loader with Quick Disconnect System and Attachments w/Bucket, Fork, Arm and Blade	1. ea	44.00	44.00	60.00	2,640	0.00	0	0.00	0	337,200.00	337,200	339,840.00	339,840
K0.	12.00	20	Mill Dept - RT-83 Fork Lift	1. ea	44.00	44.00	60.00	2,640	0.00	0	0.00	0	281,000.00	281,000	283,640.00	283,640
K0.	13.00	20	Fusion Machine HDPE PIPE	1. ea	11.00	11.00	60.00	660	0.00	0	0.00	0	67,440.00	67,440	68,100.00	68,100
K0.	14.00	20	Warehouse Forklifts - 2@$30,000	2. ea	22.00	44.00	60.00	2,640	0.00	0	0.00	0	140,500.00	281,000	141,820.00	283,640

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
K0.	15.00	20	Other equipment - Included in Mining Fleet	-	-	-	-	-	-	-	-	-	-	.	-	-
			K0. - Plant Mobile Fleet Subtotal			**275.00**		**16,500**		**0**		**0**		**2,069,840**		**2,086,340**
M1. - Construction Camp																
M1.	1.00	10	Constr. Camp And Catering - Not required; wiorkers will be transported to site by bus	-	-	-	-	-	-	-	-	-	-	.	-	-
			M1. - Construction Camp Subtotal			**0.00**		**0**		**0**		**0**		**0**		**0**
X1. - Construction Indirects																
X1.	1.00	91	Construction Indirects 10.0% of Direct Costs	1. lot	109,810.00	109,810.00	60.00	6,588,600	15,373,400.00	15,373,400	0.00	0	0.00	0	21,962,000.00	21,962,000
X1.	2.00	91	Travel time to worksite (2hr @ avg base rate of $25/hr)	138,900. mhr	0.00	0.00	0.00	0	25.00	3,472,500	0.00	0	0.00	0	25.00	3,472,500
X1.	3.00	91	Living out allowance (based on $35 per day for accommodation and $20 per day for meals; Required for 60% of workforce)	41,700. mda	0.00	0.00	0.00	0	55.00	2,293,500	0.00	0	0.00	0	55.00	2,293,500
X1.	4.00	91	Travel fare for turnarounds (based on 1 turnaround every 1 mths for 50% the work force) avg 200men x 12trips per year x 2years	4,800. tar	0.00	0.00	0.00	0	600.00	2,880,000	0.00	0	0.00	0	600.00	2,880,000
			X1. - Construction Indirects Subtotal			**109,810.00**		**6,588,600**		**24,019,400**		**0**		**0**		**30,608,000**
X2. - Spare Parts																
X2.	1.00	92	Spares	1. lot	0.00	0.00	0.00	0	3,042,000.00	3,042,000	0.00	0	0.00	0	3,042,000.00	3,042,000
			X2. - Spare Parts Subtotal			**0.00**		**0**		**3,042,000**		**0**		**0**		**3,042,000**
X3. - Initial Fills & Warehouse Inventory																
X3.	1.00	93	Initial Fills & Warehouse Inventory - inlcuded in Working Capital	-	-	-	-	-	-	-	-	-	-	.	-	-
			X3. - Initial Fills & Warehouse Inventory Subtotal			**0.00**		**0**		**0**		**0**		**0**		**0**
X4. - Freight And Logistic																
X4.	1.00	94	Freight And Logistics	1. lot	0.00	0.00	0.00	0	9,182,000.00	9,182,000	0.00	0	0.00	0	9,182,000.00	9,182,000
			X4. - Freight And Logistic Subtotal			**0.00**		**0**		**9,182,000**		**0**		**0**		**9,182,000**
X5. - EPCM																
X5.	1.00	95	Commisioning And Startup, 6men over 3mths	1. lot	0.00	0.00	0.00	0	518,400.00	518,400	0.00	0	0.00	0	518,400.00	518,400
			X5. - EPCM Subtotal			**0.00**		**0**		**518,400**		**0**		**0**		**518,400**

Area	Seq	Sec	Description	Qty	Labour Unit Mhr	Labour Manhour	Labour Rate	Labour Cost	Material Unit Cost	Material Cost	Const Eqt Unit Cost	Const Eqt Cost	Process Eqpt Unit Cost	Process Eqpt Cost	Total Unit Cost	Total Cost (CAD)
X6. - Commisioning And Startup																
X6.	1.00	96	EPCM - Process 12.0% of $203,758,000	1. lot	0.00	0.00	0.00	0	24,451,000.00	24,451,000	0.00	0	0.00	0	24,451,000.00	24,451,000
X6.	2.00	96	EP - Mining and Tailings 6.0% of $30,000,000	1. lot	0.00	0.00	0.00	0	1,800,000.00	1,800,000	0.00	0	0.00	0	1,800,000.00	1,800,000
			X6. - Commisioning And Startup Subtotal			**0.00**		**0**		**26,251,000**		**0**		**0**		**26,251,000**
Y0. - Owner's Costs																
Y0.	1.00	98	Owner's Costs	1. lot	0.00	0.00	0.00	0	5,000,000.00	5,000,000	0.00	0	0.00	0	5,000,000.00	5,000,000
Y0.	2.00	98	Survey Included	-	-	-	-	-	-	-	-	-	-	-	-	-
Y0.	3.00	98	Geotechnical Included	-	-	-	-	-	-	-	-	-	-	-	-	-
Y0.	4.00	98	Owner's overseeing team Included	-	-	-	-	-	-	-	-	-	-	-	-	-
Y0.	5.00	98	Permits - Not Included	-	-	-	-	-	-	-	-	-	-	-	-	-
Y0.	6.00	98	Legals Not Included	-	-	-	-	-	-	-	-	-	-	-	-	-
Y0.	7.00	98	Sunk Costs Not Included	-	-	-	-	-	-	-	-	-	-	-	-	-
			Y0. - Owner's Costs Subtotal			**0.00**		**0**		**5,000,000**		**0**		**0**		**5,000,000**
Z1. - Contingency (Risk)																
Z1.	1.00	99	Contingency 20.0% of total Costs	1. lot	0.00	0.00	0.00	0	58,843,000.00	58,843,000	0.00	0	0.00	0	58,843,000.00	58,843,000
			Z1. - Contingency (Risk) Subtotal			**0.00**		**0**		**58,843,000**		**0**		**0**		**58,843,000**
Scoping Study - Total Unit Cost Report Total						**694,786.64**		**41,687,199**		**186,782,946**		**20,069,038**		**104,517,030**		**353,056,212**

APPENDIX D

FINANCIAL MODEL

PRE-TAX AND PRE-FINANCE ECONOMIC MODEL

Client	Geodex Minerals Inc.
Project	Sisson Brook
Version	1.0
Date	2-Nov-07

BASE CASE PRICE MODEL

20,000 tonnes per day

WARDROP

	Value	Units	Y-2	Y-1	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15
Mill Feed																			
Tungsten Ore																			
Mill Throughput		tonnes			6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000
Waste + Stockpile		tonnes			7,082,852	5,511,926	6,932,834	3,866,183	5,652,181	8,214,096	10,372,882	5,933,884	7,624,369	12,883,537	7,247,917	7,990,183	18,198,784	8,644,946	14,701,563
Waste Ore Ratio					1.03	0.80	1.01	0.56	0.82	1.20	1.51	0.86	1.11	1.88	1.06	1.16	2.65	1.26	2.14
Average Grade WO_3		%			0.093%	0.082%	0.076%	0.078%	0.085%	0.075%	0.078%	0.083%	0.077%	0.078%	0.079%	0.079%	0.075%	0.081%	0.079%
Mill Recovery WO_3		70%			70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Gravity Concentrate		dmt			3,190	2,809	2,593	2,665	2,917	2,557	2,665	2,845	2,629	2,665	2,701	2,701	2,557	2,773	2,701
Gravity Concentrate Grade		%			70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Flotation Concentrate		dmt			4,466	3,933	3,630	3,731	4,084	3,580	3,731	3,983	3,681	3,731	3,782	3,782	3,580	3,882	3,782
Flotation Concentrate Grade		%			50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Gravity Concentrate Price	164.80	US$/mtu			164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80
Flotation Concentrate Price	117.60	US$/mtu			117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60
Gross revenue gravity concentration		**000's US**			51,518	45,369	41,879	43,043	47,114	41,298	43,043	45,951	42,461	43,043	43,624	43,624	41,298	44,788	43,624
Gross revenue flotation concentration		**000's US**			51,468	45,325	41,839	43,001	47,068	41,258	43,001	45,906	42,420	43,001	43,582	43,582	41,258	44,744	43,582
Gross revenue total		**000's US**			**102,986**	**90,694**	**83,718**	**86,043**	**94,183**	**82,555**	**86,043**	**91,857**	**84,881**	**86,043**	**87,206**	**87,206**	**82,555**	**89,532**	**87,206**
Molybdenum Ore																			
Mill Throughput		tonnes			6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000
Average Grade MO		%			0.037%	0.028%	0.024%	0.022%	0.027%	0.025%	0.026%	0.026%	0.022%	0.020%	0.026%	0.023%	0.020%	0.025%	0.024%
Contained Moly metal		million lb			5.558	4.288	3.652	3.335	4.129	3.811	3.970	3.970	3.335	3.017	3.970	3.494	3.017	3.811	3.652
Mill Recovery MO		85%			85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
Recovered moly metal		million lb			4.724	3.644	3.105	2.835	3.509	3.239	3.374	3.374	2.835	2.565	3.374	2.970	2.565	3.239	3.105
Smelter Deduction (Conversion loss 1.5%)	1.50%	million lb			0.071	0.055	0.047	0.043	0.053	0.049	0.051	0.051	0.043	0.038	0.051	0.045	0.038	0.049	0.047
Payable Molybdenum		million lb			4.653	3.590	3.058	2.792	3.457	3.191	3.324	3.324	2.792	2.526	3.324	2.925	2.526	3.191	3.058
Molybdenum Metal Price	21.60	US$/lb			21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60
Gross revenue		**000's US**			**100,514**	**77,539**	**66,052**	**60,308**	**74,667**	**68,924**	**71,795**	**71,795**	**60,308**	**54,565**	**71,795**	**63,180**	**54,565**	**68,924**	**66,052**
Con. Grade	50%	%			50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Con. Tonnes dry		dmt			4,286	3,306	2,816	2,571	3,184	2,939	3,061	3,061	2,571	2,327	3,061	2,694	2,327	2,939	2,816
Moist content	8%	%			8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Con. Tonnes wet		wmt			4,658	3,594	3,061	2,795	3,461	3,194	3,327	3,327	2,795	2,529	3,327	2,928	2,529	3,194	3,061
Gross Revenue		**000's US$**			**203,500**	**168,233**	**149,770**	**146,352**	**168,850**	**151,479**	**157,839**	**163,653**	**145,189**	**140,608**	**159,002**	**150,386**	**137,120**	**158,455**	**153,258**
Smelting																			
Tungsten Ore		000's US$			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Molybdenum Ore US$/lb	0.110	000's US$			511.875	394.875	336.375	307.125	380.250	351.000	365.625	365.625	307.125	277.875	365.625	321.750	277.875	351.000	336.375
Net Invoice Value (NIV) tungsten		**000's US**			102,986	90,694	83,718	86,043	94,183	82,555	86,043	91,857	84,881	86,043	87,206	87,206	82,555	89,532	87,206
Net Invoice Value (NIV) molybdenum		**000's US**			100,002	77,144	65,715	60,001	74,287	68,573	71,430	71,430	60,001	54,287	71,430	62,858	54,287	68,573	65,715
Net Invoice Value (NIV)		**000's US**			202,988	167,839	149,433	146,044	168,470	151,128	157,473	163,287	144,882	140,330	158,636	150,064	136,842	158,104	152,922
Transport Cost																			
Tungsten Ore US$/wmt	150	000's US$			1,248	1,099	1,015	1,043	1,142	1,001	1,043	1,113	1,029	1,043	1,057	1,057	1,001	1,085	1,057
Molybdenum Ore US$/wmt	150	000's US$			699	539	459	419	519	479	499	499	419	379	499	439	379	479	459
Subtotal		000's US$			1,947	1,638	1,474	1,462	1,661	1,480	1,542	1,612	1,448	1,422	1,556	1,496	1,380	1,564	1,516
Losses, insurance, representation																			
tungsten																			
Losses NIV	0.50%	000's US$			515	453	419	430	471	413	430	459	424	430	436	436	413	448	436
Insurance NIV	0.15%	000's US$			154	136	126	129	141	124	129	138	127	129	131	131	124	134	131
Representation US$/wmt	0.5	000's US$			4	4	3	3	4	3	3	4	3	3	4	4	3	4	4
molybdenum																			
Losses NIV	0.50%	000's US$			500	386	329	300	371	343	357	357	300	271	357	314	271	343	329
Insurance NIV	0.15%	000's US$			150	116	99	90	111	103	107	107	90	81	107	94	81	103	99
Representation US$/wmt	0.5	000's US$			2	2	2	1	2	2	2	2	1	1	2	1	1	2	2
Net Smelter Return (NSR) tungsten		**000's US$**			101,065	89,002	82,156	84,438	92,425	81,015	84,438	90,143	83,297	84,438	85,579	85,579	81,015	87,861	85,579
Net Smelter Return (NSR) molybdenum		**000's US$**			98,651	76,102	64,828	59,190	73,283	67,646	70,465	70,465	59,190	53,553	70,465	62,009	53,553	67,646	64,828
Net Smelter Return (NSR)		**000's US$**			**199,715**	**165,104**	**146,983**	**143,628**	**165,708**	**148,661**	**154,902**	**160,608**	**142,487**	**137,991**	**156,044**	**147,588**	**134,568**	**155,507**	**150,406**
Royalty (tungsten)	0%	000's US$			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Royalty (moly)	0%	000's US$			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Revenue (US$) tungsten		**000's US$**			101,065	89,002	82,156	84,438	92,425	81,015	84,438	90,143	83,297	84,438	85,579	85,579	81,015	87,861	85,579
Net Revenue (US$) molybdenum		**000's US$**			98,651	76,102	64,828	59,190	73,283	67,646	70,465	70,465	59,190	53,553	70,465	62,009	53,553	67,646	64,828
Net Revenue (US$)		**000's US$**			**199,715**	**165,104**	**146,983**	**143,628**	**165,708**	**148,661**	**154,902**	**160,608**	**142,487**	**137,991**	**156,044**	**147,588**	**134,568**	**155,507**	**150,406**
Exchange Rate	1.17	Cdn$/US$			1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Net Revenue (Cdn$) tungsten		**000's Cdn$**			**117,942**	**103,865**	**95,876**	**98,539**	**107,860**	**94,544**	**98,539**	**105,197**	**97,207**	**98,539**	**99,870**	**99,870**	**94,544**	**102,534**	**99,870**
Net Revenue (Cdn$) molybdenum		**000's Cdn$**			**115,125**	**88,811**	**75,654**	**69,075**	**85,522**	**78,943**	**82,232**	**82,232**	**69,075**	**62,497**	**82,232**	**72,364**	**62,497**	**78,943**	**75,654**
Net Revenue (Cdn$)		**000's Cdn$**			**233,068**	**192,676**	**171,529**	**167,614**	**193,382**	**173,487**	**180,771**	**187,429**	**166,282**	**161,035**	**182,103**	**172,235**	**157,041**	**181,477**	**175,524**
Operating Cost																			
Mining Cdn$/tonne mined	1.3	000's Cdn$		7,202	10,924	16,084	17,931	13,944	16,266	19,596	22,403	16,632	18,830	25,667	18,340	19,305	32,576	20,156	28,030
Processing Cdn$/tonne milled	5.33	000's Cdn$			36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564
G&A Cdn$/tonne milled	1.09	000's Cdn$			7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477
SubTotal		**000's Cdn$**		**7,202**	**54,965**	**60,125**	**61,972**	**57,985**	**60,307**	**63,638**	**66,444**	**60,673**	**62,871**	**69,708**	**62,381**	**63,346**	**76,618**	**64,198**	**72,071**
Operating Cash Flow		**000's Cdn$**		**-7,202**	**178,103**	**132,551**	**109,558**	**109,629**	**133,075**	**109,850**	**114,327**	**126,756**	**103,412**	**91,328**	**119,721**	**108,888**	**80,423**	**117,279**	**103,453**
Capital Costs																			
Preproduction Capital																			
DIRECT COSTS																			
Overall Site		000's Cdn$	5,699																
Mining Equipment		000's Cdn$	10,949	9,729															
Crushing		000's Cdn$	26,352	26,352															
Grinding & Flotation		000's Cdn$	52,659	52,659															
Tailings		000's Cdn$		24,028															
Site Services & Utilities		000's Cdn$	829	829															
Ancillary Buildings		000's Cdn$	3,721	3,721															
Plant Mobile Equipment		000's Cdn$	1,043	1,043															
INDIRECT COSTS		000's Cdn$	34,801	34,801															
Owners Costs		000's Cdn$	2,500	2,500															
Contingency		000's Cdn$	58,843																
Working Capital		000's Cdn$			13,741														
SubTotal Preproduction Capital		**000's Cdn$**	**197,396**	**155,661**	**13,741**														
Sustaining Capital																			
Mining		000's Cdn$			7,332	0	1,377	0	45	0	133	850	0	0	178	170	0	20,031	133
Process & Infrastructure		000's Cdn$			500	500	500	500	500	500	5,300	500	500	500	500	500	500	5,300	500
Reclaimation costs		000's Cdn$																	
Salvage of Gensets / Plant / Working Capital		000's Cdn$																	
SubTotal Sustaining Capital		**000's Cdn$**			**7,832**	**500**	**1,877**	**500**	**545**	**500**	**5,433**	**1,350**	**500**	**500**	**678**	**670**	**500**	**25,331**	**633**
Total Capital Cost		**000's Cdn$**	**197,396**	**155,661**	**21,573**	**500**	**1,877**	**500**	**545**	**500**	**5,433**	**1,350**	**500**	**500**	**678**	**670**	**500**	**25,331**	**633**
Summary																			
Net Revenue		000's Cdn$	0	0	233,068	192,676	171,529	167,614	193,382	173,487	180,771	187,429	166,282	161,035	182,103	172,235	157,041	181,477	175,524
Operating Cost		000's Cdn$	0	7,202	54,965	60,125	61,972	57,985	60,307	63,638	66,444	60,673	62,871	69,708	62,381	63,346	76,618	64,198	72,071
Capital Costs		000's Cdn$	197,396	155,661	21,573	500	1,877	500	545	500	5,433	1,350	500	500	678	670	500	25,331	633
Pre-Tax Cash Flow																			
Cash Flow		000's Cdn$	-197,396	-162,863	156,530	132,051	107,681	109,129	132,530	109,350	108,894	125,406	102,912	90,828	119,043	108,218	79,923	91,948	102,820
Accumulated Cash Flow		000's Cdn$	-197,396	-360,258	-203,728	-71,677	36,004	145,133	277,662	387,012	495,906	621,312	724,224	815,051	934,095	1,042,313	1,122,236	1,214,185	1,317,005
Discounted Cash Flow		000's Cdn$	-182,774	-139,628	124,258	97,062	73,286	68,770	77,330	59,078	54,474	58,087	44,137	36,069	43,772	36,844	25,195	26,839	27,789
Accumulated Discounted Cash Flow		000's Cdn$	-182,774	-322,402	-198,144	-101,082	-27,796	40,974	118,303	177,381	231,856	289,943	334,080	370,149	413,921	450,765	475,960	502,799	530,588
Pre-Tax Net Present Value (NPV)	8.0%	**000 Cdn$**			**692,688**														
Pre-Tax Internal Rate of Return (IRR)		**%**			**29.8%**														
Mine Life		**years**			**30.2**														
Payback Period		**years**			**2.7**														
Op Cost		**Cdn$/t**			**9.33**														
Total Initial Capital		**000 Cdn$**			**353,056**														

	Y16	Y17	Y18	Y19	Y20	Y21	Y22	Y23	Y24	Y25	Y26	Y27	Y28	Y29	Y30	Y31	TOTAL
Mill Feed																	
Tungsten Ore																	
Mill Throughput	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	1,204,897	207,004,897
Waste + Stockpile	18,717,436	17,663,768	18,746,585	17,714,830	37,381,148	20,220,356	18,614,257	12,302,146									292,218,663
Waste Ore Ratio	2.73	2.57	2.73	2.58	5.45	2.95	2.71	1.79									1.41
Average Grade WO_3	0.074%	0.076%	0.075%	0.069%	0.063%	0.060%	0.064%	0.067%	0.026%	0.026%	0.026%	0.026%	0.026%	0.026%	0.026%	0.026%	0.063%
Mill Recovery WO_3	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Gravity Concentrate	2,521	2,593	2,557	2,377	2,161	2,053	2,197	2,305	1,166	1,166	881	881	881	881	881	155	66,626
Gravity Concentrate Grade	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Flotation Concentrate	3,529	3,630	3,580	3,328	3,025	2,874	3,076	3,227	1,633	1,633	1,234	1,234	1,234	1,234	1,234	217	93,277
Flotation Concentrate Grade	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Gravity Concentrate Price	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80	164.80
Flotation Concentrate Price	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60	117.60
Gross revenue gravity concentration	40,716	41,879	41,298	38,389	34,899	33,154	35,481	37,226	18,835	18,835	14,231	14,231	14,231	14,231	14,231	2,499	1,076,041
Gross revenue flotation concentration	40,676	41,839	41,258	38,352	34,866	33,122	35,447	37,190	18,816	18,816	14,217	14,217	14,217	14,217	14,217	2,497	1,074,996
Gross revenue total	**81,392**	**83,718**	**82,555**	**76,741**	**69,765**	**66,277**	**70,928**	**74,416**	**37,651**	**37,651**	**28,447**	**28,447**	**28,447**	**28,447**	**28,447**	**4,997**	**2,151,037**
Molybdenum Ore																	
Mill Throughput	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	6,860,000	1,204,897	207,004,897
Average Grade MO	0.022%	0.023%	0.023%	0.022%	0.020%	0.017%	0.021%	0.020%	0.023%	0.023%	0.023%	0.023%	0.023%	0.023%	0.023%	0.023%	0.024%
Contained Moly metal	3.335	3.494	3.494	3.335	3.017	2.541	3.176	3.017	3.478	3.478	3.478	3.478	3.478	3.478	3.478	0.611	107
Mill Recovery MO	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
Recovered moly metal	2.835	2.970	2.970	2.835	2.565	2.160	2.700	2.565	2.957	2.957	2.957	2.957	2.957	2.957	2.957	0.519	91
Smelter Deduction (Conversion loss 1.5%)	0.043	0.045	0.045	0.043	0.038	0.032	0.040	0.038	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.008	1
Payable Molybdenum	2.792	2.925	2.925	2.792	2.526	2.127	2.659	2.526	2.912	2.912	2.912	2.912	2.912	2.912	2.912	0.512	90
Molybdenum Metal Price	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60
Gross revenue	**60,308**	**63,180**	**63,180**	**60,308**	**54,565**	**45,949**	**57,436**	**54,565**	**62,906**	**62,906**	**62,906**	**62,906**	**62,906**	**62,906**	**62,906**	**11,049**	**1,941,867**
Con. Grade	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Con. Tonnes dry	2,571	2,694	2,694	2,571	2,327	1,959	2,449	2,327	2,682	2,682	2,682	2,682	2,682	2,682	2,682	471	82,799
Moist content	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Con. Tonnes wet	2,795	2,928	2,928	2,795	2,529	2,130	2,662	2,529	2,916	2,916	2,916	2,916	2,916	2,916	2,916	512	89,999
Gross Revenue	**141,701**	**146,898**	**145,735**	**137,050**	**124,329**	**112,226**	**128,364**	**128,980**	**100,557**	**100,557**	**91,354**	**91,354**	**91,354**	**91,354**	**91,354**	**16,045**	**4,092,903**
Smelting																	
Tungsten Ore	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Molybdenum Ore US$/lb	307.125	321.750	321.750	307.125	277.875	234.000	292.500	277.875	320.357	320.357	320.357	320.357	320.357	320.357	320.357	56.268	9,889
Net Invoice Value (NIV) tungsten	81,392	83,718	82,555	76,741	69,765	66,277	70,928	74,416	37,651	37,651	28,447	28,447	28,447	28,447	28,447	4,997	**2,151,037**
Net Invoice Value (NIV) molybdenum	60,001	62,858	62,858	60,001	54,287	45,715	57,144	54,287	62,586	62,586	62,586	62,586	62,586	62,586	62,586	10,993	**1,931,978**
Net Invoice Value (NIV)	141,393	146,576	145,413	136,742	124,052	111,992	128,071	128,703	100,237	100,237	91,033	91,033	91,033	91,033	91,033	15,989	**4,083,014**
Transport Cost																	
Tungsten Ore US$/wmt	986	1,015	1,001	930	846	803	860	902	456	456	345	345	345	345	345	61	26,071
Molybdenum Ore US$/wmt	419	439	439	419	379	319	399	379	437	437	437	437	437	437	437	77	13,500
Subtotal	1,406	1,454	1,440	1,349	1,225	1,123	1,259	1,281	894	894	782	782	782	782	782	137	39,571
Losses, insurance, representation																	
tungsten																	
Losses NIV	407	419	413	384	349	331	355	372	188	188	142	142	142	142	142	25	10,755
Insurance NIV	122	126	124	115	105	99	106	112	56	56	43	43	43	43	43	7	3,227
Representation US$/wmt	3	3	3	3	3	3	3	3	2	2	1	1	1	1	1	0	87
molybdenum																	
Losses NIV	300	314	314	300	271	229	286	271	313	313	313	313	313	313	313	55	9,660
Insurance NIV	90	94	94	90	81	69	86	81	94	94	94	94	94	94	94	16	2,898
Representation US$/wmt	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	45
Net Smelter Return (NSR) tungsten	79,874	82,156	81,015	75,309	68,463	65,040	69,604	73,027	36,948	36,948	27,916	27,916	27,916	27,916	27,916	4,903	**2,110,897**
Net Smelter Return (NSR) molybdenum	59,190	62,009	62,009	59,190	53,553	45,097	56,372	53,553	61,741	61,741	61,741	61,741	61,741	61,741	61,741	10,844	**1,905,875**
Net Smelter Return (NSR)	**139,064**	**144,165**	**143,024**	**134,500**	**122,016**	**110,137**	**125,976**	**126,580**	**98,689**	**98,689**	**89,657**	**89,657**	**89,657**	**89,657**	**89,657**	**15,747**	**4,016,772**
Royalty (tungsten)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Royalty (moly)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Revenue (US$) tungsten	79,874	82,156	81,015	75,309	68,463	65,040	69,604	73,027	36,948	36,948	27,916	27,916	27,916	27,916	27,916	4,903	2,110,897
Net Revenue (US$) molybdenum	59,190	62,009	62,009	59,190	53,553	45,097	56,372	53,553	61,741	61,741	61,741	61,741	61,741	61,741	61,741	10,844	1,905,875
Net Revenue (US$)	**139,064**	**144,165**	**143,024**	**134,500**	**122,016**	**110,137**	**125,976**	**126,580**	**98,689**	**98,689**	**89,657**	**89,657**	**89,657**	**89,657**	**89,657**	**15,747**	4,016,772
Exchange Rate	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Net Revenue (Cdn$) tungsten	**93,212**	**95,876**	**94,544**	**87,886**	**79,896**	**75,902**	**81,228**	**85,223**	**43,119**	**43,119**	**32,579**	**32,579**	**32,579**	**32,579**	**32,579**	**5,722**	**2,463,417**
Net Revenue (Cdn$) molybdenum	**69,075**	**72,364**	**72,364**	**69,075**	**62,497**	**52,629**	**65,786**	**62,497**	**72,051**	**72,051**	**72,051**	**72,051**	**72,051**	**72,051**	**72,051**	**12,655**	**2,224,156**
Net Revenue (Cdn$)	**162,288**	**168,240**	**166,908**	**156,961**	**142,393**	**128,530**	**147,014**	**147,719**	**115,170**	**115,170**	**104,630**	**104,630**	**104,630**	**104,630**	**104,630**	**18,377**	**4,687,573**
Operating Cost																	
Mining Cdn$/tonne mined	33,251	31,881	33,289	31,947	57,513	35,204	33,117	24,911	8,918	8,918	0	0	0	0	0	0	595,632
Processing Cdn$/tonne milled	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	36,564	6,422	1,103,336
G&A Cdn$/tonne milled	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477	1,313	225,635
SubTotal	**77,292**	**75,922**	**77,330**	**75,988**	**101,555**	**79,246**	**77,158**	**68,952**	**52,959**	**52,959**	**44,041**	**44,041**	**44,041**	**44,041**	**44,041**	**7,735**	**1,931,806**
Operating Cash Flow	**84,996**	**92,318**	**89,579**	**80,973**	**40,838**	**49,285**	**69,856**	**78,767**	**62,211**	**62,211**	**60,588**	**60,588**	**60,588**	**60,588**	**60,588**	**10,642**	**2,755,767**
Capital Costs																	
Preproduction Capital																	
DIRECT COSTS																	
Overall Site																	5,699
Mining Equipment																	20,678
Crushing																	
Grinding & Flotation																	
Tailings																	24,028
Site Services & Utilities																	
Ancillary Buildings																	
Plant Mobile Equipment																	
INDIRECT COSTS																	69,601
Owners Costs																	5,000
Contingency																	58,843
Working Capital																	13,741
SubTotal Preproduction Capital																	**366,797**
Sustaining Capital																	
Mining	0	45	850	133	0	1,157	0	0	0	0	0	0	0	0	0	0	32,433
Process & Infrastructure	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	25,100
Reclaimation costs																29,543	29,543
Salvage of Gensets / Plant / Working Capital																-29,543	-29,543
SubTotal Sustaining Capital	**500**	**545**	**1,350**	**633**	**500**	**1,657**	**500**	**500**	**500**	**500**	**500**	**500**	**500**	**500**	**500**	**500**	**57,533**
Total Capital Cost	**500**	**545**	**1,350**	**633**	**500**	**1,657**	**500**	**500**	**500**	**500**	**500**	**500**	**500**	**500**	**500**	**500**	**424,331**
Summary																	
Net Revenue	162,288	168,240	166,908	156,961	142,393	128,530	147,014	147,719	115,170	115,170	104,630	104,630	104,630	104,630	104,630	18,377	4,687,573
Operating Cost	77,292	75,922	77,330	75,988	101,555	79,246	77,158	68,952	52,959	52,959	44,041	44,041	44,041	44,041	44,041	7,735	1,931,806
Capital Costs	500	545	1,350	633	500	1,657	500	500	500	500	500	500	500	500	500	500	424,331
Pre-Tax Cash Flow																	
Cash Flow	84,496	91,773	88,229	80,340	40,338	47,627	69,356	78,267	61,711	61,711	60,088	60,088	60,088	60,088	60,088	10,142	2,331,436
Accumulated Cash Flow	1,401,500	1,493,273	1,581,502	1,661,842	1,702,180	1,749,807	1,819,163	1,897,431	1,959,141	2,020,852	2,080,940	2,141,029	2,201,117	2,261,206	2,321,294	2,331,436	
Discounted Cash Flow	21,145	21,265	18,929	15,960	7,420	8,112	10,937	11,428	8,343	7,725	6,965	6,449	5,971	5,529	5,120	800	692,688
Accumulated Discounted Cash Flow	551,733	572,998	591,927	607,887	615,307	623,419	634,356	645,784	654,128	661,853	668,818	675,267	681,239	686,768	691,887	692,688	