# 2020 YMEP Final Technical Report for the Swede Creek Placer Project

Swede Creek, West Dawson Area, Northern Yukon

NTS Map sheets 116B 04 & 116C 01

Location: Latitude of 64°5'57.235"N and Longitude 139°50'50.826"W

Mining District: Dawson

Yukon Territory

By Nicolai Goeppel, Higher Ground Exploration Services

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Submitted to: Derek Torgerson, Mineral Development Geologist Yukon Geological Survey

#### Abstract

The Swede Creek Placer project is located 14-line kilometers west of Dawson City, Yukon. The 2020 exploration program was brief and low-impact; consisting of prospecting through hand dug test pits and panning, aerial drone surveys and ground magnetometer surveys. The field program was run from June 4-7, 2020 and September 27<sup>th</sup> to 30<sup>th</sup>. An additional 1 mile prospecting lease and 2 placer claims were staked on April 19, 2020. A total of 1550 hectares was flown on the upstream section of the property to generate a digital elevation model (DEM), high resolution orthophotos, and 3D modeling. The magnetometer survey consisted of 1.85-line kilometers in 3 areas on the downstream section. A total of 14 hand excavated test pits were dug on near surface gravels while prospecting the downstream area; panning returned gold in all sample locations. Drone data identified numerous areas with exposed bedrock and other land forms such as benches, point bars and bedrock reefs. Panning indicated presence of gold in the upper gravels and on several tributaries draining into Swede creek. Magnetometer survey proved less effective.

Further work is recommended to extend the current drone survey area, prospecting and hand dug test pitting followed by mechanical test pitting or sonic drilling to determine grade of gravels overlaying bedrock. The coupled program would provide detailed information for future mine planning and reclamation.

The total 2020 exploration expenditures are \$29,686.12.

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#### Introduction

The Swede creek placer project consists of 4.3 miles of placer claims and 10.92 miles of prospecting leases for a total of 15.3 miles of placer ground on Swede creek, west of Dawson. The project is owned and operated by Bill Harris and Nicolai Goeppel. The property is road accessible off of the Top of the World highway. The property is bounded by some of the most prolific placer gold drainages in the Yukon including to the immediate east the Klondike goldfield, north the Fortymile river and to the south Sixtymile river. Swede creek remains one of the most substantial undeveloped and underexplored drainages in the Klondike.

Recent activity to the north end of the property on Green Gold Explorations property has indicated coarse gold on their property and currently holds an active class 4 mining land use permit. Recent work at the south of the claim block on Swede creek by Morgan Fraughton has produced grades up to 2 grams per cubic meter and indicated areas of partially thawed, shallow bedrock. Hand dug test pitting on the lower end of Swede creek placer property has shown gravels are overlain by 1.5-2m of overburden and has returned up to 2mg pans from top gravels, in 2019. Bedrock exposures are common along the creek consisting of carbonaceous shales, quartz-muscovite-chlorite schist and oxidized quartz-sericite-pyrite schist. The shallow partially thawed conditions and strong water table are favorable for a cost-effective placer mining with minimal discharge. Close proximity to Dawson and good infrastructure makes the project very feasible. Further exploration work is required to determine the full placer gold potential and to determine potential sites for future mining. Class four mining land use permits are active on the north end and southern ends of Swede creek including the first 5 miles of the Swede creek property on the south end under Henry Vincent. A water license application is currently underway on the upstream end of the property.

The 2020 Placer YMEP exploration program on the Swede creek placer property consisted of an aerial drone survey, prospecting and hand dug test pitting and magnetometer geophysical survey. The purpose of this report is to gain funding through the Yukon Mineral Exploration Program (YMEP); in order to facilitate the further exploration on the Swede creek placer property. The total budget for the 2020 YMEP exploration program on the Swede creek placer project is \$29,686.12.

#### **Location and Access**

The Swede creek property is located within the Dawson Mining District, Yukon Territory. The property is centered around latitude 64°5'57.235"N and longitude 139°50'50.826"W; NTS Map sheets 116B 04 & 116C 01. The project is located on Swede creek a prolific drainage located west of Dawson and flows southeast into the Yukon river. The property can be accessed by 4x4 road off of the Top of the World highway from three different locations (Figure 1 & 2). An old cat road to California creek runs along the creek through the downstream half of the property.

The property lies between 1400 and 2500ft in elevation. Physiology of the creek varies from broad and wide creek level to narrow canyons. Steep bedrock faces to gradual slopes peak into large terraces. The creek generally 3-4m wide and under a meter deep with a gravel bottom meanders through the vast drainage. Vegetation generally consists of spruce, alder and willow with lesser stands of popular and birch.

#### **Regional Geology**

The Swede creek area was most recently mapped in 1996 by Jim Mortensen. Below is a regional bedrock geology description for the area according to MacKenzie, Craw, & Mortensen, 2008.

The main basement lithologic units of the Klondike District form part of the Yukon-Tanana terrane and include medium-grade metamorphic rocks of the Upper Permian Klondike Schist, carbonaceous schist of the Devonian-Mississippian Finlayson assemblage (Nasina fades), and little-metamorphosed Late Paleozoic greenstone and ultramafic rocks of the Slide Mountain terrane (Fig 1.; Mortensen, 1990, 1996; Mortensen et al., 2007). These units were thrust-imbricated in the Early Jurassic (Mortensen, 1996) resulting in a series of stacked thrust slices that are locally separated by lenses of ultramafic rocks. The uppermost slices are Klondike Schist and consist of complexly interleaved (1- to 100-m-scale) greenschistfades quartzofeldspathic, chloritic, micaceous and minor carbonaceous schists. The two upper slices of Klondike Schist host significant orogenic gold and are the focus of current research into the structural controls on gold-bearing veins (MacKenzie et al., in press). The thrust stack was uplifted through the brittle-ductile transition in the Jurassic and unconformable overlain by locally derived sedimentary and volcanic rocks in the Late Cretaceous (Mortensen, 1996).

Regional extension and normal faulting continued from Late Cretaceous to early Eocene with initiation of the strike-slip Tintina fault, along which rocks of the Klondike District were offset -450 km from the rest of the Yukon-Tanana terrane (Gabrielse et al., 2006). Minor regional uplift continued in the late Tertiary when erosion produced the Pliocene White Channel Gravels and the world-famous Klondike gold placer deposits (Lowey, 2005). Exposure of basement rocks in the Klondike District is generally poor due to extensive colluvium and permafrost on the tree-covered slopes (Bond and Sanborn, 2006).

#### **Local Geology and Mineralization**

The Swede creek property is underlain by thrusted slivers of Carboniferous and Permian Slide mountain terrane; a dominantly oceanic assemblage of mafic volcanics, ultramafics, chert, pelite, limestone and gabbroic rocks. The Slide Mountain terrane is known to host motherlode style gold mineralization, a potential source of Ni-PGEs and Jade in BC. This is juxtaposed to Permian Klondike schist and Devonian-Mississippian Finlayson assemblage. The Klondike schist is an assemblage of metamorphosed pelitic/volcanic rocks, phyllite and minor marble. The Klondike schist has been a significant host to orogenic gold mineralization in the Dawson area. The Finlayson assemblage consists of graphitic quartzite and muscovite-quartz-rich schist (Mortensen, 2008).

The closest mineral occurrence (Fresno 116B 041) lies approximately 10km north of the property; this VMS occurrence was explored with minor prospecting, reconnaissance soil sampling and trenching. Recent work done by Morgan Fraughton discovered quartz vein hosted in the Klondike schist assaying 28 g/t Au on the high-level terraces above Swede creek suggesting potential local sources to the alluvial gold (Fraughton, 2015). This is further substantiated by the coarseness and angularity that is described of the gold found on Swede creek. Over a long period of bedrock decomposition and subsequent erosion gold would have liberated from such bedrock sources and redistributed in down slope colluvial deposits which would have further been concentrated by alluvial action on high level terraces and slowly eroding to the current creek level.

#### **Surficial Geology**

During the last three million years much of the Klondike plateau was free of significant glaciation. This unglaciated period has had a significant impact on the region and the Swede creek area. This glacier free period allowed for the evolution and preservation of a well-developed landscape, with rounded summits and valley systems and their contained placer deposits. Deep recessive weathering uninfluenced by glacial activity has allowed for significant quantities of alluvial gold to accumulate. Surficial materials in unglaciated regions of the Klondike plateau consist largely of weathered bedrock, colluvium, retransported loess (wind-blown silt), organic, and fluvial deposits. The Klondike plateau is in a zone of widespread discontinuous permafrost, with permafrost generally present on north and east facing slopes and thicker packages of stream beds.

#### **Previous History**

The early history of Swede is limited, it is recorded that on February 2<sup>nd</sup>, 1989 C.A. Olafson and his group found gold and staked the first discovery claims. The gold that the Swedish prospectors reported to have found per pan was worth 90 cents (Miller, 1898). In 1898 when gold was worth \$20.67 USD and therefore it is estimated that this was approx. 1.5g of gold in their pan, or todays value \$117 CAD. Soon after a staking rush followed and over 600 claims were staked on the creek and its tributaries. There are no records of any significant mining activities on Swede creek. A document labeled 'Dredge Swede Creek' in the National Archive suggests that YCGC did carry out drilling on Swede creek and had made plans to dredge sections of the creek. This is further substantiated by Green Gold Exploration which states; "Mr. Steve Kormendy (oldtimer / prospector), collected direct information about a drilling campaign performed by YCGC during the early 50's. The results obtained at the time were positive and convinced the company to plan a dredging operation along the upper part of Swede Creek." It is further indicated that YCGC held claims on Swede creek till 1957.

#### 2020 Work Program

The Swede Creek Placer project is located 14-line kilometers west of Dawson City, Yukon. The 2020 exploration program was brief, low-impact with minimal disturbance; consisting of prospecting through hand dug test pits and panning, aerial drone surveys and ground magnetometer surveys. The field program was run from June 4-7 September 27<sup>th</sup> to 30<sup>th</sup>. A total of 1550 hectares was flown on the upstream section of the property to generate a digital elevation model (DEM), high resolution orthophotos, and 3D modeling. The magnetometer survey consisted of 1.85-line kilometers in 3 areas on the downstream section. A total of 14 hand excavated test pits were dug on near surface gravels while prospecting the downstream area; panning returned gold in all sample locations. On April 19, 2020 a helicopter based out of Dawson was used to mobilize a two-person crew to stake a 1mile prospecting lease and 2 regular placer claims.

#### Drone Survey

The survey captured high resolution orthophotos and digital elevation model (DEM) and the results produced a georeferenced orthomosaic / DEM and 3D model. The drone is a DJI Mavic 2 Pro and is fitted with a 4K Hasselblad high resolution camera. The program was planned using Drone Deploy and Drone Harmony to integrate a terrain awareness for the autonomous survey. Drone Deploy was also used for post processing. The survey altitude was 110m and flown at a resolution of 8.24 cm per pixel for orthophotos and 32.96 cm per pixel for the digital elevation model.

Two days were required to prepare all the flight lines along the creek, four days were spent in the field flying the survey from September 27 -30, 2020 and an additional 3 days was required for post processing. The survey was limited by limited access off the Top of the World highway, the shorter daylight hours in the fall and wet weather. The drone was also lost near the end of the survey with approximately 2.5 miles of data, due to the high steep slopes/cliffs that bound Swede creek and inferior terrain awareness.

The high-resolution imagery outlined areas of bedrock exposure along the creek, large point bars, and other areas of interest for future exploration including bedrock reefs and intersections. The DEM proved effective in identifying some more subtle landforms away from the creek. The full drone report and details is attached to this report.



#### Magnetometer Survey

The magnetometer survey was completed between June 4-7, 2020 in 3 locations over a 2km area on the downstream end of the property and shown in the overview map below. A total of 1.85-line kilometers was completed. Each area was hiked into and thus restricted the survey to the downstream, more accessible end. The areas were chosen based on accessibility and where Swede creek becomes wide enough to support a larger mining cut.



Area 1 was 1.34-line kilometers on a large prominent point bar; values ranged from 56963.78 to 57159.97 nT. The response identified several isolated magnetic highs and some longer more continuous anomalies (shown below).



Area 2 was 0.55-line kilometers; values ranged from 42943.52 to 57100.98 nT. The area displayed a broad magnetic high along the eastern side of the creek with a sharp low in the creek (shown below). The area was narrow and affected the gps of the magnetometer.



Area 3 was 0.79-line kilometers; values ranged from 56870.28 to 57135.46 nT. The area covered a smaller point bar (map shown below). The entire bar returned a higher magnetic signature than the encompassing active creek.



#### 2020 Hand dug test pitting and Prospecting

Prospecting and hand dug test pitting was completed from June 4-7, 2020 on the downstream more accessible end of the Swede creek property. 3 days were spent in conjunction with magnetometer survey in the field for this phase of exploration. A total of 14 Short 2ft test holes were dug on various point bars, near bedrock intersections or on intersecting tributaries. Material excavated using picks and shovels, then was screened using a course half-inch mesh, and lastly panned using a standard 16-inch gold pan. Gold quantities were calculated in the field using a YGS gold card. All test contained gold ranging from 2 mg to 15 mg. This was a positive result as all samples sites only tested shallow top gravels. Best results were near a significant bedrock ridge that is cut by the active creek. Below is a map indicating test sites labeled with estimated gold values (mg).



Gravels ranged from medium to coarse with sections containing abundant boulders. Since sites were near the active drainage there was no overburden only gravels. Away from the creek overburden ranges between 1-2 meters deep and generally thawed, at the base of the steep encompassing hills overburden is thicker with build up of colluvium. Old 'turn of the century' test pits and shafts were observed in several locations during traverses. The drainage was explored to a larger extent in the past than reflected in historical data. Likely, the strong water table discouraged many of the prospectors who explored Swede creek in the early 1900s. A brief sample description and location is tabulated below.

Id	Easting	Northing	Value (mg)	Description	
SWD1	563434	7103702	5	Medium to coarse gravels medium sand matrix on point bar	
SWD2	563149	7103646	7	Medium to coarse gravels medium sand matrix on point bar	
SWD3	563171	7103807	2	Medium to coarse gravels medium sand matrix on point bar	
SWD4	563211	7103974	3.5	Medium to coarse gravels medium sand matrix on point bar	
SWD5	561906	7104192	7	Medium to coarse gravels medium sand matrix on point bar	
SWD6	561946	7104270	15	coarse gravel near prominent bedrock ridge	
SWD7	562104	7104446	6	6 Medium to coarse gravels medium sand matrix on point bar	
SWD8	561963	7104286	10	coarse gravel near prominent bedrock ridge	
SWD9	561862	7104639	2	Near mouth of small tributary, area that was recently scoured exposing gravels	
SWD10	560234	7104711	7	Near mouth of small tributary, area that was recently scoured exposing gravels	

				Near mouth of small tributary, area that was recently
SWD11	559439	7106016	2	scoured exposing gravels
SWD12	560306	7105481	5	Medium to coarse gravels medium sand matrix on point bar
				Near bedrock exposure, coarse gravel with occasional
SWD13	561323	7104708	4	boulders
				Near bedrock exposure, coarse gravel with occasional
SWD14	560843	7104990	8	boulders

#### 2020 Expenditures

The total expenditures for the 2020 placer YMEP on the Swede Creek property is approximately \$29,686.12.

Fireweed Helicopters	\$ 1,581.89
Drone Survey	\$ 14,754.76
Magnetometer Survey	\$ 5,579.97
Hand Dug Test Pits	\$ 3769.50
Report	\$ 2,100.00
Staking	\$ 700.00
Field expenses	\$ 1,200.00
Total	\$ 29,686.12

#### **Conclusion and Recommendations**

The Swede creek placer project consists of 4.3 miles of placer claims and 10.92 miles of prospecting leases for a total of 15.3 miles of placer ground on Swede creek west of Dawson. The 2020 exploration program was brief and low-impact; consisting of prospecting through hand dug test pits and panning, aerial drone surveys and ground magnetometer surveys. The program was successful in determining new exploration targets and areas for follow up testing. Further work is recommended to extend the current drone survey area, prospecting and hand dug test pitting followed by mechanical test pitting or sonic drilling to determine grade of gravels overlaying bedrock. The coupled program would provide detailed information for future mine planning and reclamation. Future exploration should focus on minable areas that have the space to sustain a mining cut appose to the narrow canyon areas.

#### **Statement of Qualifications**

I Nicolai Goeppel, of the city of Whitehorse, Yukon, certify that:

- 1. I worked and been involved in Swede Creek Placer Property since 2019
- 2. I have completed an Earth Sciences B.Sc. at Memorial University of St. John's, Newfoundland in 2014
- 3. I have worked in the mineral exploration industry in the Yukon, Newfoundland, and British Columbia since 2009
- 4. I have been involved in the placer industry my entire life and engaged in placer gold exploration in the Yukon and BC since 2009
- 5. Owner and founder of Higher Ground Exploration Services since 2015

#### References

Fuller, E. A. (1993). High Level Terraces Along Lower Stewart River amd Parts of Yukon River. *Yukon Exploration & Geology 1993, Part C: Geological Fieldwork*, pp. 15-28.

Fraughton, M. (2015). *Report on the 2015 Exploration of Swede Creek and its High-level Terraces for Placer Gold* 

MacFarlane, K., & Nordling, M. (2015, January). Big Alex Bench - Wolfhead Mining and Discovery. *Yukon Exploration & Geology Overview 2015*, p. 80.

MacKenzie, D., Craw, D., & Mortensen, J. K. (2008). Thrust slices and associated deformation in the Klondike goldfields, Yukon. *Yukon Exploration and Geology, 2007*, p. 199.

McKillop, R., Turner, D., Johnston, K., & Bond, J. (2013). Property-scale classification of surficial geology for soil geochemical sampling in the unglaciated Klondike Plateau, west-central Yukon. *Yukon Geological Survey, Open File 2013-15*, 85 p., including appendices.

## Appendix I



Figure 1. Location



Figure 2. Claim and leases with detailed access



Figure 3. Regional geology, claims and leases

### Appendix II

Geophysical values tabulated below.

Area	Easting	Northing	nT
SWD 1	563199	7103920	56994.27
SWD 1	563190	7103919	57033.16
SWD 1	563180	7103910	57026.17
SWD 1	563173	7103902	57026.11
SWD 1	563166	7103894	56989.8
SWD 1	563157	7103890	57011.92
SWD 1	563147	7103883	57110.63
SWD 1	563137	7103879	57036.5
SWD 1	563128	7103877	57023.62
SWD 1	563122	7103871	57047.34
SWD 1	563116	7103863	57030.53
SWD 1	563104	7103860	57016.05
SWD 1	563097	7103853	57017.97
SWD 1	563089	7103850	57010.55
SWD 1	563083	7103840	57037.46
SWD 1	563076	7103834	57034.39
SWD 1	563067	7103830	57077.01
SWD 1	563058	7103826	57050.97
SWD 1	563051	7103822	57063.36
SWD 1	563041	7103816	57004.59
SWD 1	563032	7103812	57000.68
SWD 1	563026	7103805	57041.59
SWD 1	563019	7103798	57003.25
SWD 1	563010	7103792	57034.8
SWD 1	563003	7103788	56972.55
SWD 1	562994	7103783	56990.99
SWD 1	562945	7103810	56963.78
SWD 1	562952	7103821	57008.39
SWD 1	562960	7103828	57159.97
SWD 1	562970	7103831	57055.15
SWD 1	562979	7103837	57055.79
SWD 1	562988	7103844	57049.12
SWD 1	562991	7103852	57033.07
SWD 1	563002	7103855	56990.96
SWD 1	563010	7103860	57004.53
SWD 1	563021	7103868	57008.39
SWD 1	563027	7103877	56989.87
SWD 1	563033	7103887	57009.39

SWD 1	563043	7103892	57075.57
SWD 1	563054	7103894	57002.48
SWD 1	563065	7103897	57063.95
SWD 1	563075	7103900	57042.55
SWD 1	563078	7103907	57039.12
SWD 1	563090	7103914	57013.66
SWD 1	563094	7103925	57011.57
SWD 1	563106	7103928	57024.25
SWD 1	563113	7103936	56988.08
SWD 1	563123	7103939	57020.58
SWD 1	563131	7103945	57126.83
SWD 1	563141	7103949	57012.94
SWD 1	563147	7103958	57039.72
SWD 1	563159	7103964	56997.97
SWD 1	563166	7103965	57017.37
SWD 1	563172	7103975	57047.51
SWD 1	563175	7103985	57018.21
SWD 1	563191	7103983	57017.93
SWD 1	563199	7103989	57017.37
SWD 1	563150	7104030	57032.2
SWD 1	563146	7104023	57046.4
SWD 1	563140	7104015	57014.41
SWD 1	563128	7104008	57006.69
SWD 1	563119	7104004	56983.62
SWD 1	563110	7103996	56992.98
SWD 1	563107	7103990	57033.73
SWD 1	563098	7103981	57023.36
SWD 1	563090	7103978	57060.99
SWD 1	563080	7103972	57013.54
SWD 1	563071	7103966	57003.07
SWD 1	563065	7103960	57010.95
SWD 1	563058	7103954	57023.94
SWD 1	563052	7103948	56990.92
SWD 1	563044	7103941	57051.43
SWD 1	563037	7103933	57030.29
SWD 1	563026	7103926	57023.86
SWD 1	563019	7103923	57014.08
SWD 1	563009	7103920	57025.49
SWD 1	563003	7103913	57050.18
SWD 1	562992	7103909	57093.47
SWD 1	562986	7103904	57054.26

SWD 1	562977	7103900	57039.17
SWD 1	562968	7103893	57020.86
SWD 1	562958	7103889	57016.14
SWD 1	562953	7103879	57052.96
SWD 1	562946	7103872	56969.38
SWD 1	562932	7103868	57027.97
SWD 1	562925	7103861	57033.85
SWD 1	562915	7103858	57081
SWD 1	562911	7103851	57021.76
SWD 1	562907	7103841	57039.38
SWD 1	562900	7103834	57108.5
SWD 1	562861	7103876	57093.7
SWD 1	562875	7103882	56971.29
SWD 1	562882	7103890	56964.87
SWD 1	562890	7103894	56975.4
SWD 1	562898	7103902	56975.19
SWD 1	562907	7103909	56970.25
SWD 1	562914	7103922	57044.08
SWD 1	562922	7103924	57014.81
SWD 1	562932	7103929	57075.69
SWD 1	562942	7103934	57022.41
SWD 1	562951	7103939	57037.88
SWD 1	562956	7103947	57032.27
SWD 1	562963	7103955	57091.87
SWD 1	562966	7103962	57125.65
SWD 1	562975	7103972	57001.77
SWD 1	562982	7103978	57016.86
SWD 1	562996	7103983	57003.56
SWD 1	563002	7103983	56985.56
SWD 1	563007	7103994	57032.63
SWD 1	563015	7103998	56997
SWD 1	563024	7104007	56980.29
SWD 1	563033	7104009	57027.44
SWD 1	563049	7104011	57025.55
SWD 1	563050	7104021	57061.97
SWD 1	563056	7104031	56999.08
SWD 1	563064	7104038	57006.89
SWD 1	563070	7104043	56997.74
SWD 2	562336	7103827	42943.52
SWD 2	562337	7103829	56977.81
SWD 2	562337	7103831	56947.45

SWD 2	562335	7103839	56953.53
SWD 2	562336	7103846	56976.9
SWD 2	562339	7103860	56942.68
SWD 2	562338	7103867	56962.23
SWD 2	562334	7103880	56992.74
SWD 2	562335	7103893	56978.45
SWD 2	562336	7103906	56941.62
SWD 2	562356	7103905	56983.76
SWD 2	562359	7103892	56946.1
SWD 2	562359	7103881	56921.95
SWD 2	562363	7103869	56974.72
SWD 2	562364	7103858	56996.01
SWD 2	562371	7103836	56925.39
SWD 2	562398	7103844	57011.12
SWD 2	562395	7103860	56947.4
SWD 2	562392	7103874	56982.63
SWD 2	562393	7103878	56956.62
SWD 2	562392	7103888	57100.98
SWD 3	561354	7104863	56918.11
SWD 3	561366	7104855	56993.83
SWD 3	561368	7104852	57011.68
SWD 3	561374	7104847	56974.71
SWD 3	561382	7104839	57024.03
SWD 3	561402	7104840	57032.72
SWD 3	561398	7104851	57135.46
SWD 3	561394	7104862	57017.55
SWD 3	561390	7104868	57027.69
SWD 3	561384	7104876	56992.42
SWD 3	561382	7104878	56974.01
SWD 3	561417	7104874	57003.68
SWD 3	561449	7104893	56870.28
SWD 3	561436	7104881	56911.29
SWD 3	561434	7104872	56921.57
SWD 3	561434	7104862	56919.25
SWD 3	561433	7104847	56927.55

# Swede Creek Drone Survey 2020



# Map Details Summary (i)

Project Name	swede creek - swede creek123	
Photogrammetry Engine	DroneDeploy Proprietary	
Date Of Capture	Sep 27, 2020 - Sep 29, 2020	
Date Processed	Oct 19, 2020	
Processing Mode	Terrain (2D)	
GSD Orthomosaic (GSD DEM)	8.24cm/px (DEM 32.96cm/px)	
Area Bounds (Coverage)	15599435.70m <sup>2</sup> (36%)	
Image Sensors	Hasselblad - L1D-20c	

# Quality & Accuracy Summary ()

lmage Quality	High texture images
Median Shutter Speed	Low shutter speed 1/80 - motion blur likely.
Processing Mode	Terrain Mode (2D) - Optimized for efficiently mapping large fields and crops, natural open terrain, and generating topographical maps. This mode expects Nadir (top down) imagery, and so is not recommended for reconstructing the sides of buildings, overhangs, or complex equipment.
Images Uploaded (Aligned %)	2690 (100%)
Camera Optimization	0.02% variation from reference intrinsics

Preview (i)



Dataset Quality Review (i)

### Orthomosaic Coverage (i)



Insufficient coverage, expect large holes in the map, and low accuracy. Marginal coverage, expect distortion or holes on buildings or sharp edges, and lower accuracy measurements. Good coverage, expect a high quality reconstruction

Sensor(s) Used	Hasselblad - L1D-20c
Image Count (by sensor)	2690
Image Resolution	5472x3648 (~20MP)
Orthomosaic coverage (% of area of interest)	36.59
Average Orthomosaic Image Density within Structured Area	66 images/pixel
Median Shutter Speed	Low shutter speed 1/80 - motion blur likely.

#### Structure from Motion (i)

Aligned Cameras	100% 2690/2690		
RMSE of Camera GPS Location	X 4.16m Y 3.45m Z 58.18m RMSE 33.73m		

#### Camera Calibration (i)

Camera Optimization

0.02% variation from reference intrinsics

#### Hasselblad - L1D-20c

Hasselblad - L1D-20c - Distortion Map 1 pixel 3500 1500 2000 2500 3000 1000 500 0 1000 2000 3000 4000 5000 0 CCD center Principal point × ÷

### Densification and Meshing $\widehat{()}$

Processing Mode	Terrain Mode (2D) - Optimized for efficiently mapping large fields and crops, natural open terrain, and generating topographical maps. This mode expects Nadir (top down) imagery, and so is not recommended for reconstructing the sides of buildings, overhangs, or complex equipment.
Processing Mode Quality	High
Nadir Images	100%
Oblique images	 0%
Horizontal images	0%
Total Points	34.8 million
Point Cloud Density	6.10 points/m <sup>2</sup>
Mesh Triangles	4.0 million

### Digital Elevation Model (i)

Mode	Generated from Mesh
DEM GSD	DEM 32.96cm/px
Relative/Absolute	Absolute Altitude





This map and report was produced with proprietary cloud photogrammetry software from DroneDeploy. Provide feedback to improve this report