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Ontario Geological Survey
Open File Report 6117

Regional Modern Alluvium Sampling Survey of the Sault Ste. Marie–Espanola Corridor, Northeastern Ontario: Operation Treasure Hunt

2003

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ONTARIO GEOLOGICAL SURVEY

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Regional Modern Alluvium Sampling Survey of the Sault Ste. Marie–Espanola Corridor, Northeastern Ontario: Operation Treasure Hunt

by

J.L. Reid

2003

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Modern Alluvium Data Release, Sault Ste. Marie–Espanola Corridor, Northeastern Ontario: Operation Treasure Hunt; by J.L. Reid

This release consists of data resulting from heavy mineral processing of 720 samples collected over an area of approximately 21 000 km^2 in the Sault Ste. Marie–Espanola area, northeastern Ontario. The data consist of kimberlite indicator minerals (KIMs), metamorphic/magmatic massive sulphide indicator minerals (MMSIMs®[1]) and gold grains recovered from modern alluvium samples. The data are being released in conjunction with Open File Report 6117. Files on this release contain information on sample site locations; abbreviations used; sample processing data; KIMs picked and picking remarks; microprobe analyses of KIMs; gold grain data; MMSIMs® picked, picking remarks and assemblages present; and normalized KIM results. Data are available as compressed files in ASCII (*.txt*) and Microsoft® Excel (*.xls*) file format on two 3.5-inch MS-DOS diskettes.

These diskettes are available separately from the report.

[1] MMSIM is a registered trademark of Overburden Drilling Management Limited, Nepean, Ontario

Abstract

In 2001, the Ontario Geological Survey (OGS) completed a regional modern alluvium sampling survey in the Sault Ste. Marie–Espanola corridor of northeastern Ontario as part of the Operation Treasure Hunt initiative. The primary objective of this survey was to determine the presence of kimberlite indicator minerals (KIMs), metamorphic/magmatic massive sulphide indicator minerals (MMSIMs®) and gold grains. The survey area covered approximately 21 000 km^2. A contractor, under contract to the OGS, collected a total of 720 modern alluvium samples.

A number of important indicator minerals were recovered as part of this survey including a single G10 Cr-pyrope garnet; G9 Cr-pyrope garnets; megacrystic garnets; eclogitic garnets; picro-ilmenites; kimberlitic Cr-diopsides and chromites; and forsteritic olivines. Locations of interest are highlighted in the report including 2 areas of greatest exploration potential, which are 1) approximately 100 km north-northwest of Espanola in a region characterized by complex faulting; and 2) approximately 75 km east of Sault Ste. Marie. It is suggested that the information provided here be used in conjunction with available geophysical data to properly evaluate the region in follow-up investigations.

A number of metamorphic/magmatic massive sulphide indicator minerals were recovered including numerous chalcopyrites and gahnites. Areas that exhibit anomalous distributions of MMSIMs® are highlighted in the report.

Digital data are available separately as Miscellaneous Release—Data (MRD) 121.

Regional Modern Alluvium Sampling Survey of the Sault Ste. Marie–Espanola Corridor, Northeastern Ontario: Operation Treasure Hunt

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Ontario Geological Survey
Open File Report 6117
2003

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Introduction

Proterozoic and Archean rocks of the Great Lakes region of the Canadian Shield have had complex formative histories and their mineral deposits are diverse. The Lake Superior region is known for its sedimentary iron and native copper ores, the north shore of Lake Huron for its paleoplacer uranium deposits and Sudbury for nickel-copper magmatic sulphides. In recent years, unusual diamond-bearing rocks have focussed exploration interest just north of Wawa. In this area, close to four dozen, Archean-age occurrences of diamondiferous heterolithic breccia have been discovered by Band-Ore Resources, Pele Mountain Resources, Spider Resources, Arctic Star, Oasis and Iciena and Dia Bras (Wilson 2003). Most recently, Pele Mountain Resources announced the discovery of a 0.72 carat diamond from their property in the Wawa area (Pele Mountain Resources, Press Release, January 22, 2003).

To evaluate the diamond and other mineral potential of this region of northeastern Ontario, the Ontario Geological Survey, under the auspices of Operation Treasure Hunt (OTH), completed a modern alluvium survey in the Sault Ste. Marie–Espanola corridor during the summer of 2001 (Figure 1). The primary objective of this survey is to extend the regional information base concerning the types and distribution of kimberlite indicator minerals (KIMs) found in modern alluvium from Espanola, west to the Sault Ste. Marie area.

Kimberlite is a rock type commonly recognized as the primary host for diamond. The KIM suite of minerals includes pyrope and eclogitic garnets, magnesium ilmenite, chromite, chrome diopside, forsteritic olivine and diamond. The presence of these indicator minerals is used to determine the prospect for and proximity of any diamond-bearing kimberlites in an area. As well, heavy mineral assemblages are often examined for gold grains and metamorphic or magmatic massive sulphide indicator minerals (MMSIMs®[1]).

Study Area

LOCATION

The Sault Ste Marie–Espanola study area (*see* Figure 1) is represented on 20, 1:50 000 scale National Topographic System (NTS) map sheets. The western part of the study area is shown on the following map sheets: Searchmont (41 K/16), Sault Ste. Marie (41 K/9), Ranger Lake (41 J/13), Echo Lake (41 J/12), Bruce Mines (41 J/5), and Rocky Island Lake (41 J/14). The central part of the study area is represented by the following map sheets: Wakomata Lake (41 J/11), Iron Bridge (41 J/6), Kindiogami Lake (41 J/15), Rawhide Lake (41 J/10), Elliot Lake (41 J/7), and Whiskey Lake (41 J/8). The eastern part of the study area is shown on maps: Madawanson Lake (41 J/9), Mazabong Lake (41 J/16), Indian Lake (41 O/1), Spanish (41 J/1), Pogamasing (41 I/13), Cartier (41 I/12), Espanola (41 I/5) and Whitefish Falls (41 I/4).

A network of primary and secondary roads, including highways 6, 17, 129, 556, 546, 639 and 144, and trails provided reasonable access to the study area (Figure 2; Figure 3, back pocket).

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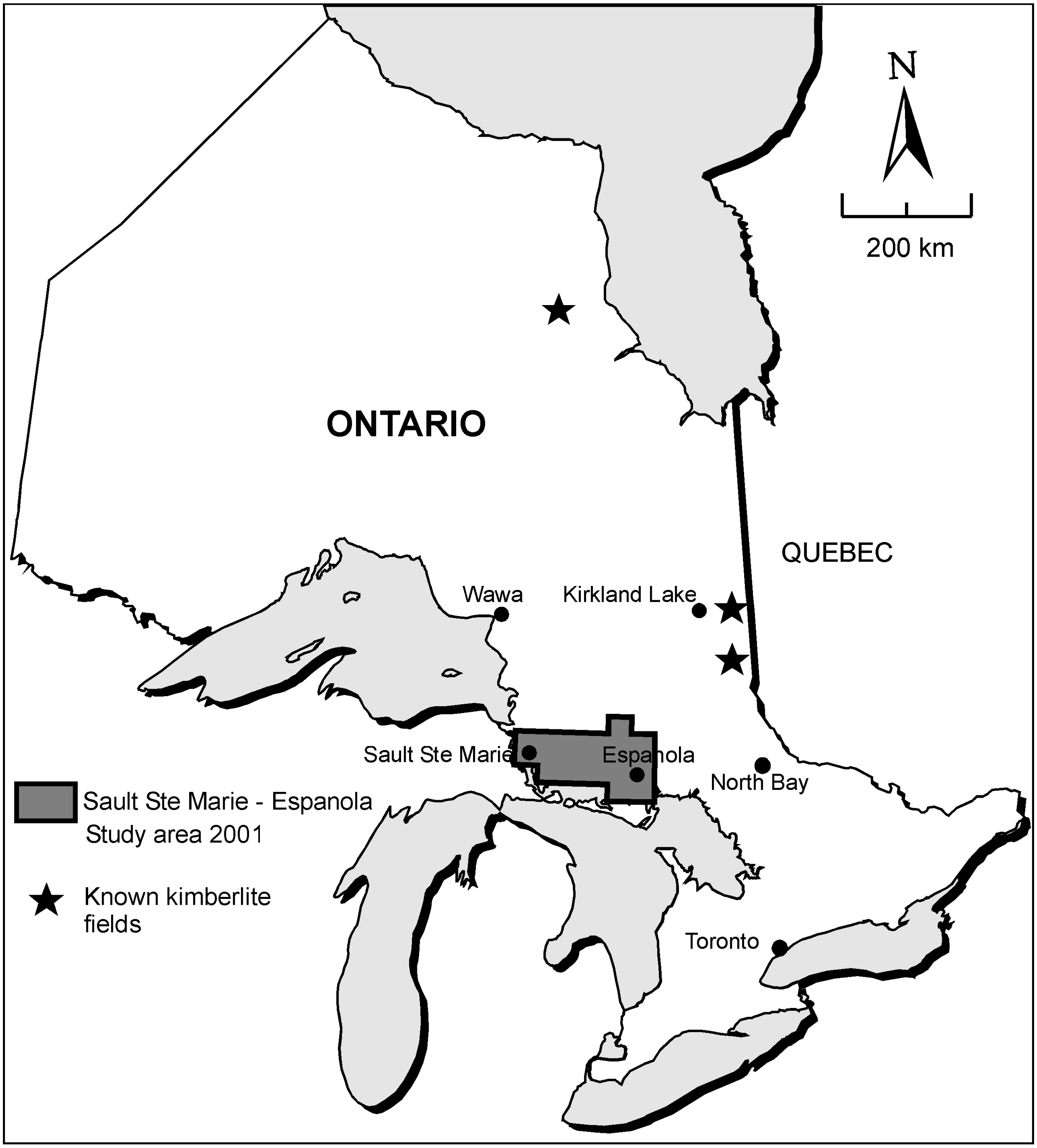

Figure 1: Location of the Sault Ste. Marie - Espanola study area. Location of known kimberlite fields from Sage (1996).

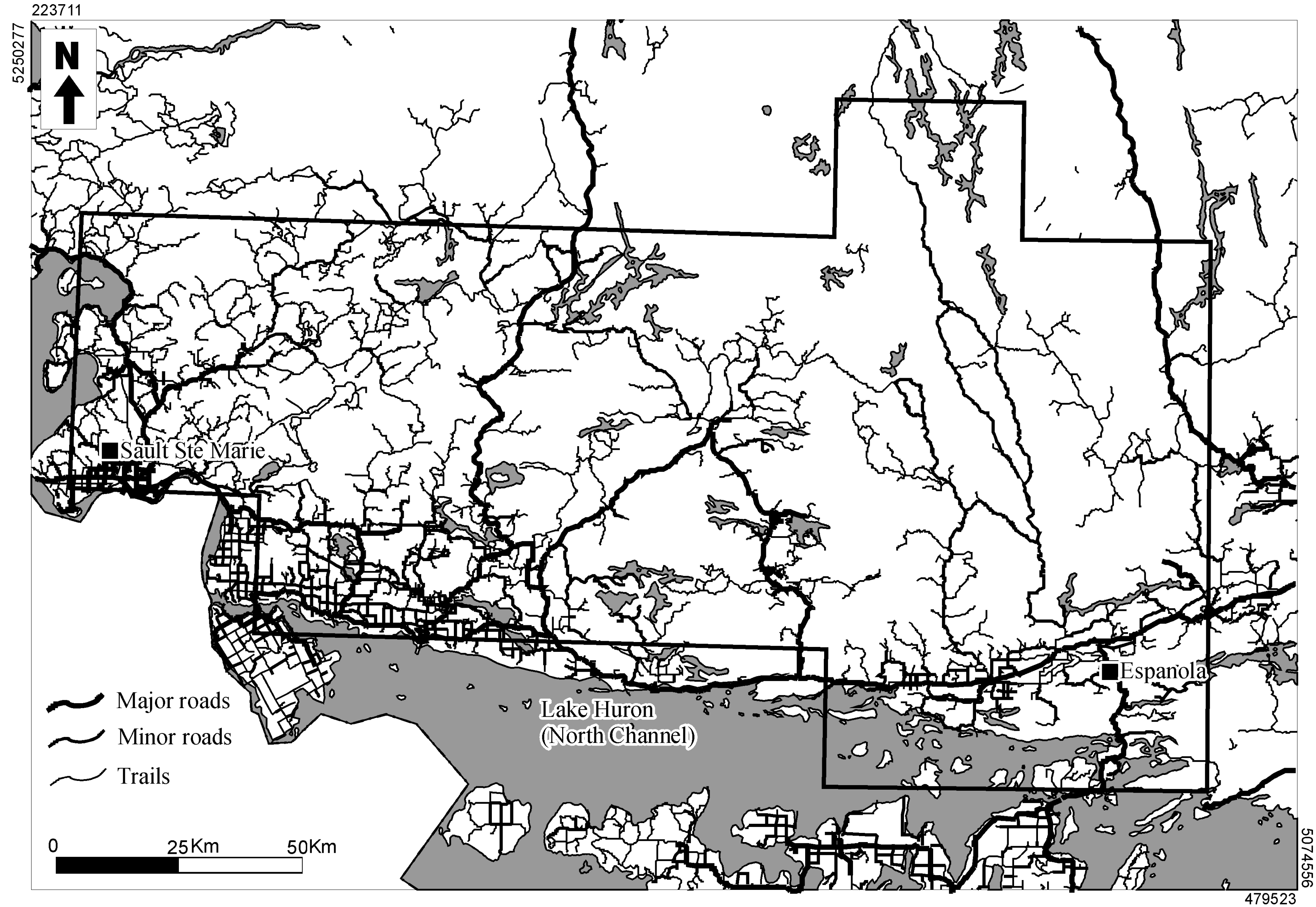

Figure 2: Road and trail systems present in the study area.

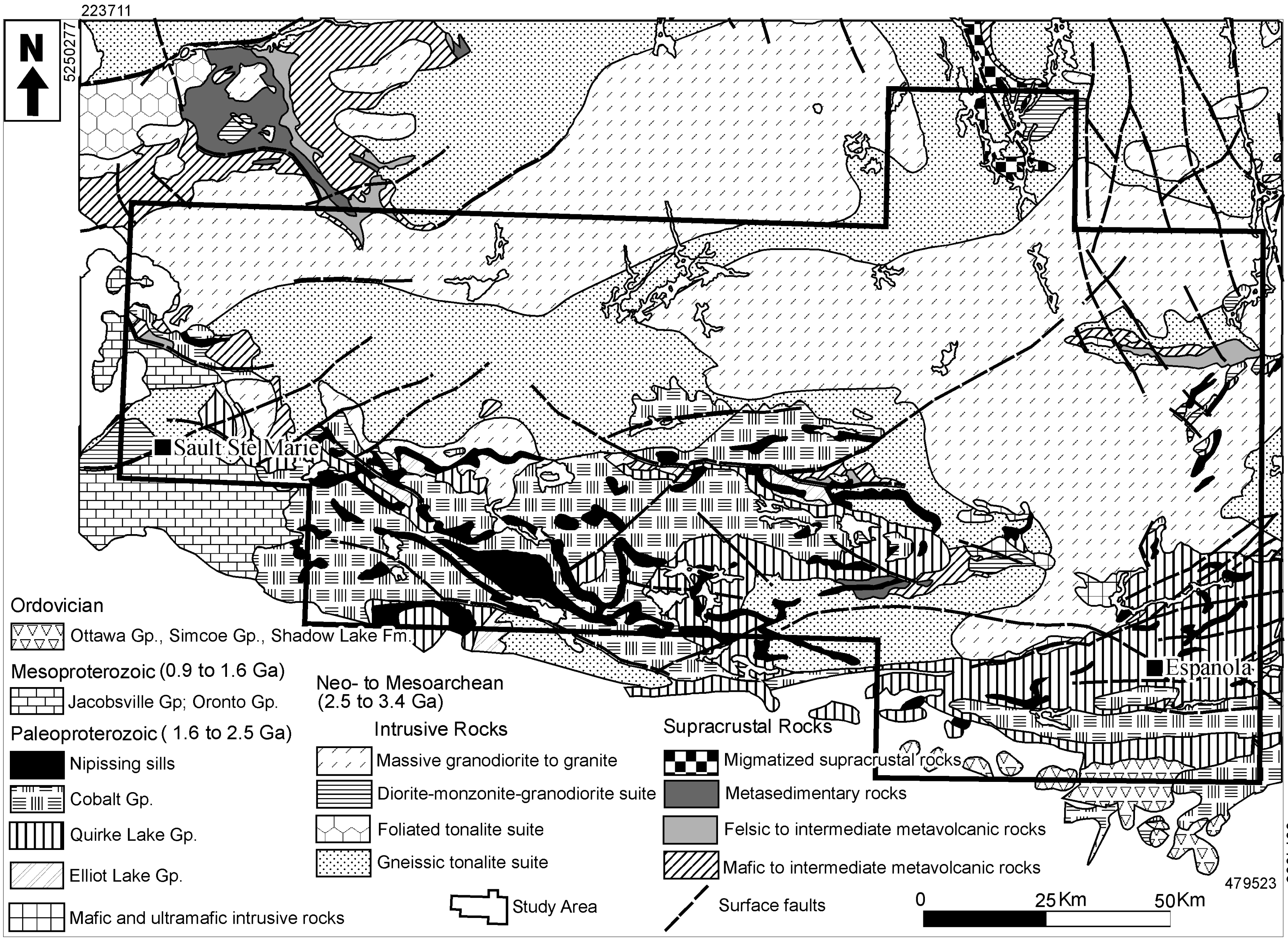

Figure 4: Bedrock geology of the study area (after Ontario Geological Survey 1991).

PHYSIOGRAPHY

The survey area lies within 2 physiographic divisions, both part of the James Region (Bostock 1976). The northern portion of the survey area falls within the Abitibi Uplands, whereas the southern part of the study area falls within the Penokean Hills (Bostock 1976). The Abitibi Uplands are underlain by crystalline Archean rocks and has broad rolling surfaces that rise gently from the Hudson Bay Lowland in the north. Most of the uplands lie between 275 and 360 m asl, however, in the higher parts near the southern border, elevations reach approximately 450 m asl (Bostock 1976). These uplands form a rocky landscape, scattered with lakes and large areas that are mantled by Quaternary deposits and features including glaociolacustrine clays, shorelines of proglacial lakes, outwash channels, glacial till and moraines (Thurston 1991). The Penokean Hills are composed of folded Proterozoic sediments and stratified rocks. Most summits in this unit are 250 to 300 m in elevation.

The principal drainage channels in the southeastern part of the study area are the Spanish, Aux Sables and Little Serpent rivers. Streams in this area flow southeast, west or southwest into these rivers as a result of structural control (jointing, faulting and dikes) within the Precambrian basement. To the north of this area, drainage follows the easterly strike of the metasediments and faults, such as the Murray Fault (Robertson 1976). The main rivers of the western part of the study area include the Mississagi, Garden and Goulais and flow south into the North Channel of Lake Huron or west into Lake Superior.

Bedrock Geology

The study area comprises rocks of the Superior and Southern provinces (Figure 4). The oldest rocks found in the area are located in the northern part of the survey area and are Neo- to Mesoarchean (2.5 to 3.4 Ga) supracrustal and intrusive rocks of the Superior Province. The Superior Province is divided into numerous subprovinces, including the Abitibi Subprovince, which is present in the survey area. The Abitibi Subprovince is a Neoarchean granite-greenstone-gneiss terrane that developed between 2.8 and 2.6 Ga (Jackson and Fyon 1991).

Within the survey area, the Neo- to Mesoarchean supracrustal rocks include suites of mafic to intermediate metavolcanic rocks that consist of basaltic and andesitic flows, tuffs and breccias and chert and iron formation. Also present are suites of felsic to intermediate metavolcanic rocks consisting of rhyolitic, rhyodacitic and andesitic flows, tuffs, breccias, chert and minor metasedimentary rocks. Additionally, suites of metasedimentary rocks including wacke, arkose, argillite, slate, marble, chert and minor metavolcanic rocks and suites of migmatized supracrustal rocks consisting of metavolcanic rocks, minor metasedimentary rocks, mafic gneisses and granitic gneisses are present. The intrusive rocks of Neo- to Mesoarchean age range from approximately 2.65 to 3.2 Ga. These intrusive rocks include a gneissic tonalite suite, which consists of tonalite to granodiorite—foliated to gneissic—with minor supracrustal inclusions and a foliated tonalite suite, which consists of tonalite to granodiorite that is foliated to massive. They also include the diorite-monzonite-granodiorite suite, which consists of diorite, tonalite, monzonite, granodiorite and syenite and a massive granodiorite to granite suite that consists of massive to foliated granodiorite to granite (Ontario Geological Survey 1991).

The Southern Province in the study area comprises sedimentary and subordinate metavolcanic rocks that unconformably overlie Archean rocks of the Superior Province. These rocks form part of the Penokean Fold Belt, a fold belt that deformed various Archean and Proterozoic rocks at approximately 1.8 Ga. The folded rocks include the 2.4 Ga Paleoproterozoic Huronian Supergroup, a stratigraphic succession 5 to 10 km thick that lies unconformably on top of Archean granitic and metavolcanic rocks. Locally, these rocks are intruded by 2219 Ma Nipissing diabase (Thurston 1991). The Huronian

Supergroup rocks are only moderately deformed in the study area. The Huronian Supergroup consists of 4 lithostratigraphic groups. The oldest, the Elliot Lake Group, consists of bimodal, rift-related volcanic rocks (the Thessalon, Pater, Dollyberry Lake, Salmay Lake, Stobie, and Copper Cliff Formations), feldspathic sandstone and uraniferous quartz-pebble conglomerate (the Matinenda Formation), and argillaceous sedimentary rocks (the McKim Formation). The feldspathic sandstone and uranium-bearing conglomerate of the Matinenda Formation is most prevalent near Elliot Lake (Robertson and Card 1972). The 3 other groups, from bottom to top, are the Hough Lake, Quirke Lake and Cobalt groups. Thick formations of conglomerate, subarkose to quartz arenite and formations of fine-grained wacke siltstone or carbonate-rich sedimentary rocks characterize each group. These groups and the formations within them are arranged in a repeating, or cyclical fashion (Jackson 2001). Also present in this region are the Mesoproterozoic (0.9 to 1.6 Ga) Jacobsville and Oronto groups of the Upper Keweenawan Supergroup. These groups are characterized by sandstone, shale and conglomerate. Approximately 1.6 to 2.5 billion years ago, a series of northeast-trending Paleoproterozoic diabase dikes known as the North Channel and Preissac swarms were emplaced. Following this, a series of Mesoproterozoic northwest-trending diabase dikes, known as the Sudbury swarm, was emplaced approximately 1238 Ma (Ontario Geological Survey 1991). Both sets of dikes are present locally within the survey area. Fold axes and major faults in the Sudbury–Espanola and western Huronian belts strike easterly.

The Archean basement rocks, part of the Abitibi granite greenstone terrane of the Superior Province, contain deposits of polymetallic base metal sulphides, lode gold and iron, associated chiefly with the greenstone belts. The Huronian sequence contains major paleoplacer uranium deposits in basal conglomerate sediments. Volcanics in the lower part of the succession have minor copper and polymetallic sulphide deposits, and associated gabbro-anorthosite intrusions contain Ni-Cu sulphides (Roscoe and Card 1992).

In the southernmost part of the survey area, Middle Ordovician rocks including limestone, dolostone, shale, arkose and sandstone occur (Ontario Geological Survey 1991).

Faults and Lineaments

Regional structures trend east to northeasterly near Sudbury, easterly in the Blind River–Elliot Lake area and west to northwesterly in the Bruce Mines–Sault Ste. Marie area. The most important of the fault systems are the Murray and Flack Lake faults. There is evidence for repeated movement at various times and in various directions on most of the major faults (Robertson and Card 1972).

Oblique, northward compression across the Penokean Fold Belt is indicated by east-trending, north converging synclines and anticlines and associated south-dipping thrust faults; conjugate sets of northeast- and northwest-trending, strike slip faults; and the east-trending, dextral, strike-slip of the Murray Fault (Robertson and Card 1972). Within the Penokean Fold Belt, the intensity of deformation decreases northward. The main Murray Fault zone stretches across the southern part of the study area from east of Sudbury to Blind River. The southeastern part of the study area, near Massey, contains numerous faults. Faults are most easily recognized where they cut across Huronian sediments, post-Huronian intrusive rocks and post-Huronian fold structures. These late-stage faults have northwesterly, northeasterly and easterly trends.

Several deformational episodes affected the Huronian Supergroup strata. The major east-trending faults of the Murray fault system were probably initiated prior to Huronian sedimentation, but were periodically reactivated during subsequent deformational events (Hart and Podolsky 1972). A syndepositional event produced some relatively large-scale folds and faults in the region that predate emplacement of Nipissing diabase circa 2.2 Ga. In addition, post-depositional deformation resulted in large-scale folds and faults such as the Quirke Lake Syncline, Chiblow Anticline, Murray Fault, and Flack Lake Fault (Jackson 2001).

As a suite of structural elements, faults in the area may represent long-lived and multiply reactivated basement structures that may represent interesting exploration targets (Jackson 2001).

Economic Geology

The north shore of Lake Huron is known for its paleoplacer uranium deposits. Historically important is Elliot Lake, a major past-producing centre for uranium. As of 1990, about 140 000 tonnes of uranium had been produced from 150 million tonnes of ore. This total represents nearly 12% of all uranium produced outside of the eastern bloc countries to that date. Production from the Elliot Lake camp ceased in the early 1990s. The Elliot Lake pyritic paleoplacer uranium ores, myriad lenses of radioactive pyritic gravels, were deposited by early Huronian fluvial systems. Other endogenic Huronian mineral deposits include disseminated nickel-copper sulphides in gabbros, copper in red beds high in the Huronian succession and silica in quartz arenites (Roscoe and Card 1992).

Uranium and thorium deposits occur in the pyritic quartz-pebble conglomerates of the Matinenda Formation in the Elliot Lake area. These are generally considered to be syngenetic placer deposits, possibly formed under anoxygenic atmospheric conditions (Card et al. 1972). During the period 1954 to 1970, 59 724 metric tonnes of uranium and minor amounts of thorium and yttrium were produced from 12 mines in the Elliot Lake camp. Uranium mineralization also occurs in lower Huronian quartz-pebble conglomerates and laminated argillites and thorium minerals occur in quartz-pebble conglomerates of the Lorrain Formation of Elliot Lake.

Other types of mineral deposits in the region include copper-nickel sulphides and gold-bearing quartz vein deposits associated with Nipissing diabase intrusions. Copper sulphides occur in the lower Huronian volcanic sequences (Hart and Podolsky 1972). Copper was discovered at Bruce Mines in 1846 and the town became the first commercially successful copper mining area in Canada.

Quaternary Geology

As recently as 10 000 years ago, the Laurentide ice sheet covered the study area. Ice flow indicators, primarily striae and other linear ice flow features, such as eskers, drumlins and crag and tail forms, show that the last glacial advance was generally to the southwest (Boissonneau 1968).

Overburden materials within the survey area are predominantly the result of continental glaciation during the Lake Wisconsinan substage of the Pleistocene Epoch (Barnett et al. 1991) (Figure 5). Till of Late Wisconsinan age is the oldest surficial sediment found in the survey area. Where exposed, it often forms a thin discontinuous veneer over bedrock, consisting of coarse textured, unsorted boulder-rich sediment. Locally, the till can be compact, massive to fissile and gravelly to silty and sandy in character (Barnett et al. 1991). During deglaciation, as the ice margin retreated to the north and northeast, proglacial Lake Algonquin fronted the ice mass. Remnants of ice-marginal deposition, including glaciofluvial ice-contact deposits of sand and gravel, minor till, eskers, kames, end moraines and subaqueous fan deposits, are found in the southwestern and southeastern parts of the study area. Near the town of Thessalon, an arcuate belt of ice-marginal deposits is believed to represent a stillstand position of the Late Wisconsinan ice mass during deglaciation of the survey area (Ontario Geological Survey 1995).

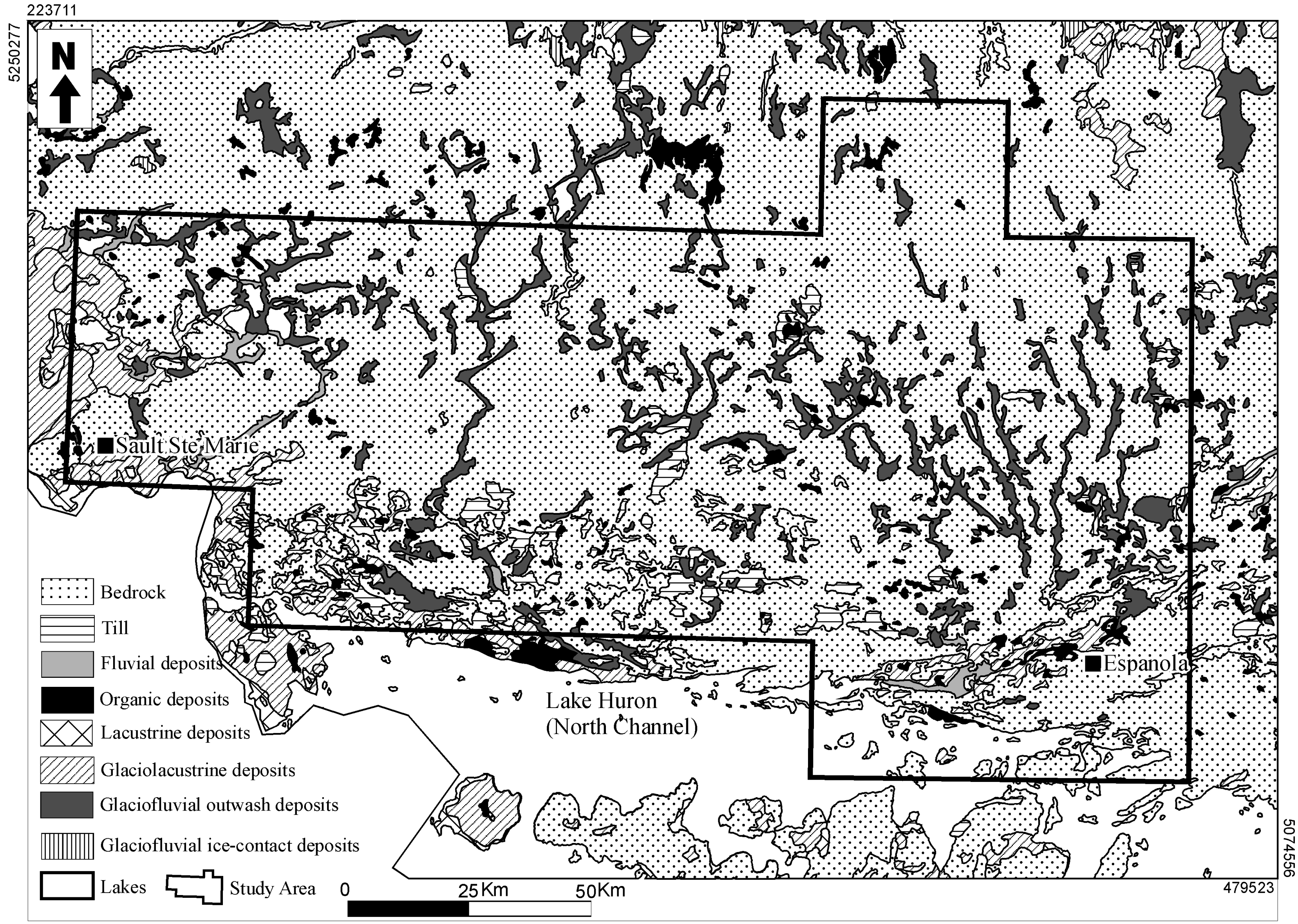

Figure 5: Quaternary geology of the study area.

A large delta with a maximum elevation of approximately 240 m asl formed east of Thessalon as part of this ice-marginal system (Ontario Geological Survey 1995). Locally, outwash deposits of sand and gravel are also found within the survey area (Barnett et al. 1991). With continued northward retreat of the ice margin accumulation of glaciolacustrine silt, clay and sand were deposited in topographically low areas in short-lived glacial lakes. Glaciolacustrine deposits of sand, gravelly sand and gravel and nearshore and beach deposits occur sporadically within the survey area (Barnett et al. 1991). Many of these deposits were laid down during progressively lower lake levels of the post-Algonquin lake stages. As water levels in the Lake Huron basin regressed to present day levels, fluvial systems deposited alluvium within parts of the study area. Thick deposits of alluvial sand and gravelly sand are found along many of the rivers within the region (Card 1976; Ontario Geological Survey 1995).

Lastly, recent swamp, lake and stream deposits as well as organic deposits of peat, muck and marl can be found throughout the survey area (Barnett et al. 1991).

Sampling Methodology

Regional overburden heavy mineral surveys provide data on the types, distribution and relative concentration of heavy minerals in a given region. The focus of the current sampling program was to provide regional information on kimberlite indicator minerals and MMSIMs® in the area. The Sault Ste. Marie–Espanola regional modern alluvium survey, covering a total area of approximately 21 000 km^2, was conducted in July, August and September 2001. A total of 720 modern alluvium samples were collected by a private vendor under contract to the OGS. Access to sample locations was achieved by truck and helicopter. Samples were collected over as broad an area as possible and the distribution of samples provides excellent regional coverage (*see* Figure 3). The position of each sample was accurately recorded with a geographic positioning system (GPS) instrument set to North American Datum (NAD) 83 and using NTS 1:50 000 scale map sheets situated in UTM zones 16 and 17. Sample numbers and locations (in UTM co-ordinates) are summarized in Appendix A (this report and MRD 121).

Modern alluvium was chosen as the primary sampling media for this study as it is commonly used as a means of gaining a fast, relatively inexpensive heavy mineral signature for individual drainage basins. The primary objective of a regional-scale survey is to isolate anomalies that may indicate the presence of mineral deposits in the catchment area or possibly beyond. The heavy mineral signature obtained from modern alluvium is a product of the erosion of both bedrock and overburden, and the subsequent transportation and deposition of the eroded material (Morris et al. 2000). Stream sediments are characterized by variable composition, grain size, sorting and colour, all of which are a function of geology, terrain and climate of the catchment area sampled by the stream (Meyer et al. 1979). It is important to note, however, that lakes within drainage basins act as sediment traps, restricting the down drainage transport of heavy minerals. Therefore, when modern alluvium sample sites were chosen for this survey, an attempt was made to maximize the length of stream section between the sample site and a lake. This maximizes the area of drainage basin sampled by the stream (Morris et al. 2000).

Points of heavy mineral deposition within streams were targeted for sample collection (Figure 6). These points include the deepest part of the channel; longitudinal and point bars; and boulder, log and vegetation traps. Material was sieved in the field using a 5 mm mesh screen with the <5 mm fraction being retained. Sample weights ranged from 10 to 20 kg. Larger samples were collected at some sites to compensate for the high percentage of fine-sand or silt material in the sediment or for the dilution of heavy mineral grains by the high percentage of organic material found in streams within the area. The <5 mm fraction of the sample was sent for heavy mineral processing to separate possible kimberlite and other indicator minerals. At each sample location, modern alluvium and surrounding terrain descriptions were recorded. Descriptions included types of exposed bedrock; boulder types; texture of overburden;

surface expression; drainage; vegetation type; material texture; clast abundance, type, size and shape; bar form or type of trap; and any additional comments. A digital photograph was taken at each site.

Standard OGS sampling methologies (Morris and Kaszycki 1997) were utilized by the vendor and OGS staff monitored adherence to those protocols.

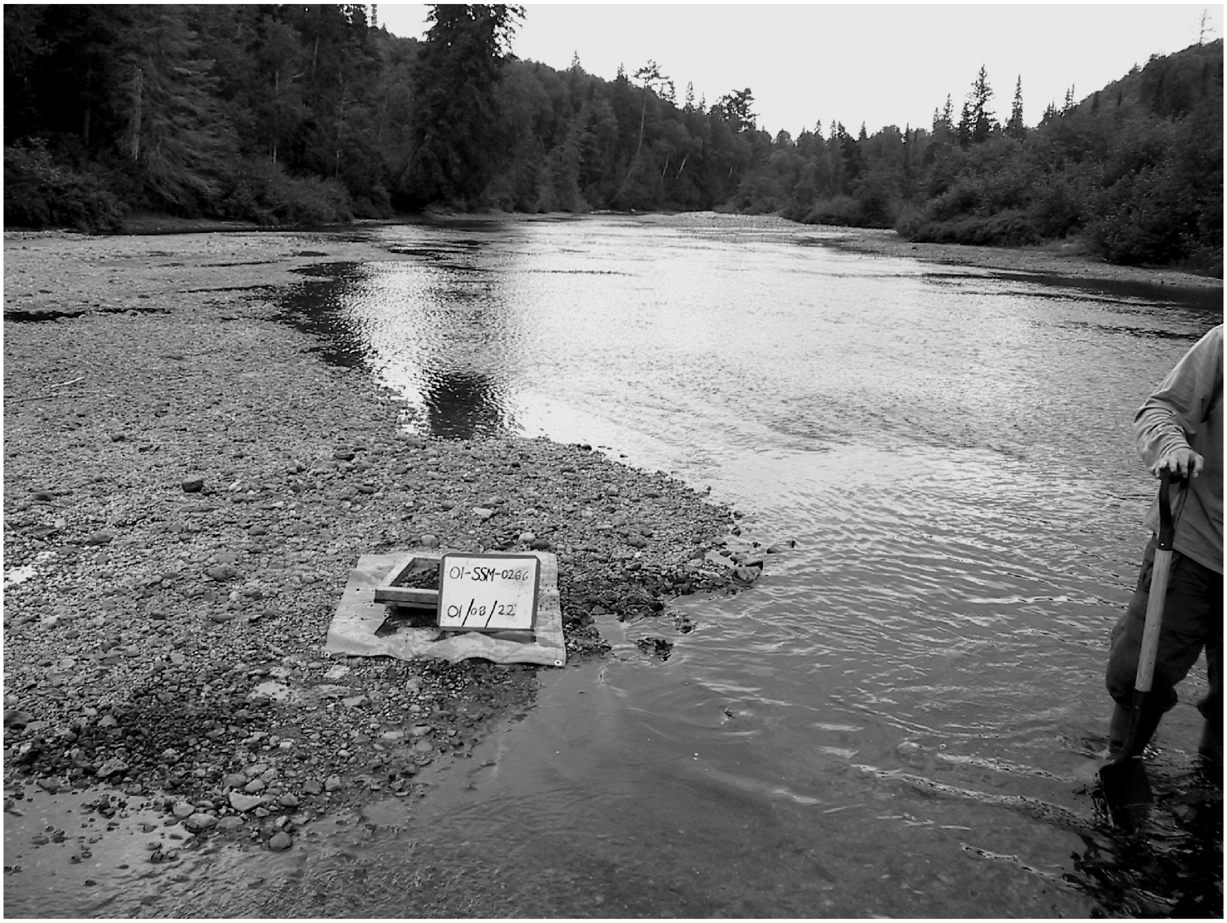

Figure 6: Photograph of sample site 266, illustrating the upstream end of a gravel-rich point bar.

Heavy Mineral Recovery and Identification

All samples were sent to a private laboratory for heavy mineral processing to isolate KIMs, MMSIMs® and gold grains. Initially, weighed samples were wet sieved at 2 mm. The >2 mm fraction was stored and the <2 mm fraction passed over a shaking table to remove light (low specific gravity) material and to obtain a preliminary gold grain count. The table concentrate was panned and a secondary gold grain count performed. Heavy liquid separation (methylene iodide, specific gravity 3.2) was used to further concentrate heavy minerals. The heavy mineral concentrate then underwent ferromagnetic separation to obtain magnetic and nonmagnetic fractions. A series of various sieving and washing processes and additional magnetic separations were carried out to obtain the final concentrates for indicator mineral picking (Figure 7). Sample processing data are presented in MRD 121 and Appendix B. The isolated KIM and MMSIM® grains were sent to the Ontario Geoscience Laboratories in Sudbury, Ontario, to determine, through microprobe analysis, the precise composition of critical indicator minerals.

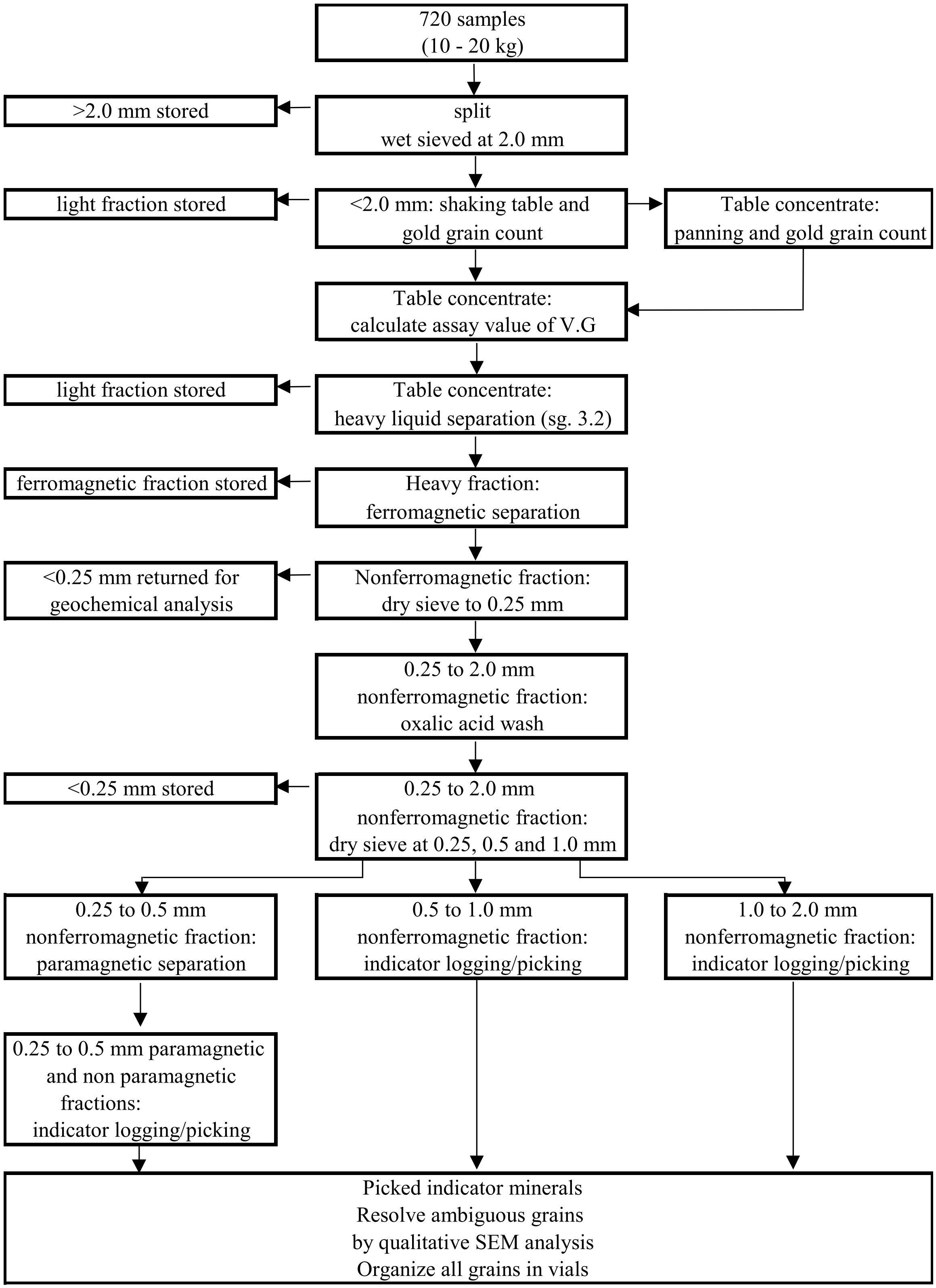

Figure 7. Heavy mineral concentrate process flowchart (*after* Averill 2001).

During the picking process, 6 types of KIMs were isolated: Cr-pyrope garnets; eclogitic garnets; Cr-poor megacrystic garnets; chromite; Cr-diopside; Mg-ilmenite and forsteritic olivine. All identified grains were sent for microprobe analysis. The picking results and remarks for these minerals are outlined in Appendixes C and D, respectively. Microprobe analyses are summarized in Appendix E and MRD 121.

A summary of recovered gold grains is listed in MRD 121, Appendix F. Grains were classified by physical appearance into pristine, modified and reshaped categories. Additionally, estimated gold concentrations in parts per billion (ppb) were calculated for each category and in total per sample.

Heavy mineral processing also recovered several types of MMSIMs®, including chalcopyrite; pyrite; molybdenite; goethite; spinel (gahnite); corundum; Mn-epidote; Cr-grossular; low Cr-diopside; red rutile; kyanite; staurolite; spessartine; uvarovite; sillimanite; orthopyroxene; fayalite; forsteritic olivine; and chromite. Results are summarized in Appendixes I and H and MRD 121. Only spinel, rutile, corundum, gahnite, low Cr-diopside, staurolite and chromite grains were sent for microprobe analysis.

Estimation of Grain Numbers and Data Normalization

For samples that contain large numbers of indicator minerals, it is neither time efficient nor cost effective to precisely count the absolute number of grains or pick the total number of grains of an abundant mineral present in that sample. Therefore, a representative subset of the grains was picked and an estimate made of the number of grains present. After isolated grains were analyzed by microprobe and their compositions confirmed, picking estimates were normalized based on the number of grains verified to be kimberlitic. For example, sample 01SSM-013 was estimated to contain 100 chromites where 40 were picked and sent for microprobe analysis. Analysis revealed that 39 of the 40 chromites were, in fact, kimberlitic. Therefore, after normalization, the sample was considered to contain 98 chromites.

Normalization is not recommended except for unusual circumstances where abnormally high numbers of indicator minerals were present and only a select number of grains were picked from an estimated total number of grains (i.e., picked estimate normalization).

All normalized data and sample calculations are listed in Appendix J (this report and MRD 121).

Geochemical Analysis, Results and Interpretation

KIMBERLITE INDICATOR MINERALS

Despite the number of potential bedrock hosts for natural diamond occurrences, kimberlite has historically been regarded as the only significant primary host rock for diamonds (Helmstaedt 1993). The volcanic host rocks for diamonds, however, merely represent the agents to transport diamonds from the upper mantle to the surface. Kimberlite magmas must form at extreme depths (in excess of 150 km) in order to tap the diamondiferous portions of the subcratonic lithosphere (Ontario Geological Survey 2001b). The proven diamond source rocks are various types of peridotite and certain high-pressure eclogites. Three types of peridotitic paragenesis are evident and are listed in order of relative importance with respect to diamond potential: garnet harzburgite; chromite harzburgite; and garnet lherzolite (Gurney 1985). The transportation and subsequent disaggregation of these source rocks by kimberlite during the eruption process is the mechanism by which both diamonds and associated indicator minerals become liberated from their mantle host rocks.

The indicator mineral approach to kimberlite exploration relies on the recognition of distinctive mineral suites that are associated with potentially diamondiferous source rocks. Since these minerals are far more abundant than coexisting diamonds in the mantle environment and since kimberlite weathers quickly in the secondary environment, exploration programs focus on the recovery of indicator minerals rather than diamonds. The compositions of certain key indicator minerals, namely garnet, chromite, chrome diopside, olivine and ilmenite, have been used in diamond exploration to permit an assessment of diamond potential (Fipke et al. 1995).

Garnet

Garnet grains analyzed in this study include Cr-pyrope, pyrope, almandine, andradite, spessartine and grossular. Garnets in kimberlites can be derived from various sources including peridotites, eclogites, Cr-poor megacrysts and crustal rocks. Garnets of peridotite origin are typically Cr-rich pyropes and can originate from 5 different types of peridotite, the 2 most important being harzburgite and lherzolite. In the case of diamonds that are harzburgitic in origin, the Cr-pyrope that occurs as inclusions in diamonds are Ca-depleted and Cr-enriched (Gurney 1985). These types of garnets have been termed "G10" garnets (Dawson and Stephens 1975). Eclogitic and megacrystic garnets are also of primary interest as they are indicative of upper mantle derived material (Allan 2001). Megacrysts are thought to be phenocrysts in the kimberlite that formed at depths of 150 to 200 km. Therefore, they have no genetic connection with diamonds, which are xenocrysts in the kimberlite, but their presence in a pipe helps in ascertaining if that kimberlite has sampled a sufficiently thick lithospheric mantle keel to be potentially diamondiferous (Schulze 1999; Fipke et al. 1995).

Garnets recovered from modern alluvium sampling in this study were classified on the basis of a combination of geochemical parameters including % weight of Cr_2O_3, TiO_2, Na_2O, FeO, CaO and MnO. Peridotitic garnets are distinguished from eclogitic and crustal garnets in terms of Cr_2O_3 wt %. Eclogitic garnets are typically Cr-poor, whereas harzburgite and lherzolite garnets are Cr-rich, in general, displaying concentrations of Cr_2O_3 greater than 2%. These can be further subdivided into G9 and G10 classifications based on CaO concentration. On a CaO/Cr_2O_3 plot, 85% of diamond inclusion garnets fall on the Ca-enriched side of a diagonal line that parallels the lherzolite trend. This 'diamond in' line (based on studies of South African diamondiferous kimberlites) separates G10 (Ca-depleted) garnets to the left and G9 garnets to the right. Given that garnet harzburgite has greater diamond potential than garnet lherzolite, G10 garnets with compositions that scatter well across the sub-calcic field are the most important garnet indicators recovered in an exploration program (Gurney and Zweistra 1995). Very high diamond potential is indicated by G10s that are <2.5 wt % CaO and >6 wt % Cr_2O_3 (Fipke et al. 1995). Additionally, peridotitic garnets can be classified according to a J-factor scale (Lee 1993). On a CaO/Cr_2O_3 plot, the areas defining G9 and G10 garnets have been subdivided into 10 zones that rate diamond potential from J1 to J10 where J10 represents a highly Cr-enriched, Ca-depleted G10 garnet.

Eclogitic garnets have Cr_2O_3 concentrations <2 wt % and can be isolated from crustal garnets and Cr-poor megacrysts on the basis of FeO, MnO and TiO_2 content. The first step is to screen out crustal garnets on the basis of FeO concentration where the FeO content of eclogitic garnets is <22 wt %. Care must be taken to exclude spessartine and grossular garnets from the data, as they will tend to plot with the eclogites at this stage. These grains can be screened on the basis of MnO (typically >1%) and CaO (typically >15%) (Ontario Geological Survey 2001b). After eclogitic garnets have been isolated, the classification of Group I and Group II eclogites and compositional overlap with megacryst garnets can be carried out using a plot of Na_2O versus TiO_2 (Schulze 1999). Generally, only Group I eclogites are considered diamond bearing. Garnets from these eclogites have a content of Na_2O > 0.07 wt %, indicating equilibrium at high pressures compatible with diamond stability (Schulze 1999; Fipke et al. 1995). Group II eclogites are Ti- and Na-depleted. Megacrystic garnets also have Na_2O concentrations of <0.07 wt %, however, on this particular plot, they are also TiO_2 enriched, with concentrations of TiO_2 >0.4 wt % (Schulze 1999).

A total of 186 garnets were recovered from heavy mineral processing and sent for microprobe analysis. Precise geochemical classification determined the following distinctions: 1 G10 pyrope; 57 G9 pyropes; 29 Group II eclogitic garnets (ECLs); 15 Cr-poor megacrysts; 56 crustal garnets; 6 grossular garnets; 1 uvarovite; 9 andradites; and 12 almandines. Figure 8 shows the distribution of all compositional data on the lherzolite/harzburgite discriminant plot. A J-factor classification of all garnets (Figure 9) shows that the G10 grain plots in the J2 field.

Chemical compositions of different garnet types are compared on the graphs illustrating the classification process: G9 and megacrystic garnets on a Cr_2O_3/TiO_2 plot (Figure 10); eclogitic and crustal garnets on a FeO/ TiO_2 plot (Figure 11); eclogitic and crustal garnets on a FeO/MnO plot (Figure 12); Group I and Group II eclogitic garnets and megacrysts on a Na_2O/TiO_2 plot (Figure 13); and eclogitic and megacrystic garnets on a Na_2O/CaO plot (Figure 14).

The presence of 29 Group II eclogitic garnets suggests that some of the eclogite source rocks sampled may have been diamond bearing. The presence of 1 G10 garnet suggests that the peridotite source was potentially diamond bearing. Based upon the number of G9 garnets recovered, it can be inferred, however, that any kimberlites or related rocks that may exist in the region sampled more mantle-derived peridotite than eclogite.

The regional occurrences of G10s, G9s, Group II ECLs and Cr-poor megacrysts are summarized on Figures 15, 16, 17 and 18, respectively. Very few garnet grains were recovered over the survey area and grains that were recovered are evenly distributed throughout the region. As illustrated in Figure 15, 1 G10 grain (SSM-117) was recovered approximately 75 km east of Sault Ste. Marie. The G9 grains are much more numerous and are distributed evenly across the area. The anomalous sites yield 2 and 3 grains per site. Anomalous Group II ECLs are rare within the study area. However, 4 anomalies were identified, SSM-154, 129, 213 and 454 yielding 2 and 3 grains each (*see* Figure 17). Despite the low numbers of Cr-poor megacrystic garnets, they are evenly distributed throughout the survey area (*see* Figure 18).

Chromites

Chromite represents one compositional end-member in the spinel group of minerals and occurs widely in mafic to ultramafic rocks. Kimberlitic chromite grains allow the determination of the amount of chromite harzburgite sampled and disaggregated by the kimberlite (Fipke et al. 1995). Evidence summarized by Griffin et al. (1994) suggests that Cr_2O_3 increases with temperature and pressure in chromite. Thus, chromite with high Cr_2O_3 is most likely to have originated at depth and can be interpreted to be of kimberlitic origin. Therefore, Cr is a significant indicator of diamond potential.

Chromites have distinct compositional characteristics that can be used in exploration programs to determine diamond potential of an area. Chromites plotting in the diamond inclusion field generally contain concentrations of MgO >10 wt% and Cr_2O_3 >61 wt% (Figure 19). Finding such a chromite in surficial material or a rock sample is just as significant as finding a G10 Cr-pyrope garnet (Stephenson et al. 1999).

Fipke et al. (1995) proposed that the TiO_2 and Cr_2O_3 concentrations of chromites can be used to isolate kimberlitic and lamproitic chromites from other sources. In general, the largest population of chromites recovered during modern alluvium surveys is characterized by Ti-poor compositions (likely from a combination of crustal and mantle sources); these plot in the field of compositional overlap with other sources (Ontario Geological Survey 2001b). However, chromites that plot in this overlap field may be considered as possible kimberlite indicator minerals.

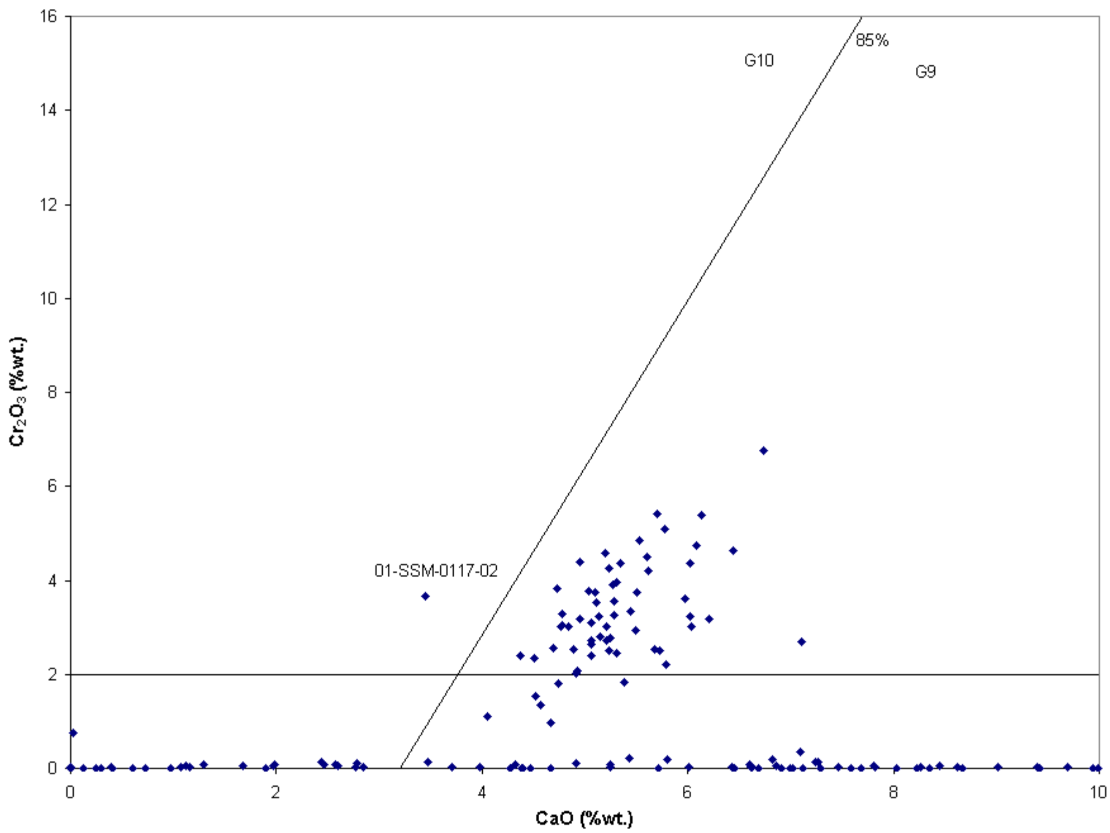

Figure 8. CaO/Cr_2O_3 plot of all garnets recovered from the study area (*after* Dawson and Stephens 1975).

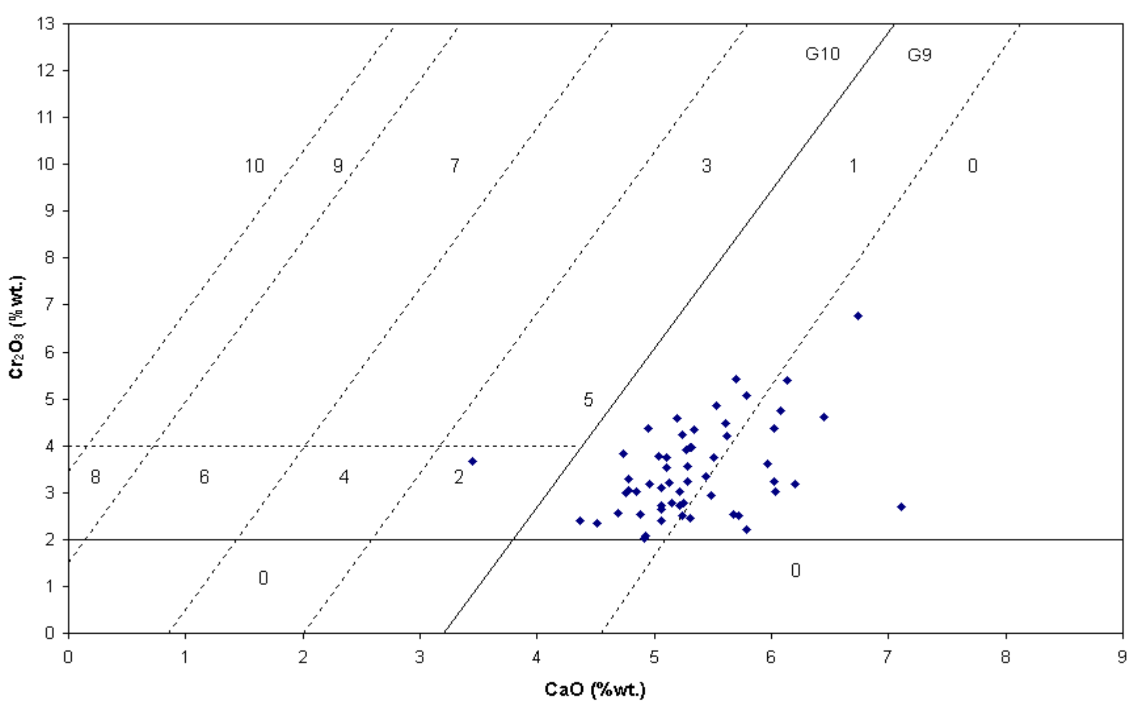

Figure 9. J-factor classification of all garnets (*after* Lee 1993).

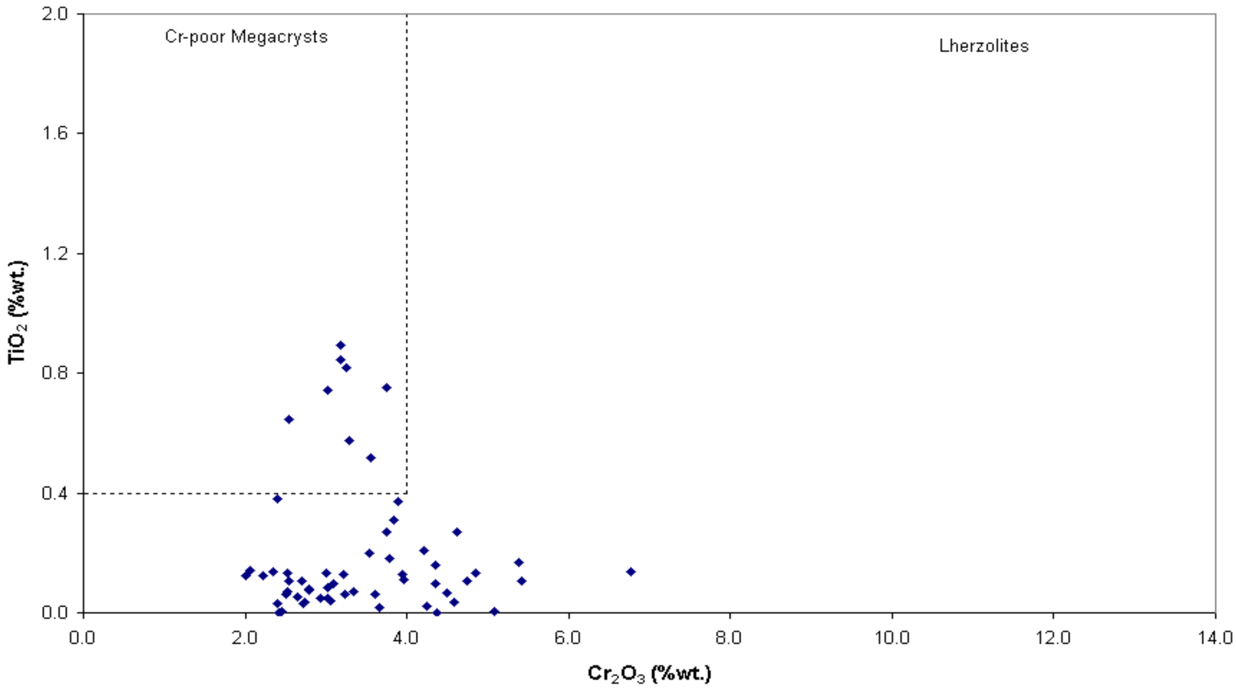

Figure 10. Cr_2O_3/TiO_2 plot showing lherzolitic garnets and Cr-poor megacrysts from the study area (*after* Schulze 1999).

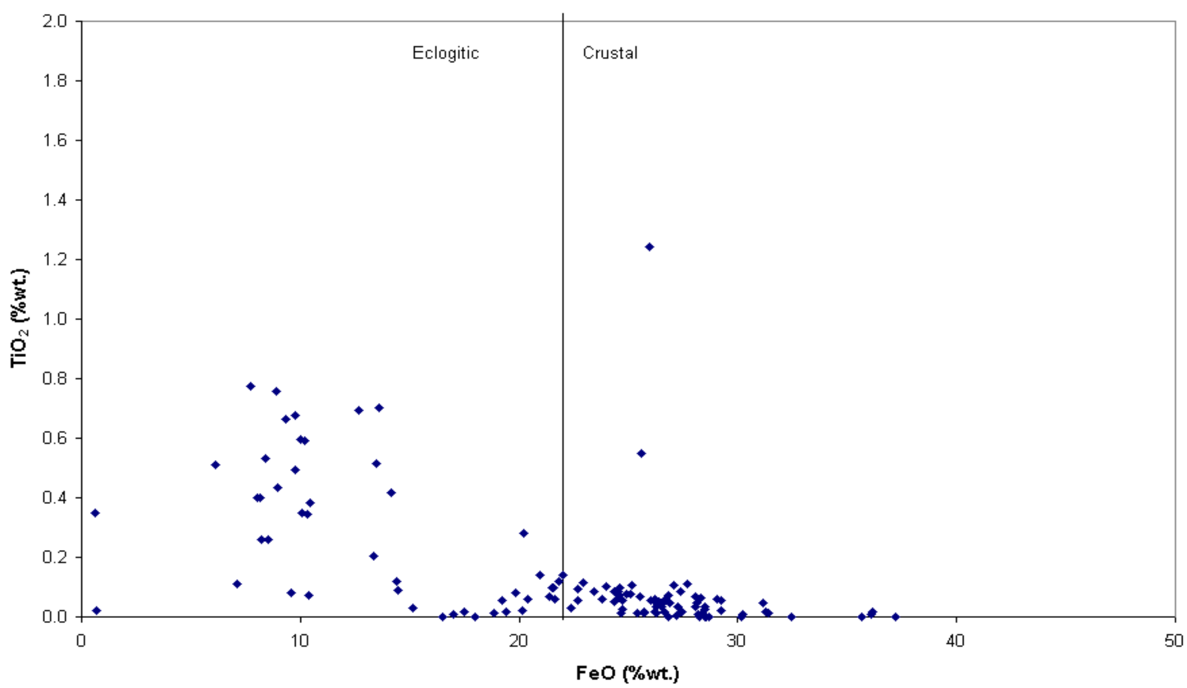

Figure 11. FeO/TiO_2 plot showing eclogitic and crustal garnets from the study area (*after* Schulze 1999).

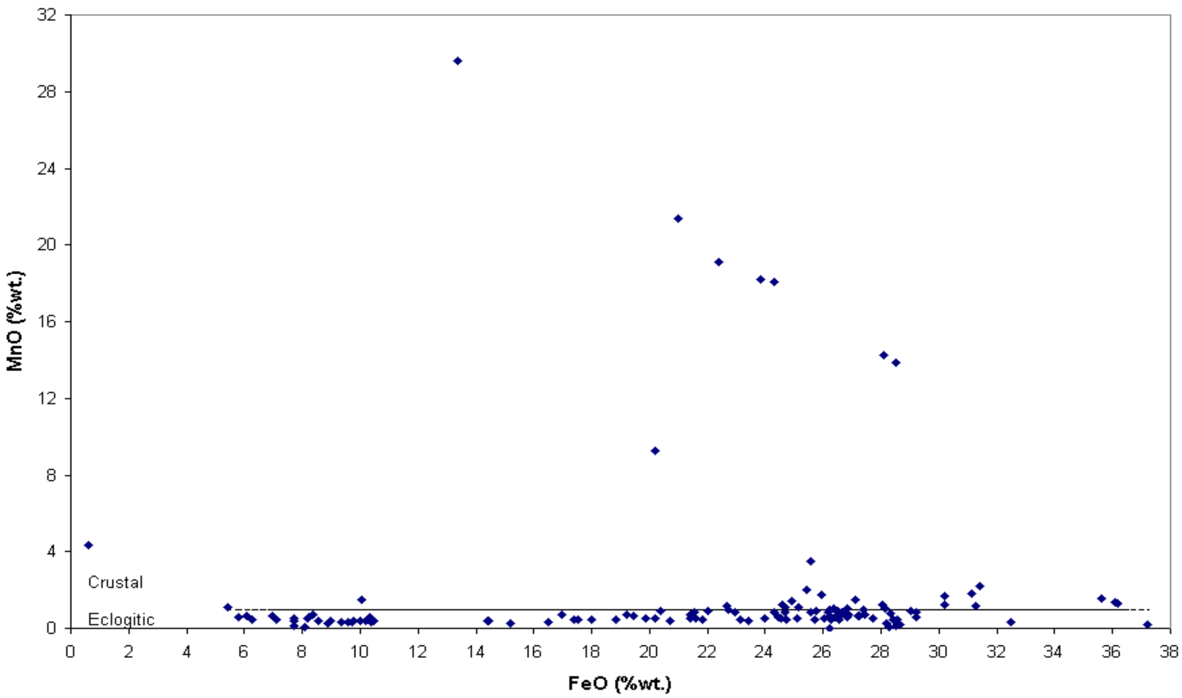

Figure 12. FeO/MnO plot showing eclogitic and crustal garnets from the study area.

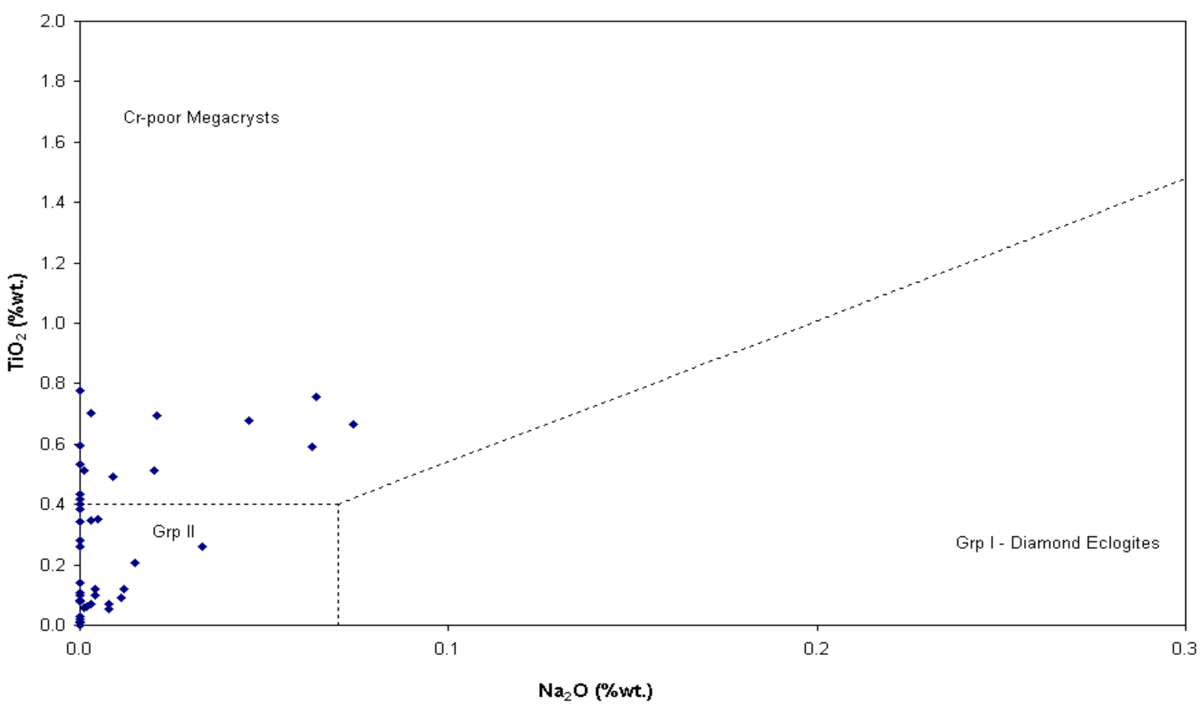

Figure 13. Na_2O/TiO_2 plot showing Group I and II eclogitic garnets and Cr-poor megacrystic garnets from the study area (*after* Schulze 1999).

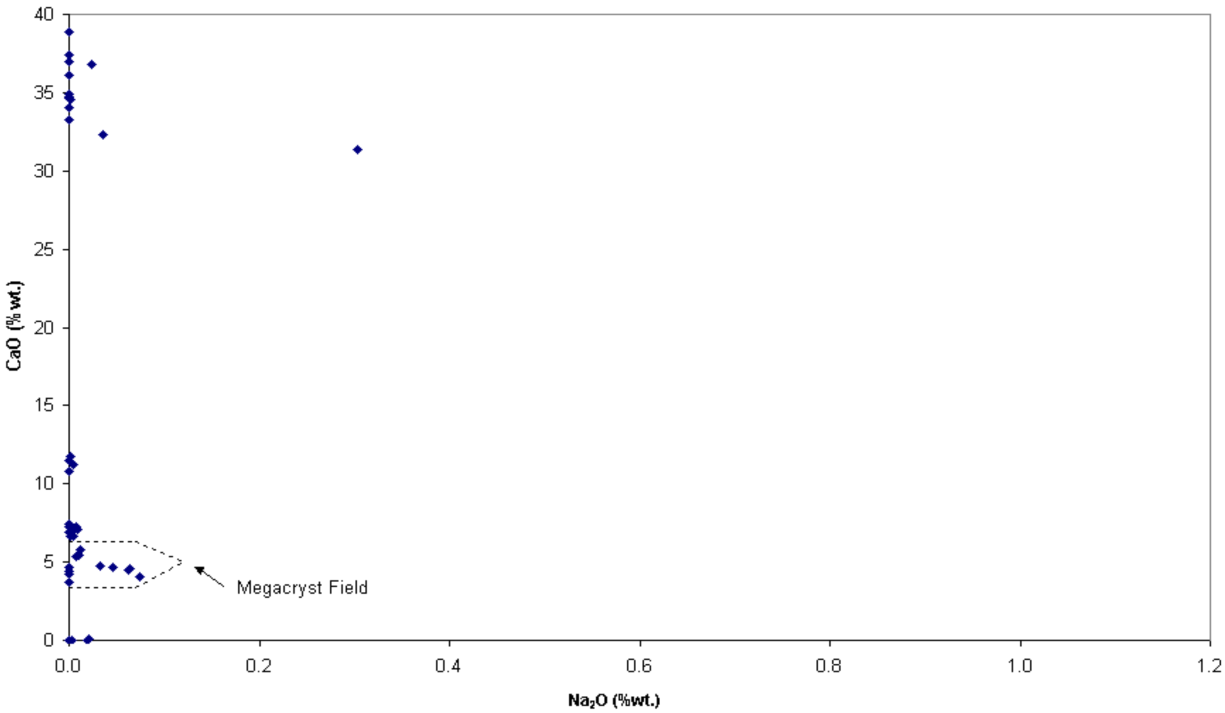

Figure 14. Na_2O/CaO plot of garnets from the study area and the megacrystic field (*after* Fipke et al. 1995).

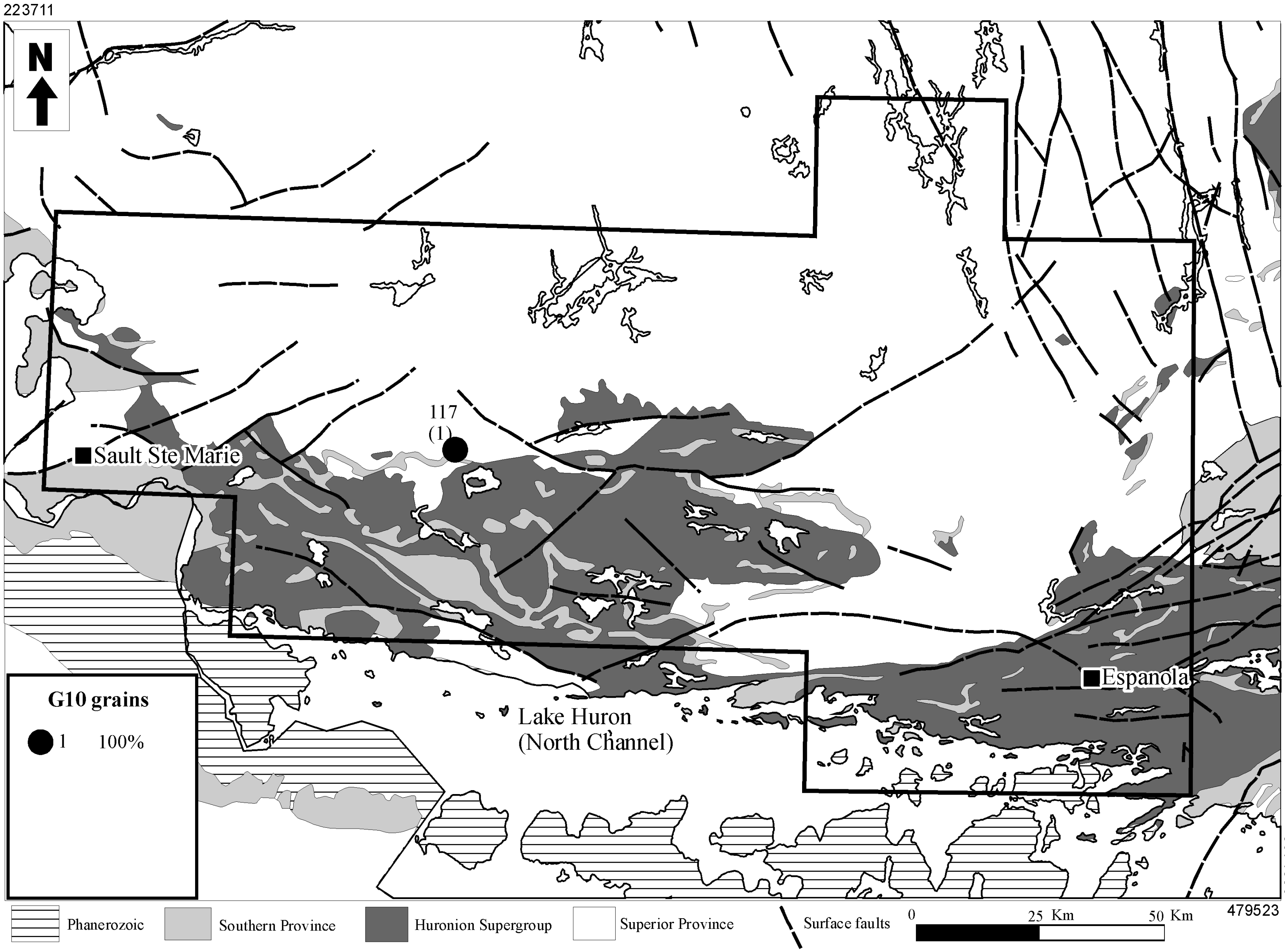

Figure 15: Location of the G10 garnet grain. Anomalous sites are labelled with the corresponding number of grains shown in brackets.

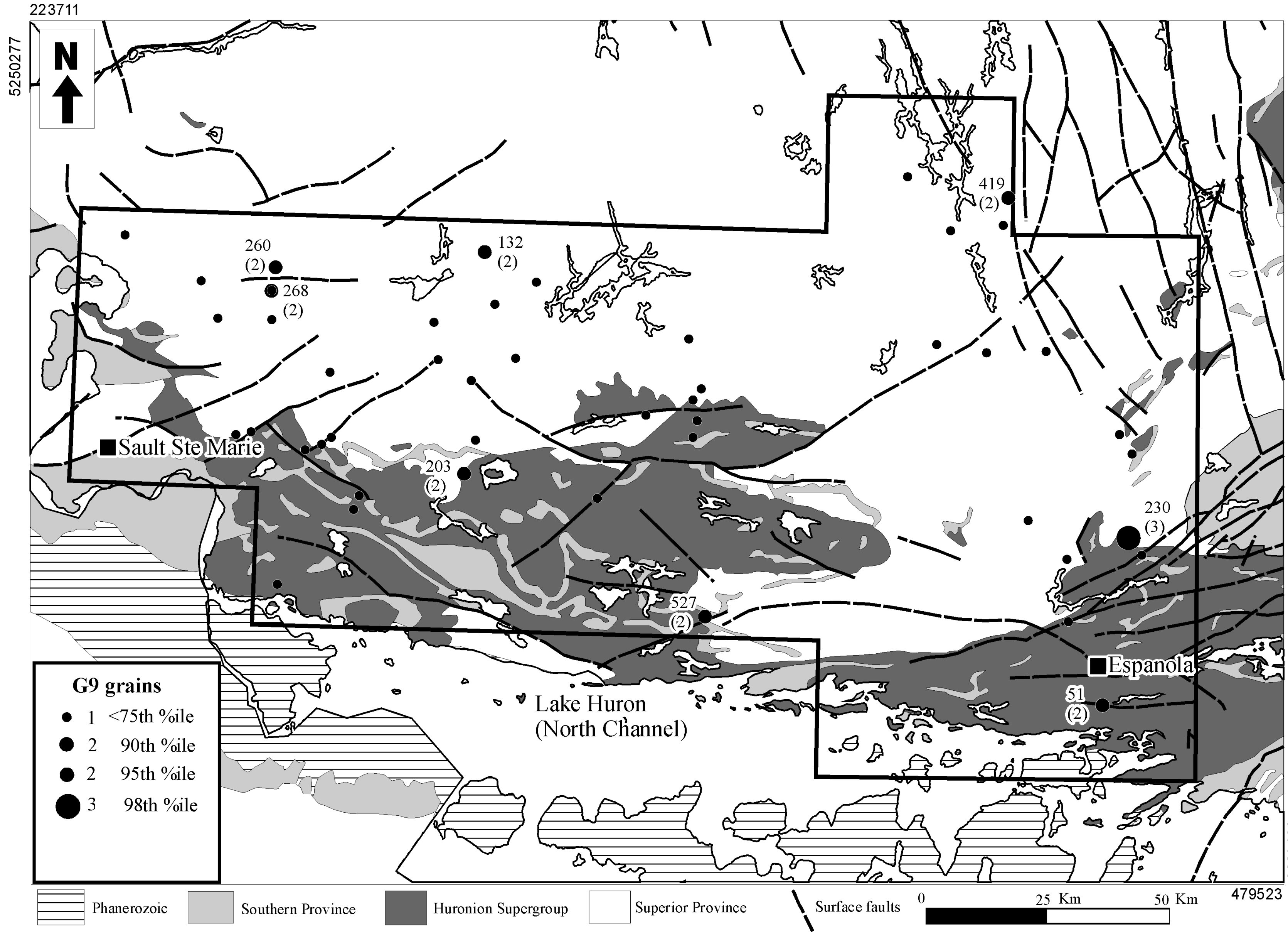

Figure 16: Regional distribution of G9 garnet grains. Anomalous sites are labelled with the corresponding number of grains shown in brackets.

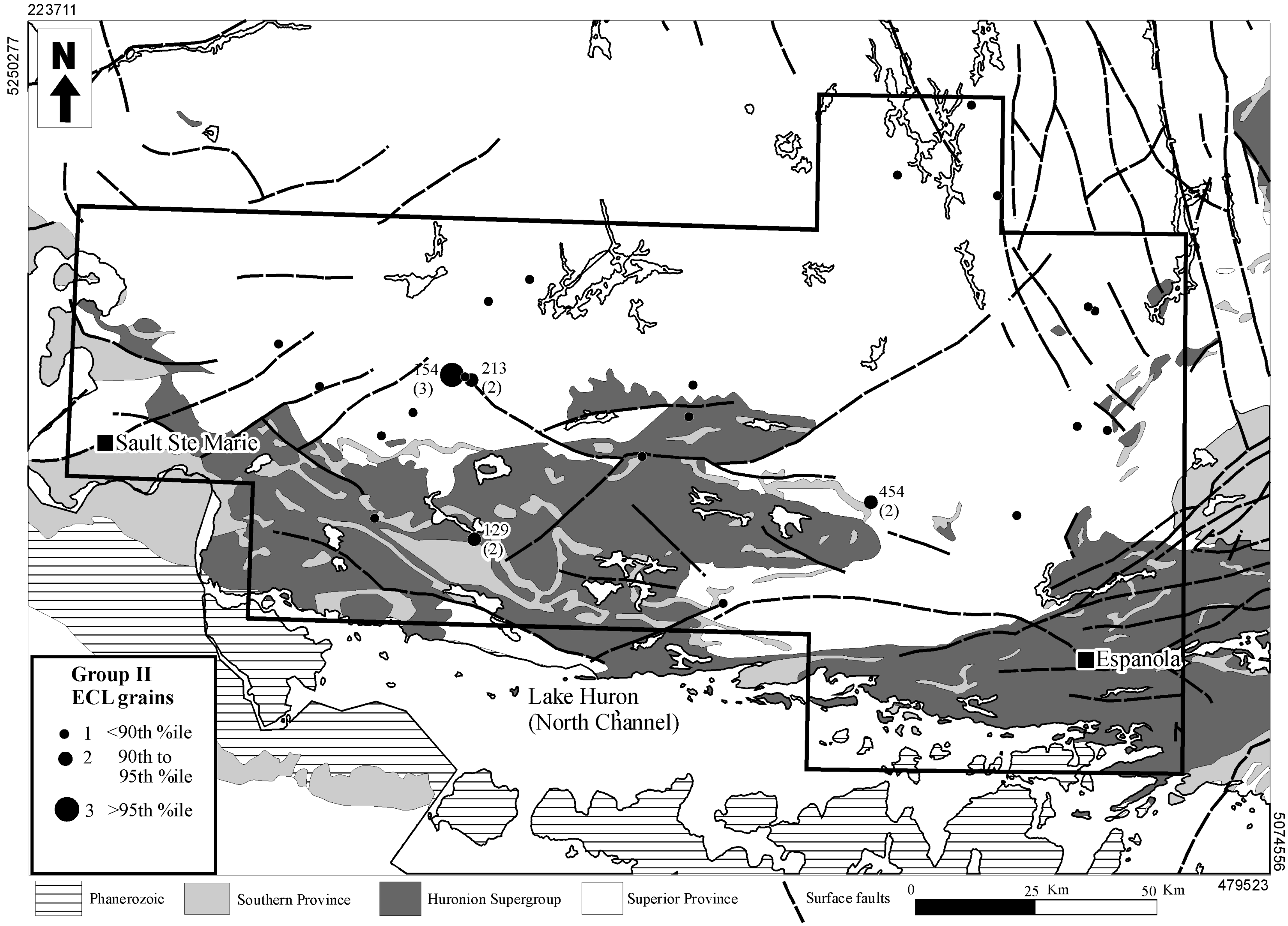

Figure 17: Regional distribution of Group II eclogitic garnet grains. Anomalous sites are labelled with the corresponding number of grains shown in brackets.

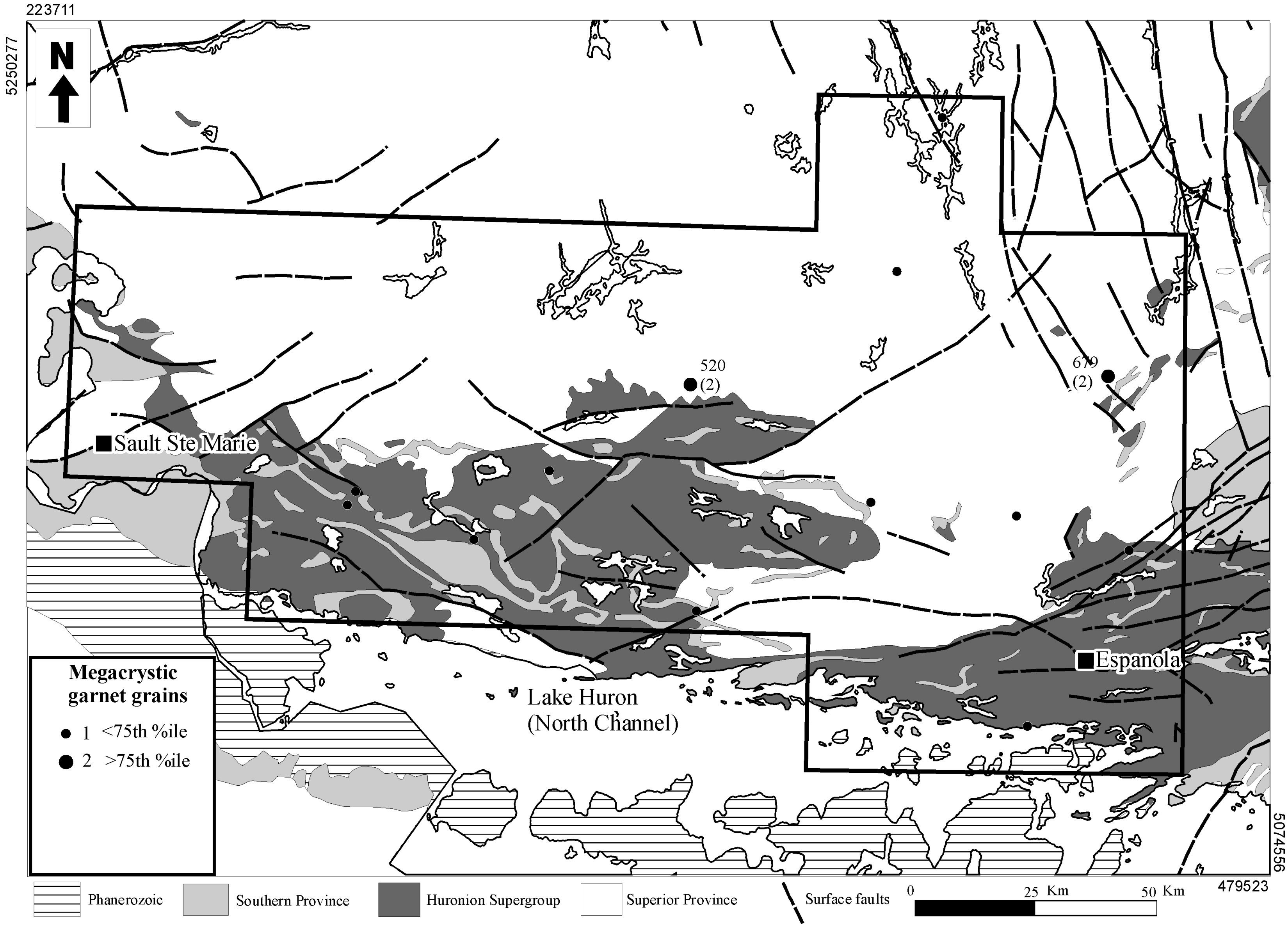

Figure 18: Regional distribution of Cr-poor megacrystic garnet grains. Anomalous sites are labelled with the corresponding number of grains shown in brackets.

A total of 4310 chromites were recovered by heavy mineral processing and sent for microprobe analysis. Precise geochemical classification resulted in the following distinctions: 17 diamond inclusion/intergrowth chromites; 140 considered to be unique to the kimberlites and lamproites; 4012 of possible kimberlitic affinity (overlap field); and 141 non-kimberlitic/lamproitic. Figure 19 shows the distribution of the compositional data on a MgO versus Cr_2O_3 plot. Figure 20 illustrates the distribution of the data on a TiO_2 versus Cr_2O_3 binary plot. Samples 316-009, 601-001 and 107-017 plot just below the diamond inclusion field on the MgO versus Cr_2O_3 plot and within the diamond inclusion field on the TiO_2 versus Cr_2O_3 plot and are therefore considered diamond inclusion chromites. The 4012 chromites that fall within the overlap field are considered as possible KIMs.

If the picked versus estimated grain counts for individual samples is taken into account, the estimated total number of recovered chromite grains increases from 4310 to 6046. The number of possible KIM chromites increases to 5748 grains (6046 recovered grains minus the 140 unique field kimberlitic chromite grains, 17 diamond inclusion chromite grains and 141 non-kimberlitic chromite grains). The regional distribution of diamond inclusion chromites, KIM chromites and possible KIM chromites (those of possible kimberlitic affinity (overlap field)) based on picked and estimated data are shown in Figures 21, 22 and 23, respectively.

Information on samples in which the number of grains was estimated is summarized in Appendix J. Figure 21 shows the grain distribution for the diamond inclusion and intergrowth field chromite grains. The grains fall almost entirely within the western half of the survey area. All sites contain 1 grain with the exception of site SSM-316 which has 2 grains. Figures 22 and 23 represent the total chromite KIM grains and the possible chromite KIM grains (including those chromites that plot in the overlap field in Figure 20). The chromite KIM grains (*see* Figure 22) are scattered evenly across the western half of the survey area and clustered in the northeast portion of the survey area. When the total possible chromite KIMs are plotted (*see* Figure 23), the anomalous sites follow the same trends as the chromite KIMs. The cluster of anomalous chromite KIM sites found in the northeastern portion of the survey area (SSM-397, 423, 442, 536, 562, 579, 622, 691, 705, 714, 718 and 724) contain as many as 246 grains at one site. The large number of chromite anomalies found in the northeastern portion of the survey area could be due, in part, to the fact that they are located along and within a highly faulted region. The large numbers of chromite KIMs recovered throughout the entire area could be due to the fact that chromite is the most resistant KIM species. As well, these grains could have undergone a second cycle of reworking and transport dispersing them from source to the west-southwest (i.e., toward Lake Superior and the North Channel of Lake Huron). Another observation is that many of the possible chromite KIMs coincide with anomalous gold grain sites. Further discussion on this observation is found in “Gold Grains” in this report.

Cr-Diopside

Cr-diopside is not a definitive kimberlite indicator since it occurs in both kimberlite and other basic and ultrabasic rocks. It is, however, one of the major mineral components of the lherzolite peridotite assemblage and since lherzolites are not a major sources of diamonds, Cr-diopside can only be considered useful as a KIM and not as a diamond indicator mineral (Ontario Geological Survey 2001a). Cr-diopside associated with lherzolitic rock is commonly considered to have high chrome values (>1.5 wt %) (McClenaghan et al. 1999). Morris et al. (2002) developed a ternary plot classification of Cr-diopsides, which has proven to be an excellent way of discriminating between Cr-diopsides derived from kimberlite and other sources. A ternary plot of Cr_2O_3–Al_2O_3–Na_2O has been used to define Cr-diopside derived from a deep mantle source as opposed to a shallow crustal source. For kimberlitic Cr-diopsides, the Cr values range from 1 to 40 molar wt % and Al_2O_3 ranges from 2 to 50 molar wt %. Na_2O ranges are related to Cr content. For example, when Cr_2O_3 is between 1 and 20 molar wt %, Na values are from 29 to 48 molar wt %, and when Cr_2O_3 >20 molar wt %, the range of Na increases from 19 to 58 molar wt %, but does not exceed 65 molar wt% (Allan 2001).

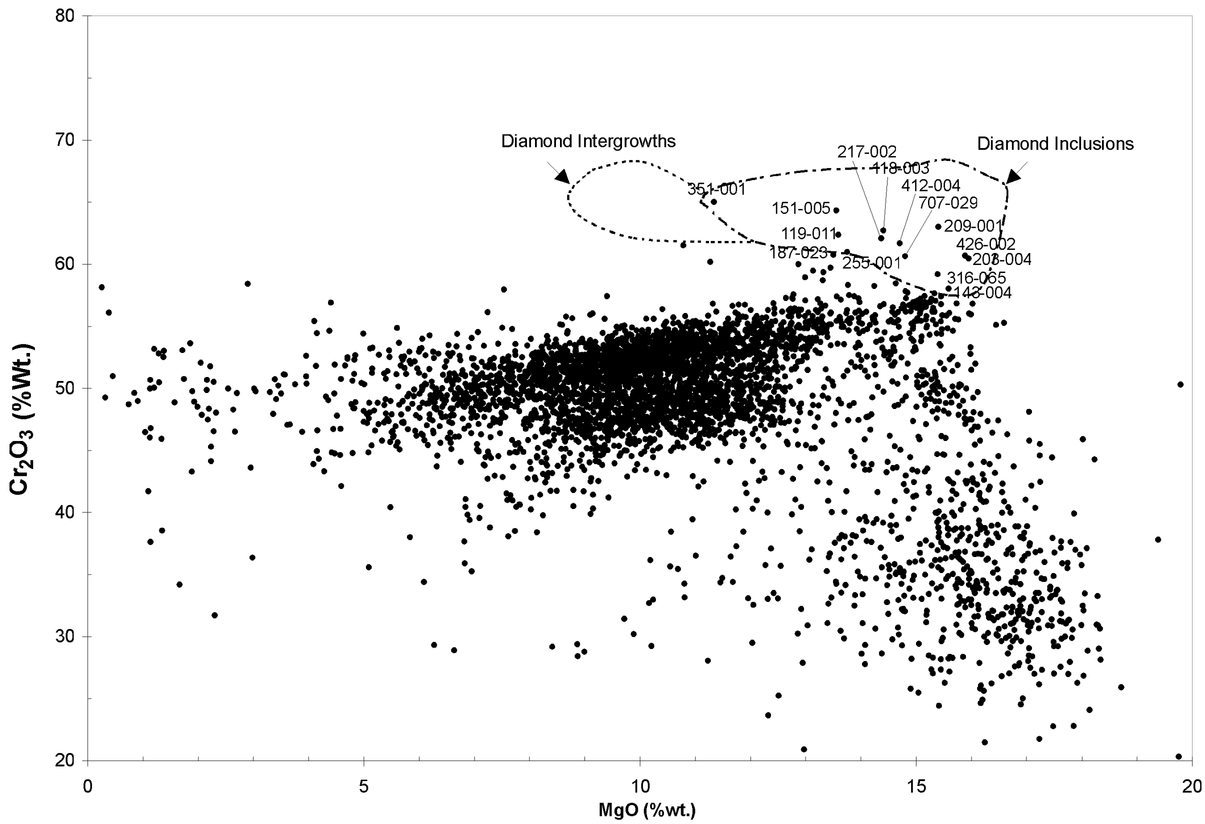

Figure 19. MgO/Cr_2O_3 plot of all chromite grains recovered from the study area (*after* Fipke et al. 1995).

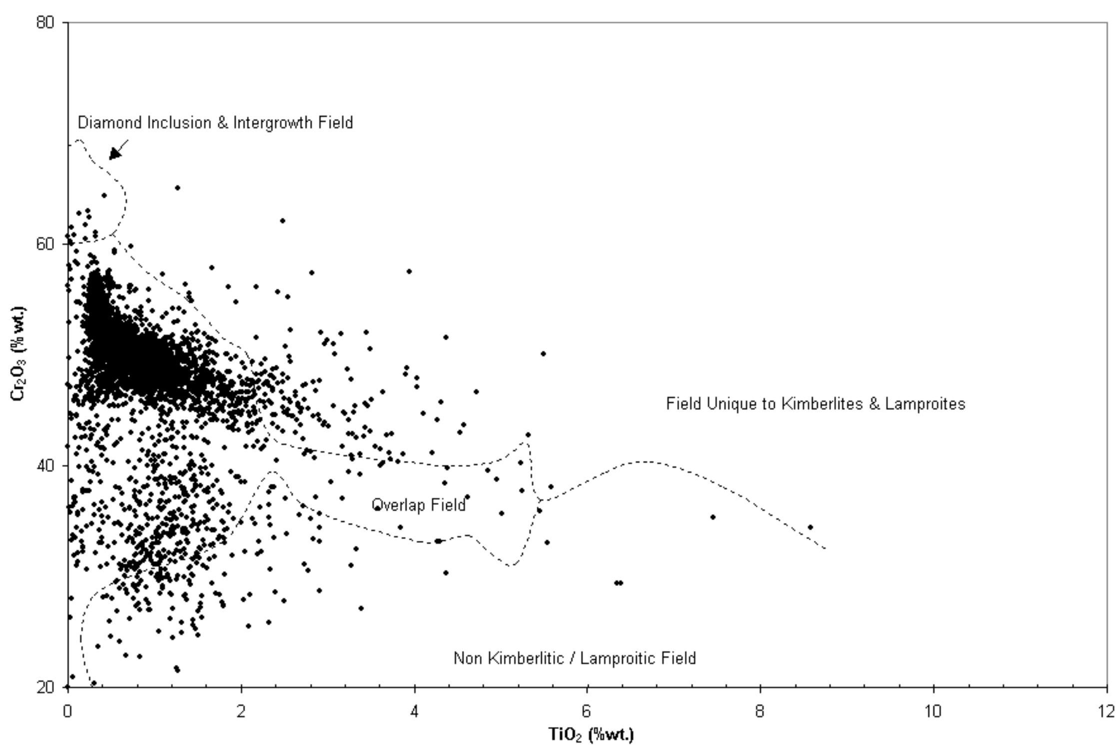

Figure 20. TiO_2/Cr_2O_3 plot of all chromite grains recovered from the study area (*after* Fipke et al. 1995).

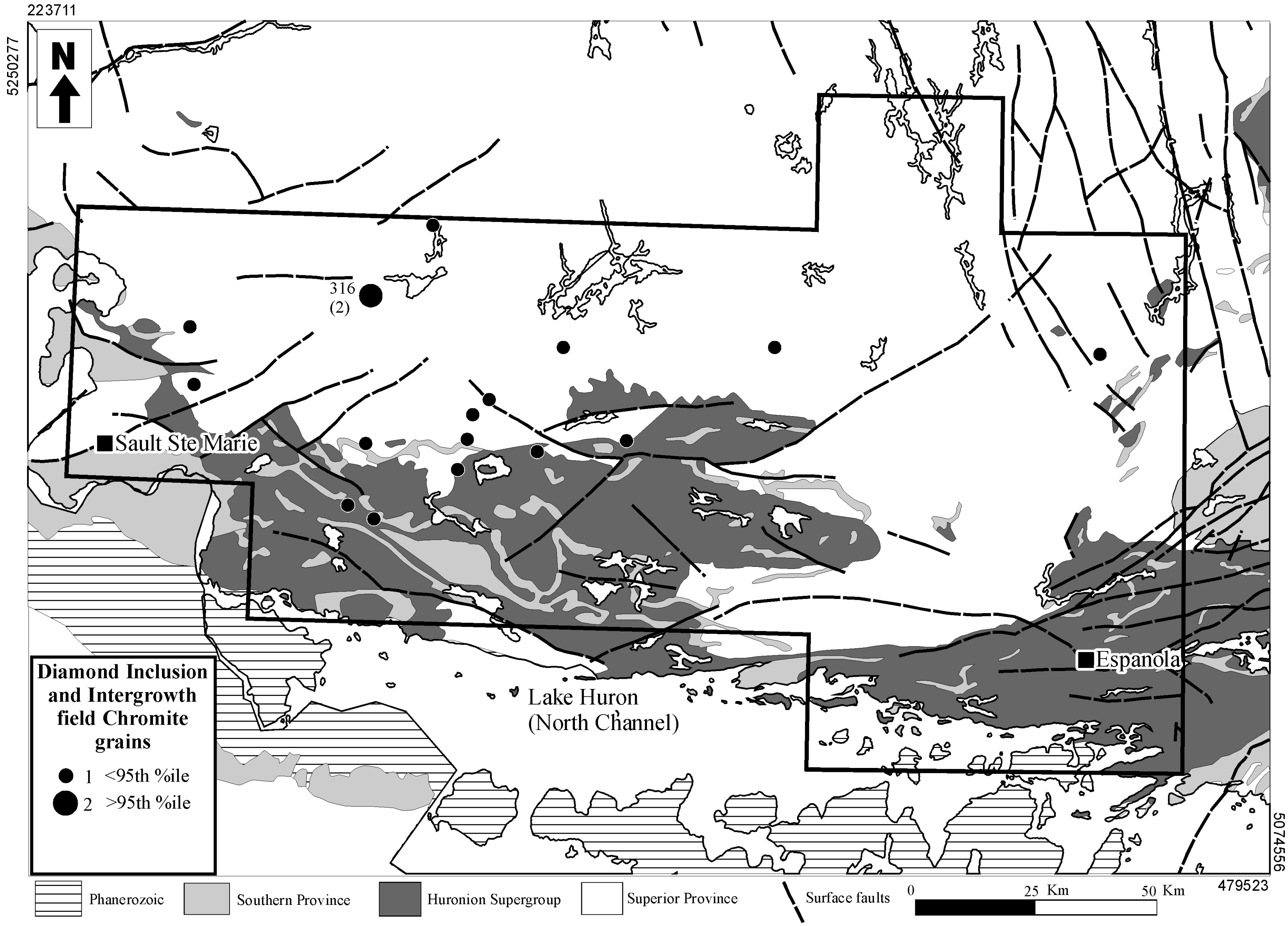

Figure 21: Regional distribution of diamond inclusion and intergrowth field chromite grains. Anomalous sites are labelled with the corresponding number of grains shown in brackets.

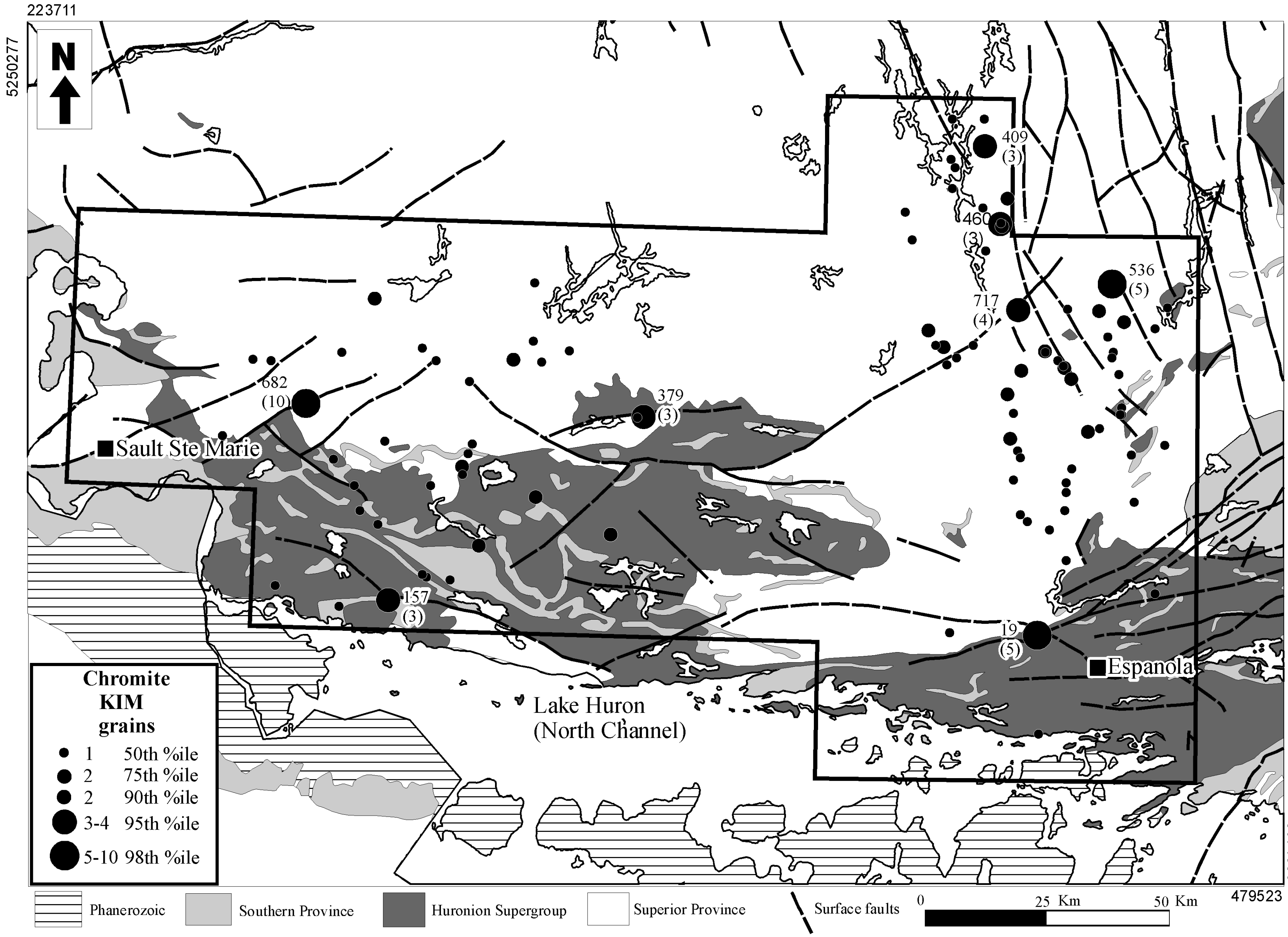

Figure 22: Regional distribution of chromite KIM grains. Anomalous sites are labelled with the corresponding number of grains shown in brackets.

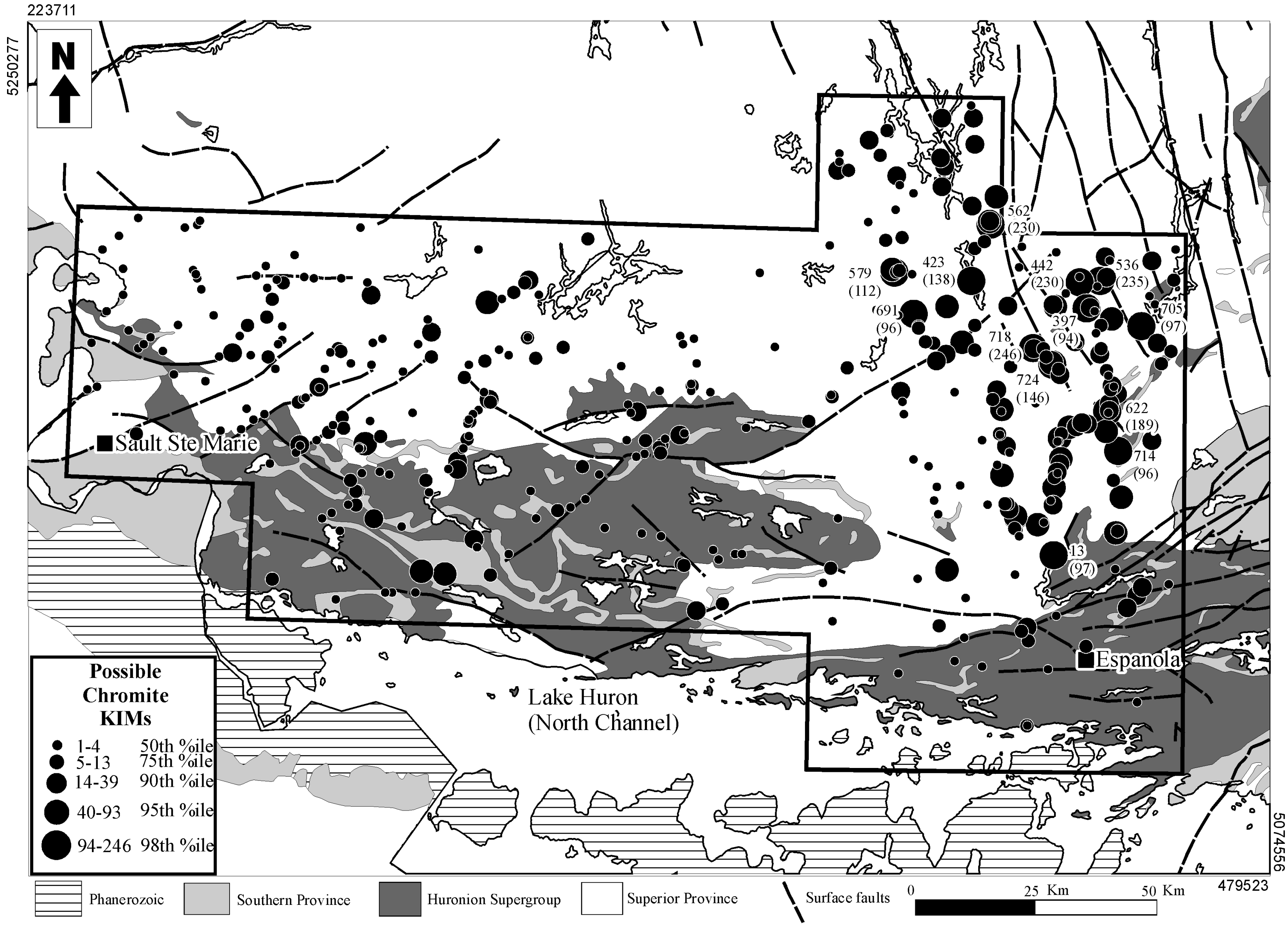

Figure 23: Regional distribution of possible chromite KIM grains (includes overlap field chromites). Anomalous sites are labelled with the corresponding number of grains shown in brackets.

A total of 3908 chrome diopsides were identified by microprobe analysis. The ternary plot of Cr_2O_3–Al_2O_3–Na_2O indicates that 334 grains could be classified as kimberlitic (Figure 24). Of these 334 kimberlitic Cr-diopsides, 6 were high Cr-diopside KIMs (Cr_2O_3 >1.5 wt %). Of the remaining 3574 non-kimberlitic clinopyroxenes, 3065 contain between 0.5 and 1.5 wt % Cr_2O_3, 322 are high Cr-diopsides (Cr_2O_3 >1.5 wt %) and 187 are low Cr-diopsides (Cr_2O_3 <0.5 wt %). In 11 samples, however, the number of chrome diopsides were estimated based on a picked subset, bringing the total count of chrome diopsides to 3934 grains and the total count of KIM chrome diopsides to 360 grains. The grain data is summarized in Appendix J and it is the estimated values that have been used in the proportional dot plot figures.

The distribution of kimberlitic Cr-diopsides in the survey area is illustrated in Figure 25. The KIM Cr-diopside grains that fall within the 50th and 75th percentiles are scattered throughout the area, however, those grains that fall within the 90th, 95th and 98th percentiles fall within the western part of the area. There are 4 anomalous sites, SSM-176, 227, 585 and 682, each containing at least 7 Cr-diopside KIM grains. Because of its susceptibility to weathering, the presence of Cr-diopside can be used as a measure of proximity to source. This mineral disappears quickly once transported from source. Therefore, its recovery in a sample suggests local derivation.

An additional classification of kimberlitic Cr-diopsides was also used to examine the data. Figure 26 shows data on a binary plot of atomic Ca/(Ca+Mg) versus Na_2O wt %. Further constraints on mantle derived clinopyroxene compositions can be placed by projecting data on this plot. The choice of Na_2O as a variable on this diagram is important since there is a correlation between pressure and the amount of Na that can enter the clinopyroxene structure in the form of the jadeite molecule ($NaAlSi_2O_6$) (Ontario

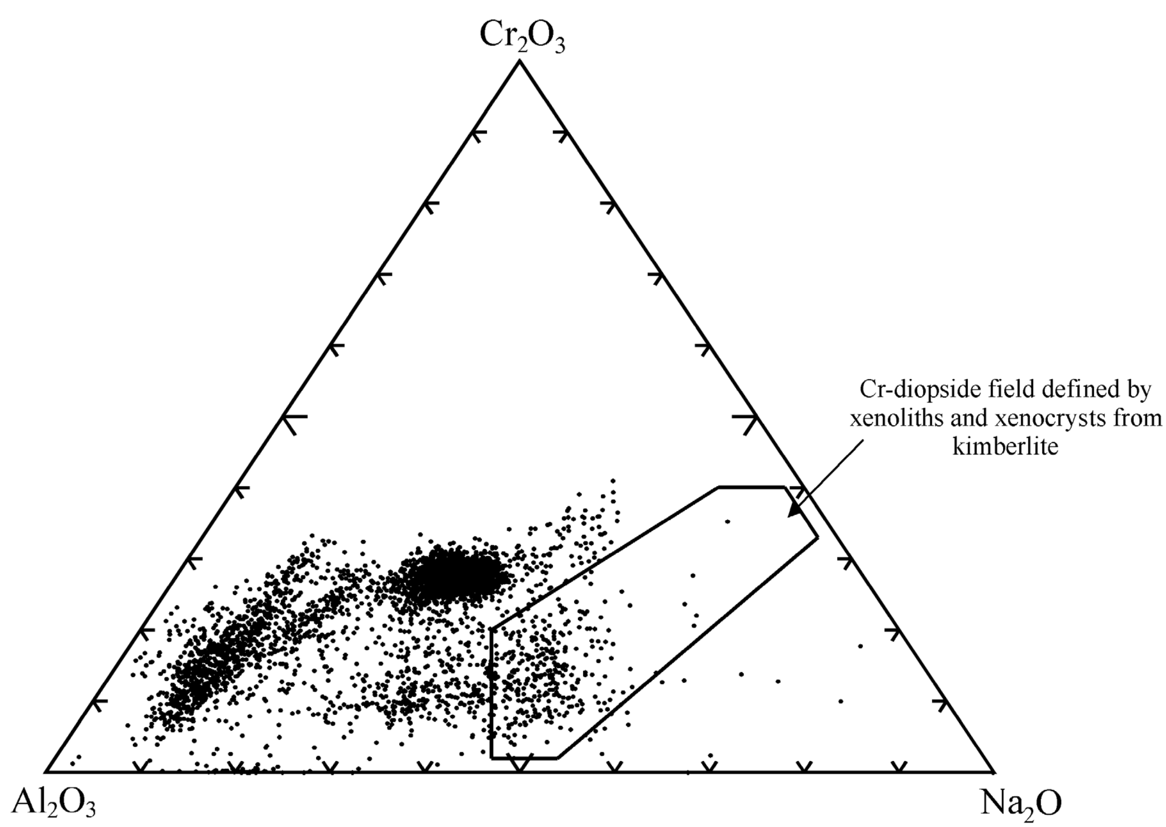

Figure 24. Ternary plot of Cr_2O_3–Al_2O_3–Na_2O showing all Cr-diopside grains from the survey area (*after* Morris et al. 2000).

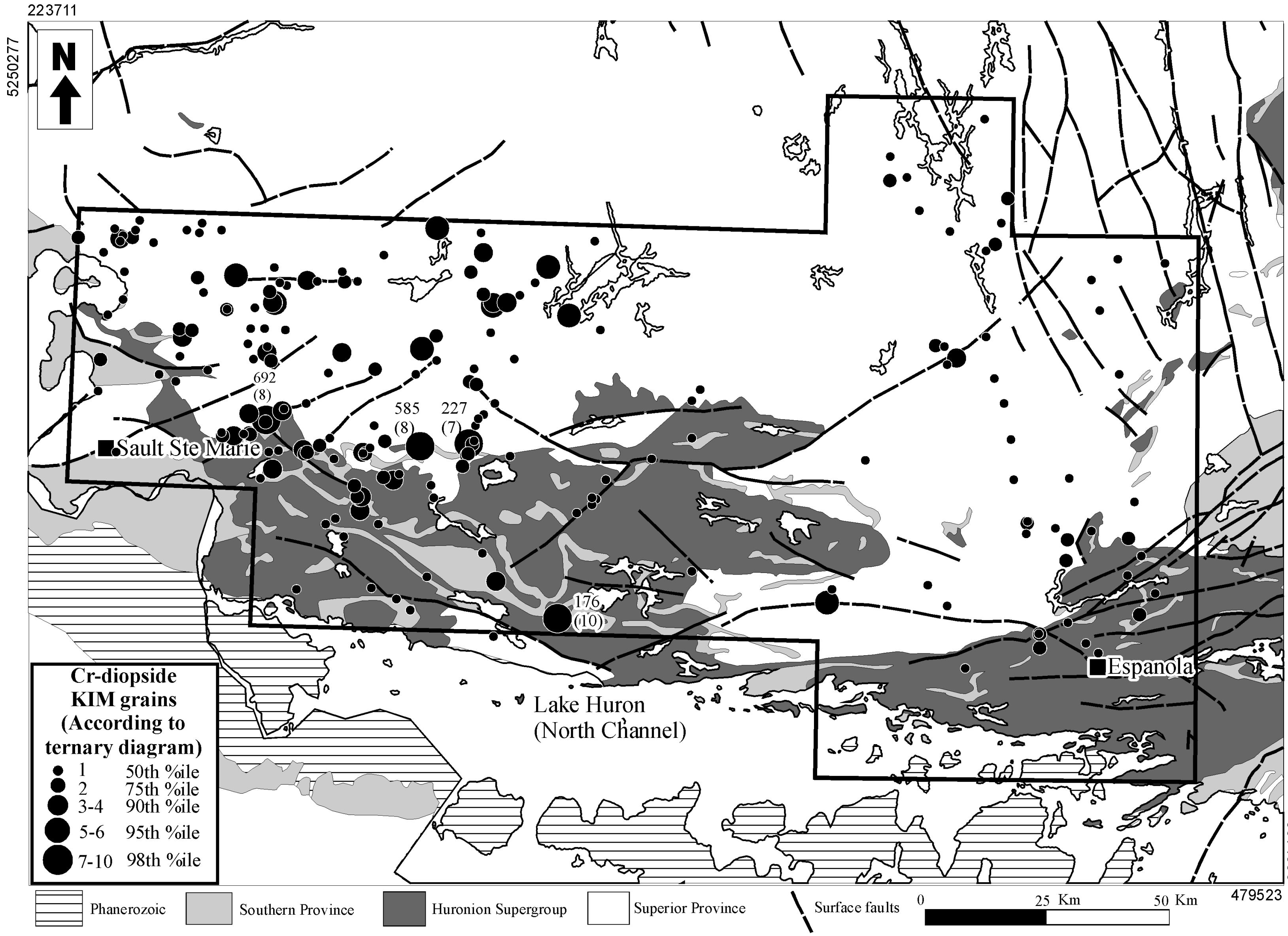

Figure 25: Regional distribution of Cr-diopside KIM grains that fall within the field shown on Figure 24. Anomalous sites are labelled with the corresponding number of grains shown in brackets.

Geological Survey 2001b). This binary plot is based on Cr-diopsides from both peridotite xenoliths carried in kimberlites (globally occurring) and xenocrysts from the Attawapiskat kimberlite field.

When 334 analyses that plot in the compositional field for mantle derived Cr-diopside on the Cr_2O_3–Al_2O_3–Na_2O ternary plot (*see* Figure 24) are recast onto the Ca/(Ca+Mg) versus Na_2O wt % binary plot (*see* Figure 26), only 17 of the grains have compositional characteristics similar to Cr-diopsides found in subcratonic mantle xenoliths. Therefore, it is suggested that the use of 2 discriminating techniques is warranted for the Cr-diopsides found in the survey area. When the 17 Cr-diopsides identified here as having mantle type geochemical signatures are plotted (Figure 27), the sites are concentrated within the western portion of the study area with one notable exception. The one sample that falls within the 95th percentile is found at the extreme east end of the survey area, north of Espanola, in a highly faulted area.

Ilmenite

Ilmenite is a common mineral in Ontario kimberlites (Sage 1996). Kimberlitic ilmenite is typically Mg-rich (4 to 16 wt %) and Cr-rich (0.1 to 11 wt %) (Mitchell 1986) and can be readily distinguished from Mg- and Cr-depleted ilmenite that is representative of crustal rocks. Ilmenite compositions are plotted on a MgO versus Cr_2O_3 parabolic plot in order to screen out compositions that are from crustal sources (MgO <4 wt %).

As the incorporation of the Fe_2O_3 molecule into the ilmenite structure is dependent on the oxygen fugacity (fO_2) in the kimberlitic magma (Haggerty and Tompkins 1983), ilmenite compositions may be used to predict whether magmatic conditions would have been favourable (reducing) or detrimental (oxidizing) for diamond preservation during kimberlite emplacement (Ontario Geological Survey 2001b).

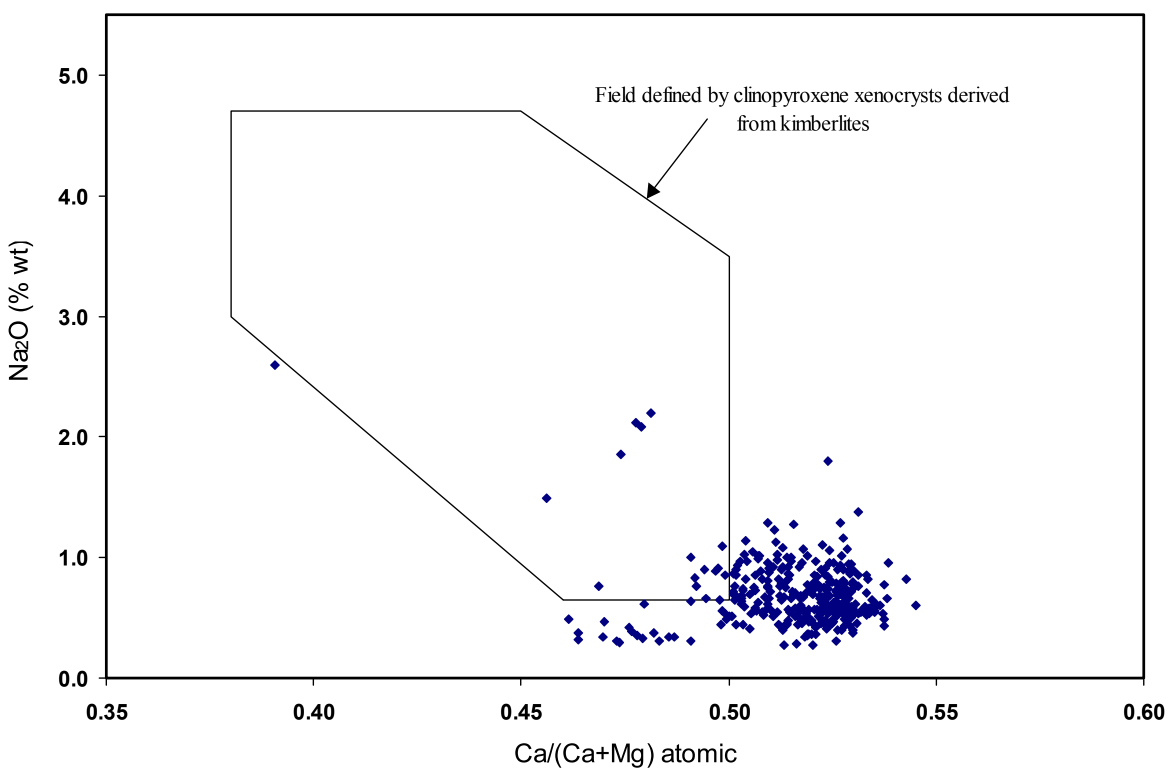

Figure 26. Ca/(Ca+Mg) versus Na_2O classification scheme for clinopyroxenes from the study area that plot within the field defined by mantle xenoliths and xenocrysts on the Al-Na-Cr ternary diagram (*see* Figure 24).

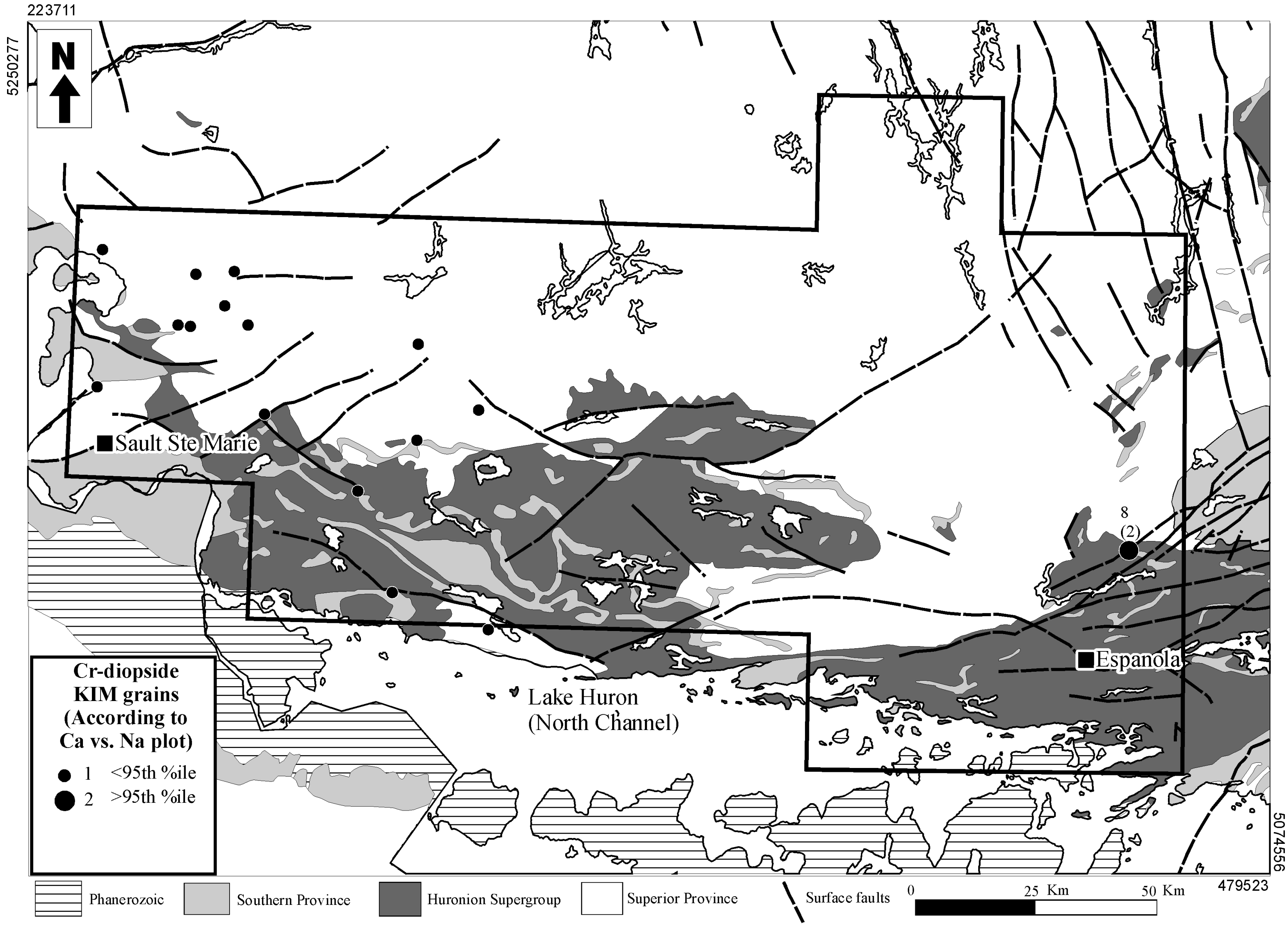

Figure 27: Regional distribution of Cr-diopside KIM grains based on the Ca vs. Na plot (Figure 26). Anomalous sites are labelled with the corresponding number of grains shown in brackets.

Highly oxidizing conditions are known to promote diamond resorption and can remove up to 50% of the original diamond content (Gurney and Zweistra 1995). Ilmenites are abundant as macrocrysts in both kimberlite and its groundmass. Therefore, ilmenites are considered to be representative of both the depth and redox conditions of the magma chamber sampled and of subsequent changes that may have affected the kimberlite upon ascent and emplacement (Gurney and Zweistra 1995).

On a MgO/Cr_2O_3 parabolic plot, ilmenites with MgO >8 wt % at increased concentrations of Cr_2O_3 indicate high preservation potential (reduced environment). In contrast, ilmenites with MgO <8 wt % with little or no concentration of Cr_2O_3 indicate less preservation potential (oxidized environment) (Fipke et al. 1995). The mantle source material had to be diamondiferous initially for the presence of diamond preservation ilmenites to be of any significance.

A total of 710 ilmenites were recovered from heavy mineral processing and sent for microprobe analysis. Of the 710 ilmenites, 50 are classified as KIMs and 660 are considered to be crustally derived.The KIM ilmenite population ranges in MgO content from 4.0 to 13.8 wt % (Figure 28). The majority of the grain population is greater than 8 wt % MgO with variable Cr_2O_3 content. If the number of picked versus estimated grain counts for individual samples is taken into account, the total number of recovered ilmenite grains increases from 710 to 727 and, therefore, the number of possible KIMs increases from 50 to 67 grains.

Data for samples in which the total number of ilmenites present is based on analyses of a picked subset are shown in Appendix J. The regional distribution of the ilmenite KIM grains, based on estimated grain numbers, is shown in Figure 29. The majority of ilmenite grains (including anomalies) fall within the western section of the survey area. The 3 sites that fall within the 95th percentile include SSM-187, 193 and 674. There are no other kimberlitic anomalies that occur at these sites.

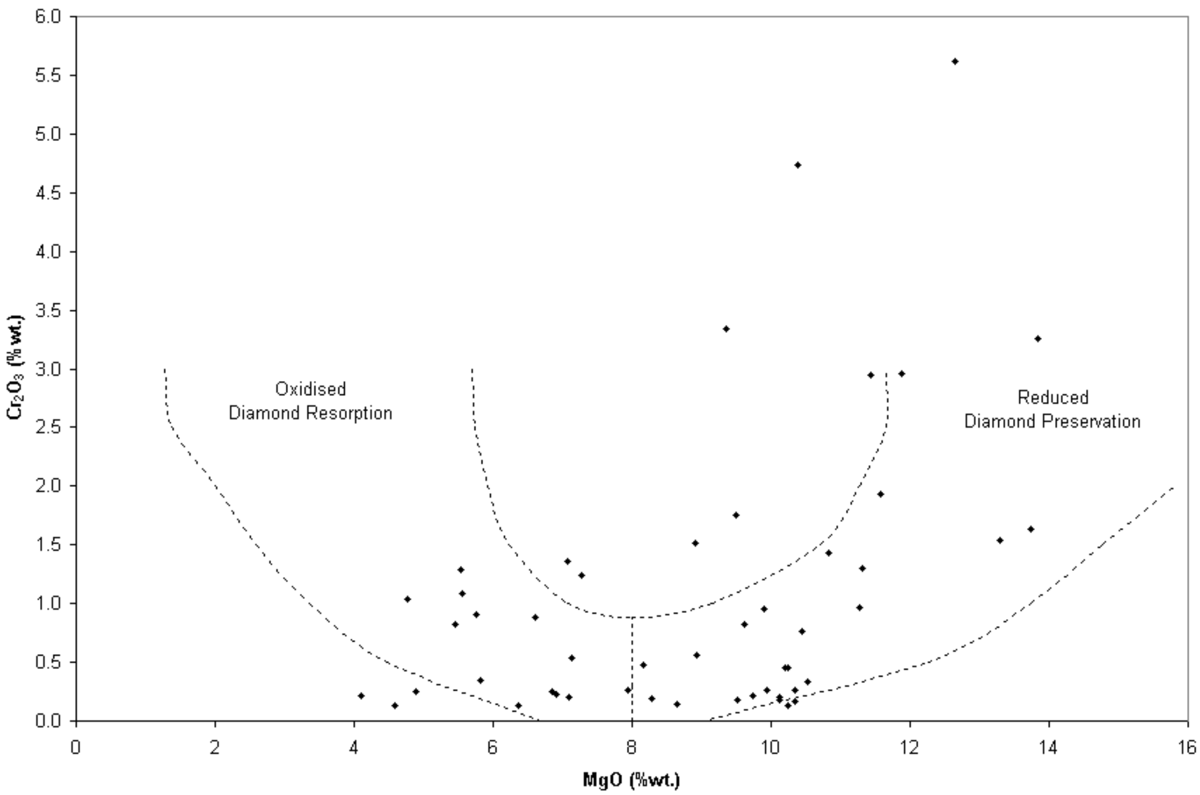

Figure 28. MgO/Cr_2O_3 plot of kimberlitic ilmenites (>4 wt% MgO) from the survey area (*after* Gurney and Moore 1991).

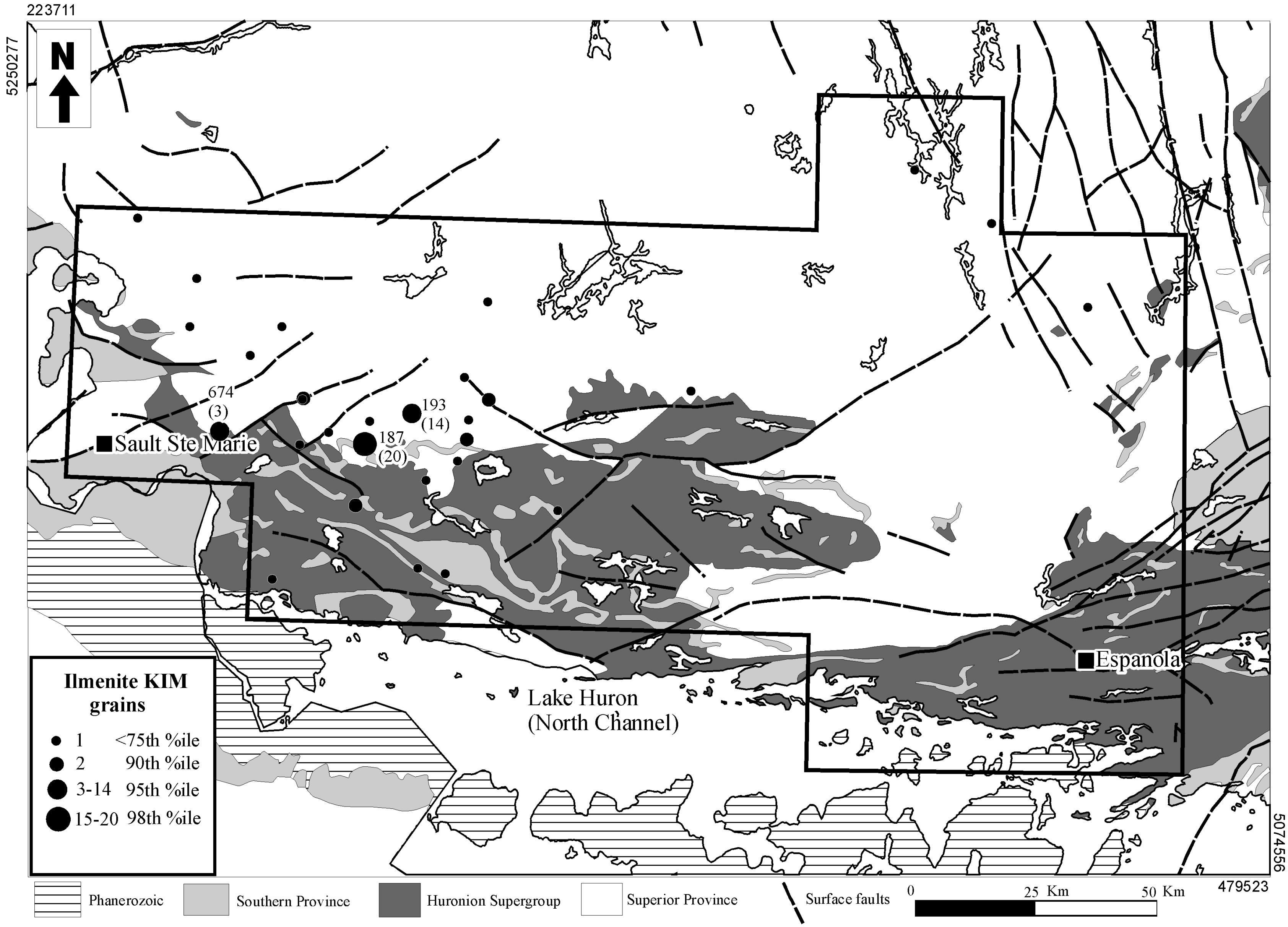

Figure 29: Regional distribution of ilmenite KIM grains. Anomalous sites are labelled with the corresponding number of grains shown in brackets.

Olivine

Forsteritic olivine is a characteristic mineral in kimberlite but it is not unique to kimberlite as it can occur in a range of ultramafic supracrustal and plutonic rocks (Stone 2001). Also, olivines are easily weathered and break down readily during transport. As well, it is often completely altered in many kimberlites, such as the Kirkland Lake pipes (Sage 1996). According to Morris et al. (2000), forsteritic olivines with MgO numbers (MgO/(MgO+FeO)) greater than 90 are considered to be associated exclusively with kimberlite and those with MgO numbers between 80 and 90 are considered to be derived from mafic or kimberlitic sources.

A total of 220 olivine grains were recovered and sent for microprobe analysis. Of these, 120 have MgO numbers greater than 80, indicating that they are derived from mafic or kimberlitic sources (Figure 30). It should be noted, however, that the number of grains assigned to 7 samples are estimated from the analysis of a picked subset. The total number of olivine grains recovered in this survey, including those estimated in the 7 normalized samples, is 294. This increases the number of KIM grains (according to the MgO plot) from 120 to 194.

The samples that required picked estimate normalization are summarized in Appendix J. The regional distribution of the olivine KIM grains, based on normalized data, is shown in Figure 31. Olivine KIM grains are clustered within the central part of the western half of the survey area. There are 4 anomalous sites worth noting, SSM-85, 87, 138 and 412, where each site falls within the 95th percentile and contains at least 17 grains.

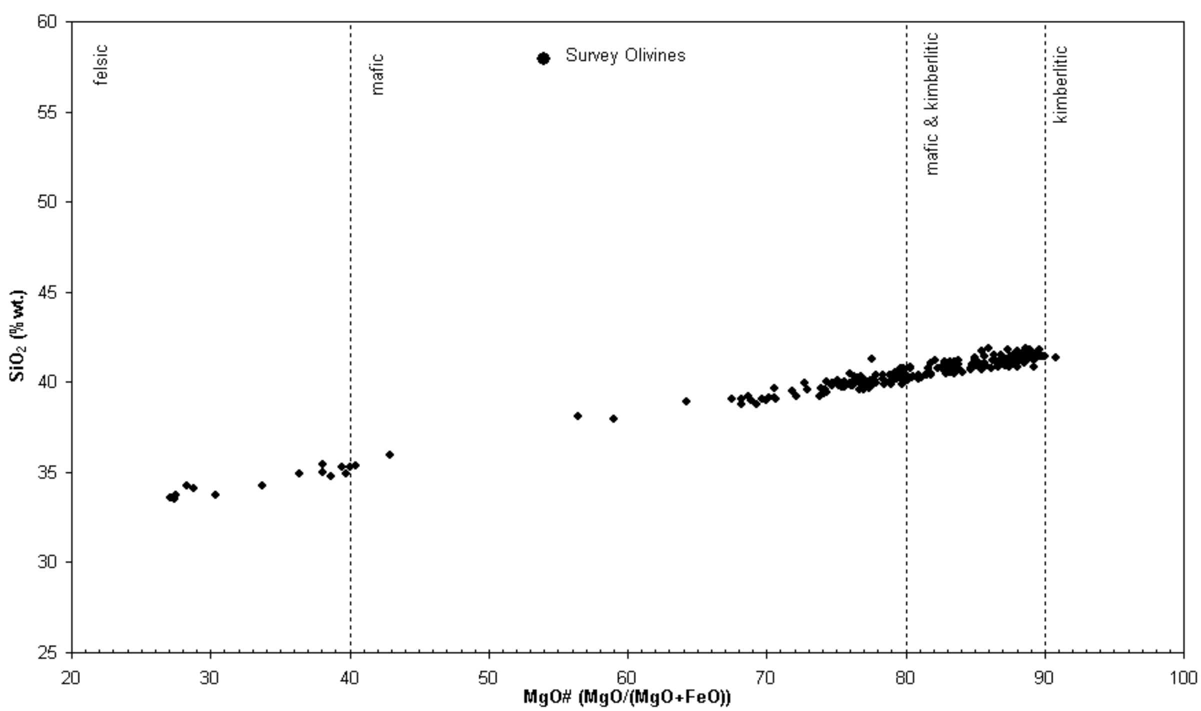

Figure 30. MgO#/SiO_2 plot showing compositions of olivines recovered from the survey area.

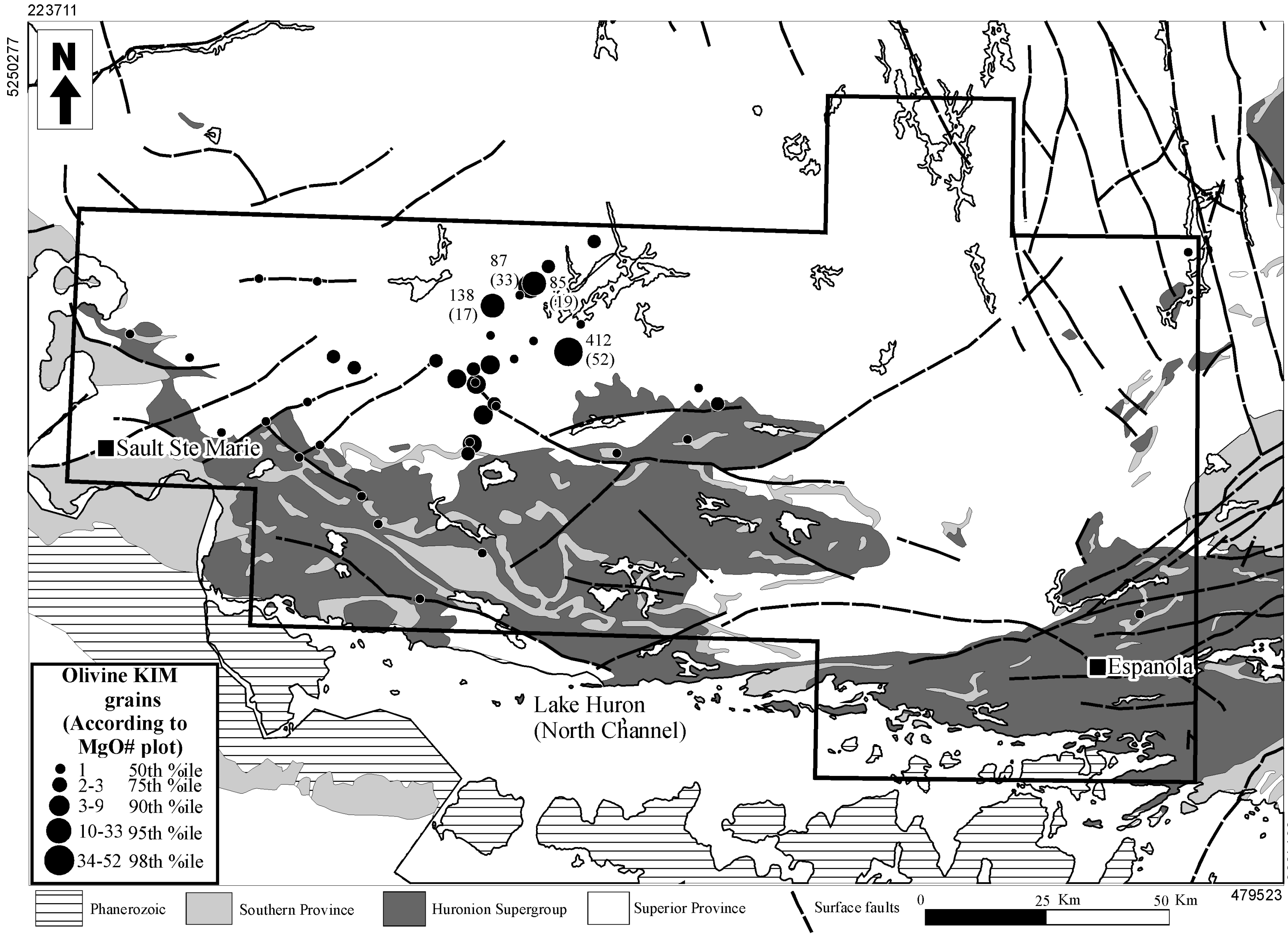

Figure 31: Regional distribution of olivine KIM grains according to MgO#/SiO_2 plot (Figure 30). Anomalous sites are labelled with the corresponding number of grains shown in brackets.

Although the binary discriminant system used here (Morris et al. 2000) is capable of isolating olivine compositions from kimberlitic and other mafic rocks, compositional overlap is substantial (Ontario Geological Survey 2001b). As a result, an additional classification technique was employed utilizing a large database of olivine compositions isolated from numerous kimberlitic heavy mineral concentrates from Ontario (Ontario Geological Survey 2001b). Examination of minor element concentrations from 951 olivine grains picked from the Ontario kimberlite heavy mineral concentrates suggests that additional constraints may be placed on mantle type olivine compositions crystallized at high pressures (Ontario Geological Survey 2001b). The kimberlitic compositions are characterized by depleted CaO concentrations when the olivine data was plotted on a binary plot of forsterite content (Fo#) versus CaO wt % (Ontario Geological Survey 2001b). The 120 olivine KIM grains from the MgO plot were recast onto the Fo# plot. From these grains, 84 plotted within the field defined by olivine xenocrysts from Ontario kimberlites (Figure 32). These grains show depleted CaO concentrations and increased Fo numbers. This number, however, when normalized, increases from 84 grains to 161 grains. The regional distribution of KIM olivine grains based on the Fo# plot (*see* Figure 32) is shown in Figure 33. The anomalous values for sites SSM-85, 87 and 412 remain the same, while the grain numbers for site SSM-138 decrease with the additional plotting constraints.

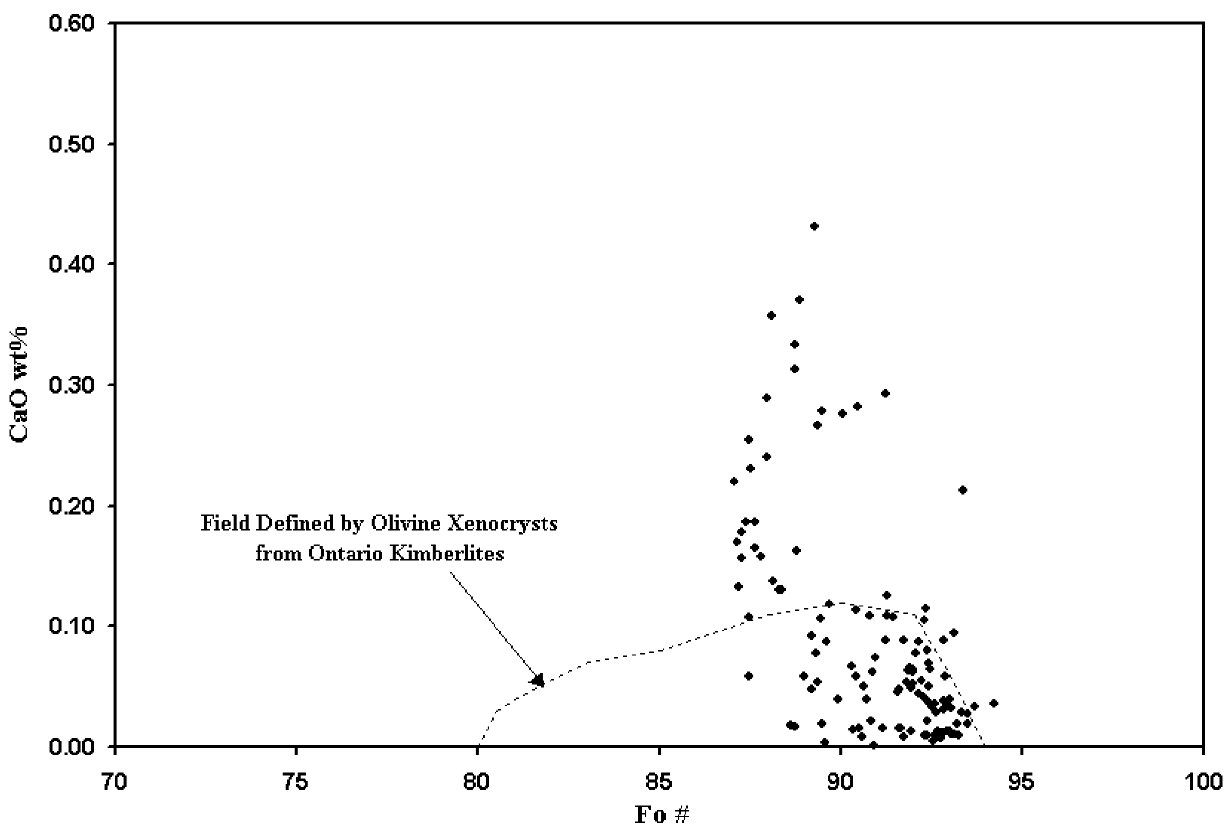

Figure 32. Fo# versus CaO plot for olivines recovered in the survey area.

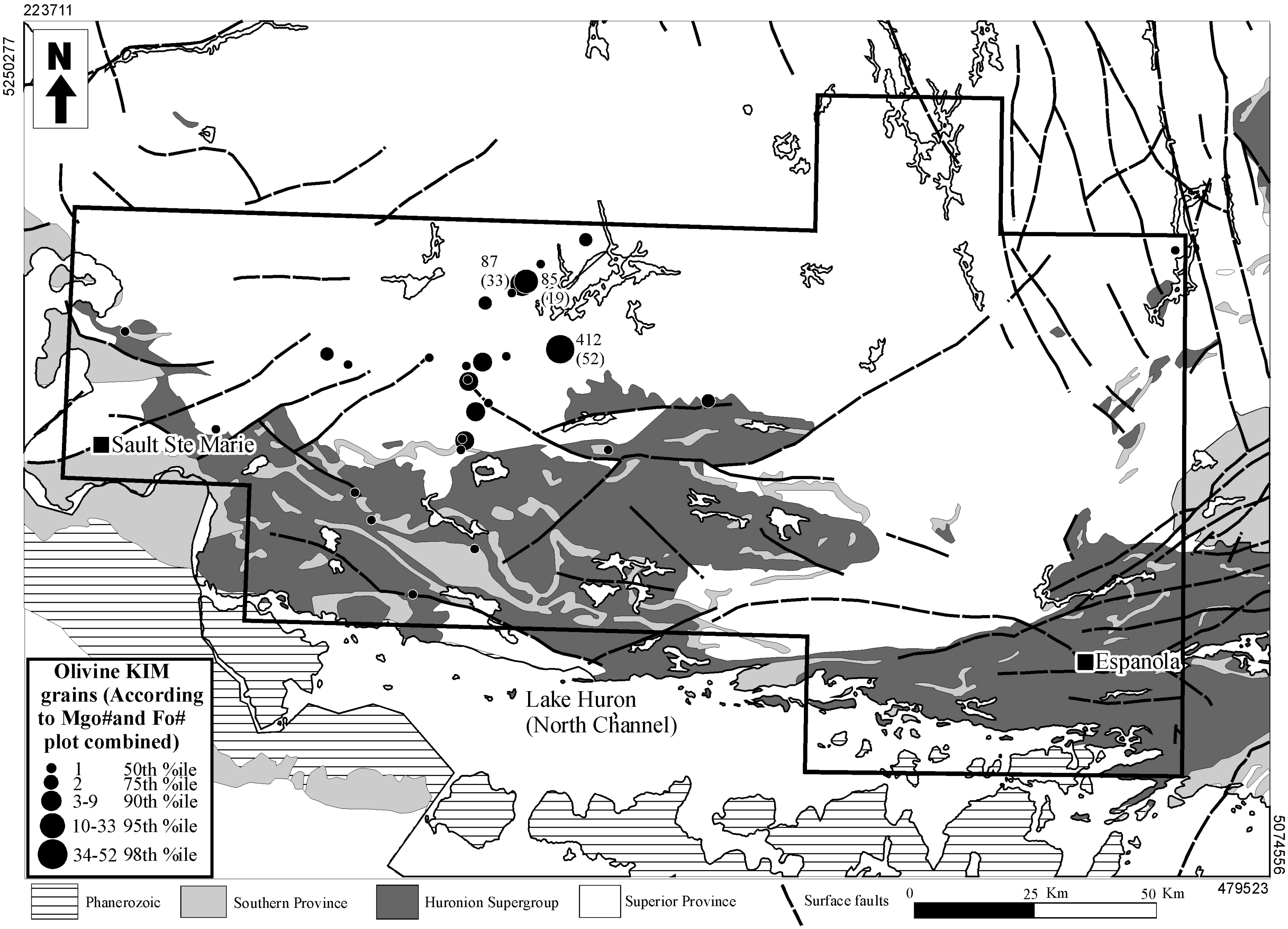

Figure 33: Regional distribution of olivine KIM grains according to Fo# plot (Figure 32). Anomalous sites are labelled with the corresponding number of grains shown in brackets.

TOTAL KIMS AND RECOMMENDATIONS FOR KIMBERLITE EXPLORATION

In examining the distribution and composition of kimberlite indicator minerals several sites were identified as having anomalous numbers of KIMs. The exploration targets within the study area are based on sample sites containing a combination of significant KIMs such as G10 and G9 garnets, Mg-ilmenites, chromites, Cr-diopsides and olivine. Sample sites with single mineral anomalies should be considered with caution unless they occur in the vicinity of other anomalous sites.

Diamond inclusion chromites and G10 garnets are considered to be the most significant KIMs and the best indicators of diamond potential. Figure 34 summarizes the cumulative distribution of these significant KIMs. The grains tend to be distributed throughout the western half of the survey area; sites contain 1 diamond potential grain, except for site SSM-316, which contains 2 diamond potential grains. This grain falls within the 95th percentile. There was not enough data variation to include a 98th percentile.

To further illustrate anomalous sites, regional distribution figures of total KIM grains (all garnets, chromite KIMs, ilmenite KIMs, Cr-diopside KIMs and olivine KIMs) (Figure 35) and total possible KIM grains (total KIMs including chromites of the overlap field) (Figure 36) were plotted. Anomalous sample sites that fall within the 98th percentile in Figure 35 include SSM- 85, 87, 111, 119, 138, 187, 193, 412 and 682. In Figure 36, anomalous sample sites that fall within the 98th percentile include SSM- 13, 45, 397, 423, 442, 536, 562, 575, 579, 622, 691, 705, 714, 718 and 724. Due to the large numbers of chromite grains that fall into the overlap field in Figure 20, there are no coincident anomalies among Figures 35 and 36.

Figures 34 and 35 reveal 3 coincident anomalies including SSM 119, 187 and 412. Sample 119 contains 1 diamond potential KIM grain as well as numerous olivine KIM grains. Sample 187 contains 1 diamond potential KIM grain as well as numerous ilmenite KIM grains and sample 412 contains 1 diamond potential KIM grain and numerous chromite KIM grains.

A closer look at the local geology around the anomalous sites in the northeastern part of the survey area (*see* Figure 36) reveals the presence of Mesoproterozoic mafic intrusive rocks, more specifically, diabase dikes of the Sudbury swarm as well as Paleoproterozoic Nipissing sills described as diabase sills and dikes and related granophyre. Samples that occur in close proximity to these intrusions include SSM-13, 45, 397, 423, 442, 562, 536, 575, 579, 622, 705, 714, 718 and 724. These intrusions may account for the observed heavy mineral signatures, especially the chromites. In addition, sample SSM 536 returned an MMSIM® anomaly and sites SSM 442 and SSM 705 returned gold grain anomalies. The faults along which these intrusions were emplaced are likely deep seated, as the rocks are mafic and sourced from depth. For this reason, these faults present viable conduits for kimberlite or related rock emplacement. In addition, many orthogonal intersections of faults occur within the region enhancing the prospect of intrusions. In general, the anomalous sites located in the eastern half of the survey area consist primarily of chromite KIM grains and possible chromite KIM grains.

It is in the western part of the survey area where the diamond potential KIM grains and total KIM grains have been identified. Samples 412 and 119 are anomalous in both instances (within the 98th percentile) and samples 151 and 187 fall within the the 95th percentile on both plots (*see* Figures 34 and 35). Sample 117 contains 1 G10 grain, however, it is not anomalous with any other KIM indicator. In general, the anomalous sites located in the western half of the study area consist primarily of diamond inclusion chromite KIM grains, Cr-diopside KIM grains, ilmenite KIM grains and olivine KIM grains. These anomalies are, for the most part, located in close proximity to faults and orthogonal intersections that, again, provide avenues for the passage of kimberlites or related rocks.

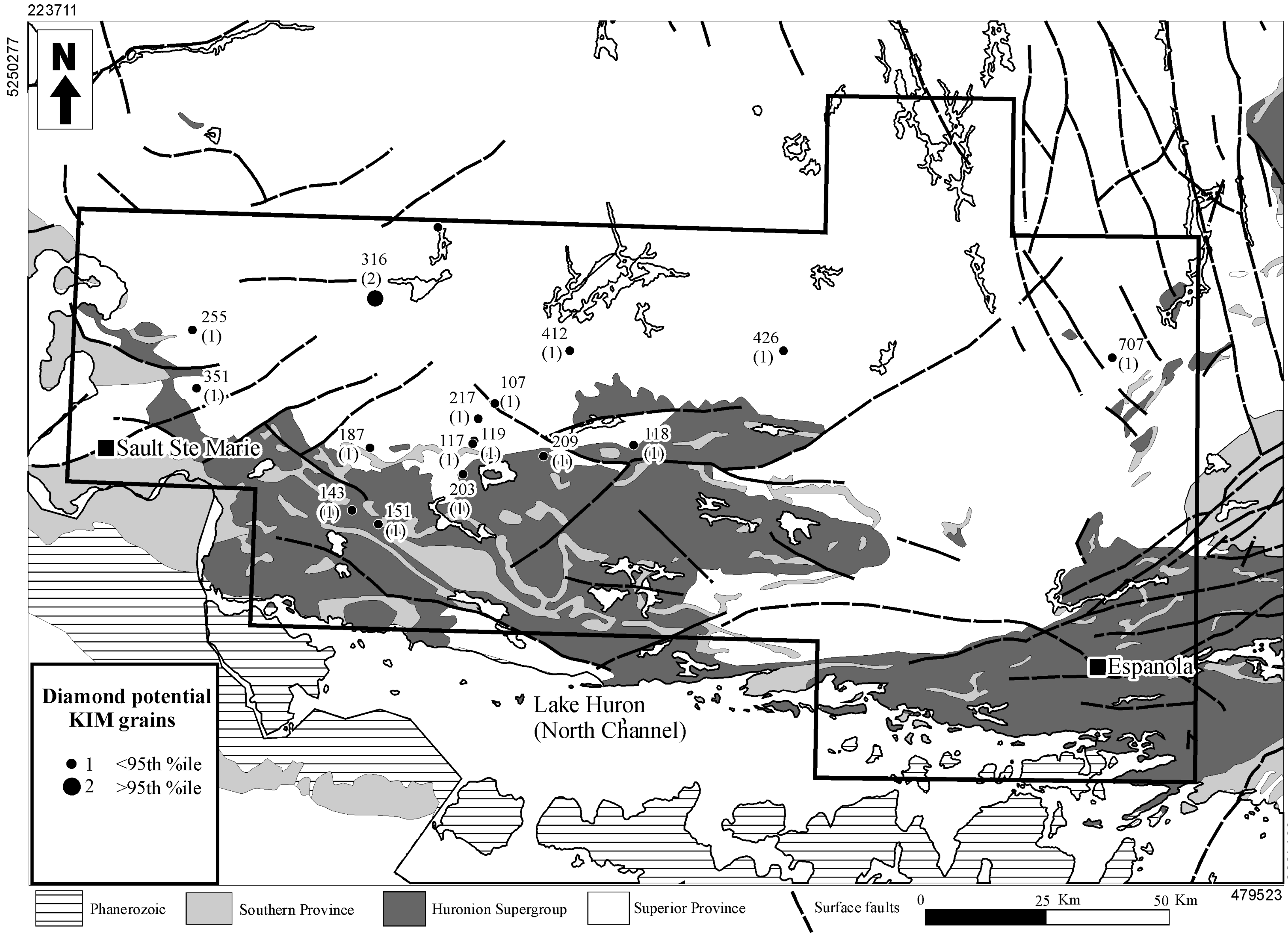

Figure 34: Regional distribution of total diamond potential KIM grains (G10 garnet and diamond inclusion chromite grains). Anomalous sites are labelled with the corresponding number of grains shown in brackets.

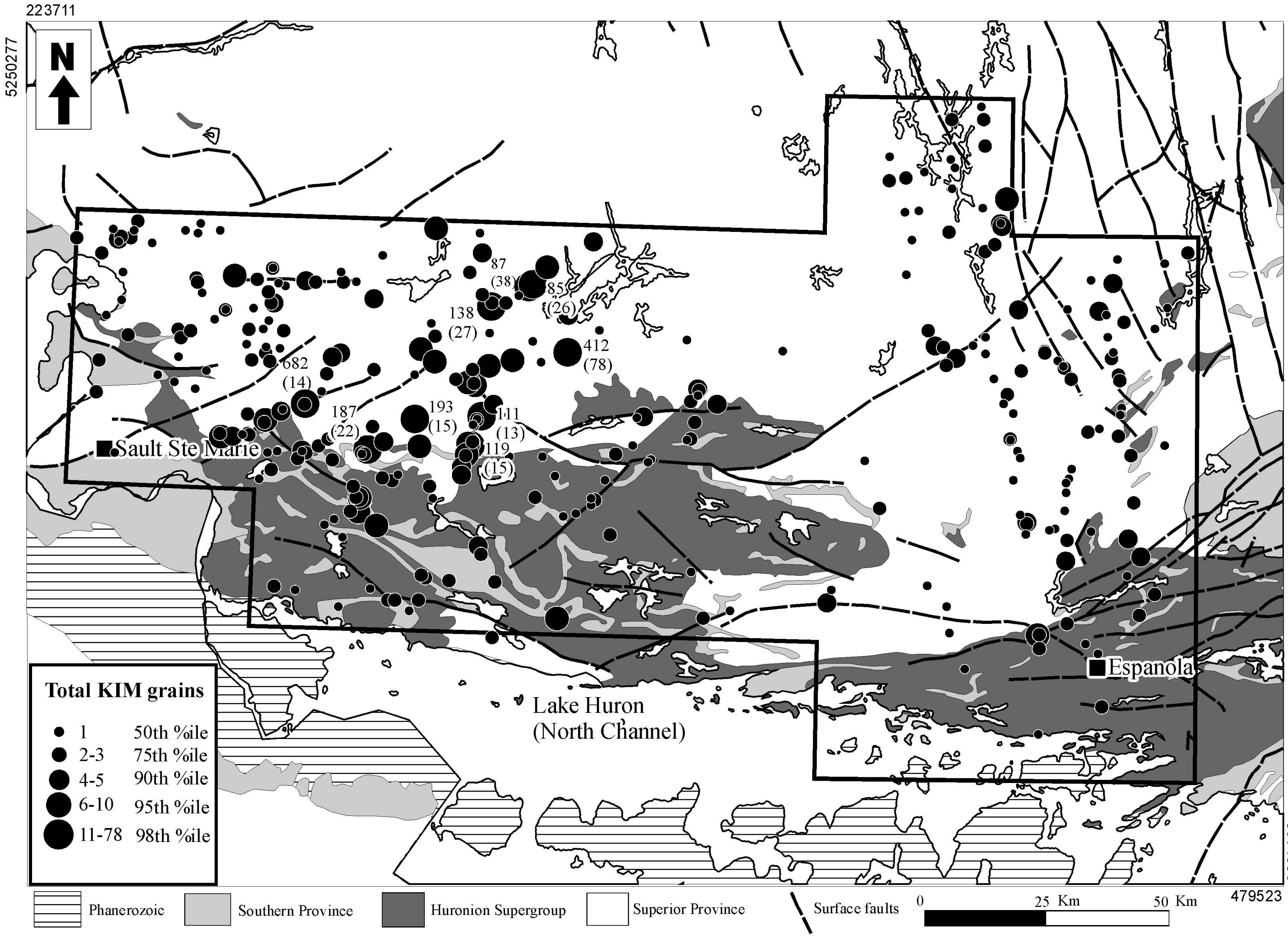

Figure 35: Regional distribution of total KIM grains (all garnets, chromite KIMs, ilmenite KIMs, Cr-diopside KIMs and olivine KIMs). Anomalous sites are labelled with the corresponding number of grains shown in brackets.

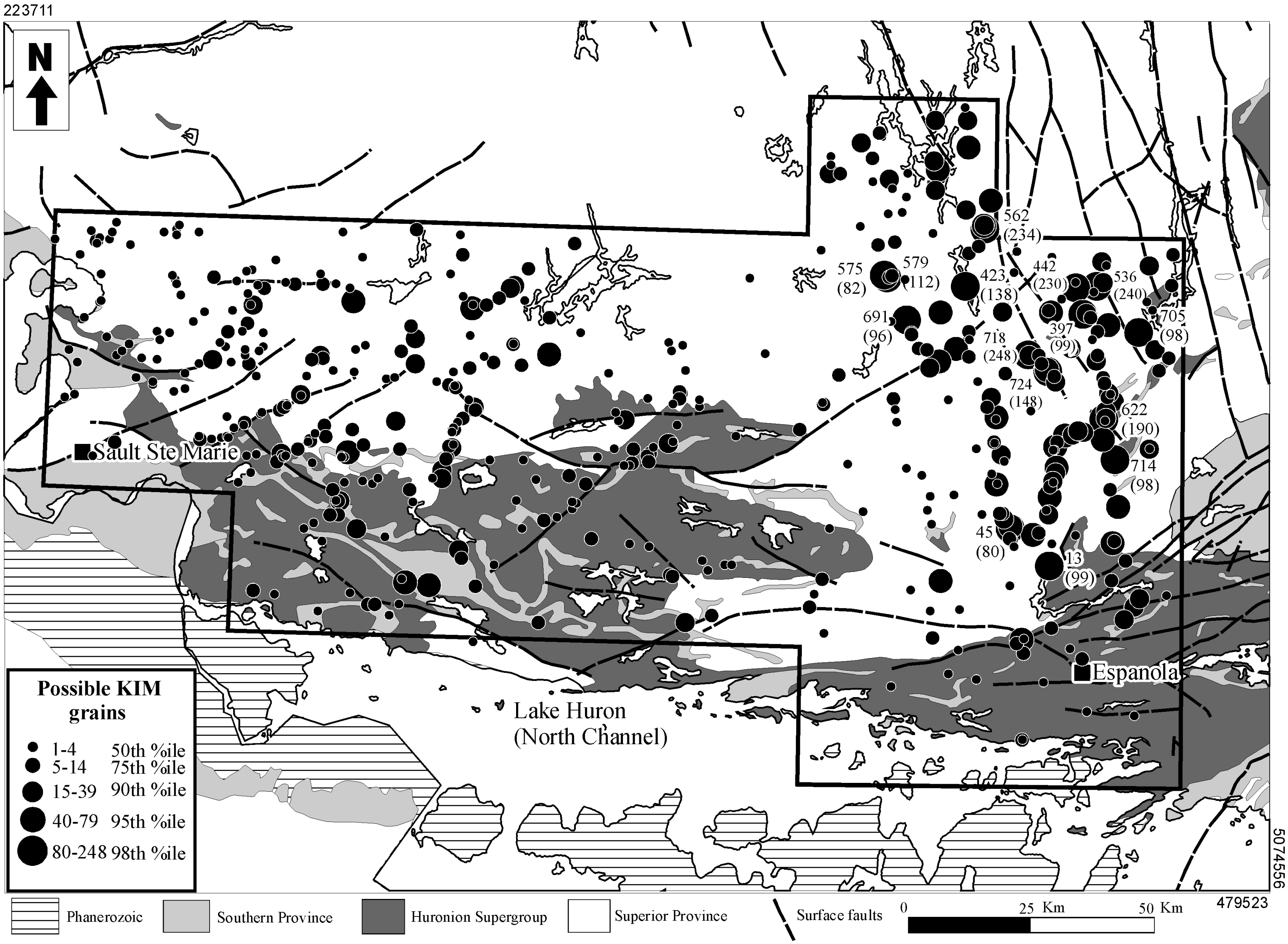

Figure 36: Regional distribution of total possible KIM grains (includes total KIMs as well as overlap field chromites). Anomalous sites are labelled with the corresponding number of grains shown in brackets.

Because of its susceptibility to weathering, the presence of Cr-diopside can be used as a measure of proximity to source. This mineral disappears quickly in the secondary environment once transported from source. Therefore, its recovery in a sample may suggest local derivation. The Cr_2O_3–Al_2O_3–Na_2O ternary plot (*see* Figure 24) for Cr-diopside indicated that a large number of grains could be classified as kimberlitic. When the grains were plotted, all anomalous sites were located in the western half of the survey area. As the anomalous sites coincide with only chromite KIM anomalies, it is suggested that their source is a rock type other than kimberlite. To further assess proximity to source, pebble lithology studies can be used. Local rock types found as pebbles in modern alluvium samples can provide a level of support for the assertion that transport distances are limited. However, pebbles were not collected during this survey, therefore no relation between local bedrock and pebble lithologies in samples could be determined.

The types of surficial deposits in the study area can provide some indication of local or distal derivation of the KIMs in the anomalies identified. Sites 107, 117, 119, 203 and 217, which yielded diamond potential KIMs, and sites 13, 85, 87, 111, 119, 397, 622 and 718, from which total KIMs and total possible KIMs were recovered, are close to or situated within deposits of glaciofluvial outwash. These deposits may consist of distally derived material and heavy minerals could have travelled some distance from source. However, surrounding these samples are sites that reveal anomalous KIM values in areas that do not incise glaciofluvial deposits, inferring that local derivation could be probable. If derivation of KIMs is from an upstream kimberlite boulder that was deposited in the area by glacial activity, the source could be distal. Nonetheless, consistency among samples with KIM anomalies would suggest local derivation. Generally, local derivation can be inferred due to the bedrock-dominated nature of the study area.

METAMORPHIC/MAGMATIC MASSIVE SULPHIDE INDICATOR MINERALS

Metamorphic/magmatic massive sulphide indicator minerals (MMSIMs®) are stable heavy minerals that occur in alteration zones associated with volcanogenic massive sulphide deposits in high grade terrains; in magmatic Ni-Cu sulphide deposits; and in skarn and greisen deposits (Averill 1999). The heavy mineral assemblages associated with each of these deposits are listed in Table 1. Identifying MMSIM® minerals in overburden deposits is straightforward as they are coarse grained; unique to the types of mineralization listed below; visually distinctive; easy to concentrate due to their specific gravity (>3.2); amenable to paramagnetic separation; and they are relatively resistant to weathering in the secondary environment (Averill 1999).

Common mineral associations in volcanogenic massive sulphide (VMS) type dispersion trains are gahnite-barite, chalcopyrite-spessartine (Mn epidote), gahnite-chalcopyrite-staurolite and red rutile-spinel-kyanite (or sillimanite). Gahnite is probably the most important MMSIM® associated with VMS-type dispersions since it is enriched in the ore metal Zn and is extremely stable in the secondary environment. Other MMSIMs® associated with VMS deposits include kyanite, sillimanite, staurolite and orthopyroxene. Magmatic Ni-Cu indicator minerals are characterized by distinctive Cr-rich phases, such as Cr-diopside, chromite, uvarovite and Cr-rutile (Ontario Geological Survey 2001a). Other phases associated with these deposits include chalcopyrite, forsteritic olivine, Mg-orthopyroxene and PGE alloys (Ontario Geological Survey 2001b).

Table 1. List of indicator minerals found in the survey area and the associated base metal mineralization style (after Averill 1999). The presence of a mineral species is indicated by a shaded rectangle. MVMS: metamorphosed volcano-sedimentary massive sulphide mineralization; Mag Ni-Cu: magmatic nickel-copper massive sulphide mineralization.

Indicator Mineral	MVMS	Mag Ni-Cu	Skarn	Griesen
chalcopyrite	■	■	■	■
chromite		■		
corundum	■			
Cr-rutile	■	■		
foresteritic olivine			■	
gahnite	■			
grossular			■	
kyanite	■			
low Cr-diopside		■		
molybdenite	■	■	■	■
Mn-epidote	■			
native gold	■		■	
olivine		■		
orthopyroxene	■	■		
pyrite	■	■	■	■
sillimanite	■			
spessartine	■			
staurolite	■			
uvarovite		■		

Gahnite

Gahnite, a zinc spinel ($ZnAl_2O_4$), is a useful indicator mineral in exploration for base metal deposits and is stable in the oxidizing surficial environment (Morris et al. 1997). Gahnite is associated with 4 geological environments including metamorphosed massive sulphide deposits; aluminous metasediments; pegmatites; and marbles. The presence of gahnite in a deposit may result from one or a combination of the following mechanisms: desulphidation of sphalerite during metamorphism under high fO_2; reaction between kaolinite (aluminous clay) and absorbed ZnO; reaction between Zn associated with organic material and sulphur to form ZnS, which subsequently reacts with kaolinite; breakdown of zinc-bearing silicates (biotite and staurolite) during prograde metamorphism; precipitation from hydrothermal fluids; and contamination of a felsic melt by Zn-enriched wall rock (Dunlop 2000).

Compositional differences between gahnites from the various environments make it possible to classify the mode of occurrence using electron microprobe data. Gahnites from polymetallic deposits exhibit MgO concentrations that are typically >2 wt%, whereas, those from rare element pegmatites and peraluminous granites tend to have MgO concentrations that are <2 wt% (Dunlop 2000; Morris et al. 1997). However, compositional overlap between these groups does exist.

Pegmatites and peraluminous granites result from late-stage fractional crystallization, thus removing MgO during earlier crystallization of mafic minerals. Therefore, gahnite crystals that formed would reflect the Mg-depleted nature of the parent magma (Batchelor and Kinnaird 1984). Rare earth pegmatites are more felsic than peraluminous granite resulting in a lower MgO limit, as there is less chance of any remnant MgO in the melt. Consequently, other crystallizing phases are lacking in these felsic melts that incorporate Zn into their structures (Dunlop 2000). In metamorphic terrains, Mg is remobilized by the breakdown of mafic phases, such as biotite and amphibole, and could be incorporated into the crystallizing gahnite, increasing its MgO content (Batchelor and Kinnaird 1984). Additionally, lower ZnO values may result due to higher fS_2 in metamorphic environments, therefore, sphalerite is preferentially deposited (Dunlop 2000). Lower ZnO values in gahnites originating from metamorphosed massive sulphide deposits may indicate more ZnS and, potentially, higher amounts of ore.

A total of 43 gahnite grains were recovered from the samples and sent for microprobe analysis. The data show that all grains have a MgO concentration <2 wt %. The fact that all of the grains are depleted in MgO suggests that the source is likely rare earth pegmatite or peraluminous granite. To further determine the possible origin of these gahnite grains, the data was plotted on a ternary diagram of ZnO, FeO and MgO (Figure 37). The gahnite grains are Zn-enriched and MgO depleted, falling in the area generally representative of rare earth pegmatites (Morris et al. 1997). Regional gahnite distribution is displayed on Figure 38. Morris et al. (1997) have analyzed gahnite grains obtained from the Mattabi volcanogenic massive sulphide deposit occurrence. Those grains display similar compositions to the gahnites recovered from this survey.

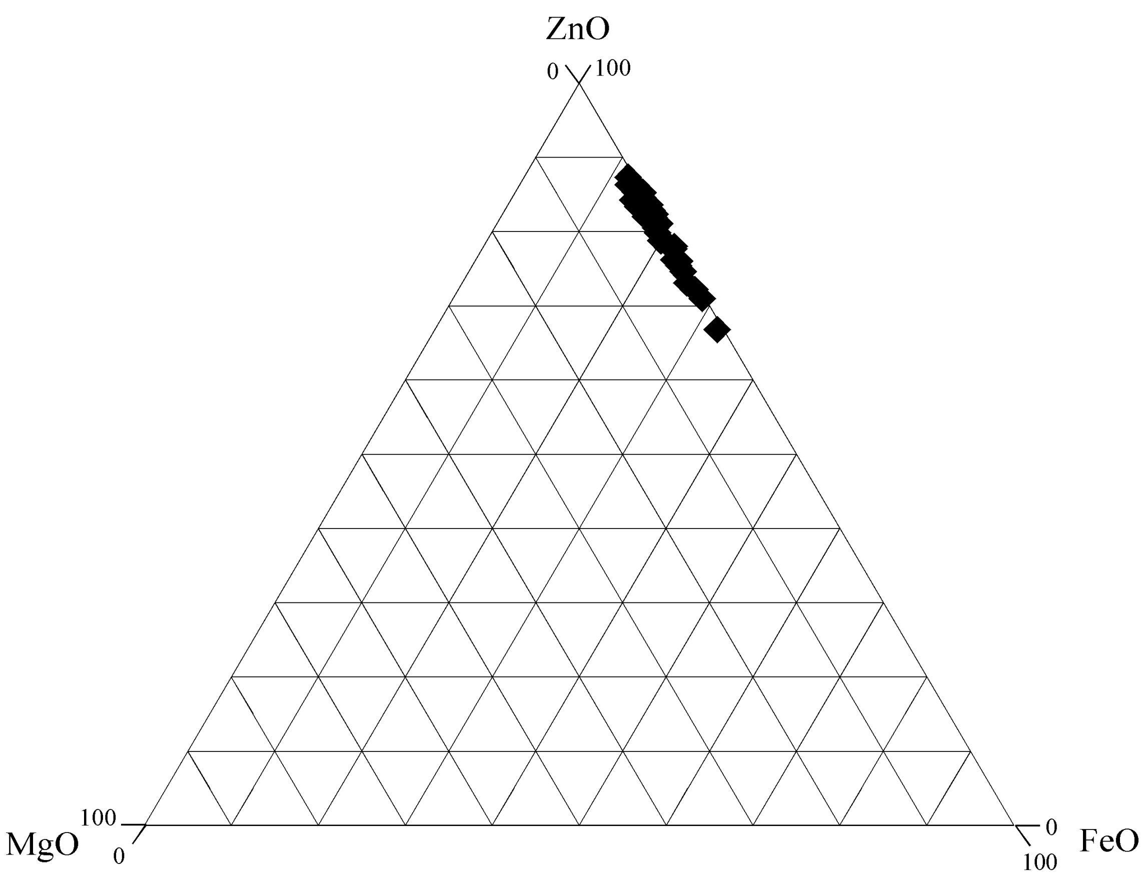

Figure 37. Ternary ZnO/MgO/FeO plot showing gahnite grain compositions.

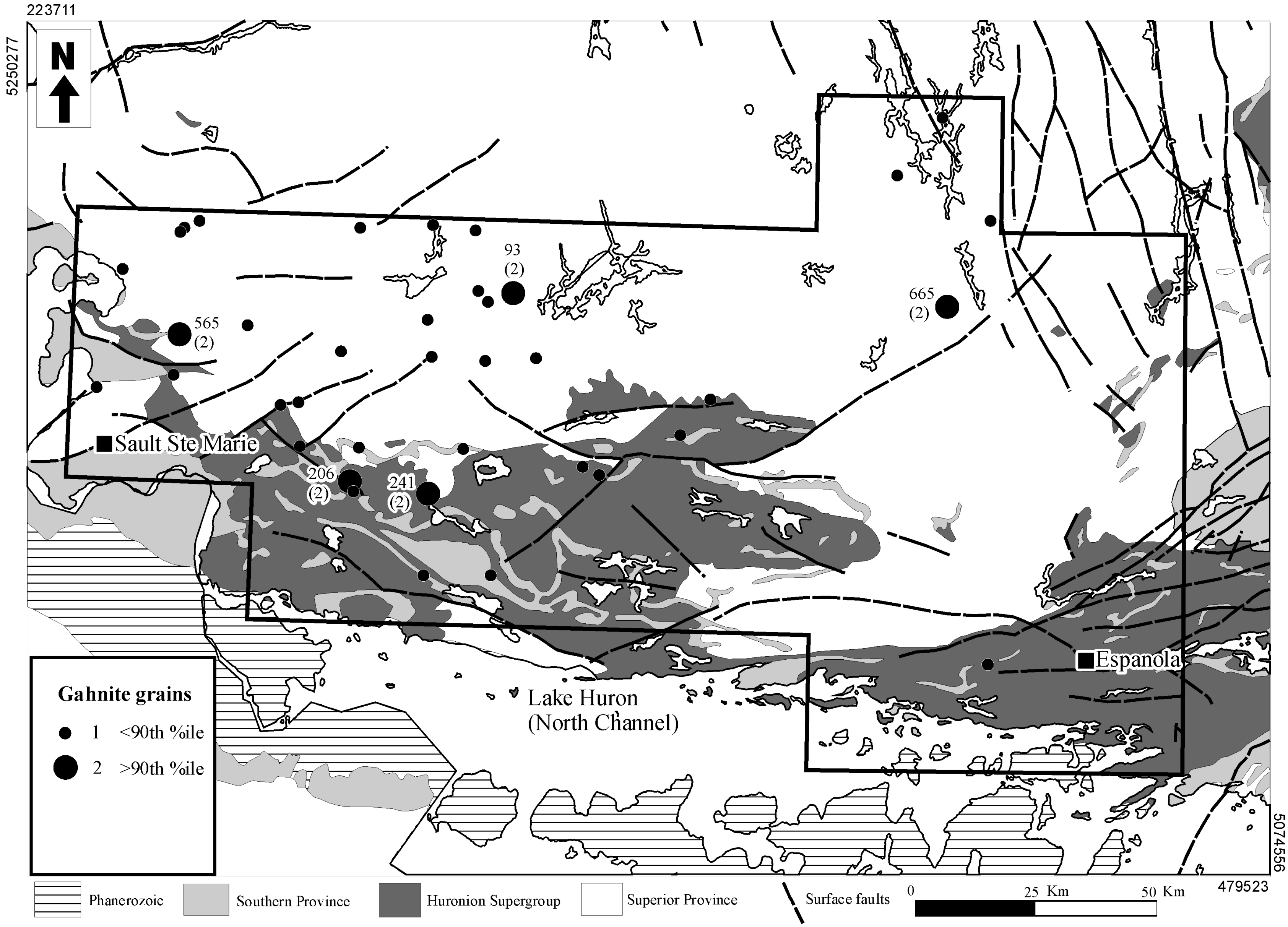

Figure 38: Regional distribution of gahnite grains. Anomalous sites are labelled with the corresponding number of grains shown in brackets.

Table 2. Summary of MMSIMs picked and anomalous MMSIM sites. Actual grain numbers are shown unless labelled otherwise (e.g., %). Samples ranked 3 and 5 fall within the 98th percentile. For abbreviations of MMSIM types, *see* Appendix 1.

Sample Number	Low-Cr diopside	Chromite	Cpy	Molybdenite	Py	Gahnite	Mn-epidote	Corundum	Cr-grossular	Red Rutile	Uva	% Gth	% Ky	% Sil	% St	% Sps	% Fay	% Opx	**RANK**
01SSM																			
0085	29	14	3	0	400	0	1	2	0	0	0	0	0	0	0	2	1	0.25	5
0138	19	6	0	0	0	1	0	5	0	34	0	0	0	0.25	0.3	0.25	0	0.25	3
0142	28	0	0	0	3	0	1	0	5	0	0	0	0.3	0	0	0	0	0	3
0173	3	5	7	0	5	0	0	2000	0	0	0	10	0.3	0	0	0	0	0.25	3
0177	19	0	0	0	0	0	1	500	0	0	0	0	0.3	0	0.3	0	0	3	3
0199	25	6	0	0	0	1	2	11	0	0	0	0	0.3	0	0.3	0	0	1	3
0227	22	0	0	0	0	0	4	200	0	0	0	0	0.3	0.25	0	0	5	2	3
0263	19	0	0	0	15	0	1	1	0	0	0	0	0.3	0	0	0	0	5	3
0270	15	6	0	0	1	0	2	4	1	0	1	0	0	0	0.3	0	1	2	3
0536	1	118	0	0	75	0	0	0	0	0	0	0	0	0.25	0	0	25	0	3
0539B	5	11	6	2	300	0	0	0	0	0	0	0	0	0	0.3	0.25	0.25	0.25	3
0599	29	39	7	0	1	0	0	0	0	0	0	0.25	0	0.25	0.3	0	0	0.25	3
0600	2	0	0	2	60	0	0	500	0	0	0	0	0	0	0	0	0	0	3

Cr-Diopside

It has been indicated by Averill (1999) that low Cr-diopsides are an important indicator mineral for magmatic Ni-Cu mineralization with 2 notable examples of this association occurring at Thompson, Manitoba and Outokumpu, Finland. Clinopyroxene is one of the first minerals to crystallize from a mafic–ultramafic melt. If its formation precedes chromite, Cr in the melt may be initially incorporated into the diopside structure. However, clinopyroxene crystallization occurring after chromite can still produce Cr-diopside. The silicate melt will eventually be Fe-depleted due to the formation of Ni-Cu minerals and chromite crystallization will cease, allowing any excess Cr to be included in diopside. Only those Cr-diopsides plotting outside the kimberlite field defined on a Cr_2O_3–Al_2O_3–Na_2O ternary diagram were considered as potential MMSIMs® (*see* Figure 24). These grains were further subdivided based on their Cr_2O_3 wt% values with Cr-diopsides having less than 1.3 wt % Cr_2O_3 considered to be MMSIMs® (Morris et al. 2000).

Chromite

During fractional crystallization of mafic and ultramafic magmas, chromite is one of the earliest minerals to appear and often forms layered cumulates at the base or within the solidified melt. Chromite is a primary component of many mafic and ultramafic layered intrusions that are hosts to Ni-Cu mineralization, such as: the Bushveld Complex, South Africa; Skaergaard Intrusion, Greenland; Stillwater Complex, Montana; and the Muskox Intrusion, NWT. As well, chromite occurs in komatiitic flows that host Ni-sulphide mineralization (Kambalda, Australia; Nor'ilsk, Russia).

Those chromites that plot in the non-lamproitic/kimberlitic field and the overlap field of the Fipke et al. (1995) Cr_2O_3-TiO_2 plot were considered to be MMSIMs®. Chromite can be an indicator for alteration zones in metamorphosed VMS deposits and in Ni-Cu massive sulphide deposits (Averill 1999).

OTHER METAMORPHIC/MAGMATIC MASSIVE SULPHIDE INDICATOR MINERALS

The formation of Ni-Cu sulphide minerals removes Fe from crystallizing mafic–ultramafic melts, resulting in the formation of Mg-rich olivines and Mg-rich orthopyroxenes. The conclusion of chromite crystallization resulting from the lack of Fe allows excess Cr in the melt to be incorporated into red rutile and uvarovite (Averill 1999).

Picking results for MMSIMs® were reported in 3 ways: actual grain counts (e.g., low Cr-diopside or chromite), percentages of the total fraction size (e.g., orthopyroxene) or as trace amounts (e.g., staurolite). In order to determine the distribution of sites with anomalous MMSIMs®, a ranking system was designed to analyse the data in a uniform manner. Minerals present in trace amounts were assigned values representing half of the lowest reported amount, 0.25%. The sites were than ranked from 5 to 0 depending upon the number of anomalous (anomalous defined as >98th percentile) MMSIMs® determined for each site. The 98th percentile was chosen instead of the 95th percentile due to a lack of data variation. For example, sample 01SSM-085 has the highest number (5) of different anomalous MMSIMs®, (low Cr-diopside, chalcopyrite, pyrite, Mn-epidote and spessartine). Site 01SSM-138 was given a ranking of 3 as it consists of 3 different types of anomalous MMSIMs® (low Cr-diopside, corundum and red rutile). Results of this ranking system were used to produce an MMSIM® proportional dot diagram summarizing the distribution of those sites with the highest number of anomalous MMSIMs®. Above the 98th percentile, 13 sites ranked at 3 or 5 (Table 2) and 52 sites ranked above the 90th percentile, at 2. The regional distribution of the anomalies is shown on Figure 39. In addition, regional chalcopyrite distribution was plotted and is displayed in Figure 40. Analysis of the chalcopyrite data identified 9 sites as anomalous, 3 above the 98th percentile and 6 above the 95th percentile (Table 3).

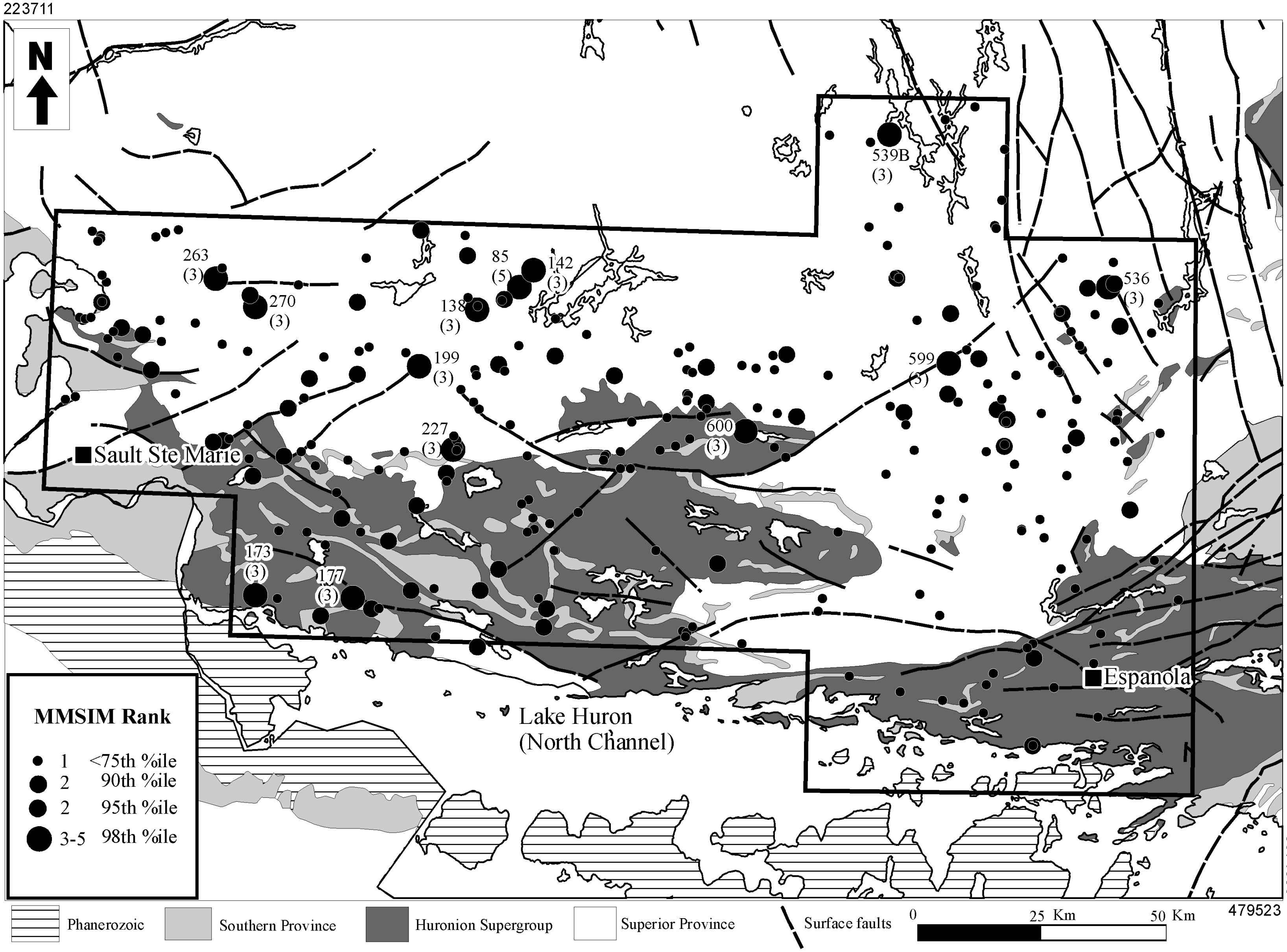

Figure 39: Regional distribution of MMSIM indicators. Labelled anomalies, shown in brackets, were determined by level of rank (described in text).

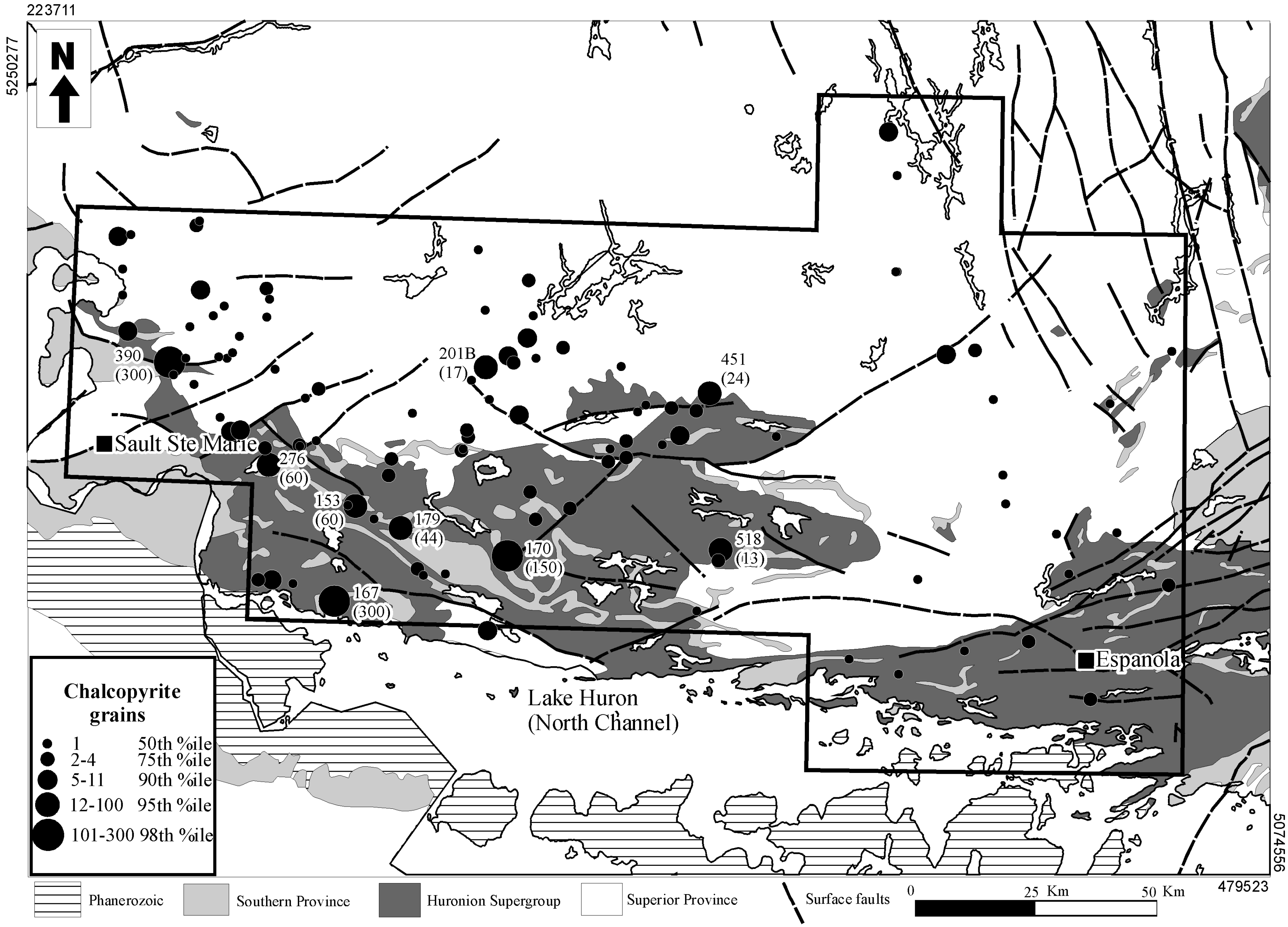

Figure 40: Regional distribution of chalcopyrite grains. Anomalous sites are labelled with the corresponding number of grains shown in brackets..

Table 3. Summary of anomalous chalcopyrite grains.

Sample Number	Easting	Northing	Number of Cpy grains
98th percentile			
01-SSM-0167	287106	5131184	300
01-SSM-0390	253350	5180194	300
01-SSM-0170	322748	5140299	150
95th percentile			
01-SSM-0153	291475	5150525	60
01-SSM-0276	273516	5159029	60
01-SSM-0179	300800	5146001	44
01-SSM-0451	364396	5173615	24
01-SSM-201B	318152	5179127	17
01-SSM-0518	366485	5141655	13

Anomalous MMSIM® sites are distributed evenly throughout the study area. These anomalies could occur in various geological environments. Polymetallic occurrences of metals including copper, cobalt, silver, gold, zinc, lead and nickel are either hosted within the margins of Nipissing diabase or within sedimentary rocks adjacent to diabase sills. The mafic and ultramafic rocks of the Nipissing diabase, Sudbury swarm and related intrusive rocks may contain pods of magmatic Ni-Cu massive sulphides. As well, small quartz-carbonate veins containing anomalous values of Cu, Ag, Co ± Au and Ni may occur in the region. The emplacement of Archean mafic and felsic intrusives or Proterozoic mafic intrusives may have liberated hydrothermal fluids that remobilized metals from the metavolcanics or Huronian sediments. Consequently, these fluids could have deposited the sulphides in quartz-carbonate veins in any of the rock formations present in the vicinity as they travelled along structural contacts or fault zones. Later metamorphism could have resulted in the genesis of similar veins. Sulphide veins in rhyolites and related felsic volcanic rock types may represent zones of volcanogenic massive sulphides with minor copper and zinc mineralization.

GOLD GRAINS

Gold grains recovered from modern alluvium samples are typically silt sized and may be classified according to their grain shape. The shape varies depending on the distance of transport from their source area. The 3 gold grain shapes include pristine, modified and reshaped. In general, pristine grains appear as angular wires or rods and thus retain primary textures, such as crystal faces, suggesting little distance of transport from the source. Modified grains retain the original shape, but have irregular edges and crumpled or curled protrusions. Reshaped grains indicate a longer distance of transport from source therefore, appear flattened or rounded, retaining little or none of their original form (DiLabio 1990).

Gold grain data for the 720 samples collected are listed in Appendix F. A total of 322 gold grains were recovered. Of the 322 grains, 8 were pristine, 10 were modified and 304 were reshaped. The majority of grains were reshaped suggesting some distance of transport. Table 4 lists the anomalous samples and the corresponding shapes of visible gold grains. Grains were recovered from 130 of the sites sampled, however, only 10 samples were considered anomalous, 3 above the 98th percentile (14 to 38 grains) and 7 above the 95th percentile (6 to 13 grains) (Figure 41).

Table 4. Summary of anomalous gold grain sites.

Sample Number	Number of Visible Gold Grains			
	Reshaped	Modified	Pristine	Total
98th percentile				
0561	38			38
0006	19		1	20
0016	17			17
95th percentile				
0417	13			13
0442	10			10
0406	4	3	1	8
0010	6			6
0554	6			6
0570	6			6
0714	6			6
90th percentile				
0022	5			5
0404	2	3		5
0405	5			5
0008	3		1	4
0094	4			4
0196	4			4
0555B	4			4
0597	4			4
0710	1		3	4
0716	3		1	4

The anomalous gold grain samples are concentrated mainly within the eastern half of the survey area and are associated with the Nipissing diabase intrusions, the massive granodiorite to granite intrusive rocks and the Cobalt Group rocks. The southeast portion of the study area shows a cluster of gold anamolies (SSM-10 and SSM-16) that are likely associated with the copper, nickel and gold ore deposits of the Sudbury Nickel Irruptive and/or the Worthington offset dike. The Worthington offset dike extends into Lorne Township in the southeast part of the survey area. The gold in this area may be associated with sulphide mineralization within Nipissing sills or quartz veins (Hart and Podolsky 1972). Slightly to the southwest of these sites, numerous gold showings have been reported. These are associated with quartz veins running through the Cobalt Group rocks. The quartz is mineralized with pyrite, arsenopyrite, chalcopyrite and gold. These vein occurences fall into 2 classes: 1) those formed along the contact of the diabase and the quartzite; and 2) those formed within the igneous rock itself (Card 1976). In the northeastern part of the study area, a number of gold grains were recovered, including anomalous sites 417, 554 and 570. These grains may be derived from Archean sulphide-bearing felsic or mafic metavolcanic rocks or they may be spatially associated with regional deformation zones or related to minor base metal mineralization that exists in association with quartzo-feldspathic gneisses.

The large number of reshaped grains recovered suggests that the gold has travelled some distance from source. It is interesting to note that the sites with anomalous gold grain counts are also anomalous in chromite KIM grains.

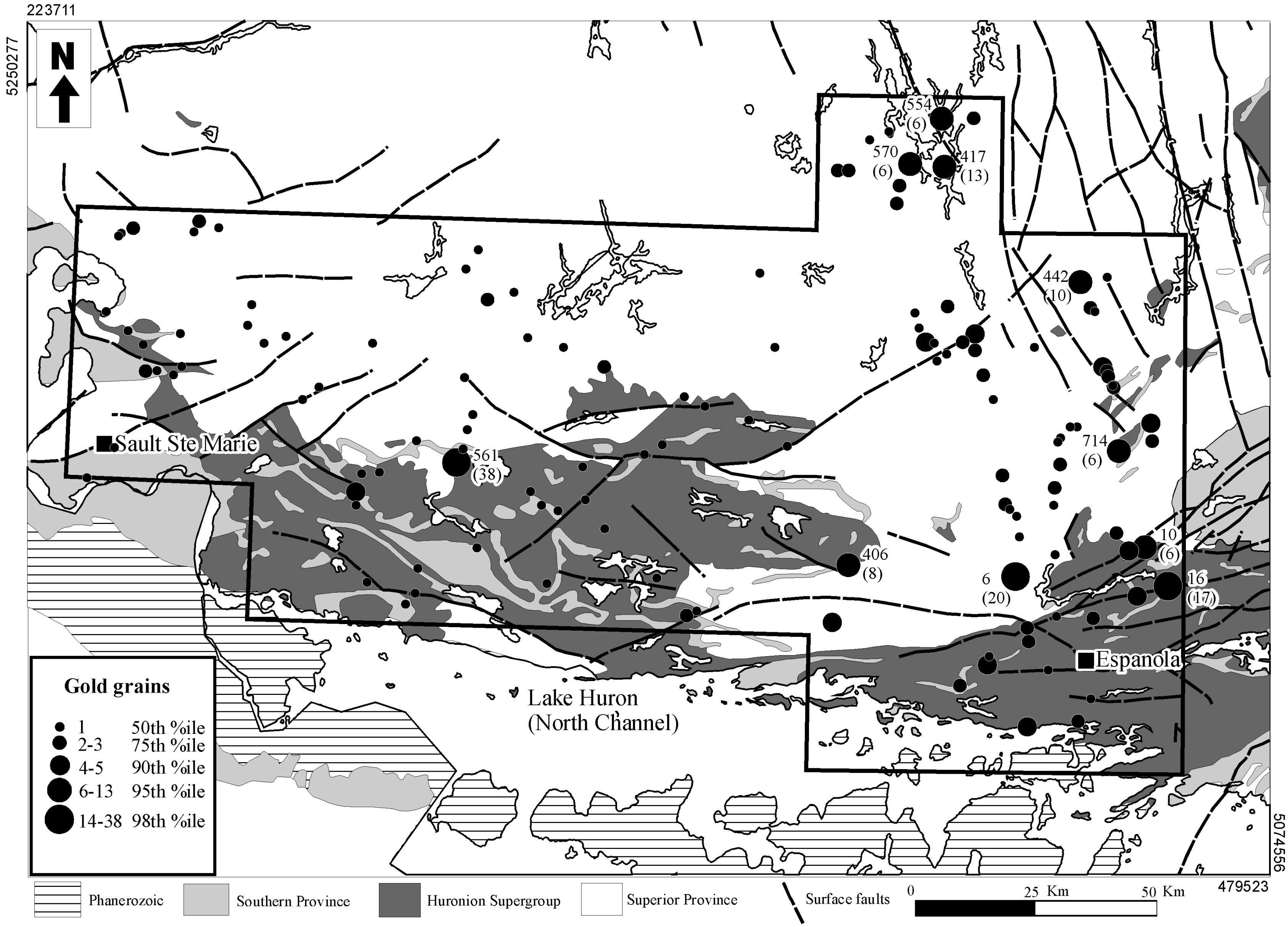

Figure 41: Regional distribution of gold grains. Anomalous sites are labelled with the corresponding number of grains shown in brackets..

Conclusions

KIMBERLITES AND RELATED ROCKS

The primary objective of this survey was to create a regional data set on the types and distribution of kimberlite indicator minerals by means of modern alluvium sampling. The survey is regional in nature and as such does not pinpoint specific locations for follow-up studies; however, this survey has defined target areas containing kimberlite indicator minerals that warrant additional work. Areas where diamond potential KIM grains and other KIM grains are found clustered together require further investigation. To locate the source(s) of the kimberlite heavy minerals, the sampling density needs to be increased and other exploration techniques, such as high density till sampling, employed. Therefore, more detailed exploration is strongly recommended.

BASE METAL AND GOLD

Historically, the north shore of Lake Huron has been an area of intense uranium and thorium production as well as copper and nickel sulphide and gold production. The production of ore has come fom the Nipissing diabase or from the Sudbury nickel irruptive. The anomalies outlined in this study are representative of areas of magmatic or volcanogenic massive sulphide deposits and may be associated with the Nipissing diabase.

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Appendix A

Sample Site Locations

SAMPLE NUMBER	UTM	
	EASTING	NORTHING
01-SSM-0001	425950	5149820
01-SSM-0002	427400	5148400
01-SSM-0003	427250	5145600
01-SSM-0004	427800	5144200
01-SSM-0005	427800	5143950
01-SSM-0006	427300	5136100
01-SSM-0007	424050	5130500
01-SSM-0008	450383	5141257
01-SSM-0009	432878	5146778
01-SSM-0010	453955	5142024
01-SSM-0011	435524	5144572
01-SSM-0012	458792	5138664
01-SSM-0013	435231	5140543
01-SSM-0014	459954	5136770
01-SSM-0015	437861	5136493
01-SSM-0016	458736	5134287
01-SSM-0017	435368	5127692
01-SSM-0018	457970	5133259
01-SSM-0019	429485	5125545
01-SSM-0020	450095	5129334
01-SSM-0021	429844	5125561
01-SSM-0022	451999	5131875
01-SSM-0023	443080	5127360
01-SSM-0024	403605	5174066
01-SSM-0025	447607	5137324
01-SSM-0026	403749	5171669
01-SSM-0027	453181	5133767
01-SSM-0028	404027	5169250
01-SSM-0029	420598	5177464
01-SSM-0030	404129	5169155
01-SSM-0031	422575	5172439
01-SSM-0032	405894	5164161
01-SSM-0034	406134	5160021
01-SSM-0035	412610	5175548
01-SSM-0036	409313	5158406
01-SSM-0037	414672	5173609
01-SSM-0038	410997	5154272
01-SSM-0039	417628	5170400
01-SSM-0040	411110	5148536
01-SSM-0041	420097	5163729
01-SSM-0042	409074	5144463
01-SSM-0043	423384	5158887
01-SSM-0044	408823	5144303
01-SSM-0045	427297	5148080
01-SSM-0046	427620	5116730
01-SSM-0047	452231	5107021
01-SSM-0048	429553	5117739
01-SSM-0049	452043	5109981
01-SSM-0050	433826	5116566
01-SSM-0051	442382	5110634
01-SSM-0052	441621	5121469
01-SSM-0053	427081	5145780
01-SSM-0054	439154	5123321
01-SSM-0055	427110	5136101
01-SSM-0056	457106	5129814
01-SSM-0057	449176	5116494
01-SSM-0058	429872	5122622
01-SSM-0059	420208	5117192
01-SSM-0060	428453	5124649
01-SSM-0061	419506	5111703
01-SSM-0062	401070	5172867
01-SSM-0063	422529	5110456
01-SSM-0064	394136	5160822
01-SSM-0065	411368	5114114
01-SSM-0066	400159	5159412
01-SSM-0067	402916	5115934
01-SSM-0068	399222	5162439
01-SSM-0069	403727	5115834
01-SSM-0070	415697	5154417
01-SSM-0071	345464	5163879
01-SSM-0072	402616	5148319
01-SSM-0073	345364	5163945
01-SSM-0074	413265	5137436
01-SSM-0075	345145	5163962
01-SSM-0076	413895	5136427
01-SSM-0077	344175	5163392
01-SSM-0078	414634	5133294
01-SSM-0079	344043	5162879
01-SSM-0080	410961	5131033
01-SSM-0081	343498	5162189
01-SSM-0082	411161	5131122
01-SSM-0083	343279	5159751
01-SSM-0084	416713	5131231
01-SSM-0085	327083	5196982
01-SSM-0086	414617	5130088
01-SSM-0087	326150	5196287
01-SSM-0088	411331	5125663
01-SSM-0089	318508	5193072
01-SSM-0090	411677	5123429
01-SSM-0091	323278	5193989
01-SSM-0092	416418	5120765
01-SSM-0093	323842	5194360
01-SSM-0094	421358	5117729
01-SSM-0095	328847	5193822
01-SSM-0096	415670	5113555
01-SSM-0097	325273	5190069
01-SSM-0098	415285	5116566
01-SSM-0099	320848	5182575
01-SSM-0100	421720	5119461
01-SSM-0101	317897	5180281

SAMPLE NUMBER	UTM	
	EASTING	NORTHING
01-SSM-0102	414612	5118415
01-SSM-0103	322750	5181455
01-SSM-0104	406891	5118910
01-SSM-0105	317702	5173824
01-SSM-0106	358004	5165129
01-SSM-0107	318748	5172350
01-SSM-0108	358877	5165173
01-SSM-0109	319028	5171699
01-SSM-0110	354910	5164046
01-SSM-0111	316639	5170056
01-SSM-0112	354352	5163109
01-SSM-0113	314855	5167855
01-SSM-0114	353943	5162495
01-SSM-0115	314180	5165983
01-SSM-0116	353971	5161436
01-SSM-0117	314566	5164806
01-SSM-0118	347108	5163923
01-SSM-0119	314361	5164264
01-SSM-0120	350560	5160961
01-SSM-0121	342085	5155425
01-SSM-0122	350230	5160428
01-SSM-0123	339410	5152972
01-SSM-0124	348880	5160364
01-SSM-0125	338568	5151655
01-SSM-0126	347066	5160429
01-SSM-0127	335323	5150013
01-SSM-0128	316057	5206967
01-SSM-0129	315702	5143425
01-SSM-0130	316237	5206808
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01-SSM-0134	314063	5200044
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01-SSM-0139	302134	5138948
01-SSM-0140	316606	5194762
01-SSM-0141	302048	5142338
01-SSM-0142	329836	5200217
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01-SSM-0144	321353	5193004
01-SSM-0145	295499	5150525
01-SSM-0146	317972	5190615
01-SSM-0147	298437	5148496
01-SSM-0148	328435	5180691
01-SSM-0149	295102	5147613
01-SSM-0150	323997	5179959
01-SSM-0151	295165	5147742

SAMPLE NUMBER	UTM	
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01-SSM-0153	291475	5150525
01-SSM-0154	311057	5177311
01-SSM-0155	298743	5132422
01-SSM-0156	311547	5177690
01-SSM-0157	297276	5132581
01-SSM-0158	313724	5176956
01-SSM-0159	288110	5145211
01-SSM-0160	314609	5179458
01-SSM-0161	286212	5148792
01-SSM-0162	329516	5150635
01-SSM-0163	284287	5147675
01-SSM-0164	332982	5149569
01-SSM-0165	278745	5147975
01-SSM-0166	329823	5148313
01-SSM-0167	287106	5131184
01-SSM-0168	328288	5147720
01-SSM-0169	278397	5134598
01-SSM-0170	322748	5140299
01-SSM-0172	330512	5134374
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01-SSM-0176	331642	5128730
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01-SSM-0178	318474	5124938
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01-SSM-0197	304120	5183500
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01-SSM-0199	306991	5181087
01-SSM-0200	292551	5156990
01-SSM-201B	318152	5179127
01-SSM-0202	292543	5162303

SAMPLE NUMBER	UTM	
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01-SSM-0204	292543	5162303
01-SSM-0205	331298	5157748
01-SSM-0206	290205	5155687
01-SSM-0207	328270	5162877
01-SSM-0208	284535	5161730
01-SSM-0209	328776	5161508
01-SSM-0210	285880	5161140
01-SSM-0211	314821	5176480
01-SSM-0212	291809	5162336
01-SSM-0213	315104	5176190
01-SSM-0214	291805	5162074
01-SSM-0216	291823	5162047
01-SSM-0217	315319	5169332
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01-SSM-0222	360056	5126818
01-SSM-0223	314253	5167254
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01-SSM-0226	353341	5135626
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01-SSM-0232	448094	5145123
01-SSM-0233	321753	5161537
01-SSM-0234	439930	5106259
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01-SSM-0238	324145	5167100
01-SSM-0239	305747	5155581
01-SSM-0240	341474	5156906
01-SSM-0241	306284	5153007
01-SSM-0242	235586	5155909
01-SSM-0243	298703	5160081
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01-SSM-0245	257854	5198985
01-SSM-0246	234886	5159507
01-SSM-0247	258284	5198090
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01-SSM-0256	278109	5204181
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01-SSM-0284	282632	5197230
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01-SSM-0286	280756	5197454
01-SSM-0287	244477	5186471
01-SSM-0288	276303	5196376
01-SSM-0289	258602	5208137
01-SSM-0290	274909	5197002
01-SSM-0291	259127	5209128
01-SSM-0292	246402	5209699
01-SSM-0293	259063	5209134
01-SSM-0294	245660	5207748
01-SSM-0295	256082	5207785
01-SSM-0296	245035	5206299
01-SSM-0297	252795	5205722
01-SSM-0298	241321	5207855
01-SSM-0299	249299	5205167
01-SSM-0300	243010	5207117
01-SSM-0301	254197	5206732
01-SSM-0302	243193	5206473

SAMPLE NUMBER	UTM	
	EASTING	NORTHING
01-SSM-0303	255108	5206892
01-SSM-0304	242581	5205985
01-SSM-0305	272347	5182776
01-SSM-0306	242526	5205250
01-SSM-0307	272487	5183978
01-SSM-0308	236851	5183972
01-SSM-0309	275194	5183667
01-SSM-0310	238604	5181405
01-SSM-0311	276058	5184589
01-SSM-0312	296310	5202616
01-SSM-0313	276832	5185301
01-SSM-0314	293715	5196209
01-SSM-0315	275100	5187895
01-SSM-0316	294427	5193932
01-SSM-0317	273101	5189219
01-SSM-0318	294407	5179491
01-SSM-0319	271891	5187452
01-SSM-0320	294645	5183853
01-SSM-0321	276029	5187248
01-SSM-0322	288401	5182280
01-SSM-0323	284865	5178548
01-SSM-0324	287663	5182663
01-SSM-0325	284335	5174945
01-SSM-0326	286052	5181910
01-SSM-0327	283864	5174966
01-SSM-0328	236123	5174214
01-SSM-0329	283669	5174520
01-SSM-0330	237987	5174977
01-SSM-0331	283532	5174901
01-SSM-0332	239952	5177216
01-SSM-0333	296862	5184817
01-SSM-0334	244245	5180876
01-SSM-0335	279733	5162927
01-SSM-0336	248164	5178149
01-SSM-0337	279856	5162809
01-SSM-0338	250526	5178157
01-SSM-0339	280028	5162305
01-SSM-0340	251343	5178061
01-SSM-0341	280739	5162379
01-SSM-0342	255538	5179008
01-SSM-0343	274652	5162851
01-SSM-0344	261981	5176942
01-SSM-0345	272710	5162493
01-SSM-0346	260221	5179067
01-SSM-0347	271107	5157187
01-SSM-0348	260325	5181210
01-SSM-0349	269549	5156529
01-SSM-0350	261501	5180714
01-SSM-0351	258000	5175313
01-SSM-0352	264949	5180811

SAMPLE NUMBER	UTM	
	EASTING	NORTHING
01-SSM-0353	258760	5168331
01-SSM-0354	263210	5181212
01-SSM-0355	263580	5170428
01-SSM-0356	265837	5181945
01-SSM-0357	263435	5168529
01-SSM-0358	269868	5190529
01-SSM-0359	263208	5166281
01-SSM-0360	269139	5187473
01-SSM-0361	267739	5166177
01-SSM-0362	268370	5184574
01-SSM-0363	265646	5165754
01-SSM-0364	267214	5185400
01-SSM-365B	389431	5170946
01-SSM-0366	264367	5191454
01-SSM-0367	390749	5168556
01-SSM-0368	264350	5191457
01-SSM-0369	384469	5167789
01-SSM-0370	247285	5188759
01-SSM-0371	387407	5167066
01-SSM-0372	245703	5187943
01-SSM-0373	384393	5163805
01-SSM-0374	251526	5187179
01-SSM-0375	350865	5171259
01-SSM-0376	249081	5185139
01-SSM-0377	347791	5169570
01-SSM-0378	247464	5183612
01-SSM-0379	349262	5169919
01-SSM-0380	246485	5182920
01-SSM-0381	444809	5187724
01-SSM-0382	254673	5182118
01-SSM-0383	443748	5185918
01-SSM-0384	254691	5181980
01-SSM-0385	433051	5182814
01-SSM-0386	256603	5181739
01-SSM-0387	442048	5167129
01-SSM-0388	256473	5180840
01-SSM-0389	439613	5166549
01-SSM-0390	253350	5180194
01-SSM-0391	431830	5146555
01-SSM-0392	260227	5175923
01-SSM-0393	443253	5190437
01-SSM-0394	300936	5177927
01-SSM-0395	442521	5191389
01-SSM-0396	299572	5179393
01-SSM-0397	441964	5191253
01-SSM-0398	290131	5179762
01-SSM-0399	437406	5169445
01-SSM-0400	265319	5188445
01-SSM-0401	440870	5167486
01-SSM-0402	254886	5190121

SAMPLE NUMBER	UTM	
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01-SSM-0403	430853	5150396
01-SSM-0404	389268	5126577
01-SSM-0405	429634	5105059
01-SSM-0406	392790	5138483
01-SSM-0407	417909	5232843
01-SSM-0408	387499	5134365
01-SSM-0409	418781	5224922
01-SSM-0410	386602	5132018
01-SSM-0411	429505	5105048
01-SSM-0412	333968	5183097
01-SSM-0413	418521	5230205
01-SSM-0414	340211	5187196
01-SSM-0415	411816	5222117
01-SSM-0416	346568	5185922
01-SSM-0417	412592	5220257
01-SSM-0418	344906	5184957
01-SSM-0419	423289	5214106
01-SSM-0420	358931	5172916
01-SSM-0421	423866	5219757
01-SSM-0423	418177	5196956
01-SSM-0424	380345	5183291
01-SSM-0425	411386	5207325
01-SSM-0426	377500	5183145
01-SSM-0427	402650	5212787
01-SSM-0428	377716	5180299
01-SSM-0429	406304	5219414
01-SSM-0430	371260	5181132
01-SSM-0431	418726	5203488
01-SSM-0432	454083	5200027
01-SSM-0433	402294	5211311
01-SSM-0434	459601	5203276
01-SSM-0435	360416	5180302
01-SSM-0436	459943	5203185
01-SSM-0437	358641	5183499
01-SSM-0438	445556	5201789
01-SSM-0439	358003	5185365
01-SSM-0440	445959	5197589
01-SSM-0441	366586	5201339
01-SSM-0442	440416	5196507
01-SSM-0443	374473	5198419
01-SSM-0444	428261	5203596
01-SSM-0445	374032	5180566
01-SSM-0446	434964	5191732
01-SSM-0447	382307	5170992
01-SSM-0448	449132	5152344
01-SSM-0449	378418	5171623
01-SSM-0450	440157	5146215
01-SSM-0451	364396	5173615
01-SSM-0452	406879	5135395
01-SSM-0453	364129	5180853

SAMPLE NUMBER	UTM	
	EASTING	NORTHING
01-SSM-0454	397241	5151005
01-SSM-0455	374450	5172543
01-SSM-0456	390651	5147850
01-SSM-0457	359789	5168757
01-SSM-0458	389260	5137505
01-SSM-0459	338095	5158361
01-SSM-0460	421827	5209107
01-SSM-0461	375627	5169212
01-SSM-0462	421921	5208956
01-SSM-0463	326584	5185004
01-SSM-0464	411935	5216112
01-SSM-0465	361414	5179616
01-SSM-0466	399342	5217706
01-SSM-0467	347417	5171202
01-SSM-0468	358781	5138263
01-SSM-0469	350929	5163957
01-SSM-0470	358193	5138392
01-SSM-0471	421376	5150599
01-SSM-0472	365916	5139354
01-SSM-0473	425060	5150730
01-SSM-0474	369380	5140288
01-SSM-0475	425509	5150876
01-SSM-0476	370839	5140297
01-SSM-0477	424451	5156810
01-SSM-0478	342525	5179043
01-SSM-0479A	424502	5156656
01-SSM-0480	345995	5179068
01-SSM-0481	426252	5179104
01-SSM-0482	435626	5157110
01-SSM-0483	423439	5174401
01-SSM-0484	435717	5157228
01-SSM-0485	424137	5169713
01-SSM-0486	435230	5156333
01-SSM-0487	436088	5163707
01-SSM-0488	285814	5165536
01-SSM-0489	446501	5171374
01-SSM-0490	285918	5165378
01-SSM-0491	423804	5165095
01-SSM-0492	286518	5166986
01-SSM-0493	425208	5162278
01-SSM-0494	286584	5167010
01-SSM-0495	423705	5164042
01-SSM-495B	421122	5150532
01-SSM-0496	285247	5165221
01-SSM-0497	423908	5165305
01-SSM-0498	283139	5163729
01-SSM-0499	425374	5162613
01-SSM-0500	377875	5164674
01-SSM-500B	393756	5228016
01-SSM-0501	446399	5170067

SAMPLE NUMBER	UTM	
	EASTING	NORTHING
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01-SSM-0503	445849	5165898
01-SSM-0504	366693	5165649
01-SSM-0505	436617	5160192
01-SSM-0506	358756	5170841
01-SSM-0507	434227	5151324
01-SSM-0508	361367	5170168
01-SSM-0509	392431	5178819
01-SSM-0510	364397	5172376
01-SSM-0511	425942	5161288
01-SSM-0512	363039	5170927
01-SSM-0514	370776	5170080
01-SSM-0516	360953	5166275
01-SSM-0518	366485	5141655
01-SSM-0520	360279	5175402
01-SSM-0521	389289	5172994
01-SSM-0522	360607	5175105
01-SSM-0523	359172	5141792
01-SSM-0524	360346	5174084
01-SSM-0525	371370	5125357
01-SSM-0526	360011	5173740
01-SSM-0527	361557	5128955
01-SSM-0528	356315	5170563
01-SSM-0529	353858	5173981
01-SSM-0530	455246	5200848
01-SSM-0531	438326	5166717
01-SSM-0532	446594	5200766
01-SSM-0533	440617	5169030
01-SSM-0534	447040	5188882
01-SSM-0535	440205	5169613
01-SSM-0536	444723	5196896
01-SSM-0537	400793	5227696
01-SSM-0538	444066	5195441
01-SSM-539B	400974	5227357
01-SSM-0540	440289	5197509
01-SSM-0541	354107	5144031
01-SSM-0542	427934	5199384
01-SSM-0543	338435	5153044
01-SSM-0544	430535	5195640
01-SSM-0545	328668	5154345
01-SSM-0546	447251	5155792
01-SSM-0547	327298	5153458
01-SSM-0548	416580	5123230
01-SSM-0549	311558	5159300
01-SSM-0550	410331	5151396
01-SSM-0551	399257	5222567
01-SSM-0552	397360	5155440
01-SSM-0553	418859	5182393
01-SSM-0554	411954	5230165
01-SSM-555B	418682	5185804
01-SSM-0556	423843	5224178
01-SSM-0557	418925	5187716
01-SSM-0558	418361	5212170
01-SSM-0559	416263	5184061
01-SSM-0560	420837	5204876
01-SSM-0561	312212	5159591
01-SSM-0562	422234	5208463
01-SSM-0563	258011	5206697
01-SSM-0564	396838	5208795
01-SSM-0565	255234	5186008
01-SSM-0566	387588	5216295
01-SSM-0567	255169	5185991
01-SSM-0568	388768	5227208
01-SSM-0569	251494	5182181
01-SSM-0570	405470	5220791
01-SSM-0571	416255	5184143
01-SSM-0572	400520	5205245
01-SSM-0574	388794	5204068
01-SSM-0575	401727	5199163
01-SSM-0576	390495	5200781
01-SSM-0577	402577	5198544
01-SSM-0578	405718	5192172
01-SSM-0579	402515	5198522
01-SSM-0580	402989	5189612
01-SSM-0581	298026	5156826
01-SSM-0582	398368	5190838
01-SSM-0584	394940	5188728
01-SSM-0585	303682	5163816
01-SSM-0586	392993	5187153
01-SSM-0587	288421	5168739
01-SSM-0588	397186	5184734
01-SSM-0589	292195	5207599
01-SSM-0590	401902	5186091
01-SSM-0591	403232	5198953
01-SSM-0592	390586	5181105
01-SSM-0593	405918	5198124
01-SSM-0594	372395	5199853
01-SSM-0595	410248	5184022
01-SSM-0596	388482	5179132
01-SSM-0597	408553	5184322
01-SSM-0598	384875	5174606
01-SSM-0599	412805	5181645
01-SSM-0600	372228	5168003
01-SSM-0601	307059	5208176
01-SSM-0602	380032	5162667
01-SSM-0603	270676	5197622
01-SSM-0604	348566	5179734
01-SSM-0605	267479	5200493
01-SSM-0606	326598	5184999
01-SSM-0607	275503	5170938

SAMPLE NUMBER	UTM	
	EASTING	NORTHING
01-SSM-0608	329755	5185910
01-SSM-0609	459833	5196899
01-SSM-0610	360979	5184684
01-SSM-0611	295686	5157711
01-SSM-0612	426851	5183205
01-SSM-0613	296058	5157330
01-SSM-0614	424529	5170249
01-SSM-0615	310883	5150692
01-SSM-0616	436719	5165342
01-SSM-0617	438123	5174655
01-SSM-0618	436344	5164394
01-SSM-0619	438324	5174446
01-SSM-0620	435877	5163525
01-SSM-0621	454611	5193474
01-SSM-0622	446170	5169966
01-SSM-0623	455927	5191944
01-SSM-0624	446126	5169487
01-SSM-0625	457156	5179550
01-SSM-0626	436378	5158351
01-SSM-0627	241741	5162550
01-SSM-0628	436301	5159100
01-SSM-0629	237996	5161027
01-SSM-0630	435181	5154173
01-SSM-0631	274628	5178662
01-SSM-0632	434798	5150685
01-SSM-0633	269818	5191942
01-SSM-0634	397766	5172606
01-SSM-0635	271365	5135332
01-SSM-0636	391792	5178276
01-SSM-0637	268765	5166291
01-SSM-0638	389207	5173055
01-SSM-0639	270143	5167982
01-SSM-0640	364859	5141357
01-SSM-0641	278854	5161441
01-SSM-0642	366671	5130146
01-SSM-0643	336231	5188390
01-SSM-0644	374946	5124957
01-SSM-0645	333966	5190360
01-SSM-0646	350144	5144777
01-SSM-0647	327920	5189434
01-SSM-0648	347968	5147827
01-SSM-0649	439297	5184127
01-SSM-0650	326609	5154733
01-SSM-0651	439871	5183656
01-SSM-0652	327280	5153883
01-SSM-0653	440622	5182215
01-SSM-0654	342394	5145881
01-SSM-0655	438877	5185038
01-SSM-0656	310274	5157807
01-SSM-0657	435556	5191679

SAMPLE NUMBER	UTM	
	EASTING	NORTHING
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01-SSM-0659	437147	5187902
01-SSM-0660	258726	5207048
01-SSM-0661	435484	5202556
01-SSM-0662	263215	5207660
01-SSM-0663	437398	5193955
01-SSM-0664	232367	5171540
01-SSM-0665	413207	5191532
01-SSM-0666	272007	5145614
01-SSM-0667	447444	5174869
01-SSM-0668	299318	5157848
01-SSM-0669	446729	5176174
01-SSM-0670	288704	5166397
01-SSM-0671	405299	5211681
01-SSM-0672	265803	5167084
01-SSM-0673	403133	5216546
01-SSM-0674	263373	5165729
01-SSM-0675	406068	5214829
01-SSM-0676	305951	5188841
01-SSM-0677	445910	5178286
01-SSM-0678	302769	5178391
01-SSM-0679	446095	5177128
01-SSM-0680	287607	5199204
01-SSM-0681	390956	5222992
01-SSM-0682	280534	5172537
01-SSM-0683	391047	5224439
01-SSM-0684	280948	5172606
01-SSM-0685	396931	5225812
01-SSM-0686	280484	5172218
01-SSM-0687	407207	5187185
01-SSM-0688	279442	5171669
01-SSM-0689	407150	5187092
01-SSM-0690	275948	5171234
01-SSM-0691	406409	5190147
01-SSM-0692	272534	5169109
01-SSM-0693	410865	5180213
01-SSM-0694	272070	5168565
01-SSM-0695	246024	5165188
01-SSM-0696	272829	5166706
01-SSM-0697	273190	5181135
01-SSM-0698	269042	5165984
01-SSM-0699	269661	5181472
01-SSM-0700	268762	5170368
01-SSM-0701	390894	5221317
01-SSM-0702	390606	5219614
01-SSM-0703	392776	5219423
01-SSM-0704	402730	5218292
01-SSM-0705	453280	5187569
01-SSM-0706	444642	5182884
01-SSM-0707	444499	5181600

SAMPLE NUMBER	UTM	
	EASTING	NORTHING
01-SSM-0708	444952	5180052
01-SSM-0709	445121	5179742
01-SSM-0710	445148	5179195
01-SSM-0711	446881	5174432
01-SSM-0712	459188	5182184
01-SSM-0713	456355	5183967
01-SSM-0714	448521	5161855
01-SSM-0715	455300	5163999
01-SSM-0716	454958	5167563
01-SSM-0717	425443	5191415
01-SSM-0718	430810	5182953

SAMPLE NUMBER	UTM	
	EASTING	NORTHING
01-SSM-0719	430963	5182744
01-SSM-0720	433420	5180967
01-SSM-0721	431162	5171517
01-SSM-0722	447097	5175264
01-SSM-0723	448169	5173544
01-SSM-0724	434907	5179684
01-SSM-0725	434662	5180065
01-SSM-0726	436199	5177439
01-SSM-0727	403932	5205777
01-SSM-0728	435998	5178410

Appendix C

Summary of Kimberlite Indicator
Mineral Counts

Summary List of Abbreviations:

KIM: Kimberlite Indicator Minerals

Diop.: Diopside

GP: Pyrope Garnet

GO: Eclogitic Garnet

DC: Chrome Diopside

IM: Ilmenite

CR: Chromite

FO: Forsteritic Olivine

(p) amount of grains picked from sample

(e) amount of grains estimated to be in sample (zero means all picked)

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
01SSM																							***				
0001	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	16
0002	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	40	50	0	0	51
0003	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	16
0004	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0005	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0006	No Sample	0	0	0	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0008	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2
0009	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	4
0010	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0011	0	1	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0012A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0013	0	2	0	19	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	40	100	0	0	102
0015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0016	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
0017	0	1	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0	0	0	4
0019	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	41
0020	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	1	0	17
0021	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0022	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0	0	26
0023	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0024	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14
0025	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
0026	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0027	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	20
0028	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0029	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0030	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
0031	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	15	0	0	15
0032	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0034	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0035	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0036	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
0037	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0038	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0039	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0040	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0041	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0042	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0043	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0045	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	80	0	0	80
0047	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0048	No Sample	0	0	0	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0049	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0050	No Sample	0	0	1	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0051	No Sample	0	0	3	0	No Sample						0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
0052	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
0053	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
0054	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0058	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	8	0	0	0	9
0059	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	4
0060	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8
0061	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0062	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0064	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0065	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0066	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0067	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0068	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0070	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0071	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0072	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0073	No Sample	0	0	0	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0074	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	50	0	0	50
0075	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0076	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0077	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0078	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0079	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0080	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0081	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0082	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0083	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0084	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0085	0	14	0	25	40	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	20	0	9	25	21
0086	No Sample	0	0	0	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0087	0	0	0	15	40	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	6	0	15	50	6
0088	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7
0089	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0090	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0091	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0092	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0093	0	0	0	27	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	7	0	7	25	8
0094	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0095	0	2	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0096	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0098	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0099	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	4	0	3
0100	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0101	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	4	0	11	25	5
0102	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0103	0	1	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	6	0	1	0	7
0105	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0106	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	20	2	0	0
0107	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	20	0	11	0	20
0108	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	3
0109	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	6	0	5	20	7
0110	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0111	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	1	0	8	15	6
0112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8
0113	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	6	0	2	0	6
0114	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8
0115	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0116	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7
0117	0	0	0	5	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	2	0	3
0118	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
0119	0	1	0	6	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	13	0	11	20	16
0120	0	4	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13
0121	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0123	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2
0124	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0125	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0126	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0127	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0128	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0129	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	10	30	0	0	30
0130	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0131	No Sample	0	0	13	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	2

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0132	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	0	8	20	6
0133	0	1	0	18	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	10	20	0	0	21
0134	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0135	No Sample	0	0	13	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0136	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0137	No Sample	0	0	16	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	2	0	4	0	2
0138	0	0	0	25	50	0	0	0	0	1	0	0	1	0	1	0	0	1	0	2	0	0	5	50	12	50	6
0139	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0140	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0141	0	1	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0142	0	5	0	40	250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	10	0
0143	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	0	1	0	5
0144	0	1	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	5	0	1	0	6
0145	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0146	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2	0	1
0147	No Sample	0	0	2	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0148	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8
0149	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0150	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0151	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	10	20	1	0	20
0152	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	3	0	5
0153	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	9	0	0	0	9
0154	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	4	0	0
0155	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0	5
0156	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0157	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	10	0	0	10
0158	0	0	0	13	0	0	0	0	0	0	0	0	0	0	1	3	0	2	0	0	1	0	5	0	0	0	11
0159	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	3
0160	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	0	2
0161	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0162	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0163	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	4
0164	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9
0165	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
0166	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0168	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0169	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0170	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0172	No Sample	0	0	1	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0173	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	4	0	0	0	7
0174	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0176	No Sample	0	0	25	50	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
0177	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0178	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0179	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0180	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0182	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	0	51	80	0	0	84
0183	0	0	0	9	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	3
0184	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0185B	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	2
0186	No Sample	0	0	0	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0187	0	1	0	7	0	0	0	0	0	0	0	0	0	0	3	9	0	0	0	1	2	10	30	50	0	0	63
0188	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	30	50	0	0	54
0189	0	0	0	8	0	0	0	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	2	0	0	0	9
0190	0	0	0	26	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0191	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	3
0192	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	1
0193	0	1	0	0	0	0	0	0	1	0	0	0	1	0	20	2	0	0	0	0	15	0	1	0	0	0	25
0194	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	4	10	1	0	13

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0195	0	6	0	7	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	18	0	0	0	21
0196	0	1	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0	0	0	5
0197	0	0	0	25	50	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	3
0198	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
0199	0	2	0	30	50	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	7	10	2	0	12
0200	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0201	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0202	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0203	0	0	0	15	0	0	0	0	0	0	0	0	0	1	0	2	0	2	0	3	0	0	20	40	0	0	8
0204	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0205	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0206	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	7	0	0	0	8
0207	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0208	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
0209	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0210	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0211	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0
0212	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0213	0	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	3	0	2
0214	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0216	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
0217	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0218	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0219	0	0	0	10	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2
0220	No Sample	No Sample	0	0	0	No Sample						No Sample						0	0	0	0	0	0	0	0	0	0
0221	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
0222	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0223	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0224	No Sample	0	0	3	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0225	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																						Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm										
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0226	No Sample	0	0	1	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0227	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	1
0228	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0229	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
0230	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	29	75	0	0	79
0231	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	10	4	0	10
0232	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13
0233	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0235	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0236	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0237	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0238	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0239	0	0	0	9	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	9	0	0	0	11
0240	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	11
0241	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0243	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0244	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0245	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0246	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0247	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	3
0248	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0249	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2	0	0	0	4
0250	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0251	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0252	0	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0253	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0254	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0255	0	0	0	8	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2
0256	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0257	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0258	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
0259	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	5	0	0	0	6
0260	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
0261	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0262	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0263	0	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
0264	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1
0265	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0266	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	3
0267	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0268	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
0269	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0270	0	1	0	23	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	5	10	0	0	11
0271	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0272	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0273	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0274	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0275	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0276	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0277	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0278	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0279	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0280	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	3
0281	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
0282	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0283	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0284	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	1	0	7
0285	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
0286	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	6	15	0	0	15

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0287	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	1	0	1	0	4
0288	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0289	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0290	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7
0291	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0292	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	3
0293	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0294	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0295	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
0296	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0297	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0298	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0299	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0301	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0302	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
0303	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0304	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	0	0	3
0305	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0306	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0307	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0308	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
0309	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0310	No Sample	0	0	6	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0311	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
0312	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0313	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0314	0	0	0	4	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	3
0315	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0316	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	57	0	0	0	69

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0317	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	5	0	0	0	6
0318	0	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0319	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0320	0	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
0321	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0322	0	1	0	8	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	6	0	0	0	10
0323	0	0	0	66	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	3
0324	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	6	10	0	0	14
0325	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0326	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	1
0327	0	0	0	11	0	0	0	0	0	0	0	0	1	0	0	5	0	0	0	0	0	0	30	50	0	0	56
0328	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	4
0329	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
0331	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0332	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0333	0	5	0	48	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
0334	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0335	0	0	0	10	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	1	0	6	15	0	0	19
0336	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0337	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2
0338	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0339	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
0340	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0341	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0342	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0343	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0344	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0345	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0346	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0347	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0348	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0349	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0351	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0352	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0353	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0354	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0355	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0356	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	5	20	0	0	22
0357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0358	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0359	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0360	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	10	0	0	10
0361	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	3
0362	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0363	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
0364	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0365B	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0366	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0367	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0368	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
0370	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0372	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0373	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0375	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0376	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0377	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
0378	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0379	0	0	0	20	200	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	33	50	0	0	52
0380	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0381	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12
0382	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0383	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0384	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0385	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12
0386	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0387	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	20
0388	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0389	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	22	0	0	0	24
0390	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	80	0	0	80
0392	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0393	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	5	0	0	0	6
0394	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	3
0395	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	23	0	0	0	24
0396	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0397	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	55	100	0	0	101
0398	0	0	0	18	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	4	0	3
0399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0401	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	18
0402	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0403	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0404	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0405	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	12	0	0	0	13
0406	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																						Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm										
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0407	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0408	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0409	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	25	40	0	0	42
0410	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0411	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0412	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	13	0	50	70	13
0413	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	19
0414	0	2	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0415	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0	0	0	29
0417	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	40	0	0	40
0418	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0419	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	55	70	0	0	72
0420	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
0421	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0423	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	150	0	0	150
0424	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0425	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
0426	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0427	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0428	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0429	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
0430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0431	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14
0432	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0433	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0435	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0436	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	4
0437	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0438	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	40	0	0	40
0439	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	5	0	0	0	6

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0440	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	23
0442	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	250	0	0	250
0443	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
0444	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0445	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0446	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	15
0447	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0448	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	80	0	0	80
0449	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0450	No Sample	0	0	3	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0451	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
0452	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0453	0	1	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0454	No Sample	0	0	1	0	No Sample						0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
0455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0456	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0457	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
0458	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
0459	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13
0460	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	80	0	0	80
0461	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0462	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	41
0463	0	1	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	2	0	9
0464	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	0	0	0	39
0465	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0466	No Sample	0	0	6	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0467	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0468	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8
0469	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	20
0470	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																						Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm										
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0471	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0472	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0473	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
0474	0	1	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0475	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	9	0	0	0	10
0476	No Sample	0	0	0	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0477	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	22	60	0	0	61
0478	0	2	0	15	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0479A	0	0	0	25	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0479B	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14
0480	0	4	0	20	60	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
0481	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12
0482	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0483	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0	28
0484	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	19
0485	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0486	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
0487	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0488	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9
0489	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	24	0	0	0	25
0490	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0491	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0492	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	4
0494	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0496	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
0497	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	15
0498	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	0	2	0	5
0499	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	19	0	0	0	20
0500	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0501	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	19	0	0	0	21

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0502	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0503	0	0	0	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	54	70	0	0	71
0504	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0505	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	40	0	0	40
0506	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0507	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0508	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0509	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7
0510	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
0511	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
0512	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0513	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0514	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0516	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0517	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0518	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0519	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0520	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	1	0	3
0521	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
0522	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	6	0	0	0	7
0523	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0524	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	4
0525	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0526	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0527	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	14	0	0	0	17
0528	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0529	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0530	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	22
0531	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	0	0	0	47
0532	0	3	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0533	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0534	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	43	0	0	0	45
0535	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0536	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	125	250	0	0	251
0537	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7
0538	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0539B	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	11
0540	No Sample	0	0	11	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0541	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0542	No Sample	0	0	2	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0543	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0544	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0545	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0546	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
0547	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	0	0	0	5
0548	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
0549	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0551	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
0552	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0553	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	12	0	0	0	13
0554	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	38	0	0	0	38
0555B	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	11
0556	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0557	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12
0558	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	16
0560	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7
0561	0	0	0	15	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	20	40	0	0	41
0562	0	0	0	1	0	0	0	0	0	1	0	1	0	0	2	13	0	0	0	0	0	0	50	200	0	0	217
0563	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0564	No Sample	0	0	13	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0565	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0567	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0568	0	15	25	25	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0569	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0570	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0571	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	0	0	0	58
0572	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	11
0574	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0575	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	30	70	0	0	75
0576	No Sample	0	0	0	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0577	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7
0578	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0579	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	120	0	0	120
0580	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0581	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0582	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0584	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0585	0	1	0	20	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0586	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0587	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	9	0	0	0	11
0588	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0589	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0590	No Sample	0	0	1	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0591	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
0592	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0593	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
0594	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0595	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	16
0596	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0597	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	13	0	0	0	14
0598	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0599	0	0	0	30	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	41
0600	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0601	0	0	0	20	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0602	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0603	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
0604	0	0	0	20	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0605	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0606	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	4
0607	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0608	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0609	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	11
0610	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0612	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0613	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0614	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	0	0	0	54
0615	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0616	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
0617	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0618	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	80	0	0	80
0619	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0620	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0621	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0622	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	200	0	0	200
0623	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0624	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0625	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12
0626	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0627	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0628	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0	0	26
0629	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	60	0	0	60
0631	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0632	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	25
0633	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0634	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0635	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0636	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0637	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
0638	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0639	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0640	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0641	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	4
0642	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	12	0	0	0	14
0643	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
0644	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0645	0	0	0	30	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0646	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
0647	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0648	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0649	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0	0	0	29
0650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0651	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0652	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0654	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6	0	0	0	7
0655	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0656	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0657	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	0	0	0	45
0658	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm									
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0659	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0660	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0661	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0662	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0663	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3
0664	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0665	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	80	0	0	80
0666	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0667	0	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0668	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0669	No Sample	0	0	5	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0670	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4	0	0	0	6
0671	No Sample	0	0	2	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0673	No Sample	0	0	1	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0674	0	0	0	5	0	0	0	0	0	0	0	0	0	0	3	4	0	0	0	0	0	0	0	0	0	0	7
0675	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0676	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	0	0	0	5
0677	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9
0678	No Sample	0	0	6	0	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0679	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
0680	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0681	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0682	0	0	0	9	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	3	6	13	25	1	0	31
0683	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0684	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0685	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	22
0686	0	2	0	6	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	0	0	0	4
0687	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	15
0688	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	0	0	0	6
0689	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	11	0	0	0	12

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																						Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm										
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0690	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0691	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	100	0	0	100
0692	0	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0693	0	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0	0	0	38
0694	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0
0695	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6	0	0	0	7
0696	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0697	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9
0698	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0699	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	2
0700	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
0701	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
0702	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0	28
0703	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	11
0704	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	17	0	0	0	18
0705	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	100	0	0	100
0706	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9
0707	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0	0	0	29
0708	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0709	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0710	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0711	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
0712	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8
0713	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	30
0714	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	60	100	0	0	101
0715	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0	32
0716	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0717	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0	0	33
0718	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	100	250	0	0	252
0719	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	38	0	0	0	39

Sample Number	Selected Pseudo KIMs					KIM Count (* species not rigorously picked; excluded from total)																						Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm										
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)	
0720	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9
0721	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
0722	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	18
0723	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0	0	40
0724	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	150	0	0	150
0725	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	0	0	0	47
0726	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	24
0727	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9
0728	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5

** Values greater than 0.1 g were weighed only to one decimal place; the zero was added in the second decimal position to facilitate column alignment.

*** Numbers in brackets are estimated total indicator grains present in samples where not all of the grains were picked.

Appendix I

Metamorphic/Magmatic Massive Sulphide Indicator Mineral Data Picking Results

Summary List of Abbreviations:

Cpy:	Chalcopyrite	Ky:	Kyanite
Moly:	Molybdenite	Sil:	Sillimanite
Py:	Pyrite	St:	Staurolite
Gth:	Goethite	Sps:	Spessartine
Sp:	Spinel	Fay:	Fayalite
Cr-Diop:	Chrome diopside	Opx:	Orthopyroxene
RedRut:	Red Rutile	Chr:	Chromite
Cor:	Corundum	Mn-Epi:	Manganese Epidote
Uva:	Uvarovite	Cr-Gros:	Chromium Grossular
sap:	Sapphire	Tr:	trace
gr:	grain(s)		

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
01SSM																			
0001	0	0	Tr (3 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	0	3	0	Tr (16 gr; see KIM data)	0
0002	0	0	0	0	0	Tr (6 gr)	0	0	0	0	0	Tr	0	Tr	0	Tr	0	Tr (~50 gr; see KIM data)	0
0003	0	0	Tr (~15 gr)	Tr	0	Tr (6 gr)	0	0	0	0	0	0	0	Tr	0	8	0	Tr (16 gr; see KIM data)	0
0004	0	0	0	0	0	Tr (7 gr)	0	0	0	0	0	0	0	Tr	0	Tr	0	Tr (3 gr; see KIM data)	0
0005	0	0	Tr (1 gr)	0	0	Tr (3 gr)	0	0	0	0	0	0	0	Tr	0	0	0	0	0
0006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0008	0	0	0	0	0	Tr (9 gr)	0	0	0	0	0	0	Tr	Tr	0	0	0	Tr (1 gr; see KIM data)	0
0009	0	0	Tr (2 gr)	0	0	Tr (6 gr)	0	0	0	0	0	0	0	Tr	0	Tr	0	Tr (3 gr; see KIM data)	0
0010	0	0	0	0	0	Tr (4 gr)	0	0	0	0	0	0	0	0.5	0	0	0	0	0
0011	Tr (1 gr)	0	0	0	0	Tr (8 gr)	0	0	0	0	0	0	Tr	Tr	0	0	0	0	0
0012A	0	0	0	Tr	0	Tr (1 gr)	0	0	0	0	0	Tr	0	0	0	0	1	0	0
0013	0	0	0	0	1 pale blue	Tr (19 gr)	0	0	0	0	0	0	Tr	Tr	0	1	Tr	Tr (~100 gr; see KIM data)	0
0015	Tr (1 gr)	0	Tr (~30 gr)	Tr	0	0	0	0	0	0	0	0	Tr	Tr	0	Tr	0	0	0
0016	Tr (3 gr)	0	Tr (5 gr)	0	0	Tr (3 gr)	0	0	0	0	0	0	0	Tr	0	0	0	Tr (4 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0017	0	0	0	0	0	Tr (13 gr)	0	0	0	0	0	Tr	Tr	Tr	0	0	Tr	Tr (3 gr; see KIM data)	0
0019	0	0	Tr (1 gr)	0	0	Tr (8 gr)	0	Tr (1gr)	0	0	0	0	Tr	Tr	0	Tr	Tr	Tr (41 gr; see KIM data)	0
0020	0	0	0	0	0	Tr (8 gr)	0	0	0	0	Tr (1 gr)	0	0	Tr	0	20	Tr	Tr (17 gr; see KIM data)	0
0021	0	0	0	0	0	Tr (7 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	0	0
0022	0	0	0	0	0	Tr (11 gr)	0	0	0	0	0	0	0	Tr	0	0	0	Tr (26 gr; see KIM data)	0
0023	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	70	0	0	0	0	0
0024	0	0	Tr (~15 gr)	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	0	0	Tr (14 gr; see KIM data)	0
0025	0	0	0	Tr	0	Tr (12 gr)	0	0	0	0	0	Tr	Tr	Tr	0	Tr	Tr	Tr (4 gr; see KIM data)	0
0026	0	0	Tr (10 gr)	Tr	0	Tr (1 gr)	0	0	0	0	0	Tr	0	Tr	0	25	5	Tr (3 gr; see KIM data)	0
0027	0	0	0	Tr	0	Tr (6 gr)	0	0	0	0	0	Tr	0	Tr	0	15	Tr	Tr (20 gr; see KIM data)	0
0028	0	0	0	Tr	0	Tr (1 gr)	0	0	0	0	0	0	0	0	Tr	0	1	0	0
0029	0	0	Tr (7 gr)	Tr	0	Tr (4 gr)	0	0	0	0	0	Tr	0	Tr	Tr	30	Tr	Tr (1 gr; see KIM data)	0
0030	0	0	0	Tr	0	0	0	0	0	0	0	0	0	0	Tr	35	Tr	Tr (4 gr; see KIM data)	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm															
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0031	Tr (1 gr)	Tr molybdenite (1 gr)	Tr (10 gr)	40	0	Tr (3 gr)	0	0	0	0	0	0	Tr	Tr	Tr	5	Tr	Tr (~15 gr; see KIM data)	0
0032	0	0	Tr (4 gr)	0.5	0	0	0	0	0	0	0	Tr	0	Tr	0	Tr	Tr	0	0
0034	0	0	Tr (3 gr)	Tr	0	Tr (5 gr)	0	0	0	0	0	0	0	Tr	0	Tr	0	Tr (1 gr; see KIM data)	0
0035	0	0	Tr (1 gr)	60	0	0	0	0	0	0	0	0	0	Tr	0	25	Tr	0	0
0036	0	0	Tr (~15 gr)	Tr	0	0	0	0	0	0	0	0	0	0	Tr	0	Tr	Tr (4 gr; see KIM data)	0
0037	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	Tr	Tr (2 gr; see KIM data)	0
0038	0	0	0	0.5	0	0	0	0	0	0	0	0	Tr	0	Tr	0	Tr	Tr (1 gr; see KIM data)	0
0039	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	0	0	Tr	0	0
0040	0	0	Tr (2 gr)	Tr	1 pale grey	Tr (2 gr)	0	0	0	0	0	0	0	Tr	0	7	0	Tr (1 gr; see KIM data)	0
0041	0	0	Tr (2 gr)	Tr	0	0	0	0	0	0	0	0	0	0	0	45	0	Tr (2 gr; see KIM data)	0
0042	0	0	Tr (1 gr)	Tr	0	0	0	0	0	0	0	Tr	0	0	0	30	0	0	0
0043	0	0	0	Tr	0	0	0	0	0	0	0	Tr	0	0	Tr	10	0	Tr (2 gr; see KIM data)	0
0045	0	0	0	Tr	0	Tr (9 gr)	0	0	0	0	0	0	Tr	0	0	0	0	Tr (~80 gr; see KIM data)	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0047	0	0	Tr (2 gr)	0	0	Tr (2 gr)	0	0	0	0	0	Tr	0	0	0	0	0	0	0
0048	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	0	0	0	0
0049	0	0	0	Tr	0	0	0	0	0	0	0	Tr	0	0	0	0	Tr	Tr (2 gr; see KIM data)	0
0050	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	30	0	0	0	Tr (1 gr; see KIM data)	0
0051	Tr (3 gr)	0	Tr (5 gr)	0	0	Tr (3 gr)	0	0	0	0	0	0	0	0	0	0	0	0	0
0052	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	Tr	0.5	0	0	0	Tr (5 gr; see KIM data)	0
0053	0	0	0	0	0	Tr (16 gr)	0	0	0	0	0	0	Tr	0	0	Tr	Tr	Tr (6 gr; see KIM data)	0
0054	0	0	0	0	0	Tr (3 gr)	0	0	0	0	0	0	0	0	0	0	0	0	0
0055	0	0	0	0	0	0	0	0	0	0	0	Tr	0	Tr	0	0	0	Tr (1 gr; see KIM data)	0
0058	Tr (4 gr)	Tr arsenopyrite (1 gr)	Tr (~30 gr)	0	0	Tr (9 gr)	0	0	0	0	0	0	0	Tr	0	0	0	Tr (8 gr; see KIM data)	0
0059	0	0	Tr (1 gr)	0	0	Tr (5 gr)	0	0	0	0	0	0	0	2	0	Tr	0	Tr (3 gr; see KIM data)	0
0060	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	0	2	0	0	2	Tr (8 gr; see KIM data)	0
0061	0	0	0	0	0	0	0	0	0	0	0	Tr	Tr	1	0	0	0	0	0
0062	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	35	0	0	0
0064	0	0	Tr (3 gr)	Tr	0	Tr (2 gr)	0	0	0	0	0	0	0	Tr	0	0	0	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0065	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	0	Tr	0.5	0	0	0	0	0
0066	0	0	0	50	0	0	0	0	0	0	0	0	0	Tr	0	0	0	0	0
0067	Tr (1 gr)	0	Tr (3 gr)	Tr	0	Tr (7 gr)	0	0	0	0	0	0	0	0.5	0	0	0	Tr (2 gr; see KIM data)	0
0068	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	0	0	0	0
0070	0	0	0	0	0	Tr (4 gr)	0	0	0	0	0	0	0	0.5	0	0	0	Tr (1 gr; see KIM data)	0
0071	0	0	Tr (1 gr)	Tr	1 pale blue-green	Tr (2 gr)	0	0	0	0	0	0	0	Tr	0	0	0	0	0
0072	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	Tr	0	0	0	0	0
0073	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0074	0	0	Tr (~15 gr)	Tr	0	Tr (2 gr)	0	0	0	0	0	0	Tr	Tr	Tr	0.5	Tr	Tr (~50 gr; see KIM data)	0
0075	0	0	0	0	0	Tr (4 gr)	0	0	0	0	0	0	0	0	0	0	0	0	0
0076	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0077	0	0	0	0	0	Tr (20 gr)	0	0	0	0	0	0	0	Tr	0	0	0	0	0
0078	0	0	Tr (~15 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0079	0	0	0	0	0	Tr (12 gr)	Tr (1gr)	0	0	0	0	0	Tr	0	0	0	0	0	0
0080	0	0	0	0	0	Tr (4 gr)	Tr (1gr)	0	0	0	0	0	0	0	0	0	0	0	0
0081	Tr (1 gr)	0	0	0	0	Tr (20 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	0	0
0082	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	Tr	Tr	0	0	0	Tr	0	0
0083	Tr (2 gr)	0	0	Tr	0	Tr (4 gr)	0	0	0	0	0	0	Tr	0	0	3	1	0	0
0084	0	0	Tr (2 gr)	0	0	Tr (4 gr)	0	0	0	0	0	0	Tr	0	0	15	4	Tr (1 gr; see KIM data)	0
0085	Tr (3 gr)	Tr fluorite (3 gr)	1 (~400 gr)	0	1 black hercynite; 4 pale purple, pale blue-green, black spinel	Tr (~40 gr)	Tr (1gr)	Tr (2gr)	0	0	0	0	0	0	2	1	Tr	Tr (20 gr; see KIM data)	Tr perovskite (1 gr)
0086	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0087	0	0	0	0	0	Tr (~40 gr)	0	0	0	0	Tr (1 gr)	0	0	0	Tr	7	2	Tr (6 gr; see KIM data)	0
0088	0	0	0	0	0	Tr (4 gr)	0	Tr (1gr)	0	0	0	0	0	0	0	0	Tr	Tr (7 gr; see KIM data)	0
0089	0	0	0	0	2 pale blue-green, pale blue	Tr (12 gr)	0	Tr (1gr)	0	0	0	Tr	Tr	0.5	0	0	4	0	0
0090	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	0	2	0	0
0091	0	0	0	Tr	0	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	Tr	30	Tr	0	0
0092	Tr (1 gr)	0	0	0	0	Tr (3 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	0	4	0	0
0093	0	0	Tr (5 gr)	Tr	2 blue-green gahnite 3 pale blue-green spinel	Tr (27 gr)	0	Tr (4 gr)	Tr (3 gr)	0	Tr (2 gr)	Tr	0	0	Tr	10	2	Tr (7 gr; see KIM data)	0
0094	0	0	0	0	1 blue-green gahnite	Tr (3 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0095	0	0	Tr (2 gr)	Tr	0	Tr (9 gr)	0	0	0	0	0	Tr	0	0	0	3	Tr	Tr (1 gr; see KIM data)	0
0096	0	Tr molybdenite (1 gr)	0	0	0	0	0	0	0	0	0	Tr	0	0	Tr	0	Tr	0	0
0098	0	0	0	0	0	Tr (7 gr)	0	0	0	0	0	0	Tr	Tr	Tr	0	2	0	0
0099	0	0	Tr (5 gr)	Tr	1 purple	Tr (3 gr)	0	0	0	0	0	0	Tr	0	0	15	1	Tr (2 gr; see KIM data)	0
0100	0	0	Tr (2 gr)	0	0	Tr (5 gr)	0	0	0	0	0	0	0	3	0	0	Tr	0	0
0101	0	0	Tr (2 gr)	Tr	2 pale blue-green 1 gahnite	Tr (5 gr)	0	0	Tr (1 gr)	0	0	0	0	0	Tr	35	Tr	Tr (4 gr; see KIM data)	0
0102	0	0	0	0	0	Tr (12 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	Tr (2 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0103	Tr (5 gr)	0	0	0	0	Tr (9 gr)	Tr (1gr)	0	0	0	0	0	0	0	0	Tr	Tr	Tr (6 gr; see KIM data)	0
0105	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	0	60	2	Tr (1 gr; see KIM data)	0
0106	Tr (7 gr)	0	0	Tr	1 blue-green gahnite	Tr (13 gr)	0	0	0	0	Tr (1 gr)	0	Tr	Tr	Tr	20	3	Tr (~20 gr; see KIM data)	0
0107	Tr (1 gr)	0	Tr (2 gr)	0	3 blue-green, pale purple, black	Tr (9 gr)	0	0	Tr (1 gr)	0	Tr (2 gr)	0	0	0	Tr	30	Tr	Tr (20 gr; see KIM data)	0
0108	0	0	0	0	0	Tr (10 gr)	0	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr (2 gr; see KIM data)	0
0109	0	0	Tr (10 gr)	Tr	0	Tr (5 gr)	0	0	Tr (1 gr)	0	Tr (1 gr)	0	Tr	Tr	Tr	20	3	Tr (6 gr; see KIM data)	0
0110	0	0	0	Tr	0	Tr (1 gr)	Tr (1gr)	Tr (2gr)	0	0	0	Tr	0	Tr	0	5	0.5	Tr (3 gr; see KIM data)	0
0111	0	0	0	0	0	Tr (4 gr)	0	0	Tr (3 gr)	0	0	0	0	0	0	7	Tr	Tr (1 gr; see KIM data)	0
0112	Tr (1 gr)	0	0	0	0	0	0	0	0	0	Tr (1 gr)	0	0	Tr	0	1	Tr	Tr (8 gr; see KIM data)	0
0113	0	0	0	0	1 grey-green	Tr (5 gr)	0	0	0	0	0	Tr	0	Tr	0	5	1	Tr (6 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0114	0	0	0	0	0	Tr (7 gr)	0	0	0	0	0	0	Tr	Tr	0	15	2	Tr (8 gr; see KIM data)	0
0115	Tr (2 gr)	0	Tr (8 gr)	0	0	Tr (3 gr)	0	0	0	0	0	0	0	0	Tr	35	Tr	0	0
0116	0	0	0	Tr	0	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	0	1	0.5	Tr (7 gr; see KIM data)	0
0117	Tr (3 gr)	0	Tr (5 gr)	Tr	0	Tr (5 gr)	0	0	0	0	0	0	0	0	Tr	20	1	Tr (1 gr; see KIM data)	0
0118	Tr (3 gr)	0	0	Tr	0	Tr (10 gr)	0	Tr (1gr)	0	0	0	0	0	Tr	Tr	Tr	Tr	Tr (1 gr; see KIM data)	0
0119	0	0	Tr (10 gr)	0	4 black, blue-green, pale blue	Tr (6 gr)	0	Tr (1 gr)	0	0	Tr (3 gr)	0	0	0	Tr	20	Tr	Tr (13 gr; see KIM data)	0
0120	0	0	0	Tr	1 grey-green	Tr (16 gr)	0	0	0	0	0	0	Tr	Tr	Tr	1	1	Tr (13 gr; see KIM data)	0
0121	0	0	Tr (5 gr)	Tr	0	Tr (3 gr)	0	0	0	0	0	0	Tr	Tr	0	1	Tr	0	0
0122	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	Tr	0	0	0	10	Tr	Tr (1 gr; see KIM data)	0
0123	0	0	0	0	1 purple	Tr (6 gr)	0	Tr (3 gr)	0	0	0	0	0	Tr	0	15	Tr	0	0
0124	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	30	Tr	Tr (1 gr; see KIM data)	0
0125	0	0	0	Tr	1 blue-green	Tr (6 gr)	0	0	0	0	0	Tr	Tr	1	0	1	Tr	Tr (2 gr; see KIM data)	0
0126	Tr (3 gr)	0	0	0	0	Tr (4 gr)	0	0	0	0	0	0	Tr	Tr	0	5	Tr	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0127	Tr (2 gr)	0	Tr (1 gr)	0	0	Tr (12 gr)	0	0	0	0	0	0	Tr	0	0	4	Tr	Tr (1 gr; see KIM data)	0
0128	0	0	0	0	3 pale blue-green, grey 1 gahnite	Tr (18 gr)	0	0	0	0	Tr (2 gr)	0	0	0	0	10	2	0	0
0129	0	0	0	Tr	1 black hercynite; 1 purple spinel	Tr (10 gr)	0	Tr (1 gr)	Tr (1 gr)	0	0	0	0	Tr	0	0	Tr	Tr (~30 gr; see KIM data)	0
0130	0	0	0	0	1 pale blue	Tr (4 gr)	0	0	Tr (2 gr)	0	0	0	0	0	0	1	Tr	0	0
0131	0	0	Tr (1 gr)	Tr	1 green hercynite; 4 pale blue-green purple spinel	Tr (13 gr)	0	Tr (3gr)	Tr (5 gr)	0	0	Tr	0	Tr	0	0	1	Tr (2 gr; see KIM data)	0
0132	Tr (1 gr)	0	Tr (~20 gr)	Tr	0	Tr (20 gr)	0	Tr (3 gr)	Tr (4 gr)	0	Tr (9 gr)	Tr	Tr	Tr	0	Tr	Tr	Tr (3 gr; see KIM data)	0
0133	0	0	Tr (1 gr)	0	1 blue-green gahnite; 10 blue-green, colourless spinel	Tr (18 gr)	Tr (1 gr)	Tr (6 gr)	Tr (13 gr)	0	Tr (2 gr)	Tr	Tr	Tr	0	0	Tr	Tr (~20 gr; see KIM data)	0
0134	0	0	0	0	1 blue-green	Tr (4 gr)	0	Tr (1 gr)	0	0	Tr (2 gr)	0	0	0	0	Tr	0	0	0
0135	0	0	0	0	2 blue-green, grey	Tr (13 gr)	0	0	0	0	0	Tr	Tr	Tr	0	0	Tr	0	0
0136	0	0	0	0	3 pale blue	Tr (13 gr)	0	Tr (4 gr)	Tr (2 gr)	0	Tr (2 gr)	0	0	0	0	Tr	0	0	0
0137	0	0	Tr (2 gr)	Tr	1 purple	Tr (16 gr)	0	Tr (1 gr)	Tr (1 gr)	0	0	Tr	0	Tr	Tr	0	Tr	Tr (2 gr; see KIM data)	0
0138	0	0	0	0	1 green gahnite; 2 blue-green spinel	Tr (~50 gr)	0	Tr (5 gr)	Tr (7gr)	0	Tr (34 gr)	0	Tr	Tr	Tr	0	Tr	Tr (~50 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0139	0	0	0	0	1 blue-green	Tr (8 gr)	0	0	0	0	0	Tr	0	Tr	0	0	Tr	0	Tr perovskite (1 gr)
0140	0	0	0	Tr	1 blue-green gahnite; 5 blue-green, pale blue-green spinel	Tr (16 gr)	0	Tr (4 gr)	Tr (1 gr)	0	Tr (5 gr)	Tr	Tr	Tr	Tr	0	Tr	0	0
0141	0	0	0	0	2 purple	Tr (8 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	0	0
0142	0	0	Tr (3 gr)	0	1 blue	0.5% low-Cr diopside (~250 gr)	Tr (1gr)	0	0	Tr (5 gr)	0	Tr	0	0	0	0	0	0	0
0143	Tr (1 gr)	0	Tr (5 gr)	Tr	1 black hercynite; 1 dark blue spinel	Tr (1 gr)	0	0	0	0	0	Tr	0	0	0	0	Tr	Tr (4 gr; see KIM data)	0
0144	0	0	0	Tr	1 blue	Tr (16 gr)	0	0	0	0	0	0	Tr	Tr	Tr	Tr	Tr	Tr (5 gr; see KIM data)	0
0145	0	0	0	0	1 blue-green	Tr (4 gr)	0	0	Tr (3 gr)	0	0	Tr	0	Tr	0	0	Tr	0	0
0146	Tr (1 gr)	0	Tr (10 gr)	Tr	1 blue	Tr (5 gr)	0	0	0	0	0	0	0	Tr	Tr	2	Tr	0	0
0147	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	0	Tr	0	0
0148	Tr (1 gr)	0	Tr (3 gr)	0	1 green gahnite; 6 green spinel	Tr (3 gr)	0	0	0	0	0	0	0	Tr	Tr	Tr	Tr	Tr (8 gr; see KIM data)	0
0149	0	0	0	0	2 blue-green	Tr (5 gr)	0	0	0	0	0	0	0	0	0	0	3	0	0
0150	Tr (4 gr)	0	Tr (5 gr)	Tr	0	Tr (5 gr)	0	0	0	0	0	0	0	Tr	Tr	0	Tr	0	0
0151	Tr (1 gr)	0	0	0	3 purple, grey blue	Tr (14 gr)	0	Tr (9 gr)	0	0	Tr (1 gr)	0	0	Tr	Tr	0	Tr	Tr (~20 gr; see KIM data)	0
0152	0	0	0	Tr	0	Tr (5 gr)	0	Tr (1 gr)	0	0	0	0	0	Tr	Tr	Tr	1	Tr (5 gr; see KIM data)	0
0153	Tr (~60 gr)	0	1 (~3000 gr)	Tr	7 blue-green, pale purple	Tr (23 gr)	0	Tr (3 gr)	0	0	0	Tr	0	Tr	0	Tr	Tr	Tr (9 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0154	0	0	Tr (1 gr)	Tr	5 purple, blue, grey	Tr (9 gr)	0	0	0	0	0	0	0	Tr	Tr	Tr	Tr	0	0
0155	0	0	Tr (2 gr)	Tr	0	Tr (4 gr)	0	0.5% Tr (80 gr)	0	0	0	Tr	0	Tr	0	Tr	Tr	Tr (4 gr; see KIM data)	0
0156	0	0	0	0	0	Tr (9 gr)	0	0	Tr (1 gr)	0	0	Tr	Tr	0	0	0	Tr	0	0
0157	0	0	0	Tr	0	Tr (7 gr)	0	5% corundum (1500 gr)	0	0	0	1	0	Tr	0	Tr	Tr	Tr (~10 gr; see KIM data)	0
0158	0	0	0	0	2 blue-green, purple	Tr (13 gr)	0	Tr (4 gr)	Tr (2 gr)	0	0	Tr	0	Tr	Tr	0	3	Tr (5 gr; see KIM data)	Tr perovskite (1 gr)
0159	0	0	0	Tr	0	Tr (22 gr)	0	Tr (2 gr)	Tr (3 gr)	0	0	Tr	0	Tr	0	0	1	Tr (3 gr; see KIM data)	0
0160	0	0	0	0	1 purple	Tr (9 gr)	0	Tr (1 gr)	0	0	0	0	0	Tr	0	3	Tr	Tr (1 gr; see KIM data)	0
0161	0	0	0	Tr	0	Tr (6 gr)	0	0	0	0	0	Tr	0	Tr	0	Tr	0.5	Tr (1 gr; see KIM data)	0
0162	0	0	0	Tr	0	Tr (2 gr)	0	3% corundum (400 gr)	0	0	0	Tr	0	Tr	0	Tr	0.5	0	0
0163	0	0	Tr (1 gr)	Tr	1 black hercynite; 1 blue spinel	Tr (6 gr)	0	Tr (2 gr) and 7% corundum (2500 gr)	Tr (1 gr)	0	0	Tr	0	Tr	0	Tr	Tr	Tr (3 gr; see KIM data)	0
0164	0	0	0	0	1 blue-green	Tr (13 gr)	0	3% corundum (1000 gr)	0	0	0	Tr	0	Tr	0	Tr	Tr	Tr (9 gr; see KIM data)	0
0165	0	0	Tr (5 gr)	Tr	0	Tr (2 gr)	0	0.5% corundum (60 gr)	0	0	0	Tr	0	Tr	0	0	Tr	0	0
0166	0	0	0	0	0	Tr (4 gr)	0	Tr (1 gr) and 7% corundum (2000 gr)	0	0	0	0	0	Tr	0	Tr	Tr	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0167	5 (~300 gr)	0	Tr (~20 gr)	0	0	0	0	15% corundum (~1800 gr)	0	0	0	0	Tr	0	0	Tr	0	Tr (2 gr; see KIM data)	0
0168	Tr (2 gr)	0	Tr (1 gr)	0	0	Tr (6 gr)	0	0.5% corundum (150 gr)	0	0	0	Tr	0	Tr	0	Tr	0.5	Tr (2 gr; see KIM data)	0
0169	Tr (1 gr)	0	Tr (2 gr)	Tr	0	Tr (1 gr)	0	1% corundum (100 gr)	0	0	0	Tr	0	Tr	0	0	Tr	0	0
0170	Tr (~150 gr)	0	Tr (7 gr)	0	1 blue-green	Tr (6 gr)	0	Tr (1 gr) and 1% corundum (400 gr)	0	0	0	Tr	0	Tr	0	Tr	Tr	Tr (2 gr; see KIM data)	0
0172	0	0	0	0	0	Tr (1 gr)	0	1% corundum (100 gr)	0	0	0	Tr	0	Tr	0	Tr	0.5	0	0
0173	Tr (7 gr)	Tr fluorite (1 gr)	Tr (5 gr)	10	0	Tr (4 gr)	0	7% corundum (2000 gr)	0	0	0	Tr	0	0	0	0	Tr	Tr (4 gr; see KIM data)	0
0174	0	0	0	0	0	Tr (4 gr)	0	1% corundum (100 gr)	0	0	0	Tr	0	Tr	0	0	20	0	0
0176	0	0	0	Tr	1 blue	Tr (~50 gr)	0	Tr (4 gr) and 0.5% corundum (500 gr)	Tr (5 gr)	0	Tr (5 gr)	Tr	0	Tr	0	0	2	0	0
0177	0	0	0	0	0	Tr (22 gr)	Tr (1 gr)	2% corundum (500 gr)	0	0	0	Tr	0	Tr	0	0	3	0	0
0178	Tr (11 gr)	0	Tr (~20 gr)	0	0	Tr (1 gr)	0	4% corundum (800 gr)	0	0	0	Tr	0	0	0	0	Tr	0	0
0179	0.1 (44 gr)	0	0.1 (~30 gr)	0	1 blue-green	Tr (7 gr)	0	0	Tr (1gr)	0	0	0	0	Tr	0	Tr	Tr	Tr (3 gr; see KIM data)	0
0180	0	0	0	0	0	Tr (1 gr)	0	Tr (20 gr)	0	0	0	Tr	0	0	0	0	0	0	0
0182	Tr (1 gr)	0	0	0	1 black hercynite; 2 blue-green, grey-green spinel	Tr (11 gr)	0	0	Tr (1 gr)	0	0	0	0	Tr	Tr	0	0	Tr (~80 gr; see KIM data)	0
0183	0	0	Tr (1 gr)	Tr	1 blue-green	Tr (9 gr)	0	0	0	0	Tr (1 gr)	0	0	Tr	0	0	Tr	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0184	0	0	0	0	0	Tr (6 gr)	0	3% corundum (500 gr)	0	0	0	0	0	Tr	0	0	0	0	0
0185B	0	0	Tr (1 gr)	0	2 blue-green, blue	Tr (7 gr)	0	0	0	0	0	Tr	0	0	0	Tr	1	Tr (2 gr: see KIM data)	0
0186	0	0	0	0	0		0	1% corundum (~50 gr)	0	0	0	0	0	0	0	0	0	0	0
0187	0	0	Tr (10 gr)	Tr	2 black hercynite; 2 blue-green, pale purple spinel	Tr (7 gr)	0	Tr (2 gr)	Tr (1 gr)	0	Tr (1 gr)	0	0	Tr	0	0	Tr	Tr (~50 gr; see KIM data)	0
0188	0	0	0	0	2 dark green	Tr (6 gr)	0	0	0	0	0	0	0	0	0	0	Tr	Tr (~50 gr; see KIM data)	0
0189	0	0	0	Tr	3 blue-green	Tr (8 gr)	0	Tr (3 gr)	Tr (5 gr)	0	0	Tr	0	Tr	0	Tr	3	Tr (2 gr; see KIM data)	0
0190	Tr (1 gr)	0	0	0	1 green gahnite; 8 green spinel	Tr (~40 gr)	Tr (1 gr)	Tr (1 gr)	Tr (2 gr)	0	0	Tr	0.5	Tr	0	0	1	0	0
0191	0	0	Tr (5 gr)	0	1 green	Tr (5 gr)	0	0	Tr (3 gr)	0	Tr (2 gr)	0	Tr	Tr	0	0	Tr	Tr (3 gr; see KIM data)	0
0192	Tr (2 gr)	0	0	0	0	Tr (14 gr)	0	0	0	0	0	0	Tr	Tr	0	0	1	Tr (1 gr; see KIM data)	0
0193	Tr (1 gr)	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	Tr	Tr	0	0	2	Tr (1 gr; see KIM data)	0
0194	0	0	0	0	4 green	Tr (7 gr)	0	Tr (2 gr)	0	0	0	Tr	0	Tr	0	0	1	Tr (~10 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0195	0	0	Tr (3 gr)	Tr	2 black hercynite	Tr (7 gr)	0	0	0	0	Tr (1 gr)	Tr	0	Tr	0	0	1	Tr (18 gr; see KIM data)	0
0196	0	0	0	0	9 green, blue-grey	Tr (16 gr)	0	0	0	0	0	Tr	Tr	Tr	0	0	Tr	Tr (5 gr; see KIM data)	0
0197	0	0	0	Tr	2 blue-green	Tr (~50 gr)	0	Tr (1 gr)	0	0	0	Tr	Tr	Tr	0	0	Tr	Tr (2 gr; see KIM data)	0
0198	0	0	0	0	4 blue, blue-green	Tr (14 gr)	0	0	Tr (4 gr)	0	0	0	Tr	Tr	0	0	Tr	0	0
0199	0	0	0	0	1 blue gahnite; 1 pink spinel	Tr (~50 gr)	Tr (2 gr)	Tr (11 gr)	0	0	0	Tr	0	Tr	0	0	1	Tr (~10 gr; see KIM data)	0
0200	0	0	Tr (2 gr)	0	1 blue	Tr (5 gr)	0	Tr (1 gr)	Tr (1 gr)	0	0	Tr	0	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0201	Tr (17 gr)	0	Tr (4 gr)	Tr	0	Tr (5 gr)	0	0	0	0	0	0	0	Tr	0	2	0	Tr (1 gr; see KIM data)	0
0202	0	0	Tr (~15 gr)	0	2 green	Tr (10 gr)	Tr (1 gr)	Tr (2 gr)	0	0	0	0	0	Tr	0	0	Tr	0	0
0203	0	0	0	0	5 green, blue-green, pale purple	Tr (~40 gr)	Tr (1 gr)	Tr (2 gr)	Tr (2 gr)	0	Tr (2 gr)	Tr	0	0	0	1	4	Tr (~40 gr; see KIM data)	0
0204	0	0	0	0	2 green	Tr (6 gr)	0	0	0	0	0	0	0	0	0	0	0.5	Tr (1 gr; see KIM data)	0
0205	0	0	0	0	0	Tr (3 gr)	0	Tr (1 gr)	0	0	0	0	0	Tr	0	0	0	0	0
0206	0	0	0	0	1 black hercynite; 4 grey-green spinel 2 gahnite	Tr (20 gr)	0	0	Tr (3 gr)	0	0	Tr	0	Tr	0	0	Tr	Tr (7 gr; see KIM data)	0
0207	0	0	0	0	2 purple	0	0	0	0	0	0	0	0	0	0	50	1	0	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0208	0	0	0	0	2 blue-green	Tr (1 gr)	0	0	0	0	0	0	Tr	0	0	0	Tr	0	0
0209	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	Tr	0	Tr (1 gr; see KIM data)	0
0210	0	0	0	0	1 grey	Tr (9 gr)	Tr (1 gr)	0	0	0	0	Tr	0	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0211	0	0	Tr (1 gr)	Tr	1 purple	Tr (5 gr)	0	0	0	0	0	0	0	0	0	3	Tr	0	0
0212	0	0	0	0	1 green gahnite; 1 black hercynite	Tr (9 gr)	0	0	Tr (1 gr)	0	0	Tr	0	0	0	Tr	4	Tr (1 gr; see KIM data)	0
0213	Tr (1 gr)	0	0	0	7 blue, grey	Tr (26 gr)	0	Tr (4 gr)	0	0	0	0	Tr	Tr	0	Tr	3	0	0
0214	0	0	0	Tr	1 blue	Tr (3 gr)	0	0	0	0	0	Tr	0	0	0	0	Tr	Tr (1 gr; see KIM data)	0
0216	0	0	0	0	0	Tr (6 gr)	0	0	0	0	0	Tr	0	Tr	0	Tr	Tr	Tr (5 gr; see KIM data)	0
0217	0	0	0	0	4 purple, pale blue	Tr (9 gr)	0	Tr (1 gr)	0	0	Tr (1 gr)	0	0	Tr	0	15	2	Tr (2 gr; see KIM data)	0
0218	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	Tr	0	0	0	0	20	0	0
0219	0	0	0	0	0	Tr (10 gr)	0	0	0	0	0	Tr	0	0	0	0	Tr	Tr (1 gr; see KIM data)	0
0220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0
0221	0	0	0	0	2 blue-green, blue	Tr (1 gr)	0	0	0	0	Tr (1 gr)	Tr	0	Tr	0	0	2	Tr (4 gr; see KIM data)	0
0222	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	0	0	5	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0223	0	0	0	0	1 blue	Tr (7 gr)	0	0	0	0	0	Tr	0	Tr	0	0	Tr	Tr (2 gr; see KIM data)	0
0224	0	0	0	0	0	Tr (3 gr)	0	0	0	0	0	0	0	0	0	Tr	0	0	0
0225	0	0	0	0	6 blue-green	Tr (8 gr)	0	Tr (2 gr)	Tr (1 gr)	0	0	Tr	0	Tr	0	0	7	0	0
0226	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	0	0	0	0	0
0227	0	0	0	0	0	Tr (32 gr)	Tr (4 gr)	Tr (1 gr) and 1% corundum (200 gr)	0	0	0	Tr	Tr	0	0	5	2	Tr (1 gr; see KIM data)	0
0228	Tr (1 gr)	0	0.5 (10 gr)	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0
0229	Tr (2 gr)	0	Tr (5 gr)	0	4 blue, pale blue-green	Tr (10 gr)	0	Tr (1 gr)	0	0	Tr (2 gr)	Tr	Tr	Tr	0	5	4	Tr (5 gr; see KIM data)	Tr perovskite (1 gr)
0230	Tr (1 gr)	0	Tr (2 gr)	0	0	Tr (7 gr)	0	0	0	0	Tr (1 gr)	0	Tr	Tr	0	0	Tr	Tr (~75 gr; see KIM data)	0
0231	Tr (1 gr)	0	Tr (1 gr)	Tr	1 green gahnite; 1 purple spinel	Tr (18 gr)	0	Tr (4 gr)	0	0	0	0	0	0	0	0.5	Tr	Tr (10 gr; see KIM data)	0
0232	0	0	Tr (1 gr)	Tr	3 blue, grey, colourless	Tr (1 gr)	0	Tr (1 gr)	0	0	0	Tr	0	Tr	0	1	Tr	Tr (13 gr; see KIM data)	0
0233	0	0	Tr (2 gr)	Tr	0	Tr (3 gr)	0	0	0	0	0	0	0	Tr	0	5	2	0	0
0234	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	Tr	0	Tr	0	0	Tr	0	0
0235	0	0	Tr (1 gr)	0	0	Tr (3 gr)	0	0	0	0	0	Tr	0	Tr	0	0	Tr	0	0
0236	Tr (5 gr)	0	Tr (2 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	0	Tr	1	0	0
0237	0	0	0	0	0	Tr (12 gr)	0	0	0	0	0	0	0	Tr	0	1	3	0	0
0238	0	0	0	Tr	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	0	Tr	Tr	0	0
0239	0	0	0	0	4 grey blue	Tr (9 gr)	0	Tr (1 gr)	0	0	Tr (1 gr)	0	Tr	Tr	0	0	Tr	Tr (9 gr; see KIM data)	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm															
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0240	0	0	Tr (2 gr)	Tr	1 blue-green gahnite	Tr (4 gr)	0	0	0	0	0	Tr	0	Tr	0	5	Tr	Tr (11 gr; see KIM data)	0
0241	0	0	Tr (1 gr)	0	2 blue-green gahnite; 6 blue-green, pink spinel	Tr (9 gr)	0	Tr (2 gr)	0	0	Tr (5 gr)	0	Tr	Tr	0	Tr	Tr	Tr (2 gr; see KIM data)	0
0243	Tr (3 gr)	Tr arsenopyrite (1 gr)	Tr (~15 gr)	Tr	0	Tr (3 gr)	0	0	Tr (3 gr)	0	0	0	0	Tr	0	Tr	Tr	0	0
0244	0	0	0	Tr	0	Tr (1 gr)	0	Tr (1 gr)	0	0	0	0	0	Tr	Tr	Tr	Tr	0	0
0245	0	0	Tr (~20 gr)	Tr	0	Tr (1 gr)	0	0	0	0	Tr (2 gr)	Tr	0	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0246	0	0	Tr (2 gr)	0	2 blue-green, blue	Tr (5 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0247	0	0	0	Tr	1 blue	Tr (5 gr)	0	0	0	0	0	Tr	0	Tr	Tr	Tr	Tr	Tr (2 gr; see KIM data)	0
0248	0	0	0	Tr	0	0	0	0	0	0	Tr (2 gr)	0	Tr	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0249	0	0	0	0	1 pale blue	Tr (1 gr)	0	0	Tr (1 gr)	0	Tr (1 gr)	Tr	0	Tr	0	0	Tr	Tr (2 gr; see KIM data)	0
0250	0	0	0	0	0	Tr (2 gr)	0	Tr (1 gr)	0	0	Tr (2 gr)	Tr	0	Tr	0	0	Tr	0	0
0251	Tr (2 gr)	0	Tr (7 gr)	Tr	0	Tr (9 gr)	0	Tr (2 gr)	Tr (2 gr)	0	Tr (1 gr)	0	Tr	Tr	0	Tr	Tr	Tr (1 gr; see KIM data)	0
0252	Tr (1 gr)	0	Tr (4 gr)	Tr	1 blue-green gahnite; 3 green, blue-green spinel	Tr (7 gr)	0	Tr (1 gr)	0	0	0	0	Tr	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm															
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0253	0	0	Tr (19 gr)	Tr	1 blue-green	Tr (4 gr)	0	0	0	0	0	0	Tr	Tr	0	0.5	1	Tr (1 gr; see KIM data)	0
0254	0	0	Tr (2 gr)	Tr	0	Tr (2 gr)	0	Tr (1 gr)	0	0	0	0	Tr	Tr	0	2	1	Tr (2 gr; see KIM data)	0
0255	Tr (1 gr)	0	Tr (1 gr)	Tr	3 blue, pale purple	Tr (8 gr)	0	0	0	0	Tr (1 gr)	Tr	0	Tr	0	Tr	Tr	Tr (1 gr; see KIM data)	0
0256	0	0	Tr (5 gr)	Tr	2 blue, pale blue-green	Tr (1 gr)	0	Tr (1 gr)	0	0	0	0	Tr	Tr	0	Tr	Tr	0	0
0257	0	0	Tr (2 gr)	Tr	0	Tr (4 gr)	0	Tr (1 gr)	0	0	Tr (1 gr)	Tr	0	Tr	0	Tr	Tr	Tr (2 gr; see KIM data)	0
0258	0	0	Tr (3 gr)	Tr	0	0	0	0	0	0	Tr (1 gr)	0	Tr	Tr	0	Tr	0.5	Tr (4 gr; see KIM data)	0
0259	Tr (1 gr)	0	0	Tr	1 green	Tr (5 gr)	0	Tr (1 gr)	0	0	Tr (7 gr)	Tr	0	Tr	0	Tr	Tr	Tr (5 gr; see KIM data)	0
0260	0	0	Tr (2 gr)	Tr	0	Tr (3 gr)	0	0	Tr (1 gr)	0	0	Tr	0	Tr	0	Tr	Tr	0	0
0261	0	0	0	0	0	Tr (6 gr)	0	0	0	0	0	0	0	0	Tr	Tr	1	Tr (1 gr; see KIM data)	0
0262	0	0	Tr (2 gr)	Tr	0	Tr (4 gr)	0	Tr (1 gr)	Tr (2 gr)	0	Tr (1 gr)	Tr	0	0	Tr	2	0.5	0	0
0263	0	0	Tr (~15 gr)	0	0	Tr (27 gr)	Tr (1 gr)	Tr (1 gr)	Tr (1 gr)	0	0	Tr	0	0	0	0	5	0	0
0264	0	0	Tr (2 gr)	Tr	0	Tr (1 gr)	0	0	Tr (1 gr)	0	Tr (1 gr)	0	Tr	0	0	Tr	Tr	Tr (1 gr; see KIM data)	0
0265	0	0	Tr (5 gr)	0	0	Tr (1 gr)	Tr (2 gr)	0	Tr (2 gr)	0	0	0	Tr	0	0	0	Tr	0	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0266	0	0	Tr (7 gr)	Tr	7 green, pale blue	Tr (15 gr)	0	Tr (7 gr)	Tr (4 gr)	0	Tr (10 gr)	Tr	Tr	0	Tr	0	2	Tr (2 gr; see KIM data)	Tr perovskite (1 gr)
0267	0	0	Tr (7 gr)	0	0	Tr (6 gr)	0	0	0	0	Tr (4 gr)	0	0	Tr	0	0	Tr	Tr (3 gr; see KIM data)	0
0268	Tr (2 gr)	0	0	0	1 blue-green	0	0	0	Tr (2 gr)	0	0	Tr	0	Tr	0	0.5	Tr	0	0
0269	0	0	Tr (2 gr)	0	0	Tr (2 gr)	Tr (1 gr)	0	0	0	0	0	Tr	Tr	0	Tr	Tr	0	0
0270	0	0	Tr (1 gr)	0	0	Tr (23 gr)	Tr (2 gr)	Tr (4 gr)	Tr (1 gr)	1 gr	0	0	0	Tr	0	1	2	Tr (~10 gr; see KIM data)	0
0271	0	0	Tr (6 gr)	Tr	1 pale purple	Tr (3 gr)	0	0	0	0	Tr (1 gr)	Tr	0	Tr	0	0	Tr	0	0
0272	0	0	Tr (3 gr)	Tr	1 blue-green	Tr (5 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	0.5	0	0
0273	Tr (1 gr)	0	Tr (1 gr)	Tr	0	0	0	0	0	0	Tr (5 gr)	Tr	0	Tr	0	Tr	Tr	Tr (1 gr; see KIM data)	0
0274	Tr (1 gr)	0	Tr (2 gr)	Tr	4 blue-green	Tr (8 gr)	0	0	0	0	Tr (1 gr)	Tr	0	Tr	0	0.5	Tr	0	0
0275	0	0	Tr (1 gr)	Tr	0	Tr (9 gr)	0	0	Tr (1 gr)	0	0	Tr	0	Tr	0	Tr	2	0	0
0276	0.1 (~60 gr)	Tr sphalerite (18 gr)	Tr (~25 gr)	Tr	1 blue-green	Tr (5 gr)	0	0	Tr (2 gr)	0	Tr (1 gr)	Tr	0	Tr	0	Tr	Tr	Tr (1 gr; see KIM data)	0
0277	0	0	Tr (8 gr)	0	3 pink, blue	Tr (8 gr)	Tr (1 gr)	Tr (1 gr)	Tr (1 gr)	0	0	Tr	0	0	0	Tr	2	0	0
0278	0	0	Tr (4 gr)	Tr	1 blue	Tr (2 gr)	0	0	0	0	Tr (1 gr)	Tr	0	Tr	0	Tr	Tr	0	0
0279	Tr (1 gr)	0	Tr (4 gr)	Tr	1 blue gahnite; 2 blue spinel	Tr (7 gr)	0	Tr (1 gr)	0	0	Tr (6 gr)	Tr	0	Tr	0	0.5	Tr	Tr (1 gr; see KIM data)	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0280	0	0	Tr (1 gr)	Tr	3 blue	Tr (7 gr)	0	0	0	0	Tr (2 gr)	Tr	0	Tr	0	Tr	Tr	Tr (2 gr; see KIM data)	0
0281	Tr (1 gr)	0	Tr (5 gr)	Tr	0	Tr (3 gr)	0	0	0	0	Tr (3 gr)	0	Tr	Tr	Tr	3	5	0	0
0282	0	0	0	Tr	1 blue-green	Tr (6 gr)	0	0	Tr (1 gr)	0	0	Tr	Tr	Tr	Tr	Tr	5	0	0
0283	0	0	0	Tr	0	Tr (5 gr)	0	Tr (2 gr)	0	0	0	0	Tr	Tr	Tr	Tr	2	Tr (3 gr; see KIM data)	0
0284	0	0	Tr (5 gr)	Tr	0	Tr (7 gr)	Tr (1 gr)	Tr (3 gr)	Tr (3 gr)	0	Tr (1 gr)	0	Tr	Tr	Tr	Tr	2	Tr (7 gr; see KIM data)	0
0285	0	0	Tr (10 gr)	0	1 pink-purple	Tr (6 gr)	0	Tr (1 gr)	Tr (1 gr)	0	0	Tr	0	Tr	Tr	Tr	3	0	0
0286	0	0	0	0	3 blue-green	Tr (15 gr)	0	Tr (3 gr)	Tr (1 gr)	0	Tr (2 gr)	0	0	0	Tr	0	Tr	Tr (~15 gr; see KIM data)	0
0287	Tr (5 gr)	Tr loellingite (2 gr)	Tr (5 gr)	Tr	0	Tr (15 gr)	0	Tr (2 gr)	0	0	Tr (1 gr)	Tr	0	Tr	0	1	1	Tr (1 gr; see KIM data)	0
0288	0	0	0	Tr	1 blue	Tr (6 gr)	0	Tr (1 gr)	0	0	0	Tr	Tr	Tr	0	Tr	0.5	Tr (2 gr; see KIM data)	0
0289	Tr (2 gr)	0	Tr (3 gr)	Tr	0	Tr (2 gr)	0	0	0	Tr (1 gr)	0	Tr	0	Tr	Tr	Tr	0.5	Tr (3 gr; see KIM data)	0
0290	0	0	Tr (5 gr)	Tr	0	Tr (2 gr)	0	0	0	0	0	Tr	0	Tr	Tr	0	1	Tr (7 gr; see KIM data)	0
0291	Tr (1 gr)	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	Tr	0	Tr	Tr (2 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0292	0	0	0	0	0	Tr (4 gr)	0	Tr (1 gr)	0	0	0	0	0	0	Tr	0	Tr	Tr (2 gr; see KIM data)	0
0293	0	0	0	0	1 blue-green gahnite; 1 blue-green spinel	Tr (6 gr)	0	Tr (3 gr)	0	0	0	0	0	Tr	Tr	0	Tr	Tr (1 gr; see KIM data)	0
0294	0	0	0	Tr	0	Tr (3 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	1	0	0
0295	0	0	Tr (3 gr)	0	1 green gahnite; 1 blue-green spinel	Tr (4 gr)	0	0	0	0	Tr (1 gr)	0	0	0	0	0	1	Tr (1 gr; see KIM data)	0
0296	Tr (1 gr)	0	0	Tr	0	Tr (15 gr)	0	0	0	0	0	Tr	0	Tr	0	4	2	0	0
0297	0	0	0	0	0	Tr (1 gr)	0	0	Tr (1 gr)	0	0	0	0	0	Tr	Tr	Tr	0	0
0298	0	0	Tr (3 gr)	Tr	0	Tr (9 gr)	Tr (1 gr)	0	0	0	0	0	Tr	Tr	Tr	2	2	0	0
0299	0	0	Tr (3 gr)	Tr	0	Tr (3 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	0.5	0	0
0300	0	0	0	0	0	Tr (1 gr)	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	Tr	Tr	0	0
0301	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	Tr	Tr	30	Tr	0	0
0302	0	0	0	0	2 pale green, grey	Tr (6 gr)	Tr (1 gr)	Tr (1 gr)	Tr (1gr)	0	0	0	0	Tr	Tr	Tr	Tr	0	0
0303	0	0	0	0	1 blue-green gahnite; 4 blue, blue-green spinel	Tr (13 gr)	0	Tr (2 gr)	Tr (1 gr)	0	0	0	0	Tr	Tr	Tr	Tr	0	0
0304	Tr (8 gr)	0	Tr (1 gr)	0	0	Tr (12 gr)	0	Tr (1 gr)	Tr (3 gr)	0	0	Tr	Tr	Tr	Tr	0	Tr	Tr (3 gr; see KIM data)	0
0305	0	0	0	0	0	Tr (13 gr)	0	Tr (1 gr)	Tr (4 gr)	0	0	0	0	Tr	Tr	0	Tr	0	0
0306	0	0	0	0	0	Tr (5 gr)	0	0	0	0	0	Tr	0	Tr	Tr	0.5	3	Tr (1 gr; see KIM data)	0
0307	0	0	Tr (1 gr)	Tr	0	Tr (2 gr)	0	Tr (1 gr)	0	0	0	6	Tr	Tr	0	Tr	Tr	0	0
0308	0	0	0	Tr	1 blue-green	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	Tr	0	1	Tr (5 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0309	0	0	0	Tr	1 blue-green	Tr (2 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	0.5	Tr (2 gr; see KIM data)	0
0310	0	0	0	0	1 blue	Tr (6 gr)	0	0	Tr (3 gr)	0	0	0	0	0	Tr	0	2	0	0
0311	0	0	Tr (1 gr)	0	0	Tr (3 gr)	0	0	0	0	Tr (1 gr)	Tr	0	Tr	Tr	0	Tr	Tr (4 gr; see KIM data)	0
0312	0	0	2 (~500 gr)	0	1 blue	Tr (22 gr)	0	0	Tr (2 gr)	0	0	0	0	Tr	Tr	3	2	0	0
0313	0	0	0	0	2 pale blue, blue-green	Tr (2 gr)	0	0	0	0	0	0	Tr	Tr	Tr	Tr	3	0	0
0314	0	0	0	0	1 blue-grey	Tr (4 gr)	0	0	Tr (1 gr)	0	0	0	0	0	Tr	Tr	2	Tr (2 gr; see KIM data)	0
0315	0	0	0	0	1 pink	Tr (3 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0316	0	0	Tr (~40 gr)	0	0	Tr (5 gr)	0	0	0	0	0	Tr	0	Tr	Tr	0	Tr	Tr (57 gr; see KIM data)	0
0317	Tr (1 gr)	0	Tr (13 gr)	Tr	2 blue-green	Tr (7 gr)	0	0	Tr (1 gr)	0	0	Tr	0	Tr	Tr	Tr	1	Tr (5 gr; see KIM data)	0
0318	0	0	0	Tr	3 grey-green, blue-green	Tr (27 gr)	Tr (1 gr)	0	Tr (2 gr)	0	Tr (1 gr)	Tr	Tr	Tr	0	0	2	Tr (1 gr; see KIM data)	0
0319	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	Tr	2	2	0	0
0320	0	0	0	Tr	1 black	Tr (46 gr)	0	0	Tr (2 gr)	0	0	Tr	0	Tr	Tr	0	1	Tr (4 gr; see KIM data)	0
0321	0	0	Tr (3 gr)	Tr	0	Tr (3 gr)	0	0	0	0	Tr (2 gr)	0	Tr	Tr	0	Tr	1	Tr (3 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0322	0	0	0	0	3 pale blue, pale purple, pale green 1 gahnite	Tr (8 gr)	0	0	0	0	0	0	0	Tr	0	Tr	1	Tr (6 gr; see KIM data)	0
0323	0	0	0	Tr	3 blue-grey, pink	Tr (66 gr)	Tr (2 gr)	0	Tr (2 gr)	0	Tr (1 gr)	Tr	0	Tr	0	Tr	2	Tr (2 gr; see KIM data)	0
0324	0	0	0	0	1 blue-grey	Tr (22 gr)	0	Tr (8 gr)	Tr (1 gr)	0	0	Tr	0	Tr	0	0	3	Tr (~10 gr; see KIM data)	0
0325	0	0	0	0	1 pale blue	Tr (12 gr)	0	0	0	0	0	0	0	0	0	8	1	0	0
0326	0	0	0	0	1 black hercynite; 2 pale blue spinel	Tr (8 gr)	0	Tr (1 gr)	Tr (4 gr)	0	0	Tr	0	Tr	0	0	3	Tr (1 gr; see KIM data)	0
0327	0	0	Tr (10 gr)	0	8 blue-green, blue	Tr (11 gr)	0	Tr (3 gr)	Tr (2 gr)	0	0	0	0	Tr	0	1	2	Tr (~50 gr; see KIM data)	Tr perovskite (1 gr)
0328	0	0	0	Tr	0	Tr (4 gr)	Tr (1 gr)	0	0	0	0	0	Tr	Tr	0	Tr	Tr	Tr (3 gr; see KIM data)	0
0329	Tr (4 gr)	0	Tr (~15 gr)	Tr	0	Tr (3 gr)	0	0	Tr (2 gr)	0	0	Tr	0	Tr	0	0	Tr	Tr (3 gr; see KIM data)	0
0330	0	0	Tr (5 gr)	0	1 blue-green gahnite; 1 blue spinel	0	0	0	0	0	Tr (3 gr)	0	0	0	0	0	Tr	0	0
0331	0	0	0	Tr	0	Tr (4 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr	0	0
0332	0	0	0	Tr	0	Tr (2 gr)	0	0	Tr (1 gr)	0	0	0	Tr	0	0	0	Tr	0	0
0333	0	0	Tr (2 gr)	Tr	0	Tr (48 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0334	0	0	0	0	1 blue	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	Tr (1 gr; see KIM data)	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0335	Tr (2 gr)	0	0	0	2 black hercynite; 4 green, pale blue spinel	Tr (10 gr)	Tr (1 gr)	Tr (5 gr)	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	Tr (~15 gr; see KIM data)	0
0336	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	Tr	Tr	Tr	0	0	0.5	0	0
0337	Tr (1 gr)	0	0	0	1 blue-green gahnite; 2 blue spinel	Tr (6 gr)	0	0	Tr (3 gr)	0	Tr (1 gr)	Tr	0	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0338	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	Tr	Tr	Tr	0	0	Tr	0	0
0339	0	0	0	0	2 green, blue	Tr (9 gr)	0	Tr (1 gr)	Tr (2 gr)	0	0	0	0	0	0	Tr	Tr	0	0
0340	0	0	Tr (2 gr)	Tr	0	Tr (1 gr)	0	0	0	0	0	Tr	Tr	Tr	0	2	Tr	0	0
0341	0	0	Tr (2 gr)	Tr	0	Tr (7 gr)	0	Tr (1 gr)	Tr (2 gr)	0	Tr (1 gr)	0	0	Tr	0	3	3	0	0
0342	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	0	Tr	3	0	0
0343	0	0	Tr (2 gr)	Tr	0	Tr (5 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0344	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	0
0345	Tr (2 gr)	0	Tr (6 gr)	0	0	Tr (4 gr)	0	0	0	0	0	0	0	Tr	0	Tr	75	0	0
0346	0	0	Tr (4 gr)	Tr	0	Tr (3 gr)	0	Tr (1 gr)	Tr (2 gr)	0	0	0	Tr	Tr	0	Tr	Tr	0	0
0347	0	0	0	0	0	Tr (4 gr)	0	0	0	0	0	Tr	0	Tr	0	0	0	0	0
0348	0	0	Tr (1 gr)	Tr	0	0	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr	0	0
0349	0	0	Tr (1 gr)	Tr	1 grey	Tr (3 gr)	0	0	0	0	0	Tr	0	Tr	0	0	Tr	0	0
0350	0	0	Tr (5 gr)	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	Tr	0	0
0351	Tr (1 gr)	0	0.2 (~60 gr)	0	0	Tr (2 gr)	0	0	0	0	0	0	Tr	Tr	0	5	Tr	Tr (1 gr; see KIM data)	0
0352	Tr (1 gr)	0	Tr (1 gr)	Tr	0	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr	0	0
0353	0	0	Tr (1 gr)	Tr	0	Tr (4 gr)	0	0	0	0	0	0	0	Tr	0	Tr	Tr	0	0
0354	Tr (1 gr)	0	Tr (4 gr)	0	0	0	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr	Tr (3 gr; see KIM data)	0
0355	0	0	0	Tr	0	0					0	0	Tr	Tr	0	3	Tr	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0356	Tr (1 gr)	0	Tr (2 gr)	Tr	5 blue-green, grey	Tr (1 gr)	0	Tr (1 gr)	Tr (4 gr)	0	0	0	Tr	Tr	0	0	Tr	Tr (~20 gr; see KIM data)	0
0357	Tr (1 gr)	0	Tr (2 gr)	Tr	0	0	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr	0	0
0358	0	0	0	0	0	Tr (3 gr)	0	0	0	0	0	0	0	0	0	0	Tr	0	0
0359	0	0	Tr (2 gr)	0	0	Tr (4 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	0	0
0360	0	0	Tr (2 gr)	Tr	1 blue-green ghnite; 1 black Cr-spinel; 6 blue, blue-green spinel	Tr (9 gr)	0	Tr (1 gr)	Tr (2 gr)	0	Tr (1 gr)	0	0	Tr	0	Tr	Tr	Tr (~10 gr; see KIM data)	0
0361	Tr (5 gr)	0	2 (~500 gr)	0	0	Tr (5 gr)	0	Tr (1 gr)	0	0	0	0	0	Tr	0	Tr	Tr	Tr (2 gr; see KIM data)	0
0362	0	0	0	0	0	Tr (3 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	0	0
0363	Tr (8 gr)	0	12 (~5000 gr)	Tr	0	Tr (3 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0364	Tr (1 gr)	0	0	0	6 green blue-green, grey	Tr (12 gr)	0	Tr (7 gr)	Tr (5 gr)	0	Tr (1 gr)	0	0	Tr	0	Tr	Tr	Tr (3 gr; see KIM data)	0
0365B	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0366	Tr (1 gr)	0	Tr (7 gr)	0	0	Tr (2 gr)	0	0	Tr (1 gr)	0	0	Tr	0	0	0	Tr	Tr	0	0
0367	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	3	1	0	0
0368	0	0	Tr (13 gr)	Tr	4 blue-green	Tr (14 gr)	0	Tr (1 gr)	Tr (3 gr)	0	0	0	Tr	Tr	0	0	Tr	0	0
0369	0	0	Tr (4 gr)	Tr	0	0	0	0	0	0	0	0	Tr	Tr	0	0	Tr	Tr (6 gr; see KIM data)	0
0370	0	0	Tr (~30 gr)	Tr	0	0	0	0	0	0	Tr (4 gr)	0	Tr	0	0	5	3	0	0
0371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	Tr	1	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0372	0	0	Tr (4 gr)	Tr	0	Tr (4 gr)	0	0	0	0	Tr (8 gr)	0	Tr	Tr	0	1	Tr	0	0
0373	0	0	0	Tr	0	Tr (2 gr)	0	0	0	0	0	0	0	Tr	0	Tr	0.5	0	0
0374	0	0	Tr (6 gr)	Tr	0	0	Tr (1 gr)	0	0	0	Tr (3 gr)	0	0	Tr	0	1	Tr	0	0
0375	Tr (1 gr)	0	Tr (1 gr)	0	0	Tr (6 gr)	0	0	0	0	0	0	0	0	0	0	Tr	0	0
0376	0	0	Tr (~20 gr)	Tr	0	0	0	0	0	0	0	0	0	0	0	Tr	Tr	0	0
0377	0	0	0	0	0	Tr (9 gr)	0	Tr (1 gr)	0	0	0	0	Tr	Tr	0	0	Tr	Tr (5 gr; see KIM data)	0
0378	0	0	0	Tr	0	Tr (1 gr)	0	0	0	0	Tr (1 gr)	0	Tr	Tr	0	Tr	2	Tr (2 gr; see KIM data)	0
0379	Tr (1 gr)	0	0	0	0	0.5% low-Cr diopside (~200 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	Tr (~50 gr; see KIM data)	0
0380	0	0	0	Tr	0	0	0	0	0	0	Tr (3 gr)	Tr	Tr	Tr	0	Tr	Tr	Tr (3 gr; see KIM data)	0
0381	0	0	0	0	1 pale blue	Tr (2 gr)	0	Tr (1 gr)	0	0	0	0	0	0	Tr	0	Tr	Tr (12 gr; see KIM data)	0
0382	0	0	Tr (~15 gr)	Tr	0	Tr (2 gr)	0	0	0	0	0	0	0	Tr	0	Tr	Tr	0	0
0383	0	0	0	0	0	Tr (6 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	Tr (2 gr; see KIM data)	0
0384	0	0	Tr (2 gr)	Tr	1 blue	Tr (5 gr)	0	Tr (1 gr)	0	0	0	0	Tr	Tr	0	Tr	0.5	0	0
0385	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	0	Tr	Tr (12 gr; see KIM data)	0
0386	0	0	0	0	0	Tr (1 gr)	0	Tr (1 gr)	Tr (2 gr)	0	0	Tr	0	Tr	0	Tr	Tr	0	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0387	0	0	Tr (~20 gr)	0	0	Tr (3 gr)	0	0	0	0	0	0	Tr	Tr	0	10	3	Tr (20 gr; see KIM data)	0
0388	Tr (1 gr)	0	Tr (15 gr)	Tr	1 blue	Tr (4 gr)	0	0	0	0	Tr (1 gr)	0	Tr	Tr	0	0	0.5	0	0
0389	0	0	Tr (3 gr)	0	0	0	0	0	0	0	0	0	Tr	Tr	0	5	Tr	Tr (22 gr; see KIM data)	0
0390	1 (~300 gr)	0	0.2 (~50 gr)	Tr	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	0	Tr	Tr	Tr (1 gr; see KIM data)	0
0391	0	0	Tr (2 gr)	0	0	0	0	0	0	0	Tr (1 gr)	0	Tr	Tr	0	5	1	Tr (~80 gr; see KIM data)	0
0392	0	0	Tr (5 gr)	0	1 green	Tr (1 gr)	0	0	Tr (1 gr)	0	0	Tr	0	Tr	0	0	Tr	Tr (2 gr; see KIM data)	0
0393	0	0	Tr (2 gr)	0	0	Tr (10 gr)	0	Tr (1 gr)	0	0	0	0	Tr	Tr	0	0.5	Tr	Tr (5 gr; see KIM data)	0
0394	0	0	Tr (1 gr)	0	0	Tr (3 gr)	0	0	0	0	Tr (1 gr)	0	Tr	Tr	0	0	Tr	Tr (2 gr; see KIM data)	0
0395	0	0	0	0	1 pale blue	Tr (6 gr)	0	0	0	0	0	0	Tr	Tr	0	1	Tr	Tr (23 gr; see KIM data)	0
0396	0	0	0	0	0	0	0	0	0	0	0	Tr	0	0	0	0	Tr	0	0
0397	0	0	Tr (1 gr)	0	0	Tr (5 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	1	Tr (~100 gr; see KIM data)	0
0398	0	0	0	Tr	2 green, purple	Tr (18 gr)	0	0	0	0	Tr (1 gr)	0	Tr	0	Tr	Tr	Tr	Tr (1 gr; see KIM data)	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm															
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0399	0	0	0	90	0	0	0	0	0	0	0	0	0	Tr	Tr	0	Tr	0	0
0400	0	0	Tr (2 gr)	Tr	0	0	0	0	0	0	0	0	Tr	0	0	0.5	2	0	0
0401	0	0	Tr (2 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	Tr	5	Tr	Tr (~18 gr; see KIM data)	0
0402	0	0	Tr (1 gr)	Tr	0	Tr (1 gr)	0	0	0	0	Tr (3 gr)	0	Tr	0	0	0.5	3	0	0
0403	0	0	0	0	0	Tr (13 gr)	Tr (1 gr)	0	0	0	0	0	0	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0404	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	0	Tr	1	Tr (2 gr; see KIM data)	0
0405	0	0	Tr (4 gr)	Tr	0	Tr (2 gr)	0	0	0	0	0	2	Tr	30	0	4	2	Tr (12 gr; see KIM data)	0
0406	0	0	Tr (4 gr)	Tr	0	Tr (7 gr)	0	0	0	0	0	0	0	Tr	0	15	1	0	0
0407	0	Tr molybdenite (1 gr)	0	Tr	0	0	0	0	0	0	0	0	0	Tr	0	Tr	Tr	Tr (3 gr; see KIM data)	0
0408	0	0	0	0	0	Tr (10 gr)	0	0	0	0	0	0	0	Tr	0	0	20	Tr (2 gr; see KIM data)	0
0409	0	0	Tr (8 gr)	0	1 blue-grey	0	0	0	0	0	0	0	0	Tr	0	0	2	Tr (~40 gr; see KIM data)	0
0410	0	0	0	0	0	Tr (24 gr)	0	0	0	0	0	0	0	Tr	0	3	2	0	0
0411	0	0	Tr (~20 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	0	20	0	Tr	1	Tr (1 gr; see KIM data)	0
0412	Tr (3 gr)	0	Tr (10 gr)	Tr	2 purple	Tr (18 gr)	0	Tr (2 gr)	Tr (2 gr)	0	0	0	0	0	0	Tr	Tr	Tr (13 gr)	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0413	0	0	0	0	0	Tr (5 gr)	0	0	0	0	0	Tr	Tr	Tr	0	0	Tr	Tr (19 gr; see KIM data)	0
0414	0	0	0	Tr	0	Tr (32 gr)	0	0	0	0	0	Tr	0	Tr	0	0.5	2	0	0
0415	0	0	Tr (3 gr)	0	0	Tr (8 gr)	0	Tr (1 gr)	0	0	0	0	Tr	Tr	0	0	Tr	Tr (29 gr; see KIM data)	0
0417	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	Tr	Tr	Tr	0	Tr	Tr	Tr (~40 gr; see KIM data)	0
0418	0	0	0	Tr	2 blue-green	Tr (2 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr	0	0
0419	0	0	0	0	0	Tr (7 gr)	0	Tr (1 gr)	0	0	0	0	Tr	Tr	Tr	0	Tr	Tr (~70 gr; see KIM data)	0
0420	0	0	0	0	1 grey	Tr (15 gr)	0	0	0	0	0	Tr	Tr	Tr	0	15	Tr	0	0
0421	0	0	0	Tr	0	0	0	0	0	0	0	0	0	Tr	0	0	0.5	0	0
0423	0	0	0	Tr	0	Tr (2 gr)	0	0	0	0	0	Tr	Tr	Tr	0	0.5	Tr	Tr (~150 gr; see KIM data)	0
0424	0	0	Tr (3 gr)	0	0	0	0	0	0	0	0	0	0	Tr	0	40	20	0	0
0425	0	0	0	0	0	Tr (6 gr)	0	0	0	0	0	0	0	0	0	0	Tr	0	0
0426	0	0	0	75	0	0	0	0	0	0	0	0	0	Tr	0	0.5	Tr	Tr (2 gr; see KIM data)	0
0427	0	0	Tr (~30 gr)	0	0	0	0	0	0	0	0	0	0	Tr	0	0	Tr	0	0
0428	0	0	0	2	0	0	0	0	0	0	0	0	0	0	Tr	0	Tr	0	0
0429	0	0	Tr (1 gr)	Tr	0	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	Tr	0	Tr	0	0
0430	0	0	Tr (1 gr)	3	0	0	0	0	0	0	0	0	Tr	0	0	0	1	0	0
0431	0	0	0	Tr	1 grey-green	Tr (11 gr)	0	0	0	0	0	0	Tr	Tr	Tr	0	2	Tr (14 gr; see KIM data)	0
0432	0	0	0	0	0	Tr (4 gr)	0	0	0	0	0	0	Tr	Tr	0	0	1	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0433	0	0	Tr (3 gr)	0	0	Tr (3 gr)	0	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr (2 gr; see KIM data)	0
0435	0	0	0	0	0	Tr (3 gr)	0	0	0	0	0	0	0	0	0	0	15	0	0
0436	0	0	0	0	0	Tr (6 gr)	0	0	0	0	0	0	0	Tr	Tr	0	3	Tr (4 gr; see KIM data)	0
0437	0	0	0	0	1 pale blue	Tr (8 gr)	0	0	0	0	0	0	0	Tr	0	0	7	Tr (2 gr; see KIM data)	0
0438	0	0	0	0	0	Tr (5 gr)	0	0	0	0	0	0	0	Tr	Tr	0	5	Tr (~40 gr; see KIM data)	0
0439	0	0	0	0	0	Tr (8 gr)	0	0	0	0	0	0	0	0	Tr	0	Tr	Tr (5 gr; see KIM data)	0
0440	0	Tr molybdenite (1 gr)	Tr (~30 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	Tr	0	Tr	Tr (23 gr; see KIM data)	0
0442	0	0	0	0	0	Tr (16 gr)	0	0	0	0	0	0	0	Tr	Tr	Tr	5	Tr (~250 gr; see KIM data)	0
0443	0	0	Tr (1 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	0	0	1	Tr (4 gr; see KIM data)	0
0444	0	0	0	0	0	Tr (4 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	Tr (2 gr; see KIM data)	0
0445	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	0	8	0	0
0446	0	0	0	Tr	0	0	0	0	0	0	0	0	Tr	Tr	Tr	0	5	Tr (15 gr; see KIM data)	0

	Sulphide/Arsenide + Related				Mg/Mn/Al/Cr Minerals														
	Minerals 0.25-0.5 mm				0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0447	0	Tr molybdenite (1 gr)	Tr (5 gr)	60	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	0
0448	0	0	Tr (5 gr)	Tr	0	Tr (15 gr)	0	0	0	0	0	0	0	Tr	Tr	Tr	5	Tr (~80 gr; see KIM data)	0
0449	0	0	Tr (3 gr)	Tr	0	0	0	0	0	0	0	0	0	0	Tr	0	7	0	0
0450	0	0	0	Tr	0	Tr (3 gr)	0	0	0	0	0	0	0	Tr	Tr	Tr	10	0	Tr perovskite (1 gr) Tr ilmenorutile (4 gr)
0451	Tr (24 gr)	0	Tr (~15 gr)	Tr	0	Tr (3 gr)	0	0	0	0	0	0	0	Tr	Tr	60	Tr	Tr (1 gr; see KIM data)	0
0452	Tr (1 gr)	0	Tr (~50 gr)	Tr	0	Tr (2 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	Tr (2 gr; see KIM data)	0
0453	0	0	Tr (2 gr)	Tr	0	Tr (16 gr)	Tr (1 gr)	0	0	0	0	0	Tr	Tr	0	15	1	0	0
0454	0	0	0	Tr	0	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	0	0	0
0455	0	0	Tr (3 gr)	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0456	0	0	Tr (4 gr)	Tr	0	Tr (5 gr)	0	0	0	0	0	0	Tr	0	Tr	40	Tr	Tr (3 gr; see KIM data)	0
0457	0	0	0	Tr	0	Tr (7 gr)	0	0	0	0	0	0	Tr	0	Tr	0	Tr	0	0
0458	0	0	Tr (2 gr)	0	0	Tr (6 gr)	0	0	0	0	0	0	Tr	0	Tr	0	Tr	Tr (6 gr; see KIM data)	0
0459	0	0	Tr (4 gr)	Tr	1 blue-green gahnite	Tr (5 gr)	0	Tr (1 gr)	0	0	Tr (1 gr)	0	Tr	Tr	Tr	5	Tr	Tr (13 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0460	0	0	Tr (~15 gr)	Tr	1 pale purple	Tr (6 gr)	0	0	0	0	0	0	Tr	Tr	Tr	0	Tr	Tr (~80 gr; see KIM data)	0
0461	0	0	0	Tr	0	Tr (6 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0462	0	0	Tr (2 gr)	0	1 green gahnite	Tr (1 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	Tr (41 gr; see KIM data)	0
0463	Tr (5 gr)	0	Tr (1 gr)	Tr	3 blue-green spinel	Tr (9 gr)	0	0	0	0	Tr (2 gr)	0	0	Tr	0	0	Tr	Tr (9 gr; see KIM data)	0
0464	0	0	Tr (1 gr)	0	0	Tr (6 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	Tr (39 gr; see KIM data)	0
0465	0	0	Tr (4 gr)	20	0	Tr (3 gr)	0	0	0	0	0	0	Tr	Tr	0	10	Tr	Tr (1 gr; see KIM data)	0
0466	0	0	0	0	0	Tr (6 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0467	0	0	0	Tr	0	Tr (6 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	Tr (3 gr; see KIM data)	0
0468	0	0	Tr (5 gr)	0	1 pale purple	Tr (5 gr)	0	0	0	0	0	Tr	Tr	0	0	2	Tr	Tr (8 gr; see KIM data)	0
0469	0	0	0	0	1 black	0	0	0	0	0	0	0	0	Tr	0	0	0	Tr (20 gr; see KIM data)	0
0470	0	0	Tr (10 gr)	Tr	1 blue-grey	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	Tr	5	Tr	Tr (13 gr; see KIM data)	0
0471	0	0	Tr (4 gr)	0	0	Tr (10 gr)	0	0	0	0	0	Tr	0	Tr	Tr	Tr	Tr	Tr (1 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0472	Tr (2 gr)	0	Tr (20 gr)	0	0	Tr (2 gr)	0	0	0	0	0	Tr	0	Tr	0	2	Tr	Tr (1 gr; see KIM data)	0
0473	Tr (1 gr)	0	Tr (6 gr)	Tr	0	0	0	0	0	0	Tr (2 gr)	0	0	Tr	Tr	5	Tr	Tr (6 gr; see KIM data)	0
0474	0	0	Tr (2 gr)	0	0	Tr (8 gr)	0	Tr (1 gr)	0	0	0	0	Tr	Tr	Tr	3	Tr	Tr (1 gr; see KIM data)	0
0475	0	0	0	0	1 purple	Tr (5 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	Tr (9 gr; see KIM data)	0
0476	0	0	Tr (4 gr)	0	0	0	0	0	0	0	0	0	0	Tr	Tr	10	Tr	Tr (1 gr; see KIM data)	0
0477	0	0	Tr (6 gr)	0	0	Tr (2 gr)	0	0	0	0	0	Tr	Tr	Tr	0	6	0	Tr (~60 gr; see KIM data)	0
0478	0	0	Tr (10 gr)	Tr	0	Tr (~30 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0479A	Tr (1 gr)	0	Tr (8 gr)	Tr	3 blue-green, purple	Tr (~40 gr)	0	Tr (4 gr)	0	0	Tr (1 gr)	0	0	Tr	Tr	10	Tr	Tr (3 gr; see KIM data)	0
0479B	0	0	Tr (7 gr)	Tr	0	Tr (5 gr)	0	0	0	0	0	0	0	Tr	Tr	15	Tr	Tr (14 gr; see KIM data)	0
0480	Tr (1 gr)	0	Tr (~15 gr)	1	0	0.2% low-Cr diopside (~60 gr)	0	0	0	0	0	0	0	0	0	0	1	Tr (1 gr; see KIM data)	0
0481	0	Tr molybdenite (1 gr)	0	Tr	0	Tr (4 gr)	0	0	0	0	0	0	0	Tr	0	Tr	0	Tr (12 gr; see KIM data)	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm															
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0482	0	0	0	Tr	0	Tr (14 gr)	0	0	0	0	0	0	0	Tr	Tr	1	Tr	Tr (1 gr; see KIM data)	0
0483	0	0	0	Tr	0	Tr (1 gr)	0	0	0	0	0	0	0	0	Tr	0	40	Tr (28 gr; see KIM data)	0
0484	0	0	Tr (4 gr)	0	0	0	0	0	0	0	0	Tr	0	0	0	1	Tr	Tr (19 gr; see KIM data)	0
0485	0	0	0	70	0	0	0	0	0	0	0	0	0	0	Tr	0	Tr	Tr (1 gr; see KIM data)	0
0486	0	0	Tr (1 gr)	Tr	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr (6 gr; see KIM data)	0
0487	0	0	0	Tr	0	Tr (2 gr)	0	0	0	0	0	0	0	0	Tr	Tr	Tr	Tr (3 gr; see KIM data)	0
0488	0	Tr fluorite (1 gr)	Tr (1 gr)	Tr	1 blue	Tr (7 gr)	0	0	0	0	Tr (2 gr)	0	Tr	Tr	0	Tr	Tr	Tr (9 gr; see KIM data)	0
0489	Tr (1 gr)	0	Tr (1 gr)	Tr	0	Tr (2 gr)	0	0	0	0	0	0	0	Tr	Tr	25	Tr	Tr (24 gr; see KIM data)	0
0490	0	0	0	Tr	0	Tr (1 gr)	0	0	Tr (1 gr)	0	0	0	Tr	0	0	Tr	2	0	0
0491	0	0	Tr (1 gr)	5	0	Tr (4 gr)	0	0	0	0	0	0	0	Tr	Tr	40	Tr	Tr (2 gr; see KIM data)	0
0492	0	0	Tr (3 gr)	Tr	0	Tr (1 gr)	0	0	0	0	Tr (2 gr)	0	Tr	0	0	Tr	Tr	Tr (3 gr; see KIM data)	0
0494	0	0	Tr (5 gr)	0	3 blue, purple, green	Tr (12 gr)	0	0	Tr (2 gr)	0	0	0	Tr	Tr	0	0	Tr	0	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0496	0	0	Tr (2 gr)	Tr	0	Tr (9 gr)	0	Tr (1 gr)	0	0	Tr (3 gr)	0	Tr	Tr	0	0	Tr	0	0
0497	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3	Tr	Tr (15 gr; see KIM data)	0
0498	Tr (1 gr)	0	Tr (4 gr)	Tr	5 blue-green, blue	Tr (14 gr)	0	Tr (1 gr)	0	0	Tr (9 gr)	0	Tr	Tr	0	0	Tr	Tr (4 gr; see KIM data)	0
0499	0	0	Tr (2 gr)	Tr	0	0	0	0	0	0	0	Tr	0	Tr	Tr	15	Tr	Tr (19 gr; see KIM data)	0
0500	Tr (1 gr)	0	Tr (3 gr)	Tr	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	0	70	0	0	0
0501	0	0	Tr (5 gr)	Tr	0	0	0	0	0	0	0	0	0	Tr	0	60	Tr	Tr (19 gr; see KIM data)	0
0502	0	0	Tr (1 gr)	Tr	0	0	0	0	0	0	0	0	0	Tr	0	20	Tr	Tr (1 gr; see KIM data)	0
0503	0	0	Tr (2 gr)	Tr	0	Tr (6 gr)	0	0	0	0	0	0	0	Tr	Tr	1	Tr	Tr (~70 gr; see KIM data)	0
0504	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	0	Tr	Tr	0	0
0505	0	0	0	Tr	0	0	0	0	0	0	0	0	0	Tr	0	20	Tr	Tr (~40 gr; see KIM data)	0
0506	0	0	0	0	0	Tr (3 gr)	0	0	0	0	0	0	0	0	0	2	Tr	0	0
0507	0	0	Tr (3 gr)	Tr	0	Tr (3 gr)	0	0	0	0	0	0	0	Tr	0	Tr	Tr	Tr (2 gr; see KIM data)	0
0508	Tr (2 gr)	0	0	0	2 pale blue-green	Tr (2 gr)	0	0	0	0	0	0	0	Tr	Tr	Tr	2	0	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0509	0	0	0	Tr	0	0	0	0	0	0	0	0	0	Tr	Tr	5	Tr	Tr (7 gr; see KIM data)	0
0510	0	0	0	Tr	1 blue-green gahnite	0	0	0	0	0	0	0	0	0	Tr	40	Tr	0	0
0511	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	15	Tr (4 gr; see KIM data)	0
0512	0	0	Tr (1 gr)	Tr	0	Tr (2 gr)	0	0	0	0	0	0	0	0	Tr	10	15	0	0
0513	0	0	Tr (~20 gr)	5	0	0	0	0	0	0	0	0	Tr	Tr	0	0	Tr	Tr (3 gr; see KIM data)	0
0514	0	0	0	Tr	0	0	0	0	0	0	0	0	0	0	0	20	Tr	0	0
0516	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0
0517	0	0	0	Tr	0	0	0	0	0	0	0	0	Tr	Tr	0	0	0	0	0
0518	Tr (13 gr)	0	Tr (20 gr)	Tr	0	Tr (11 gr)	0	0	0	0	0	0	0	0	Tr	1	7	0	0
0519	0	0	0	Tr	0	0	0	0	0	0	Tr (1 gr)	0	0	Tr	0	5	2	0	0
0520	0	0	0	Tr	1 pale purple	Tr (4 gr)	0	0	0	0	Tr (1 gr)	0	0	0	Tr	5	40	Tr (3 gr; see KIM data)	0
0521	0	0	0	Tr	0	0	0	0	0	0	0	0	0	0	Tr	1	2	Tr (6 gr; see KIM data)	0
0522	0	0	Tr (2 gr)	Tr	0	Tr (11 gr)	0	0	0	0	Tr (1 gr)	0	0	Tr	Tr	5	10	Tr (6 gr; see KIM data)	0
0523	0	0	0	Tr	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	Tr	2	Tr	0	0
0524	0	0	Tr (4 gr)	0	0	0	0	0	0	0	0	0	0	0	0	25	Tr	Tr (4 gr; see KIM data)	0
0525	0	0	1 (~60 gr)	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0
0526	0	0	0	0	0	Tr (1 gr)	0	Tr (1 gr)	0	0	0	0	0	0	0	2	Tr	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0527	Tr (1 gr)	0	0	0	2 grey, pink	Tr (3 gr)	0	Tr (1 gr)	0	0	0	Tr	0	Tr	0	Tr	5	Tr (14 gr; see KIM data)	0
0528	Tr (2 gr)	0	0.5 (~50 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	0	Tr	0	0	0
0529	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	0	3	Tr (3 gr; see KIM data)	0
0530	0	0	Tr (2 gr)	0	0	Tr (5 gr)	0	0	0	0	0	0	0	0	0	1	3	Tr (22 gr; see KIM data)	0
0531	0	0	Tr (10 gr)	0	0	Tr 1 gr)	0	0	0	0	0	0	0	0	0	60	Tr	Tr (47 gr; see KIM data)	0
0532	0	0	Tr (1 gr)	Tr	0	Tr (13 gr)	0	0	0	0	0	0	0	0	0	5	1	Tr (4 gr; see KIM data)	0
0533	0	0	0	Tr	0	0	0	0	0	0	0	0	0	Tr	0	Tr	1	0	0
0534	0	Tr molybdenite (1 gr)	Tr (1 gr)	Tr	0	Tr (9 gr)	0	0	0	0	0	0	Tr	0	0	0	1	Tr (43 gr; see KIM data)	0
0535	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	0	0	Tr	0	0
0536	0	0	0.2 (~75 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	Tr	0	0	25	0	Tr (~250 gr; see KIM data)	0
0537	0	0	Tr (13 gr)	Tr	0	Tr (1 gr)	0	0	0	0	0	0	Tr	0	0	Tr	Tr	Tr (7 gr; see KIM data)	0
0538	0	0	Tr (2 gr)	0	0	Tr (1 gr)	0	0	0	0	0	Tr	0	0	0	Tr	Tr	Tr (2 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0539B	Tr (6 gr)	Tr molybdenite (2 gr) Tr arsenopyrite (1 gr)	1 (~300 gr)	0	0	Tr (5 gr)	0	0	0	0	0	0	0	Tr	Tr	Tr	Tr	Tr (11 gr; see KIM data)	0
0540	0	0	0	Tr	0	Tr (11 gr)	0	0	0	0	0	Tr	0	Tr	0	0	3	Tr (1 gr; see KIM data)	0
0541	0	0	Tr (5 gr)	0	1 grey	Tr (7 gr)	0	0	0	0	0	Tr	Tr	Tr	0	0	10	Tr (2 gr; see KIM data)	0
0542	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	Tr	Tr	Tr (1 gr; see KIM data)	0
0543	0	0	0	Tr	0	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	0	1	Tr	0	0
0544	0	0	0	0	0	0	0	0	0	0	0	Tr	0	Tr	0	0	Tr	0	0
0545	0	0	0	Tr	0	0	0	80% corundum (~8000 gr)	0	0	0	0	Tr	0	0	15	Tr	0	0
0546	0	0	Tr (2 gr)	Tr	0	0	0	0	0	0	0	0	0	Tr	Tr	Tr	Tr	Tr (6 gr; see KIM data)	0
0547	Tr (3 gr)	0	0	Tr	0	0	0	0	0	0	0	0	0	0	0	0	Tr	Tr (3 gr; see KIM data)	0
0548	0	0	Tr (1 gr)	Tr	0	0	0	0	0	0	0	0	0	Tr	Tr	Tr	Tr	Tr (5 gr; see KIM data)	0
0549	0	0	0	Tr	0	Tr (8 gr)	0	0	Tr (2 gr)	0	0	Tr	Tr	0	0	Tr	Tr	0	0
0550	0	0	0	80	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr (3 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0551	0	0	Tr (2 gr)	Tr	0	Tr (3 gr)	0	0	0	0	0	0	Tr	0	0	Tr	Tr	Tr (5 gr; see KIM data)	0
0552	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0553	Tr (3 gr)	0	Tr (3 gr)	Tr	1 purple	Tr (2 gr)	0	0	0	0	Tr (1 gr)	0	0	Tr	0	25	Tr	Tr (12 gr; see KIM data)	0
0554	0	0	0	0	1 blue-green gahnite; 2 pale blue spinel	Tr (6 gr)	0	0	0	0	0	0	0	0	Tr	Tr	Tr	Tr (38 gr; see KIM data)	0
0555B	0	0	Tr (1 gr)	0	0	Tr (8 gr)	0	0	0	0	0	0	0	Tr	0	15	1	Tr (11 gr; see KIM data)	0
0556	0	Tr molybdenite (1 gr)	Tr (13 gr)	Tr	0	0	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0557	0	0	Tr (3 gr)	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	10	Tr	Tr (12 gr; see KIM data)	0
0558	0	0	0	0	0	Tr (3 gr)	0	0	0	0	0	0	0	0	0	0	1	Tr (16 gr; see KIM data)	0
0560	0	0	0	0	0	Tr (5 gr)	0	0	0	0	0	0	0	0	0	0	Tr	Tr (7 gr; see KIM data)	0
0561	0	0	Tr (5 gr)	Tr	1 grey-green hercynite; 1 blue-green spinel	Tr (~30 gr)	Tr (1 gr)	Tr (4 gr)	Tr (6 gr)	0	Tr (~30 gr)	Tr	Tr	Tr	0	0	Tr	Tr (~40 gr; see KIM data)	0
0562	0	0	Tr (4 gr)	0	0	Tr (1 gr)	0	0	0	0	0	Tr	0	0	0	0	Tr	Tr (~200 gr; see KIM data)	0
0563	0	0	Tr (2 gr)	Tr	0	Tr (5 gr)	0	0	0	0	Tr (1 gr)	Tr	Tr	Tr	0	Tr	2	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0564	0	0	0	0	0	Tr (13 gr)	0	0	0	0	0	0	0	Tr	0	0	1	Tr (1 gr; see KIM data)	0
0565	0	0	0	Tr	2 green gahnite; 1 green spinel	Tr sapphirine (1 gr) Tr (2 gr)	0	Tr (1 gr)	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0567	0	0	0	Tr	0	Tr (17 gr)	0	Tr (1 gr)	Tr (1 gr)	0	0	Tr	Tr	Tr	0	0	Tr	0	0
0568	0	0	0	0	0	Tr (~40 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	0	0
0569	0	0	0	Tr	0	Tr (1 gr)	0	0	Tr (1 gr)	0	Tr (1 gr)	Tr	Tr	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0570	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0571	0	0	Tr (3 gr)	0	1 blue-green	0	0	0	0	0	0	Tr	Tr	0	0	Tr	Tr	Tr (58 gr; see KIM data)	0
0572	0	Tr molybdenite (1 gr)	Tr (5 gr)	Tr	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	Tr (11 gr; see KIM data)	0
0574	0	0	Tr (7 gr)	Tr	0	Tr (3 gr)	0	0	0	0	0	0	0	Tr	0	0	0.5	Tr (1 gr; see KIM data)	0
0575	0	0	Tr (4 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	Tr (~70 gr; see KIM data)	0
0576	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0577	Tr (1 gr)	0	0.5 (~150 gr)	0	0	0	0	0	0	0	0	Tr	Tr	0	0	0	0	Tr (7 gr; see KIM data)	0
0578	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	Tr	0	0	0	0
0579	Tr (1 gr)	0	0.5 (~100 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	Tr	0	0	Tr (~120 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0580	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	5	Tr	Tr (2 gr; see KIM data)	0
0581	Tr (2 gr)	0	Tr (1 gr)	Tr	1 black hercynite	Tr (18 gr)	0	Tr (1 gr)	0	0	0	Tr	Tr	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0582	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	Tr	Tr	Tr	Tr (1 gr; see KIM data)	0
0584	0	0	0	Tr	0	Tr (1 gr)	0	0	0	0	0	0	0	0	0	0	Tr	0	0
0585	0	0	0	Tr	1 blue-green	Tr (40 gr)	Tr (1 gr)	Tr (1 gr)	0	0	0	Tr	Tr	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0586	0	0	0	Tr	0	0	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0587	0	0	Tr (1 gr)	Tr	1 blue-green	Tr (1 gr)	0	0	0	0	0	Tr	Tr	Tr	0	0.5	Tr	Tr (9 gr; see KIM data)	0
0588	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	0	Tr	0	0	0	Tr	0	0
0589	0	0	0	0	1 green gahnite; 1 green hercynite; 1 green spinel	Tr (1 gr)	0	0	Tr (3 gr)	0	0	Tr	Tr	Tr	0	0	1	Tr (3 gr; see KIM data)	0
0590	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	0	0	Tr	0	0
0591	0	0	Tr (4 gr)	Tr	0	0	0	0	0	0	0	0	Tr	0	0	0	Tr	Tr (6 gr; see KIM data)	0
0592	0	0	0	Tr	0	0	0	0	0	0	0	0	Tr	0	0	0	Tr	0	0
0593	0	0	0	0	0	Tr (6 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	Tr (4 gr; see KIM data)	0
0594	0	0	0	Tr	0	Tr (3 gr)	0	Tr (1 gr)	0	0	0	0	0	Tr	0	0	Tr	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0595	0	0	Tr (2 gr)	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	0	0	Tr (16 gr; see KIM data)	0
0596	0	0	0	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0597	0	0	0	0	0	Tr (6 gr)	0	Tr (1gr)	0	0	0	0	Tr	0	Tr	0	Tr	Tr (13 gr; see KIM data)	0
0598	0	0	0	Tr	0	0					0	0	Tr	0	0	0	Tr	0	0
0599	Tr (7 gr)	Tr pentlandite (2 gr)	Tr (1 gr)	Tr	0	Tr (~50 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	Tr (41 gr; see KIM data)	0
0600	0	Tr molybdenite (2 gr)	1 (~60 gr)	0	0	Tr (2 gr)	0	80% corundum (500 gr)	0	0	0	0	0	0	0	0	0	0	0
0601	0	0	0	Tr	1 blue-green gahnite; 2 pale blue-green spinel	Tr (~50 gr)	0	Tr (5 gr)	Tr (4 gr)	0	0	Tr	Tr	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0602	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	Tr	Tr	0	Tr	6	0	0
0603	0	0	0	Tr	0	Tr (1 gr)	0	0	Tr (1 gr)	0	0	Tr	Tr	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0604	0	0	0	0	0	Tr (~40 gr)	0	0	0	0	0	0	0	Tr	0	Tr	2	0	0
0605	0	Tr molybdenite (1 gr)	0	0	0	Tr (3 gr)	0	0	0	0	0	0	0	0	0	Tr	Tr	0	0
0606	0	0	0	Tr	1 green	Tr (2 gr)	0	0	0	0	0	Tr	Tr	Tr	0	0	Tr	Tr (2 gr; see KIM data)	0
0607	0	0	Tr (7 gr)	Tr	2 blue	Tr (13 gr)	0	Tr (2 gr)	Tr (2 gr)	0	Tr (2 gr)	0	Tr	Tr	0	5	Tr	0	0
0608	0	0	Tr (1 gr)	Tr	0	0	0	0	0	0	0	0	Tr	0	0	0	Tr	0	0
0609	0	0	Tr (9 gr)	0	0	Tr (16 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	1	Tr (11 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0610	0	0	0	0	0	0	0	0	0	0	0	0	Tr	Tr	0	Tr	9	Tr (1 gr; see KIM data)	0
0612	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	0	0	0	0
0613	0	0	0	Tr	2 blue-green	Tr (12 gr)	0	0	0	0	0	Tr	Tr	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0614	0	0	Tr (2 gr)	4	0	0	0	0	0	0	0	0	0	0	Tr	0	Tr	Tr (54 gr; see KIM data)	0
0615	0	0	0	0	0	Tr (3 gr)	0	0	0	0	0	0	Tr	0	0	Tr	Tr	0	0
0616	0	0	0	0	0	0	0	0	0	0	0	0	Tr	Tr	0	8	Tr	Tr (6 gr; see KIM data)	0
0617	0	0	Tr (1 gr)	Tr	0	0	0	0	0	0	0	0	Tr	0	0	0	Tr	0	0
0618	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	0	Tr	0	0	0	Tr	Tr (~80 gr; see KIM data)	0
0619	0	Tr molybdenite (1 gr)	0	Tr	0	0	0	0	0	0	0	0	Tr	Tr	0	3	Tr	0	0
0620	0	0	0	0	0	Tr (4 gr)	0	0	0	0	0	0	0	0	0	0	0.5	Tr (2 gr; see KIM data)	0
0621	0	0	Tr (1 gr)	7	0	0	0	0	0	0	0	0	0	Tr	0	0	0	Tr (2 gr; see KIM data)	0
0622	0	0	0	Tr	0	Tr (9 gr)	0	0	0	0	0	0	0	0	Tr	2	Tr	Tr (~200 gr; see KIM data)	0
0623	0	0	0	Tr	0	0	0	0	0	0	0	0	0	Tr	0	Tr	0	Tr (3 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0624	0	0	0	Tr	0	0	0	0	0	0	0	0	0	Tr	0	0	Tr	Tr (3 gr; see KIM data)	0
0625	0	0	Tr (3 gr)	Tr	0	Tr (8 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	0.5	Tr (12 gr; see KIM data)	0
0626	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	Tr	0	0	5	Tr	0	0
0627	0	0	Tr (3 gr)	Tr	1 blue-green	Tr (2 gr)	0	0	0	0	0	0	Tr	0	0	3	Tr	0	0
0628	0	0	0	Tr	0	0	0	0	0	0	Tr (2 gr)	0	0	Tr	0	30	Tr	Tr (26 gr; see KIM data)	0
0629	0	0	Tr (2 gr)	Tr	0	Tr (1 gr)	0	0	0	0	Tr (1 gr)	0	Tr	Tr	0	1	Tr	0	0
0630	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	Tr	Tr	Tr (~60 gr; see KIM data)	0
0631	Tr (1 gr)	0	0	0	2 blue-green	Tr (7 gr)	0	Tr (1 gr)	0	0	0	Tr	0	Tr	0	0	2	Tr (1 gr; see KIM data)	0
0632	0	0	Tr (1 gr)	0	1 pale purple	0	0	0	0	0	Tr (1 gr)	0	0	Tr	0	10	Tr	Tr (25 gr; see KIM data)	0
0633	0	0	Tr (3 gr)	0	2 blue-green	Tr (11 gr)	0	0	Tr (1 gr)	0	0	0	0	Tr	0	0	Tr	0	0
0634	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	Tr	0	0	0	0
0635	Tr (2 gr)	0	Tr (1 gr)	Tr	0	0	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr	0	0
0636	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	0	0	Tr	0	0
0637	0	0	Tr (2 gr)	Tr	0	Tr (18 gr)	Tr (1 gr)	0	Tr (3 gr)	0	0	Tr	0	Tr	0	Tr	Tr	0	0
0638	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	0	0	0	Tr (1 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0639	0	0	0	Tr	0	Tr (1 gr)	0	0	Tr (1 gr)	0	0	Tr	0	Tr	0	0	Tr	Tr (1 gr; see KIM data)	0
0640	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	0	0	Tr (1 gr; see KIM data)	0
0641	0	0	Tr (2 gr)	Tr	1 black Cr-spinel; 1 blue spinel	Tr (5 gr)	0	Tr (2 gr)	Tr (2 gr)	0	0	Tr	0	Tr	0	0	Tr	Tr (4 gr; see KIM data)	0
0642	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	Tr	0	0	Tr	0	Tr	Tr (12 gr; see KIM data)	0
0643	0	0	0	0	2 blue-grey, blue-green	Tr (15 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr	0	0
0644	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	0	0	Tr	0	0
0645	0	0	Tr (2 gr)	Tr	0	Tr (~50 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0646	0	0	Tr (1 gr)	0	0	Tr (3 gr)	0	0	0	0	0	0	0	0	Tr	Tr	Tr	Tr (5 gr; see KIM data)	0
0647	Tr (1 gr)	0	Tr (1 gr)	Tr	0	Tr (6 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0648	0	0	0	Tr	0	0	0	0	0	0	0	0	0	Tr	0	0	Tr	0	0
0649	0	Tr molybdenite (1 gr)	Tr (6 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	Tr	0	Tr	Tr	Tr	Tr (29 gr; see KIM data)	0
0650	0	0	0	Tr	0	0	0	0	0	0	0	0	0	0	Tr	0	Tr	0	0
0651	0	0	0	0	0	Tr (3 gr)	0	0	0	0	0	0	Tr	0	Tr	0	Tr	Tr (1 gr; see KIM data)	0
0652	0	0	0	Tr	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	0
0654	0	0	0	Tr	0	0	0	0	0	0	0	0	0	Tr	0	Tr	0	Tr (6 gr; see KIM data)	0
0655	0	0	0	0	0	0	0	0	0	0	0	0	Tr	Tr	Tr	30	0	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0656	0	0	0	Tr	0	Tr (12 gr)	0	0	0	0	0	0	0	0	0	0	0.5	Tr (1 gr; see KIM data)	0
0657	0	0	0	10	0	Tr (1 gr)	0	0	0	0	Tr (1 gr)	0	0	0	0	0	Tr	Tr (45 gr; see KIM data)	0
0658	0	0	0	Tr	0	Tr (6 gr)	0	0	0	0	0	0	0	Tr	0	0	1	0	0
0659	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	Tr	25	Tr	0	0
0660	0	0	0	0	0	Tr (3 gr)	0	Tr (1 gr)	Tr (3 gr)	0	0	0	Tr	Tr	0	0	Tr	0	0
0661	0	0	0	10	0	0	0	0	0	0	0	0	0	0	Tr	Tr	0	Tr (1 gr; see KIM data)	0
0662	0	0	Tr (2 gr)	Tr	0	Tr (4 gr)	0	0	0	0	0	0	Tr	0	0	Tr	Tr	0	0
0663	0	0	Tr (1 gr)	Tr	0	Tr (5 gr)	0	0	0	0	0	0	Tr	Tr	Tr	Tr	0	Tr (3 gr; see KIM data)	0
0664	0	0	0	Tr	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	0	0
0665	0	0	0	0	2 green gahnite	Tr (4 gr)	0	0	0	0	0	0	Tr	0	Tr	0	0	Tr (~80 gr; see KIM data)	0
0666	0	0	Tr (1 gr)	Tr	0	Tr (1 gr)	0	0	0	0	0	0	Tr	0	Tr	Tr	0	0	0
0667	0	0	0	0	0	Tr (7 gr)	0	0	0	0	0	0	Tr	Tr	Tr	Tr	Tr	Tr (1 gr; see KIM data)	0
0668	0	0	0	0	2 blue	Tr (18 gr)	0	Tr (1 gr)	Tr (1 gr)	0	0	0	Tr	0	0	0	0.5	0	0
0669	0	0	Tr (1 gr)	0	0	Tr (5 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	0	0
0670	0	0	Tr (5 gr)	Tr	1 blue-green	Tr (1 gr)	0	0	0	0	0	0	0	0	0	Tr	1	Tr (4 gr; see KIM data)	0
0671	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	Tr	Tr	Tr	0	0	0	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0673	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	Tr	0	Tr	Tr (2 gr; see KIM data)	0
0674	0	0	0	Tr	3 blue-green	Tr (5 gr)	0	Tr (1 gr)	Tr (2 gr)	0	0	0	0	0	0	0	Tr	0	0
0675	0	0	Tr (1 gr)	Tr	0	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	Tr	0	0	Tr (1 gr; see KIM data)	0
0676	0	0	0	Tr	1 blue-green gahnite; 1 blue-green hercynite	Tr (6 gr)	0	Tr (1 gr)	Tr (1 gr)	0	Tr (1 gr)	0	Tr	Tr	0	0	Tr	Tr (4 gr; see KIM data)	0
0677	0	0	Tr (1 gr)	0	0	Tr (2 gr)	0	0	0	0	0	0	Tr	Tr	Tr	0	0	Tr (9 gr; see KIM data)	0
0678	0	0	0	Tr	0	Tr (6 gr)	0	0	Tr (1 gr)	0	0	0	Tr	Tr	0	0	Tr	0	0
0679	0	0	Tr (2 gr)	0	1 pink	Tr (1 gr)	0	Tr (1 gr)	0	0	0	0	0	Tr	Tr	0	0	Tr (4 gr; see KIM data)	0
0680	0	0	0	Tr	1 grey-green	Tr (15 gr)	0	0	Tr (2 gr)	0	0	0	Tr	Tr	0	0	3	0	0
0681	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	Tr	Tr	Tr	0	Tr	Tr (2 gr; see KIM data)	0
0682	0	0	Tr (~15 gr)	Tr	2 blue-green	Tr (9 gr)	Tr (1 gr)	Tr (2 gr)	Tr (5 gr)	0	Tr (12 gr)	0	Tr	Tr	0	1	2	Tr (~25 gr; see KIM data)	Tr aegerine (1 gr)
0683	0	0	Tr (2 gr)	0	0	Tr (10 gr)	0	0	0	0	0	0	Tr	Tr	Tr	0	Tr	0	0
0684	Tr (1 gr)	0	Tr (5 gr)	Tr	0	Tr (2 gr)	0	Tr (2 gr)	0	0	Tr (2 gr)	Tr	Tr	Tr	0	0	Tr	Tr (2 gr; see KIM data)	0
0685	0	Tr molybdenite (1 gr)	Tr (1 gr)	Tr	1 pale purple	Tr (1 gr)	0	0	0	0	0	0	Tr	0	0	0	Tr	Tr (22 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0686	0	0	Tr (1 gr)	Tr	1 blue-green	Tr (6 gr)	0	0	0	0	0	0	0	Tr	0	Tr	Tr	Tr (1 gr; see KIM data)	0
0687	0	0	0	Tr	0	Tr (1 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr	Tr (15 gr; see KIM data)	0
0688	0	0	Tr (6 gr)	Tr	1 blue-green gahnite	Tr (5 gr)	0	0	0	0	0	0	0	Tr	0	5	Tr	Tr (3 gr; see KIM data)	0
0689	0	0	0	0	0	0	0	0	0	0	0	0	Tr	0	Tr	0	Tr	Tr (11 gr; see KIM data)	0
0690	0	Tr fluorite (1 gr)	Tr (3 gr)	Tr	1 blue-green gahnite; 1 blue-green spinel	Tr (9 gr)	0	Tr (2 gr)	Tr (5 gr)	0	Tr (2 gr)	Tr	Tr	Tr	0	0	Tr	0	0
0691	0	0	0	0	3 purple, pink, pale blue	Tr (1 gr)	0	0	0	0	0	0	Tr	0	0	0	Tr	Tr (~100 gr; see KIM data)	0
0692	0	0	Tr (3 gr)	Tr	5 blue-green, blue-grey	Tr (28 gr)	0	0	Tr (7 gr)	0	Tr (12 gr)	0	Tr	Tr	0	Tr	Tr	Tr (1 gr; see KIM data)	0
0693	0	0	Tr (2 gr)	0	0	Tr (7 gr)	0	Tr (1 gr)	0	0	0	0	Tr	0	0	0	Tr	Tr (38 gr; see KIM data)	0
0694	0	0	0	Tr	14 pink, pale blue, pale blue-green	Tr (17 gr)	0	Tr (2 gr)	0	0	Tr (2 gr)	0	Tr	Tr	0	1	2	0	0
0695	0	0	Tr (~15 gr)	Tr	0	0	0	0	Tr (1 gr)	0	Tr (2 gr)	0	0	Tr	0	Tr	Tr	Tr (6 gr; see KIM data)	0
0696	0	0	0	0	0	0	0	0	0	0	0	Tr	Tr	0	0	0	Tr	0	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0697	0	0	0	Tr	1 blue	Tr (7 gr)	0	0	Tr (2 gr)	0	Tr (1 gr)	Tr	0	Tr	0	0	Tr	Tr (9 gr; see KIM data)	0
0698	0	0	Tr (1 gr)	Tr	3 blue-green, blue	Tr (11 gr)	0	0	Tr (3 gr)	0	0	Tr	0	Tr	0	Tr	Tr	0	0
0699	0	0	Tr (1 gr)	Tr	0	Tr (2 gr)	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr	0	0
0700	0	0	Tr (1 gr)	0	1 blue-green	Tr (5 gr)	0	0	0	0	Tr (1 gr)	0	0	Tr	0	0	Tr	0	0
0701	0	0	Tr (20 gr)	Tr	0	Tr (1 gr)	0	0	0	0	0	0	Tr	0	0	0	Tr	Tr (2 gr; see KIM data)	0
0702	0	0	Tr (5 gr)	0	0	0	0	0	0	0	0	0	0	Tr	Tr	0	3	Tr (28 gr; see KIM data)	0
0703	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	0	Tr	Tr	Tr (11 gr; see KIM data)	0
0704	Tr (1 gr)	0	Tr (~20 gr)	Tr	1 green gahnite	Tr (10 gr)	0	0	0	0	Tr (1 gr)	0	Tr	Tr	Tr	1	Tr	Tr (17 gr; see KIM data)	0
0705	0	0	Tr (3 gr)	Tr	0	Tr (5 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	Tr (~100 gr; see KIM data)	0
0706	0	0	0	0	0	Tr (3 gr)	0	0	0	0	0	0	0	Tr	0	0	Tr	Tr (9 gr; see KIM data)	0
0707	0	0	0	0	0	Tr (5 gr)	0	0	0	0	Tr (2 gr)	0	0	0	0	30	Tr	Tr (29 gr; see KIM data)	0
0708	0	0	0	Tr	0	Tr (2 gr)	0	0	0	0	0	0	0	0	Tr	10	Tr	Tr (1 gr; see KIM data)	0
0709	0	0	0	0	0	Tr (1 gr)	0	0	0	0	0	0	0	0	Tr	4	Tr	0	0

Sample Number	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm															
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0710	0	0	0	0	0	Tr (4 gr)	0	0	0	0	0	0	0	0	0	Tr	Tr	0	0
0711	0	0	0	Tr	0	Tr (2 gr)	0	0	0	0	0	Tr	0	Tr	0	0	0	Tr (5 gr; see KIM data)	0
0712	Tr (1 gr)	0	Tr (2 gr)	Tr	0	Tr (4 gr)	0	0	0	0	0	0	0	0	Tr	0	0	Tr (8 gr; see KIM data)	0
0713	0	0	0	Tr	0	0	0	0	0	0	0	0	0	Tr	0	0	Tr	Tr (30 gr; see KIM data)	0
0714	0	0	0	0	0	Tr (7 gr)	0	0	0	0	0	0	0	Tr	Tr	0	0	Tr (~100 gr; see KIM data)	0
0715	0	0	Tr (6 gr)	Tr	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr (32 gr; see KIM data)	0
0716	0	0	Tr (~100 gr)	Tr	0	0	0	0	0	0	0	0	0	Tr	0	8	Tr	0	0
0717	0	0	0	Tr	0	0	0	0	0	0	0	0	0	Tr	0	0	Tr	Tr (33 gr; see KIM data)	0
0718	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	Tr	0	Tr	Tr (~250 gr; see KIM data)	0
0719	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	0	Tr	Tr	0	0	Tr	Tr (38 gr; see KIM data)	0
0720	0	0	0	30	0	0	0	0	0	0	0	0	0	0	Tr	0	0	Tr (9 gr; see KIM data)	0

	Sulphide/Arsenide + Related Minerals 0.25-0.5 mm				Mg/Mn/Al/Cr Minerals 0.25-0.5 mm														
	>1.0 amp			<1.0 amp	>1 amp									>0.8 amp	<0.8 amp				>1.0 amp
Sample Number	% Cpy	Misc. Prime MMSIMs	% Py	% Gth	# Grains + Colour Spinel	Low-Cr diopside	Mn-epidote	Corundum	Sapphirine	Cr-grossular	% Red Rutile	% Ky	% Sil	% St	% Sps	% Fay	% Opx	% Cr	Prime Carbonatite Minerals
0721	0	0	Tr (2 gr)	20	0	0	0	0	0	0	0	0	0	0	0	0.5	Tr	Tr (1 gr; see KIM data)	0
0722	0	0	Tr (1 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	Tr	0	0	Tr (18 gr; see KIM data)	0
0723	0	0	Tr (3 gr)	0	0	Tr (1 gr)	0	0	0	0	0	0	0	Tr	Tr	0	0	Tr (40 gr; see KIM data)	0
0724	0	0	Tr (3 gr)	0	0	Tr (3 gr)	0	0	0	0	0	0	0	0	Tr	0	0	Tr (~150 gr; see KIM data)	0
0725	0	0	0	Tr	0	0	0	0	0	0	Tr (1 gr)	0	0	Tr	Tr	7	Tr	Tr (47 gr; see KIM data)	0
0726	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Tr	1	Tr	Tr (24 gr; see KIM data)	0
0727	0	0	0	0	0	Tr (2 gr)	0	0	0	0	0	Tr	Tr	Tr	0	0	Tr	Tr (9 gr; see KIM data)	0
0728	0	0	Tr (2 gr)	0	0	0	0	0	0	0	0	0	0	Tr	0	5	Tr	Tr (5 gr; see KIM data)	0

Appendix J

Summary of Normalized Kimberlite Indicator
Mineral Results

Summary List of Abbreviations:

GP:	Pyrope Garnet	GAR:	garnet
GO:	Eclogitic Garnet	Cr:	chromium
DC:	Chrome Diopside	diop:	diopside
IM:	Ilmenite	KIM:	kimberlitic
CR:	Chromite		
FO:	Forsteritic Olivine		
(p):	amount of grains picked from sample		
(e):	amount of grains estimated to be in sample		
tot:	total		
c:	confirmed		
s:	sent		

❐ Total KIM Chromites include those that plot within the overlap field and are considered to possibly be of kimberlitic affinity

Sample Calculation

** Picked Estimate Normalization*

Example:
For sample 01SSM-013, 100 chromites were estimated to be present but only 40 chromites were removed (picked). Microprobe analysis confirmed that 39 were kimberlitic. The normalization calculation performed as follows:

$$\text{\# of normalized grains} = \frac{\text{(estimated \# of grains)}}{\text{(\# of picked grains)}} \times \text{(\# of confirmed KIMS)}$$

$$= \frac{100}{40} \times 39$$

$$= 98 \text{ grains}$$

Sample Number	Selected PseudoKIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs	Total KIMs probed							picked estimate normalization			
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm																				
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)		CD	IM	FO	Cr	Cr-DI	Cr-kimfield	Cr-overlap	tot(C) KIM CD	tot(C) KIM IM	tot(C) FO	tot(C) KIM Cr
0002	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	40	50	0	0	51				36		1	35				**45**
0013	0	2	0	19	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	40	100	0	0	102				39		1	38				**98**
0031	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	15	0	0	15				4			4				**12**
0045	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	80	0	0	80				44			44				**78**
0074	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	50	0	0	50				30			30				**50**
0085	0	14	0	25	40	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	20	0	9	25	21	1		7	1		1		**2**		**19**	
0087	0	0	0	15	40	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	6	0	15	50	6			10							**33**	
0093	0	0	0	27	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	7	0	7	25	8											
0101	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	4	0	11	25	5			3							**7**	
0106	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	20	2	0	0			1	9			9				**15**
0109	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	6	0	5	20	7											
0111	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	1	0	8	15	6			5							**9**	
0119	0	1	0	6	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	13	0	11	20	16			4	2	1	1				**7**	
0129	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	10	30	0	0	30				12		2	10				**36**
0132	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	0	8	20	6											
0133	0	1	0	18	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	10	20	0	0	21							7				
0138	0	0	0	25	50	0	0	0	0	1	0	0	1	0	1	0	0	1	0	2	0	0	5	50	12	50	6	3		4	6			6	**6**		**17**	**60**
0142	0	5	0	40	250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	10	0	1							**6**			
0151	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	10	20	1	0	20			1	8	1	1	6				**16**
0157	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	10	0	0	10				1		1					**3**
0176	No Sample	0	0	25	50	No Sample						0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	5							**10**			
0182	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	0	51	80	0	0	84				43		1	42				**67**
0187	0	1	0	7	0	0	0	0	0	0	0	0	0	0	3	9	0	0	0	1	2	10	30	50	0	0	63		4		27	1		26		**20**		**45**
0188	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	30	50	0	0	54				29		1	28				**48**
0190	0	0	0	26	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
0194	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	4	10	1	0	13			1	4			4				**10**
0197	0	0	0	25	50	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	3	3			1		1		**6**			
0199	0	2	0	30	50	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	7	10	2	0	12	1		2	7		1	6	**2**			**10**
0203	0	0	0	15	0	0	0	0	0	0	0	0	0	1	0	2	0	2	0	3	0	0	20	40	0	0	8				8	1	1	6				**16**
0230	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	29	75	0	0	79				25			25				**65**
0270	0	1	0	23	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	5	10	0	0	11				5			5				**10**
0286	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	6	15	0	0	15				4			4				**10**
0324	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	6	10	0	0	14				8		1	7				**13**
0327	0	0	0	11	0	0	0	0	0	0	0	0	1	0	0	5	0	0	0	0	0	0	30	50	0	0	56				14			14				**23**
0335	0	0	0	10	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	1	0	6	15	0	0	19				6			6				**15**
0356	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	5	20	0	0	22				7			7				**28**
0360	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	10	0	0	10				3			3				**8**
0379	0	0	0	20	200	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	33	50	0	0	52				24		3	24				**36**
0391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	80	0	0	80				38		1	37				**76**
0397	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	55	100	0	0	101				53		2	51				**96**
0409	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	25	40	0	0	42				25		3	22				**40**
0412	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	13	0	50	70	13			37	2	1	1				**52**	

Sample Number	Selected PseudoKIMs					KIM Count (* species not rigorously picked; excluded from total)																					Total KIMs	Total KIMs probed							picked estimate normalization			
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm																				
	Low-Cr diop.	Low-Cr diop. (p)	Low-Cr diop. (e)	Low-Cr diop. (p)	Low-Cr diop. (e)	GP	GO	DC	IM	CR	FO*	GP	GO	DC	IM	CR	FO*	GP	GO*	DC	IM* (p)	IM (e)	CR (p)	CR (e)	FO* (p)	FO (e)		CD	IM	FO	Cr	Cr-DI	Cr-kimfield	Cr-overlap	tot(C) KIM CD	tot(C) KIM IM	tot(C) FO	tot(C) KIM Cr
0417	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	40	0	0	40				20		1	19				**40**
0419	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	55	70	0	0	72				54		2	52				**69**
0423	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	150	0	0	150				46			46				**138**
0438	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	40	0	0	40				28			28				**37**
0442	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	250	0	0	250				69			69				**230**
0448	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	80	0	0	80				37		1	36				**74**
0460	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	80	0	0	80				56			56				**75**
0477	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	22	60	0	0	61				20		1	19				**55**
0478	0	2	0	15	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
0479A	0	0	0	25	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	1							**2**			
0480	0	4	0	20	60	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2											
0503	0	0	0	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	54	70	0	0	71				40			40				**52**
0505	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	40	0	0	40				25			25				**40**
0536	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	125	250	0	0	251				120		5	115				**240**
0561	0	0	0	15	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	20	40	0	0	41				16		2	14				**32**
0562	0	0	0	1	0	0	0	0	0	1	0	1	0	0	2	13	0	0	0	0	0	0	50	200	0	0	217				58		2	56				**232**
0568	0	15	25	25	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
0575	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	30	70	0	0	75				35			35				**82**
0579	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	120	0	0	120				56			56				**112**
0585	0	1	0	20	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4							**8**			
0599	0	0	0	30	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	41	2			1		1		**3**			
0601	0	0	0	20	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2			1	1			**5**			
0604	0	0	0	20	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
0618	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	80	0	0	80				49			49				**78**
0622	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	200	0	0	200				57		1	56				**190**
0630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	60	0	0	60				29		1	28				**58**
0645	0	0	0	30	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3							**5**			
0665	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	80	0	0	80				46			46				**74**
0682	0	0	0	9	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	3	6	13	25	1	0	31		1	1	5		5			**2**		**10**
0691	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	100	0	0	100				48			48				**96**
0705	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	100	0	0	100				39		1	38				**98**
0714	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	60	100	0	0	101				58		1	57				**97**
0718	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	100	250	0	0	252				99		2	97				**248**
0724	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	150	0	0	150				64		2	62				**148**

Metric Conversion Table

Conversion from SI to Imperial			Conversion from Imperial to SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
			LENGTH		
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
			AREA		
1 cm^2	0.155 0	square inches	1 square inch	**6.451 6**	cm^2
1 m^2	10.763 9	square feet	1 square foot	**0.092 903 04**	m^2
1 km^2	0.386 10	square miles	1 square mile	2.589 988	km^2
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
			VOLUME		
1 cm^3	0.061 023	cubic inches	1 cubic inch	**16.387 064**	cm^3
1 m^3	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m^3
1 m^3	1.307 951	cubic yards	1 cubic yard	0.764 554 86	m^3
			CAPACITY		
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
			MASS		
1 g	0.035 273 962	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 747	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 622 6	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311 3	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 90**	t
			CONCENTRATION		
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

	Multiplied by	
1 ounce (troy) per ton (short)	31.103 477	grams per ton (short)
1 gram per ton (short)	0.032 151	ounces (troy) per ton (short)
1 ounce (troy) per ton (short)	20.0	pennyweights per ton (short)
1 pennyweight per ton (short)	0.05	ounces (troy) per ton (short)

Note: Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries, published by the Mining Association of Canada in co-operation with the Coal Association of Canada.

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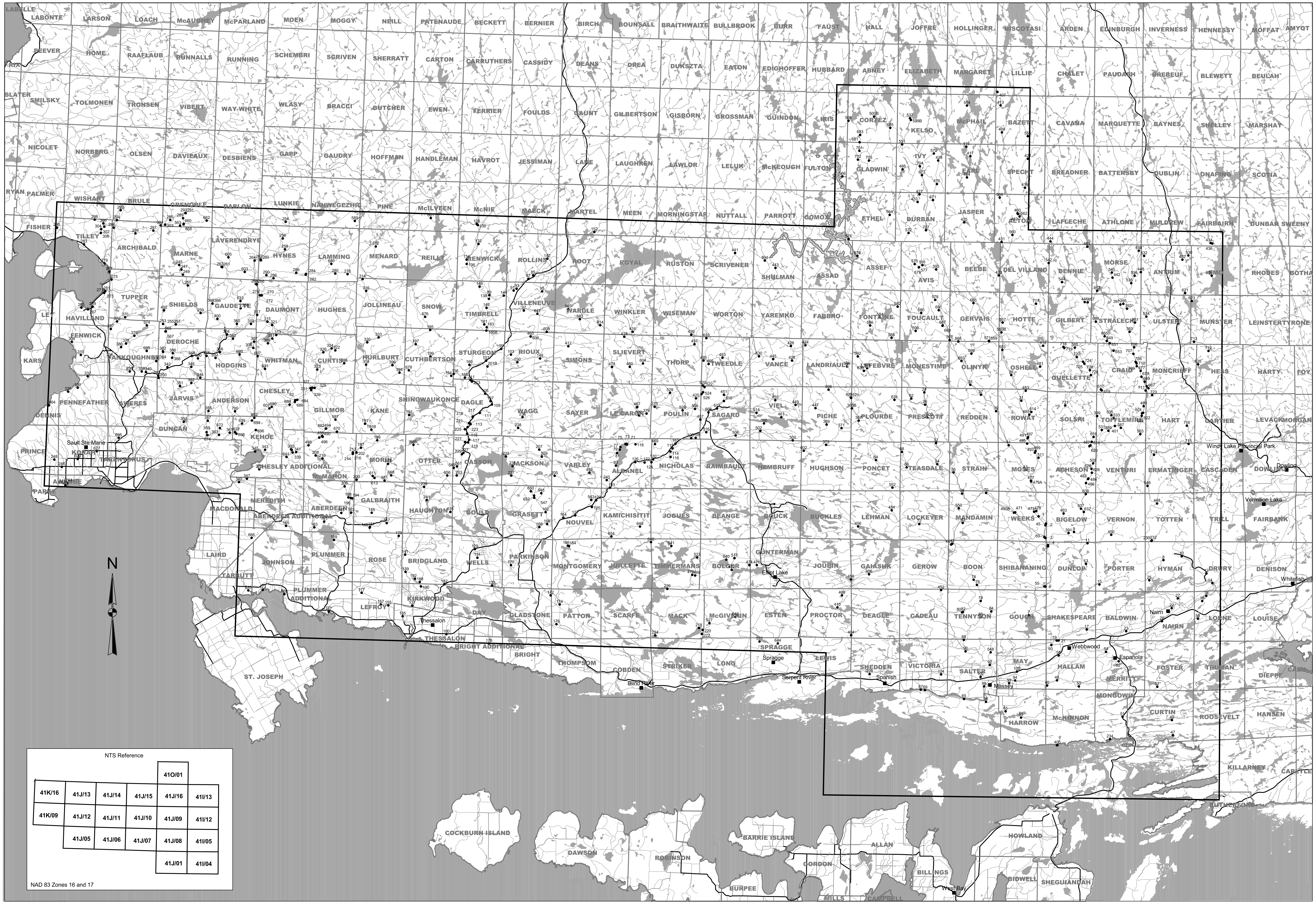

Scale 1:250 000

Figure 3: Sample Site Location Map. Regional Modern Alluvium Sampling Survey of the Sault Ste. Marie - Espanola Corridor , Northeastern Ontario. Accompanies OFR 6117