

Petrographic Descriptive Reports: Content and Pricing Estimates

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This memo describes the pricing of a petrographic report, and the resources and work behind it, as of 02 August 2018. Prices are in Canadian dollars, valid through 2018: third-party pricing is correct for mid-2018, but may be higher as you read this. *Summary? See “cost”, overleaf.*

The Products

A typical description is in a standardized format. In essence, it is a dated and numbered professional opinion, founded upon optical mineralogy. Each one has brief notes on the hand specimen (if available) and a record of locality data (e.g., “Blue Angel Mine, Jharkhand, India, drill hole 2018-05, 45.2 metres down-hole depth...”), proportions and key properties of each mineral, a summary of textural features, and an interpretation and conclusion, including the deduced identification (e.g., rock name) and other inferences.

Although a detailed description should be a stand-alone product, as crafted in the Turnstone standard format, each job has its own unique context. That is why I provide the description(s) in report format. This includes title page and certification (if required for NI 43-101 and other regulatory frameworks), a discussion, the individual descriptions, and a glossary of terms. In a very simple case, the reporting component could be as little as a 1-paragraph abstract. More typically, it includes some information on the geological or other context of the samples, the findings of the microscope work, and references to the source district of the samples and analogous places, taken from the scientific literature, as represented primarily in Turnstone’s MINLIB annotated bibliographic database. For reports with 10 or more samples I generally compile a table of the proportions of each mineral in each sample.

Sample Preparation

My personal preference for research is a *circa* 46x27-mm polished thin section (PTS), but covered thin sections (CTS), which are somewhat cheaper, are a good choice for many purposes. Thin sections typically comprise a prepared 30 microns (0.03 mm)–thick sliver of the sample, mounted on a glass slide *circa* 1 mm thick. This style of preparation can be traced back to the pioneer work of Henry Clifton Sorby in England, in the 1850s and 1860s. However, there are fewer commercial and university thin-section labs now than there were 30-40 years ago. Clients can make their own arrangements if they prefer, or I can advise. Two labs I have used extensively are Vancouver Petrographics and Vancouver Geo-Tech. The latter (<http://www.thinsection.com> / 1-800-663-2166) charge \$23 and \$44 for covered and polished thins respectively. If you wish to shop around, Van Petro Ltd (<http://www.vanpetro.com> / 1-604-888-1323) offer CTS/PTS for \$25 / \$50. Samples that are crumbly may require impregnation with an epoxy resin prior to cutting and polishing. Samples can also be prepared as polished discs 25 to 40 mm in diameter (for reflected light and electron microbeam studies – not transmitted light studies – this is a common choice for metallurgical work) or as extra-large thin sections. Please refer to the labs’ web sites for pricing of these options. A wide range of materials can be prepared, not just rocks and ores, but also sand and mineral separates, bricks and concrete, meteorites, metals, slags, fossils and archaeological artefacts.

Logistics

It is best to e-mail your enquiry, and then clarify your requirements via e-mail and/or telephone. The samples can be sent to me for mark-up before cutting, but to save time you can make your choice of lab, and ship samples direct to them, with instructions to forward all the material to my street address. Unless instructed otherwise, I will return all samples, sections and any hard-copy reports you require at the end of the job. Large jobs may require a deposit.

Timing

Ask about timing and availability. For the preparation work, Vancouver Geo-Tech offer rush processing at higher rates. Typically, with 10-20 sections, the work on the prepared samples can be turned around in 5-10 working days. Reports are finalized as pdf files, signed as need be, for submission as assessment reports and other official documents.

Cost

I charge \$100 for CTS and \$120 for PTS descriptions (each has one photomicrograph). I provide the descriptions in report format with, at minimum, a paragraph summary of findings (\$100). Generally, people take a more extended report, with a synthesis and interpretation, and supporting references. A basic report for *circa* 10-20 samples would take no more than 1 day (\$600). You can make your own estimates: I can supply an official *quotation*. Total cost? Here is a representative estimate based on current costs, for a detailed report based on 10 covered thin sections * within Canada.

Item	Service	CAN\$ cost	Notes
1	Courier (3 stages)	\$200.00	Transport you-lab-Turnstone-you (add 30% if samples sent first to Turnstone)
2	Sample preparation	\$230.00	10 routine CTS
3	Description	\$1,000.00	Per-sample rate
4	Report preparation	\$600.00	Scales with the requested level of detail
5	Printing	\$60.00	B&W + colour printing + binding – nominal, at cost. Report also supplied as pdf files
	Subtotal	\$2,090.00	* Or \$2,500.00 for 10 PTS (+tax = \$2,825)
	HST if applicable, 13%	\$271.70	These prices without HST, Aug. 2018, are
	Total	\$2,361.70	<i>circa</i> US\$1,600 / \$1,925

Equipment

Turnstone has a mineralogy laboratory with transmitted and reflected-light petrographic and stereo microscopes equipped with Jenoptik digital cameras (a CCD Routine C3 on firewire cable, and a CMOS CT3 on a USB2 link, respectively), attached to a fast PC with ProgRes 2.10.0.1 software on Windows 10. Photomicrographs are assembled from 5-10 stacked digital images. Other capabilities include: scales (to 4.2 kg ± 0.01 g), S.G., *mag-sus*, SW/LW UV.

Turnstone does not have a lapidary / petrographic sample-preparation lab. Older polished samples, and those coated with thin films for electron microprobe and SEM work, are cleaned by buffing on felt with sub-micron alumina powder, and dried in alcohol prior to examination.

Many of the 200-plus Turnstone “Rocks of the Month” feature photomicrographs: [browse at http://www.turnstone.ca/romindex.htm](http://www.turnstone.ca/romindex.htm).