

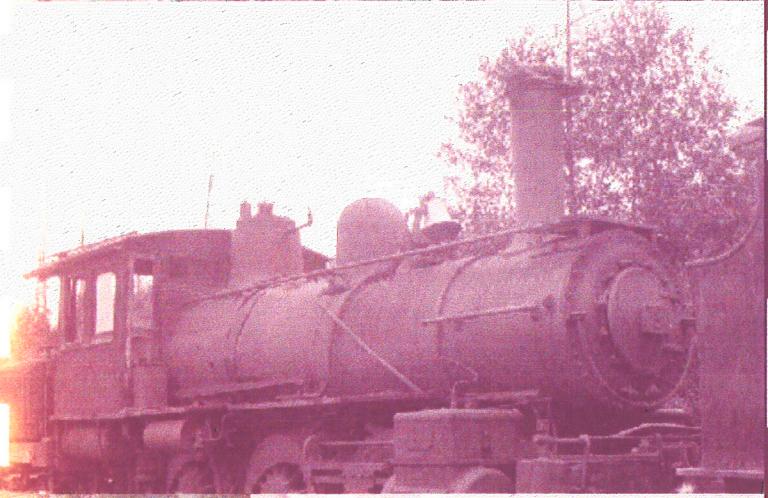
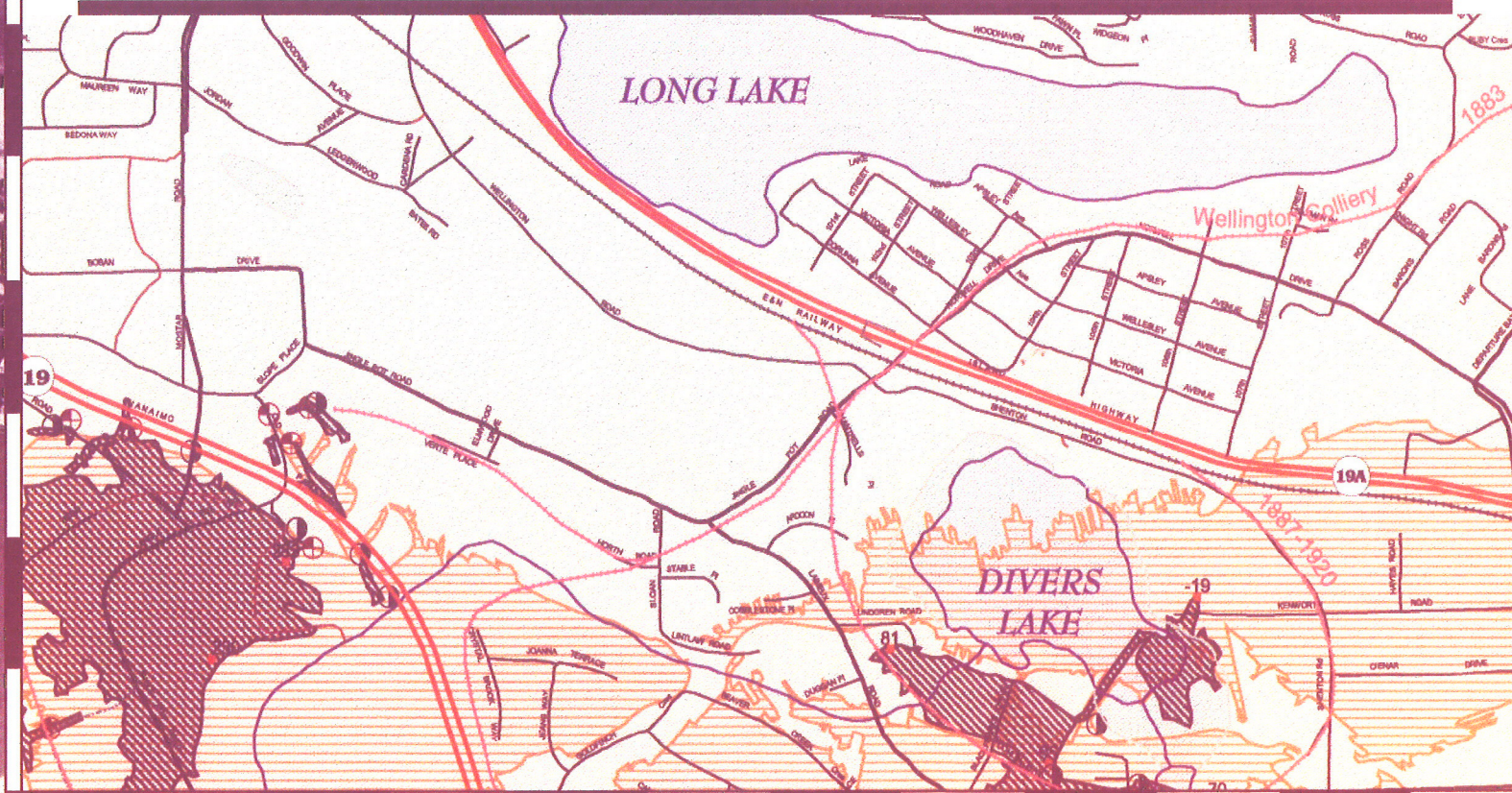
COAL MINE UNDERGROUND WORKINGS ATLAS

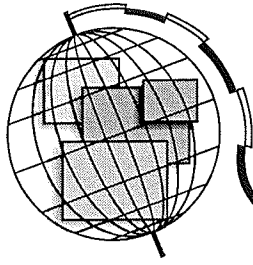
Nanaimo Area
Lantzville, South Wellington, Cassidy & Extension

Historical Photos

Historical Mining Information and Facts

Full Colour Maps





Pacific Spatial Systems Ltd.

Environmental Mapping
and GIS Consulting

Est 1988

COAL MINE Underground Workings ATLAS

August 2004

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President
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Shari Lindsay



Old Abandoned Mines Are Dangerous!

Whether you are hiking, exploring, hunting, camping, or simply just enjoying the countryside caution must be taken near abandoned mines.

The Ministry of Mines have done their best to make all the known openings safe, but no one knows the exact number or location of all the abandoned surface and underground coal mines.

Hazardous abandoned mine problems include open shafts and horizontal openings from underground mining and unstable vertical cliff-like highwalls, dangerous water bodies, and rusting machinery.

Abandoned mine shafts may be fairly easy to see if they are large, or they may be obscured by years of vegetative overgrowth. They may be covered by decayed and rotted boards that will give way under the slightest weight, or they may be a combination of all these.

Abandoned horizontal mine openings lead into underground tunnels that are prone to collapse. They may seem safe to explore, but can contain many hazards, which includes rotten roof support beams, deadly gases, vertical shafts deep within the tunnels, and flooded sections.

If you are in an area where coal has been mined, watch where you are going. You may stumble across an abandoned mine when you least expect it. So, be alert!

*EXPLORING OLD MINES IS A DANGEROUS ACTIVITY WHICH POTENTIALLY
COULD CAUSE SERIOUS INJURY, PERMANENT DISABILITY, OR DEATH !!*



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Lantzville Colliery

The Nanoose Mine opened in 1916 under the name of 'Grant's Mine' and was bought out in 1919 by Harry Lantz who was an American investor from Seattle.

The Ministry of Mines records show that in 1919 the name changed to Lantzville Mine. The Lantzville Colliery were working two seams at the time.

As Recorded:

Nanoose Colliery 1916 to 1919

Renamed to Lantzville Colliery 1919 - closed in October 2, 1926

1927 to 1943, over 68,000 Tonnes of coal was extracted (this included the Lila Mine in 1942-43)

1928 - Diamond Jubilee Mine opened

The Little Wellington seam is on average 55 centimetres thick and approximately 11 metres above the main seam. The seam was very close to the surface and when the company had recieved the point that they were mining under the ocean floor they had to stop because they knew the roof could easily cave in. They could see the large beach boulders that make up the ocean floor on the ceiling of the mine. A roof cave in would have let the ocean flood in at an uncontrollable rate killing any men working down there.

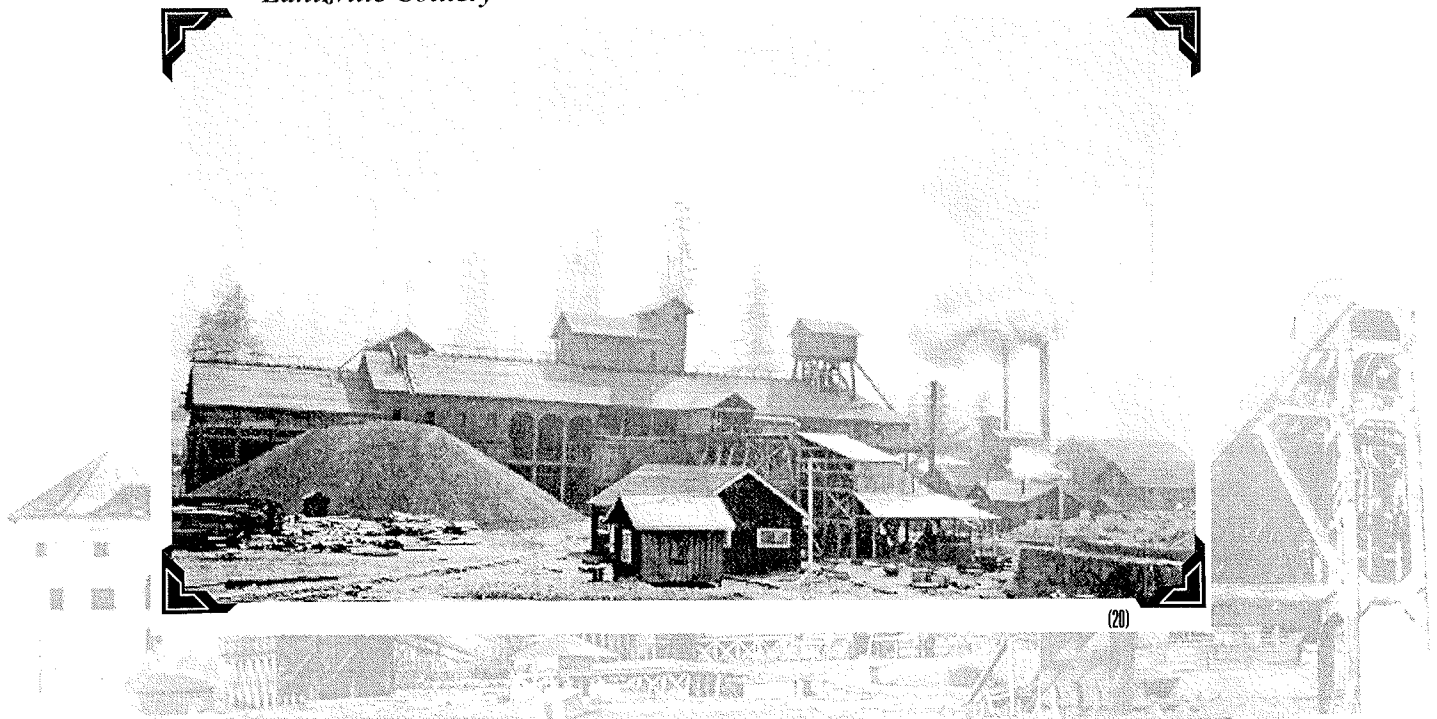
The Lantzville miners came in from Nanaimo daily via 'open air' company buses. Later, the company built several houses that were considered to be of high quality and as soon as they were completed they were rented out right away. When the mines closed the waterfront miners' homes were rented out or sold to people who wanted to have summer cottages.

Lantzville Hotel

The Lantzville Hotel was owned and operated by Abel Caillet and his family from 1925 to 1974.

The miners were able to rent out rooms or receive room and board at a reasonable price. There was a bar downstairs to serve them beer. This was important to hard working miners who believed a cold beer after shift would clean the coal dust out of their lungs before they went home. The Lantzville Hotel is still open today and is popular among local residents.

Lantzville Colliery



Nanaimo No. 1 Mine

The Vancouver Coal Mining & Land Co. was formed in 1862 and at which time they acquired the title to the Hudson Bay Company's interests.

The Nanaimo No. 1 Mine operated between 1881 and 1938 producing around 17 million tonnes of coal. The Newcastle Seam which occurs between 15 to 20 meters below the Douglas Seam was also mined at the No. 1 mine.

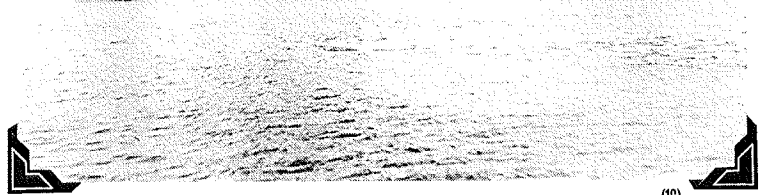
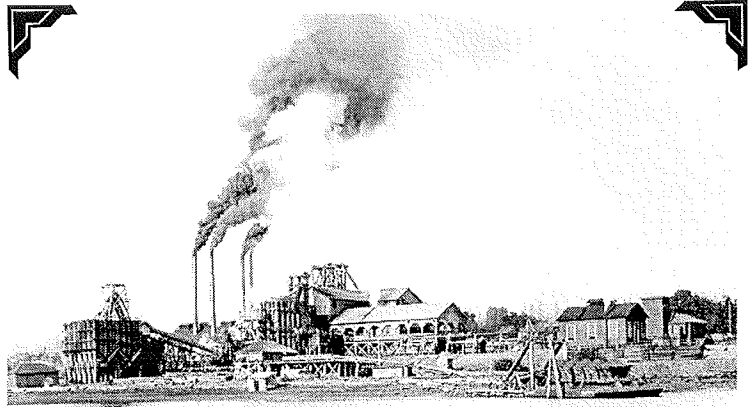
The Douglas Coal Seam consists of:

- No.1 Mine*
- North Douglas Slope and Shaft*
- New Douglas Slope 1911*
- New Douglas Mine*
- Southfield No. 1, 2, 4 Slope*
- Southfield No. 3 & 5 Mine*
- Reserve Mine*
- Fiddick and Richardson Slopes*
- Morden Mine*

The VCML started to build the mine in 1881, and in 1883 the first shift started up.

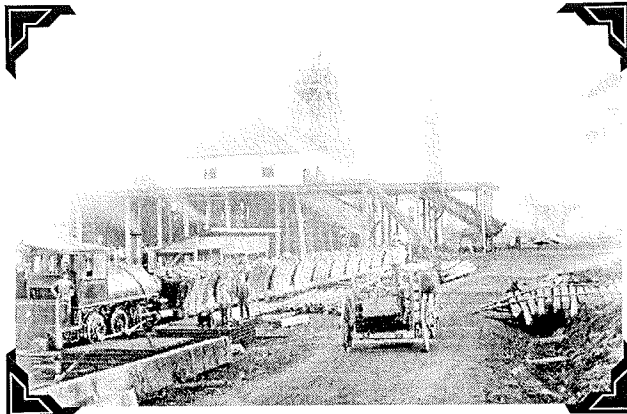
"...the whistle ruled the comings and goings of every citizen of Nanaimo and of people as far away as Extension and Second Lake several kilometers away - anyone who could hear it's raucous voice."

(Lynne Bowen, Boss Whistle, p.69)



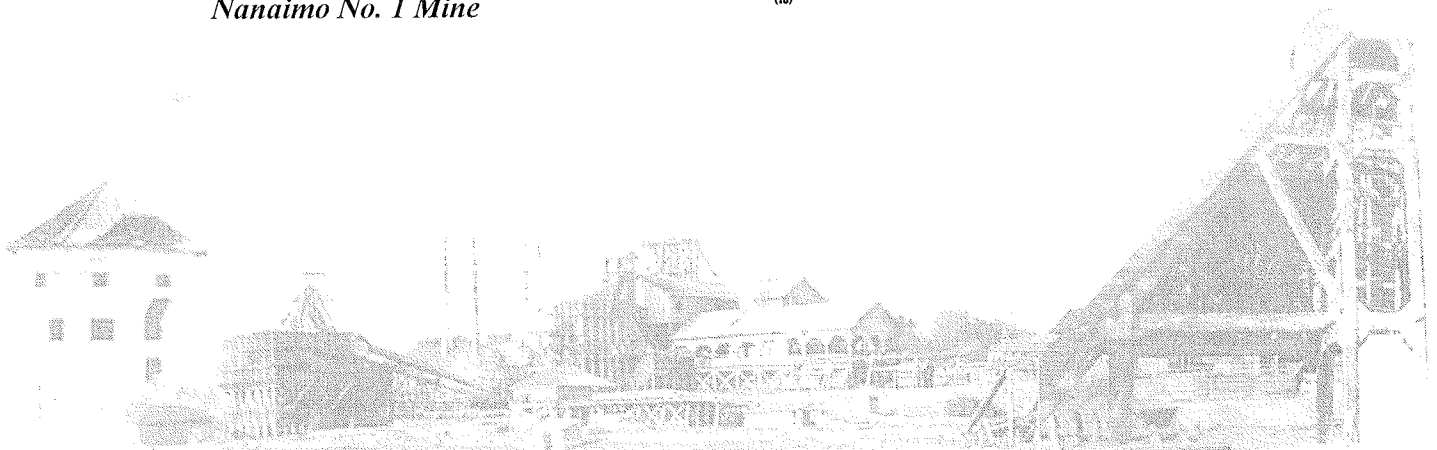
Nanaimo No. 1 Mine

(16)



Nanaimo No. 1 Mine

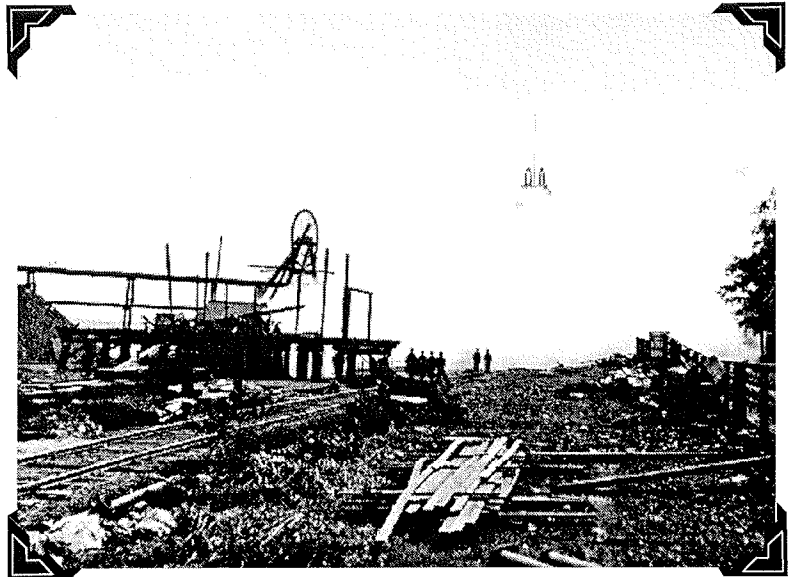
(15)



Nanaimo No. 1 Esplanade Mine Coal Disaster

On Tuesday evening, May 3, 1887 the continuous blast of the whistle from the Number One Esplanade Mine warned people that there was a serious emergency at the mine.

Recently the Nanaimo Community Archives research has updated the number killed in the explosion, the most terrible mining accident in British Columbia's history, adding 2 more men to the death toll. The total deaths recorded is 150 men.



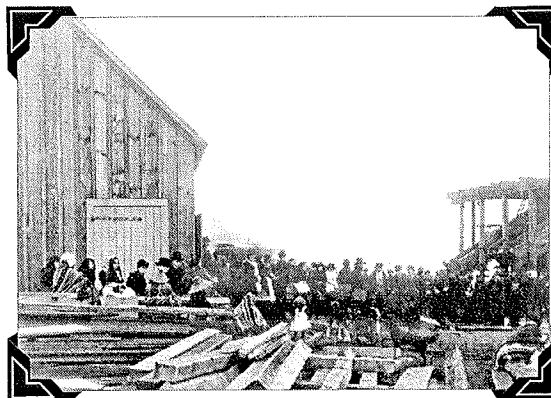
Nanaimo No. 1 Pit on Fire.

(13)

The reason for the explosion is unknown. One of the many explanations that was given is that the explosion and fire broke out in an underground shaft when a blasting charge ignited some "after-damp" mine gas. An 'after-damp' is a carbon monoxide emission from coal dust. Poor ventilation may have contributed to the cause. Another explanation was that someone may have struck a match while lighting up a pipe or a miner's lamp may have ignited the coal dust.

In 1999, a sign and plaque marking the mine's site and commemorating the deaths of the men who died in the 1887 mine disaster were erected at the corner of Esplanade and Milton Street.

*Nanaimo No. 1 Mine Disaster.
People are waiting for
news of family and friends
trapped or killed in the mine
below.*

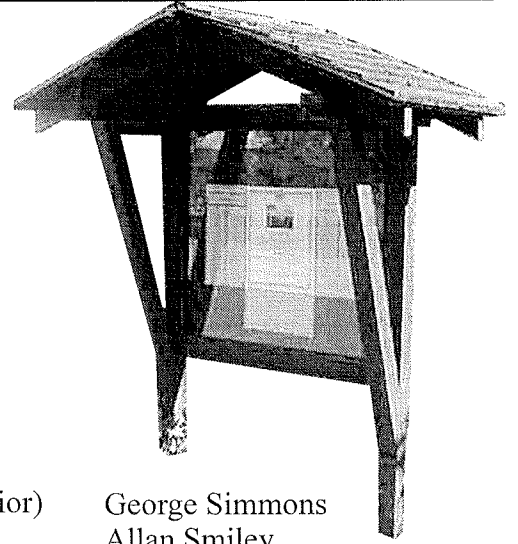


(14)



Inscription Reads:**Miners Killed by No.1 Mine Explosion
May 3, 1887 (5:55 p.m)**

Thomas Allen	Anderoti Phillippea		
G. Bartolero	Joseph Forrest		
Edward Benton	William Gilbert		
George S. Bertram	Thomas Gorman		
Herbert Bevilockway	William Hague		
George Biggs	James Hoggan		
Jonathan Blundell	William Hoy		
William Bone	Samuel Hudson		
George Bowden	Thomas Hughes		
Jonathan Bramley	Andrew Hunter	Malcolm McLean	
Robert Buffington	James Isbister	John Meakin (senior)	George Simmons
Arvid Bjurling	Edward John	Arthur Meakin	Allan Smiley
William Burns	Nicholas Johns	James Milton	John Smith
James Byers	John Johnson	David Morgan	John J. Smith
James Campbell	Evan Jones	John W. Morgan	William Stephenson
William Campbell	Hudson Lee	William Morris	John Stevens
William L. Cochrane	Henry Lee	John Morton	John Stove
Michael Corcoran	Abraham Lewis	Andrew Morton	Robert Stove
Michael Corcoran	John Linn	Andrew Muir	James Thomas
William L. Davis	William Lukey (junior)	Archibald Muir	Joseph Thompson
James Davey	William Lukey (senior)	Samuel H. Myers	John Thompson
William Davey	Michael Lyons	John Myles	Frank Tully
Daniel Dawson	James Lyons	Robert Nicholson	Joseph Watson
Charles Drake	John Malcolm	George Old	John Henry Westfeldt
Peter Ducca	Thomas Martin	Thomas Perry	Edward Wilkins
Arthur Ellis	Frederick Mattison	Benjamin Popplewell	Caton Willis
David Ellis	Roderick McDonald	John Richards	Copley Woobank
Thomas Evans	Alexander McDonald	William Ridley	John Woobank
John C. Fallen	John McGuffie	William Scales	John Zermani



Also killed in the explosion were 53 miners of Chinese origin. Unfortunately, the practice of the day was to assign payroll numbers to Chinese miners rather than to use their names. Consequently, the names of the miners are unknown and the only record available is that of coroner's inquest which lists the miners by the following numbers assigned by the Vancouver Coal Company

3, 71, 72, 73, 77, 83, 84, 86, 87, 89, 90, 92, 93, 95, 96, 97, 98, 100, 101, 102, 103, 104, 105, 106, 107, 108, 112, 113, 114, 116, 117, 118, 119, 120, 122, 123, 124, 125, 127, 128, 129, 131, 132, 133, 135, 136, 137, 139, 140, 142, 143, 145

The majority of the Chinese miners were members of the Mah clan and came from the village of Nan Long, Sheng Long, and Sun Gup near Canton City in Guangzhou, a southern province of China. These men immigrated to Canada to build both the Canadian Pacific and Equimalt & Nanaimo Railways. Upon completion of the railways, they took whatever work was available in the local lumber mills, power works and coal mines. This is considered the worst disaster to befall the Mah clan outside of China.



Inscription Reads:**No. 1 Esplanade Mine**

On this site in 1883, the Vancouver Coal company opened the No.1 Esplanade Mine with workings that later extended beyond Newcastle and Protection Island and the Nanaimo River. Workers at the mine produced 18 million tons of coal, more than any other mine on Vancouver Island, by the time it was closed in 1938.

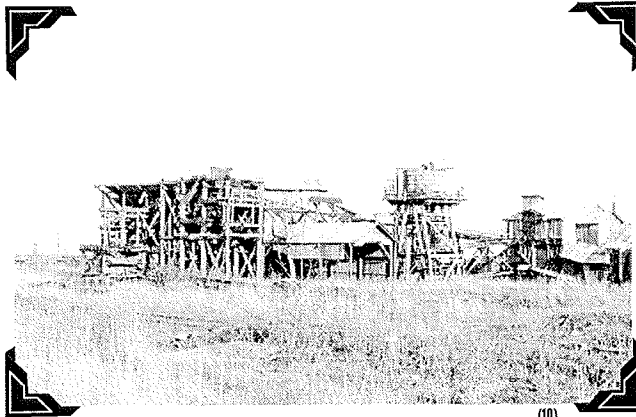
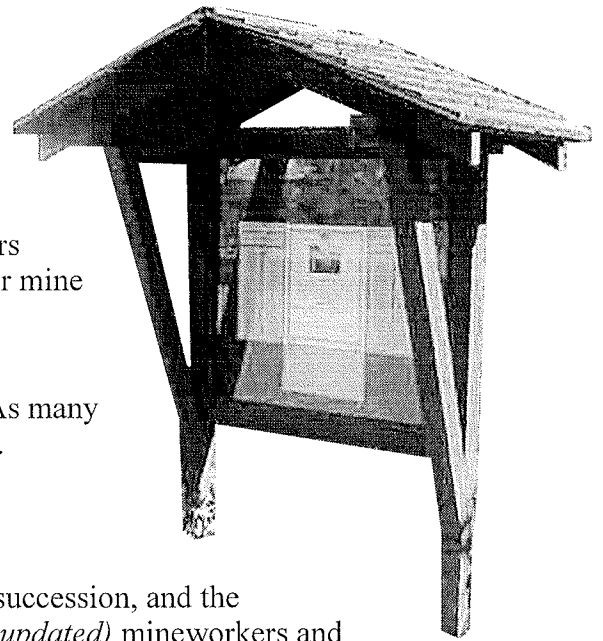
For many years, the mine was the major employer in Nanaimo. As many as 1,000 men and 150 horses and mules at the time worked there.

In Memoriam

On May 3, 1887, shortly before 6 p.m., two explosions in quick succession, and the resulting fire and afterdamp (carbon monoxide), killed 147 (*150 updated*) mineworkers and one rescuer. Only seven men emerged alive from the evening shift. It remains the worst mining accident in B.C.

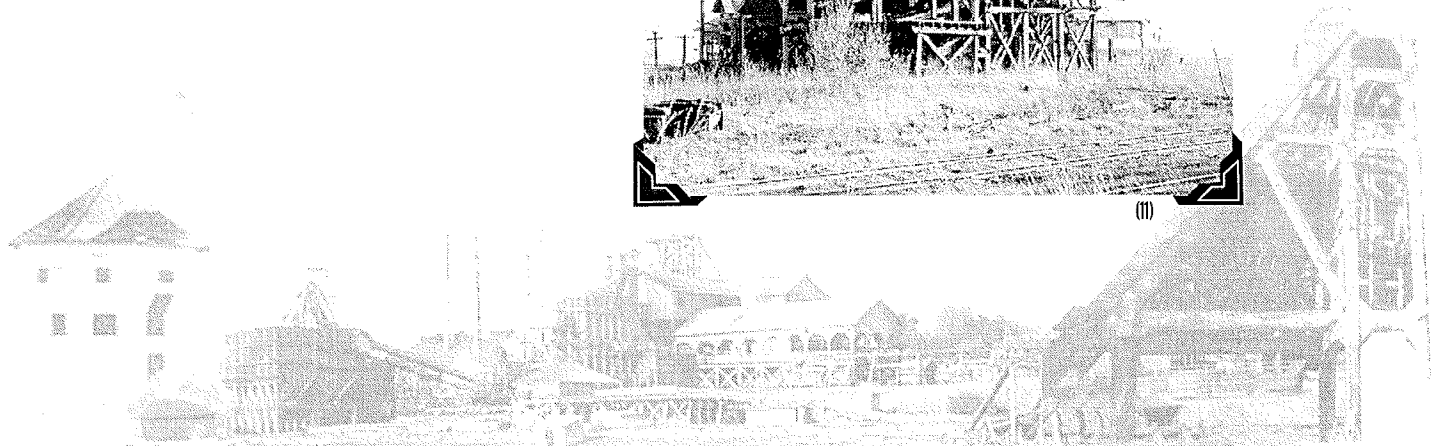
They are remembered

Erected June 26, 1999 by South End Community Association and Nanaimo Community Heritage Commission with the financial assistance of the City of Nanaimo, Cercomm Electronics Ltd., Van-Kam Freightways Ltd., And several other community minded corporate citizens.



The sign is posted near where the No.1 pit head was located which is shown in the pictures.

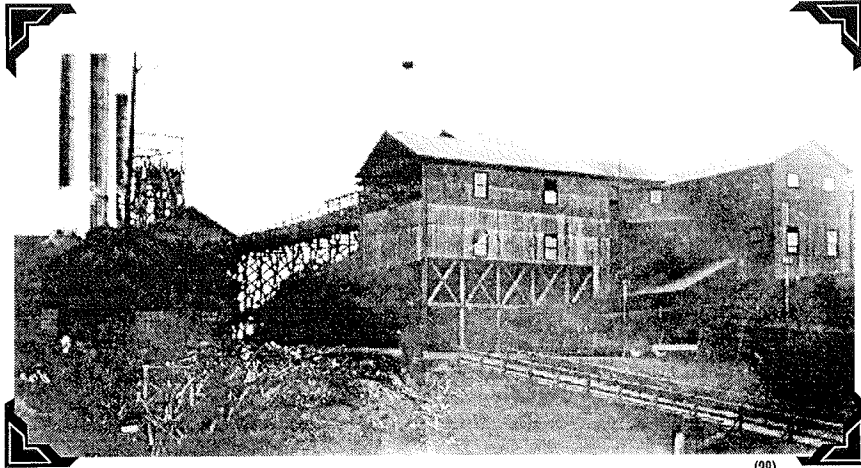
Nanaimo No. 1 Mine Coal Washer and Tipple Ruins.



Brechin Mine

The Brechin Mine was also known as the No. 4 Northfield Mine.

Brechin Mine



The Brechin Mine opened in 1904

Recruiting Miners

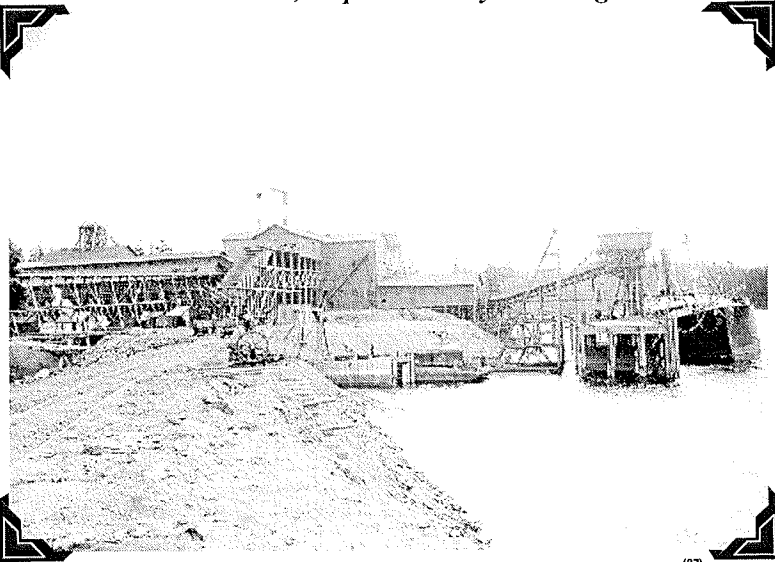
The company brought in miners from England to get the Brechin Mine started. They did this for many of their mines. Not only did they bring in men to work in the mines but to play in the local brass bands. If a musician was needed in the Nanaimo Silver Cornet Band (*est 1872 and still running strong today as the Nanaimo Concert Band*), the company would get a musician from England to come over with a promise of a job within the mines.

Shipping

The mine had a cost efficient method of loading coal as the mine pit head was located next to the dock allowing the coal to be loaded immediately onto the ships.

The ships would arrive and unload their 'rock ballast' in Departure Bay. You can still walk out on long spits and see all types of rocks from far away places.

Brechin Mine, Departure Bay in background



(37)



Wellington Seam

The Wellington Seam included:

Wellington Field

East Wellington Field (East Wellington/Chandler Seam, Jingle Pot)

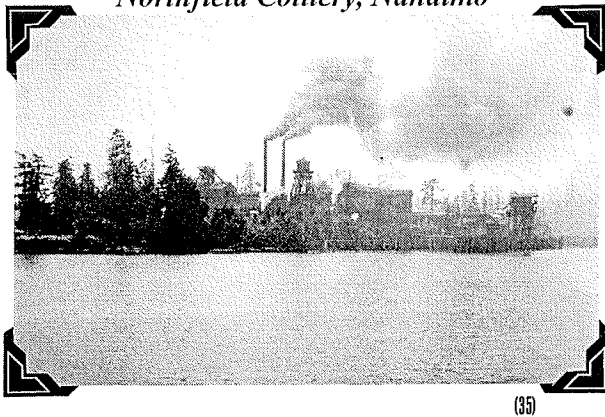
Wakesiah Mine

Harewood Mine

Extension Field (Extension No. 1,2,3,4,8, Beban's Mine, Old No.1 Slope/Vancouver, Extension Prospect & White Rapids).

.. "The area encompasses the Wellington Colliery workings, the Wellington No.9 mine and the Northfield mine. The Wellington field, northwest of Nanaimo, was initially discovered by Robert Dunsniur in 1869 and mining operations began in 1871. Production for 1871, 1872 and 1873 was 134,683 tonnes. The Northfield Mine, immediately east of the Wellington Colliery was worked in the Wellington seam from 1889 to 1895 and later these workings were used by the Dunsmuir interests to enter an area of the upper Wellington seam. The Wellington mines were exhausted near turn of the century and activity moved southwards to the East Wellington and Extension fields." (MINFILE Number: 092GSW048)

Northfield Colliery, Nanaimo



(35)

The Wellington Miners' strike in 1890 lasted 18 months. The miners were demanding a 10% wage increase and an 8 hour work shift. They went back to work on November 18th 1891.

On the April 15th, 1887 the mine caught on fire. Two days later on the 17th the mine exploded killing over 11 miners. Only the white miners were recorded in the records.

One of the reasons this mine had many troubles was due to the very poor ventilation.

Recorded Disasters

In 1881 over 65 men were killed; in 1883 over 23 men killed; in 1885 an explosion killed 4 men. The problems continued for years until a firewall was installed between the connecting mine; Jan 24, 1888 over 77 men were killed in a huge explosion. More major explosions happened on June 27, 1887 and Feb 4, 1888. On December 6, 1878 a miner by the name of Kong Sing who was a brakeman was tragically killed. A car he was driving derailed by striking a rail that was placed across the tracks. There was no way the rail could have accidentally have fallen there, but the investigator could not find the guilty party.

Wellington Mine Strikes

The Wellington Miners went on strike several times during the operation of the mines. In 1876 the miners went out because of the wage cut of 40 cents that the company had implemented. They received their demands and returned to work.

In 1877 they miners went on strike again because of the dangerous working conditions and demanded a 20 cent pay increase.

The Militia was brought in to enforce the law, strikers were evicted from their homes and many were arrested. The strike lasted six months before it was settled and in the end the miners received their pay increase. The dangerous working conditions were not improved as the future mining disasters proved.

Nanaimo Brechin Mine Pit Head

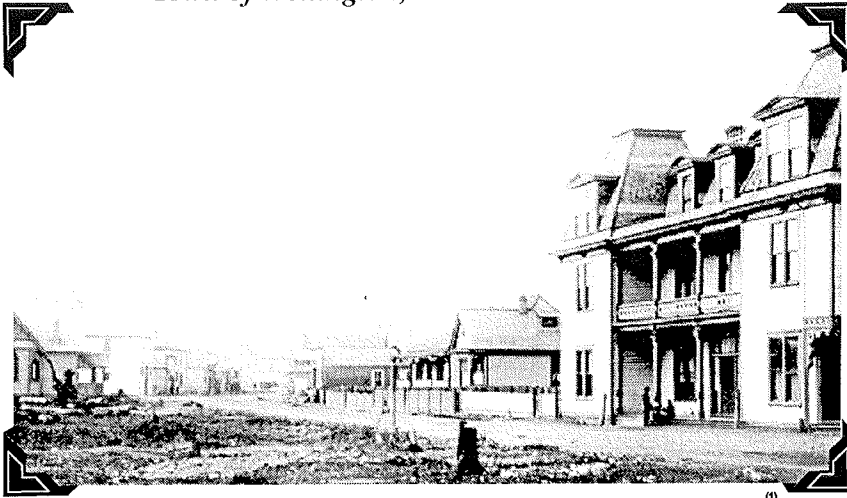


(36)



Wellington Seam

Town of Wellington, Nanaimo



Wellington

When the Wellington Mines closed down the buildings were dismantled and transported by flat car to Dunsmuir's new town site called Ladysmith, originally called Oyster Bay.

The photo shows the Abbotsford hotel in the right fore front. In Ladysmith it was used as a hotel for the miners, then after the mining slowed down in the area the building was later used as the Comox Logging & Railway Company office and boarding house for loggers until it was demolished in 1963.

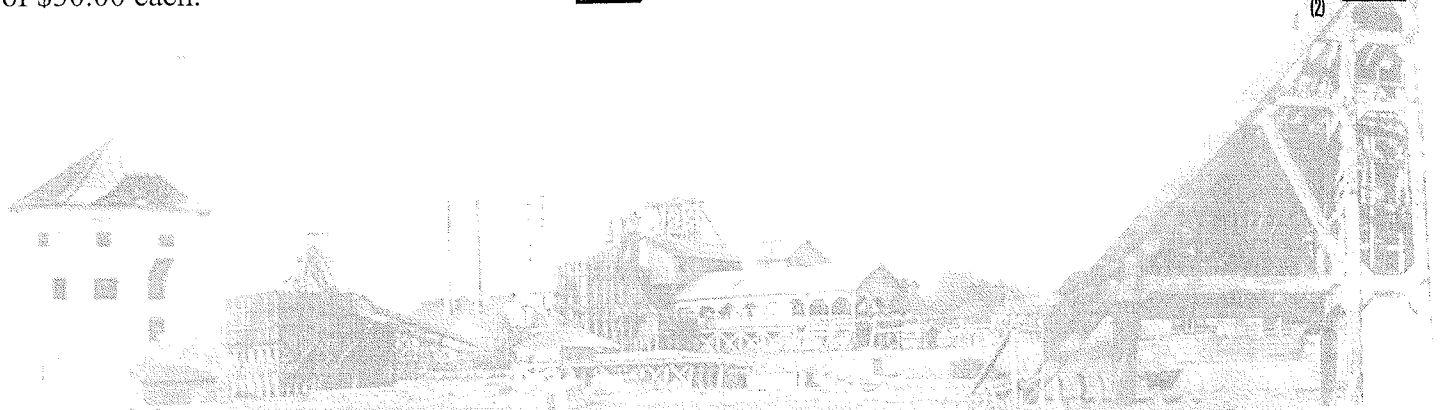
Two of the buildings on the left of the photo are still standing in Ladysmith: the church, and the Temperance Hotel

Wellington History

In 1889 Wellington had over 5,000 people making up the town, but then in 1901 the mines were closed and the houses were moved to Ladysmith leaving as few as 100 people living in the area. Today the Wellington Hotel Pub is a reminder of the town's history.

On March 17, 1899 the miners were told that the mines were to close in about two years time. That very same day a fire started and raged through the town burning homes and buildings such as the opera house. Any remaining buildings that the company owned that were not burnt down or moved to Ladysmith were sold at a very cheap price of \$30.00 each.

Town of Wellington, Nanaimo



Newcastle Island and Protection Island Mine

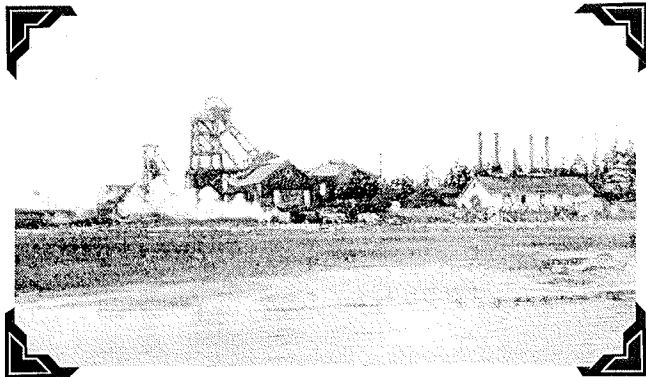
“Mineable coal was worked from the Brechin mine to the No. 1 mine for a distance of approximately 2 miles along strike and for about one mile down dip. The seam extends beneath Newcastle and Protection Islands and for some distance seaward. At the Protection mine the Douglas Seam is approximately 1.5 metres thick under a hard faulted roof rock. Below this seam is the 1.2 metre thick Newcastle Seam. Both seams were mined out under the Northumberland Channel at this mine.

The Newcastle Seam occurs occurs 244 metres to 305 metres above the Wellington Seam and on average 18.3 metres below the Douglas Seam. The seam has the most restricted distribution of the three producing seams in the Nanaimo Coalfield and has been mined mainly from the Brechin or Northfield (Brechin), Protection, No. 1 mine, Newcastle, and Fitzwilliam mines. The seam occurs in the area underlying Newcastle and Protection Islands, beneath the town Nanaimo, and is thought to extend towards south Wellington with a short continuation south of the Nanaimo River.

The coal has mainly been sold as steam coal.”

(MINFILE Number: 092GSW045)

Protection Island Mine



(8)

Newcastle Island Mine



(9)

Protection Island Mine Disaster

On September 19, 1918 disaster struck the Protection Mine when the cable to the cage that was lowering 16 men broke. The roar of the cage gaining speed and impacting the bottom of the shaft was deafening. It was assumed that the cable was in poor condition due to the salt water in the air and the fact that the checking procedure may not have been as effective as it should have been.

The funeral procession for the miners was lead by the Nanaimo Silver Cornet Band, (the band members were mostly miners themselves.) The procession included town officials and hundreds of miners that were lead through downtown Nanaimo to the cemetery on Comox Street.



Benson Mine

The miners and their families were brought to Nanaimo by boat from Fort Rupert where mining had ceased the previous year to help start up the mines in Nanaimo. Among them was Surgeon Alfred Benson

“In England he had been well-clothed and sedate; in the colony he was a disheveled eccentric, who wore sea boots because of the mud, usually with one pant leg tucked in and one hanging out. He lived in a room crowded with Indian curiosities, bird skins, geological specimens and tobacco.”

Lynne Bowen, *Three Dollar Dreams* p 90

Mr & Mrs. Alfred Robson Benson (1850's)



(40)

Benson Mine

Benson Mountain contained six coal seams. The main seam was a part of the Wellington Seam and was of good quality. The other five seams were thin and tended to be of poor quality.

Historical Treasures

Off in the bush by one of the Benson Mine openings is the remains of a garbage dump. Numerous opium bottles were found, one with a little cork stopper in place with the opium still inside.

Many of the dumps at the mine sites are over grown and the majority have been dug up by people looking for a historical treasures. Old boots from the miners to the small lady's boots with hooks to tie them up, broken dishes, bowls and plates from England and China, pots and pans, broken bottles, old shoes for the mules and lots of rusty metal from the mining equipment can be found.

Wakesiah Colliery

The Canadian Western Fuel Company opened up the Wakesiah Mine sinking two shafts in 1918 and operated the mine until January 1930, never to be reopened. The mine produced 767,025 tonnes of high quality coal.



Harewood Mine

In 1863 Dr. Alfred Benson (for whom Mt. Benson was renamed) and the Honourable Horace Douglas Lascelles, seventh son of the Earl of Harewood (b. Sept 20, 1835, d. June 15th 1869 Victoria) came together in a business venture and hired Robert Dunsmuir to open the Harewood Mine.

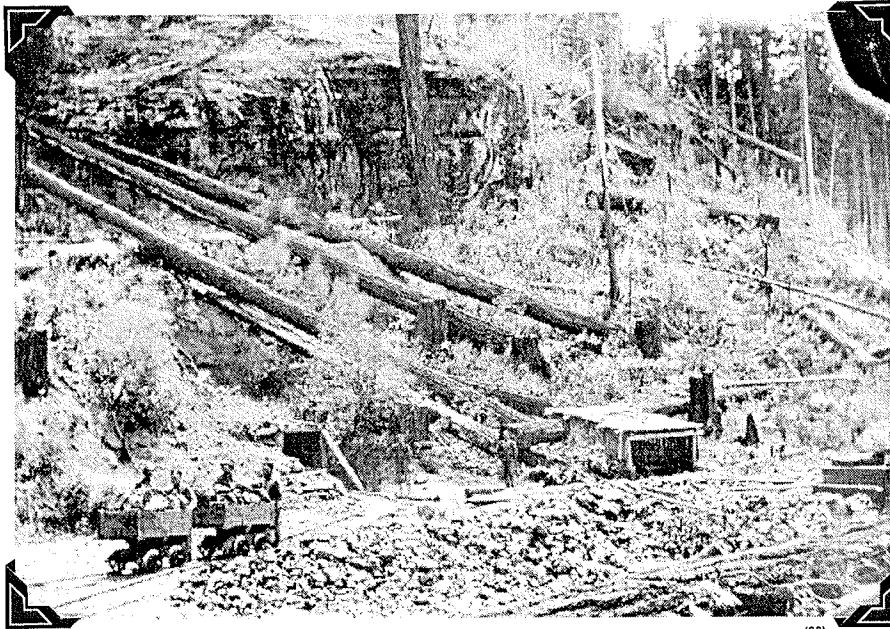
The records from the Ministry of Mines show the coal production starting in 1875. The mine operated a small surface area until 1894 before closing. Reopening again in 1902 a shaft was sunk in the old workings. The operations were again suspended in 1904.

In August 1917 a tunnel which was excavated in the earlier working was extended. For the next 6 years the mine produced over 769,500 tones of coal.

There are no records of the volume of coal production prior to 1917.

The Furnace Portal Mine, located on Harewood Ridge started operation in 1945 extracting coal from the immediate vicinity of the Old Furnace Portal Airway to the Harewood Mine. The area was originally worked in 1864 but no records or plans for the mine have been found. The mine was worked until March 1951. During the last year of operation it was mined under the name 'Biggs Mine.'

Harewood Mine, June 16, 1875



Mine Working Conditions

One aspect of this mine was that the miners liked not having to work under the ocean. Some miners worked in fear of being trapped and drowning in an mining accident which happened throughout the town's history. There was a constant reminder to the workers that they had the ocean right above them. Water would be seeping through in places and they could hear the boats going overhead as they worked.

(39)



Reserve Mine

The Mine started construction in July 1910 by the Western Fuel Company. It is part of the Douglas Seam and the company located the main seam in May 1913, but was halted when the '1913 Strike' started up. In 1914 the mine was re-opened and went full tilt until 1930. The mines closed, pumps stopped letting the mines flood. In February 1934 the water was pumped out, reopening it to extract pillars and get any pieces of recoverable coal. In 1936 to 1939 the mine produced a large amount of coal.

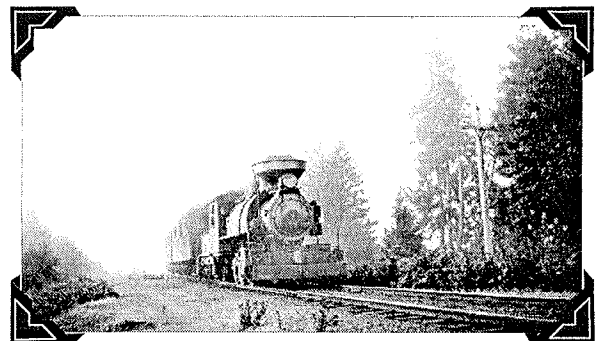
The mine was quite large compared to others in the Nanaimo area, which made the miners happy as they could stand to work. A down side was that the caverns were so large it was deemed unsafe. The roof of the mine was fragile, consisting of shale. When the roof was disturbed large boulders fell. Many men over BC's history were killed by the roofs of the mines collapsing upon them.

No. 8 Coal Train on route to Reserve Mine, at No.3 Junction, Nanaimo River Mud Flats in background



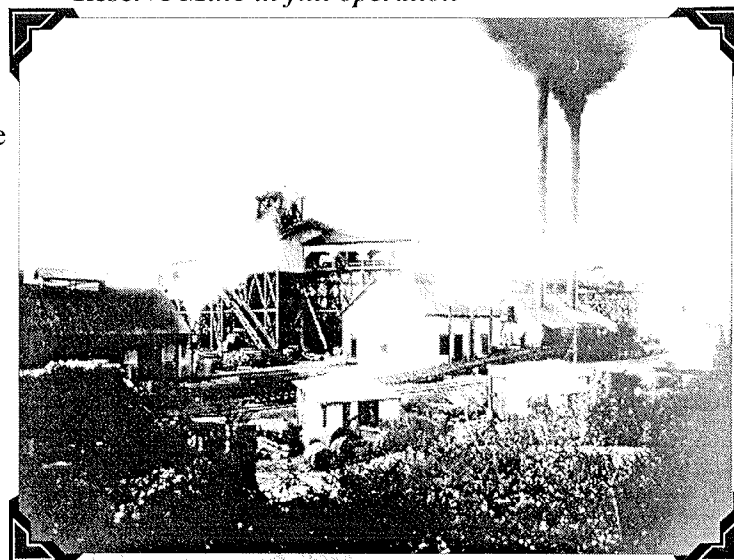
(44)

No. 7 Coal Train with Miners arriving at the Reserve Mine



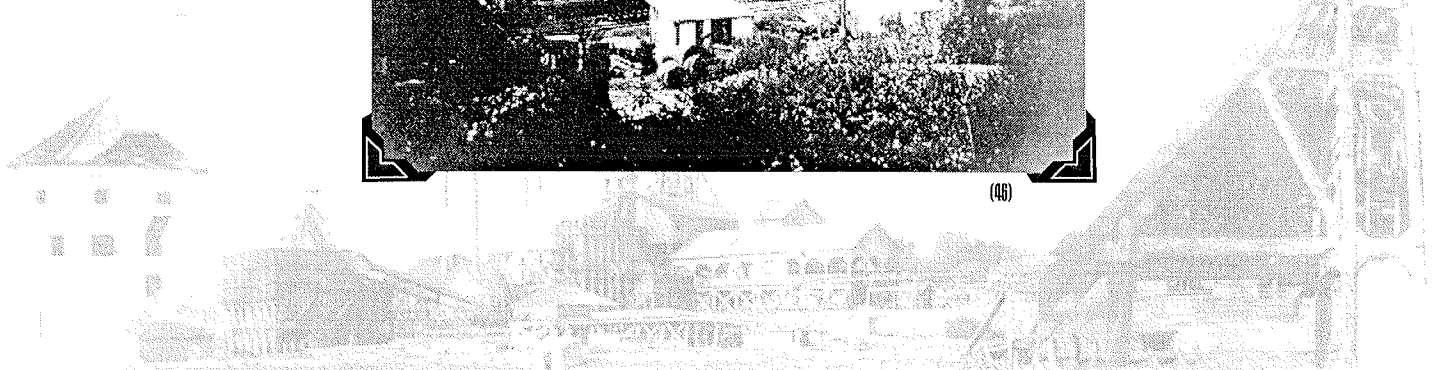
(45)

Reserve Mine in full operation



(46)

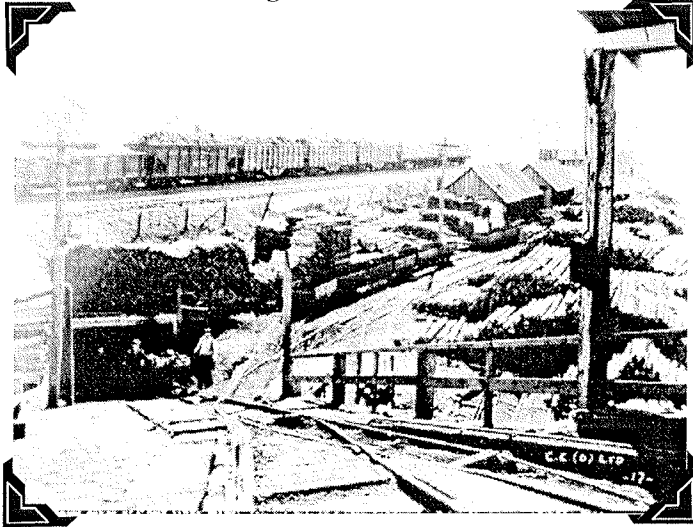
Though it was comfortable to work in the ventilation was still a major problem. On June 16, 1915 22 men were killed in a mine explosion.



South Wellington No.5

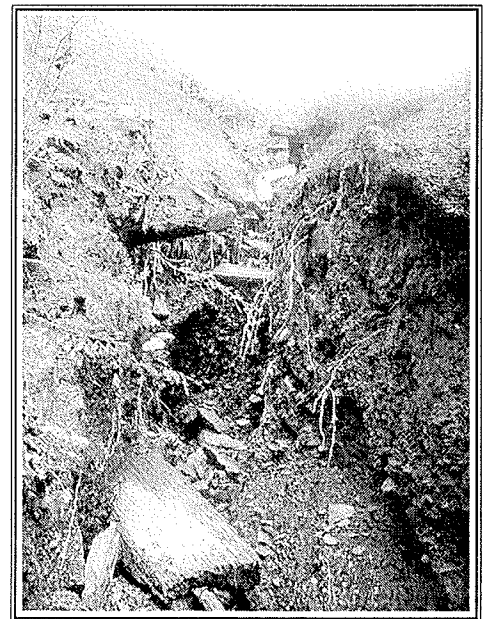
The Canadian Collieries (Dunsmuir) Ltd. opened up the South Wellington Mine No.5, located north of Beck Lake in 1917. The coal was extracted through the *Pillar and Stall* method (method described on page 19). The mine closed for a year in 1925 and reopening again in 1926. In 1928, the main slope was abandoned. In 1929 a shaft was drilled between the Old Alexandria Mine and the No. 5 Mine. When the Old Alexandria Mine closed it was flooded. When it was reopened the water was pumped into the lower portion of the adjoining mine No. 5. From 1932 to 1935 coal was extracted from the Old Alexandria Mine and was brought up through the tippie of No.5. Both Mines had major troubles with spontaneous combustion within the shafts causing fires and explosions resulting in many fatalities. Both mines closed in 1935.

South Wellington, No. 5



(3)

*South Wellington, No. 10
A huge 'Coal Slag' where the
coal has been washed away by
water exposing the old timbers*



South Wellington No.10

The Canadian Collieries (Dunsmuir) Ltd opened the No. 10 Mine in 1938. This mine was largest coal producer in the South Wellington District. The mine was open for 13 years producing over 2.5 million tonnes of coal, closing down January 19,1952. The demand for coal lessened and the explosions and ventilation problems helped prompt the closure of mine.



SOUTH WELLINGTON

Alexandria Mine

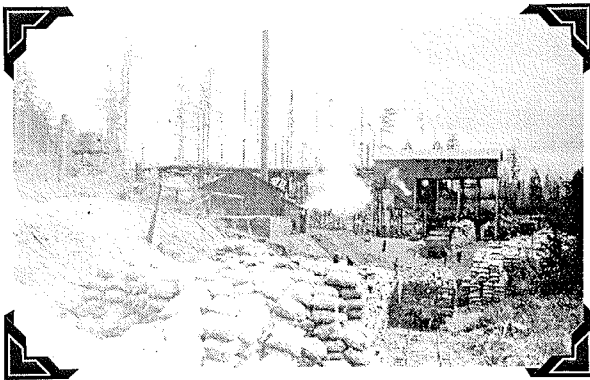
The Alexandria Mine is located along the E&N Railway, in the community of South Wellington.

Dunsmuir and Sons opened the Alexandria Mine producing coal from 1884 to 1902. From 1931 to 1935 the mine produced not only coal but coke, fire brick and ordinary brick as well.

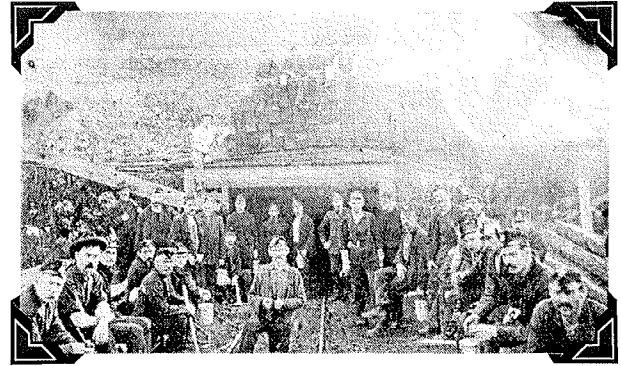
The coal seams range in thickness from 0.1 to 9.1 meters (Minfile 092GSW025)

In 1898 the local school was named Alexandria after the mine. It was renamed South Wellington School in 1911. The building exists today as the Wellington Community Hall, which is attached to the Cranberry Fire Hall located across from the new South Wellington School.

South Wellington - Tipple of the Pacific Coast Coal Company



(6)



South Wellington - Alexandria Mines

(7)

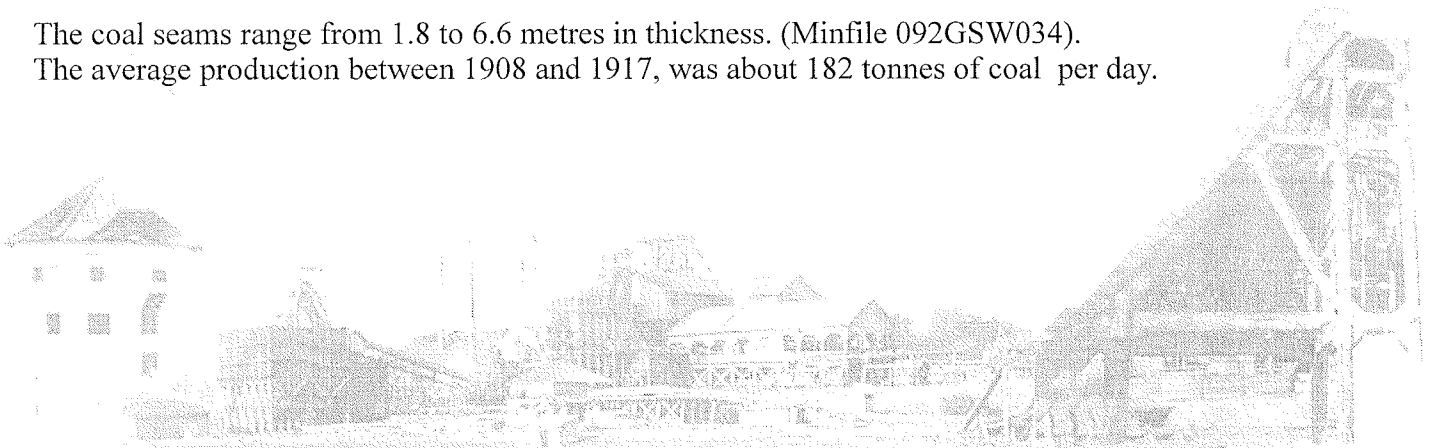
Fiddick Colliery

The Fiddick Colliery which is also known as the Fiddick and Richardson slopes operated between 1907 and 1912. In 1913, the colliery was sold to the Pacific Coast Coal Mines Ltd. who ran the mine until it closed in 1917. The Fiddick mine started up again in 1927 and operated until 1939.

Operations during this time, consisted mainly of recovering pillars that were left by the original owners. A 'Pillar' is an area of coal left to support the overlying strata in a mine, it is sometime left permanently to support surface works. This coal seam is known as the 'Old South Wellington Coal Seam', which is a continuation of the Douglas Seam.

The Richardson Mine or Ida Clara Colliery reopened in 1931 recovering pillars of coal until 1940.

The coal seams range from 1.8 to 6.6 metres in thickness. (Minfile 092GSW034).
The average production between 1908 and 1917, was about 182 tonnes of coal per day.

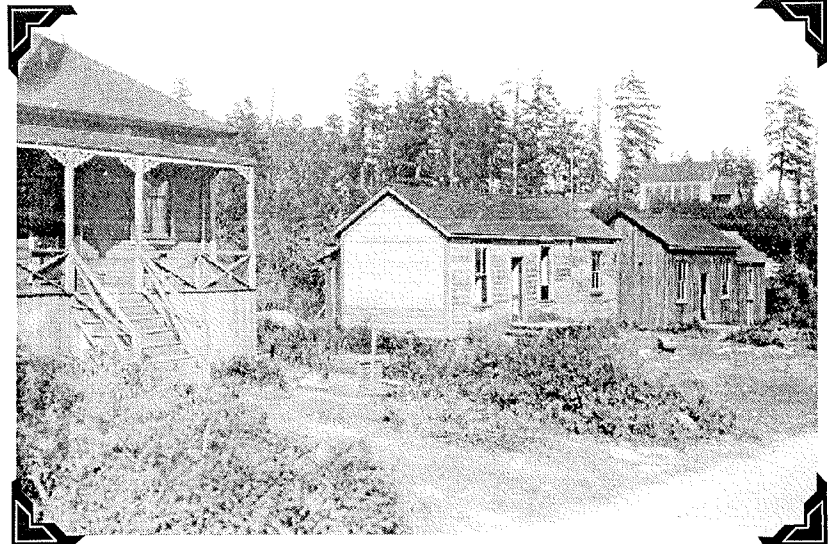


Extension Mine

In 1894, a Mr. E. Hodgeson, an employee of Dunsmuir, discovered an extension to the Wellington coal seam . The area was known as the Wellington Extension and was then later shortened to Extension. There is a story that the locals in Nanaimo tell about how the coal was really found. There was a man by the name of Louis Stark, a black settler who homesteaded in the area. He was to have many offers for his land and he turned them all down. He was also a friend of Hodgeson and one evening on the way home from Hodgeson's he had an accident.

The next morning he was found dead at the bottom of a bluff, one that he could not have fallen over by accident, as he would have had to leave a well worn trail and go through thick bushes and slag before he went over. Mr. Hodgeson was questioned and was released as there was only suspicion and no evidence. But shortly after this Mr. Hodgeson informed Dunsmuir that a coal seam was found and was available to him, one that made a huge profit.

Miners homes in Extension.



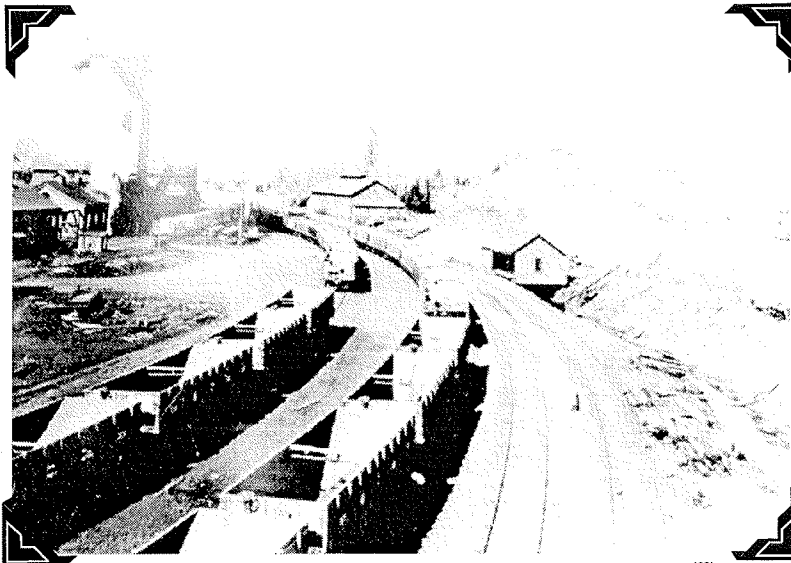
(49)

Mine Disasters

The mines were in operation in the Extension area for over 32 years and over 105 men were killed in mining accidents.

In 1901, 17 men were killed in the explosion and fire in the No. 2 mine and the company had to flood the mine to get it under control.

In 1909, on October 5th 32 men were killed in another large explosion which resulted in a huge fire in the mines.



Extension Mine Yard

(48)

The Extension Mines employed over 900 men.



Extension Colliery

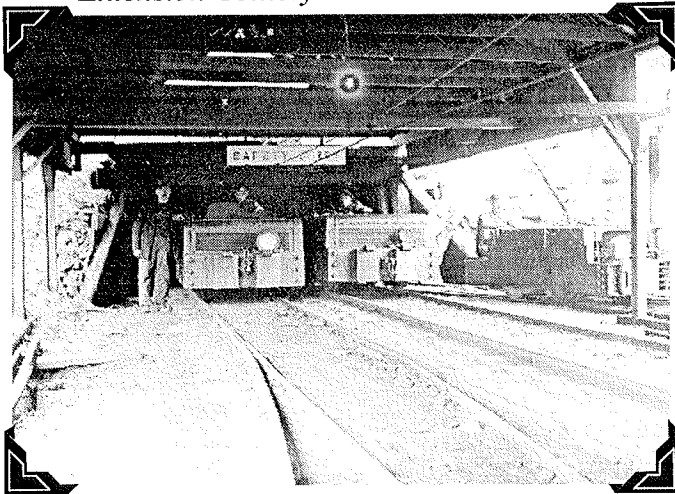
The Extension mine is part of the Wellington Seam and it is within the E&N land grant that James and Alex Dunsmuir owned, through their father Robert Dunsmuir.

When James Dunsmuir wanted to put a railroad through from Extension to Departure Bay where his coal wharfs were established he had troubles. He needed to have permission from his competitor, the New Vancouver Coal Mining & Land Company, to cross their land. He might have gained permission had he not just previously turned down their request to cross his land to put their railway through. The courts had turned down his request as well. But this didn't stop Dunsmuir, for he had a back up plan. He went forward and built his railway to Oyster Bay, now known as Ladysmith.

As the Extension Mine was getting under way Dunsmuir tried to discourage people from building their homes around the area but to build in Ladysmith where he owned much of the land in the area. But the miners built there anyway and the town of Extension came to be. There were still many miners who lived in Ladysmith and went into the mines each day on the commuter trains.

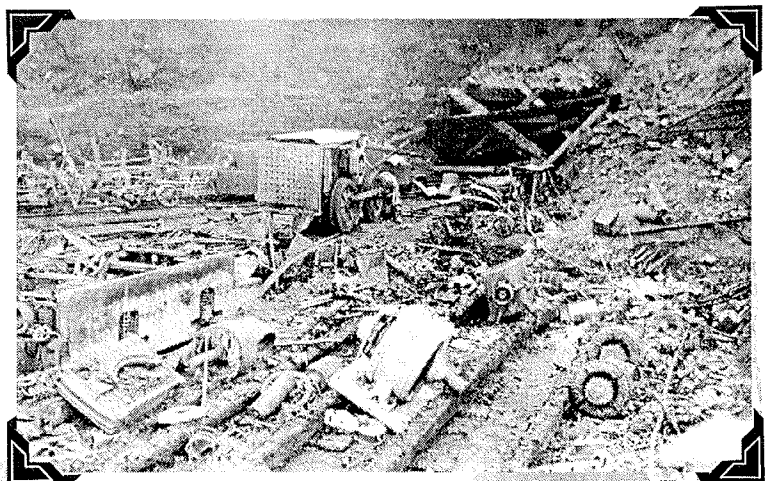
The mine had an electric train that ran under the mountain for about 2 miles, connecting Mine No. 1, 2 and 3 slopes. During the miner's strike in 1913, the mob of rioters destroyed the electric train and rails.

Extension Colliery - Electric Train



(26)

Extension , Electric Train - Destroyed by fire in the riot



(27)

These two photos are of the same area showing the mine entrance before and after the strikers destroyed it by fire.



Extension Colliery

The Extension No.8 Mine, owned by the Canadian Collieries (Dunsmuir) Ltd., opened in 1926. The mine is within the Extension Basin. In 1928, No. 8 produced 35,206 tonnes of coal. The mine closed in October 1928.

In 1945 the mine was reopened under the name Timberlands Colliery pulling out the highest quality coal.

Timberlands Colliery worked the mine from 1945 to 1955.

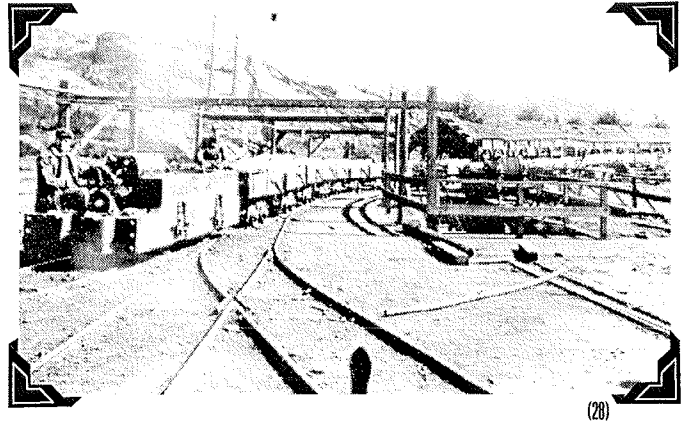
In 1951 the company extended and reopened the mine, calling it the Lewis Mine

The Lewis Mine operated 1951 to 1966.

Blue Flame Mine

The Blue Flame Mine in the Timberlands area is located by McKay Lake and south of the Extension No. 8 mine. Operated by the Timberlands Colliery, the mine produced about 1592 tonnes of coal between 1952 and 1957. The mine was closed in January 1958 due to shaly coal.

Extension Colliery - Electric Train



(28)

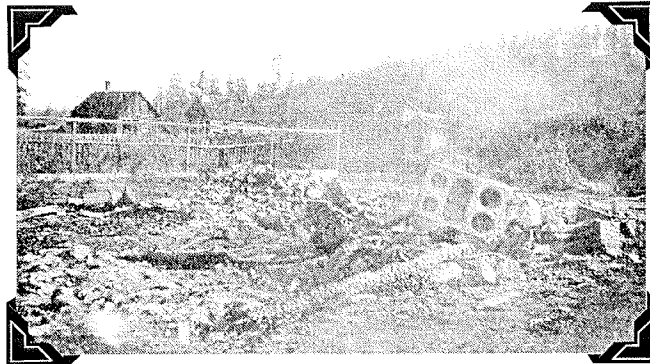
Miner's Strike 1913

September 1912, coal miners from Cumberland and Extension mines went on strike to persuade their employers to recognize their union. In May 1913, the coal miners of Vancouver Island started the longest strike in BC history.

The Canadian Collieries retaliated by evicting miners and their families from company homes.

By August strikebreakers were brought into the coal mines, riots were breaking out as one thousand striking miners went on the rampage. They took possession of the town of Extension, looting, burning, fighting and destroying property. Many innocent families, including women and children, took to the woods for their safety.

Extension Miner's Home - Destroyed by fire in riot



(29)



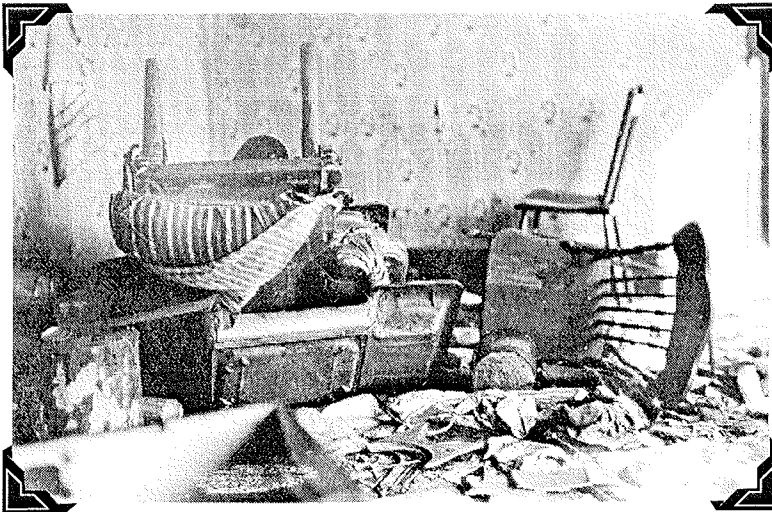
Extension Colliery

DAY OF TERROR AT COAL MINES: STRIKERS ATTACKED WORKERS AT EXTENSION
WHERE SHOTS ARE EXCHANGED -
BYSTANDER IS WOUNDED AND MAY DIE;
TORCH APPLIED TO COLLIERY BUILDINGS

"Newspaper clipping - Colonist August 14, 1913"

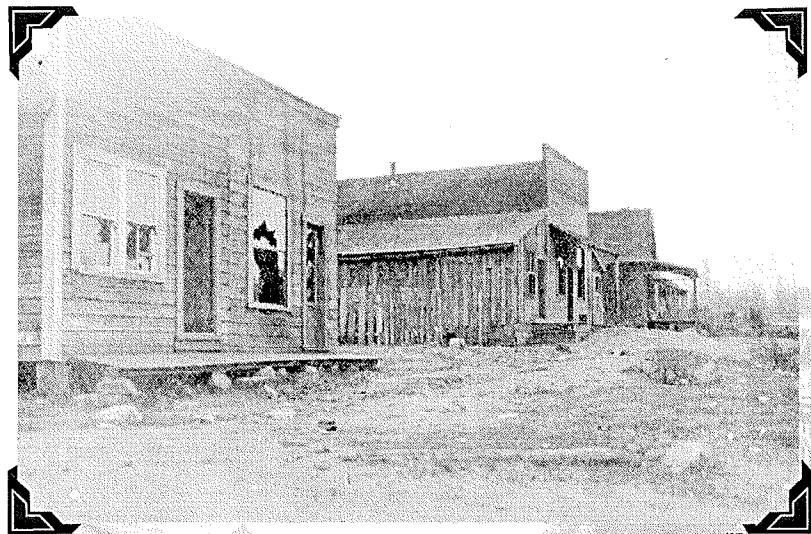
The strikers as a mob rioted through the town of Extension. Strikebreakers' homes were burnt to the ground and those who were spared being burnt down were either looted or destroyed by vandalism. Chinatown was hit the hardest.

Extension, Miner's Home Looted in Riot



(24)

Extension, Stores Wrecked in Miner's Strike Riot



(25)

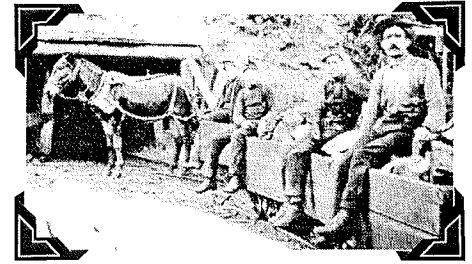


Extension Colliery Tipple in Action



(30)

Canadian Collieries (Dunmuir) Ltd. Extension Mine - Miners



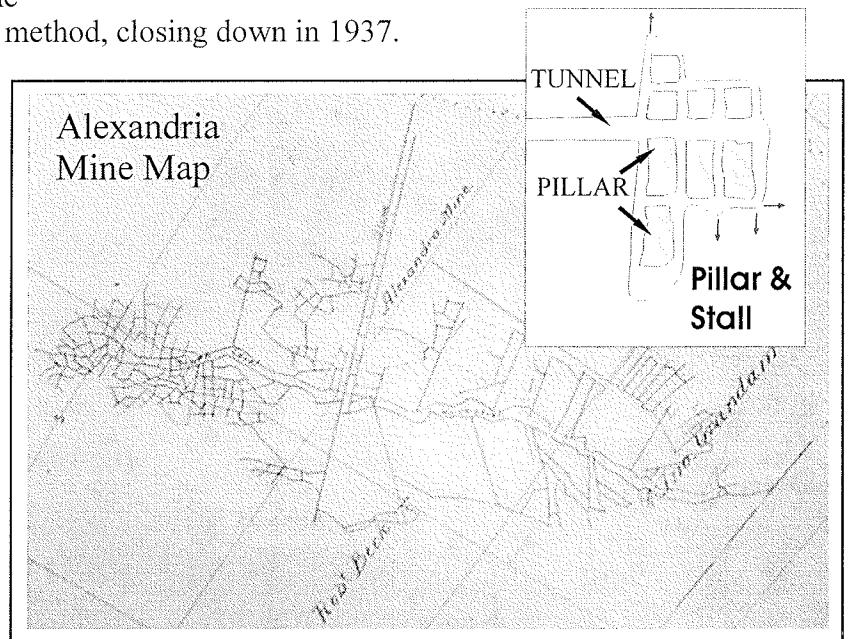
(31)

In 1901 the fire in the Extension Mine killed 17 men, in order to control the blaze the company flooded the mine. In 1932 the Mine had another explosion that killed 32 men.

Extension Colliery

The Canadian Collieries (Dunsmuir) Ltd. owned the Extension Colliery that opened in 1899. Extension Colliery consists of four mines. No.1, No.2, No.3 are connected by the Tunnel Mine No.4 is in the northwest portion of the mine The mines were worked by pillar and stall method, closing down in 1937.

In pillar and stall workings, coal was removed from large areas underground, but coal was left behind forming pillars. The pillars supported the roof of the mine and normally prevented the mine from caving in as the miners cut deeper into the coal seam. In many of the mines these pillars were removed after the main parts of the seam had been extracted.



No.1 & No.2

In 1941 the No.1 & No.2 were reopened under the name of 'Deer Home Mine' and operated between 1942 to 1947. When the mine closed in 1947 the were filled in by caving.

No.1

The mine was opened in 1933 under the name of 'Chambers Mine No.5 ' and worked mainly by recovering pillars left by the previous owners.

Between 1933 and 1952 the mine produced over 50,000 tonnes of coal. In 1961the mine was bought by the Midan Brothers, calling it the Midan Mine operating until 1965.

No.2

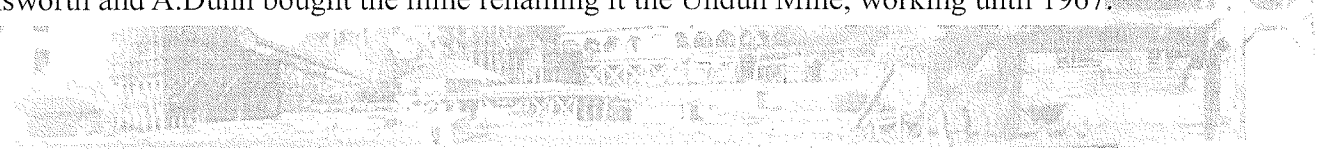
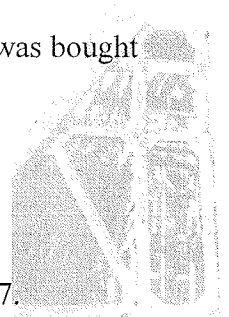
In 1957 No.2 mine was reopened and coal was mined until it was depleted in 1959.

No.3

Operated under the Canadian Collieries (Dunsmuir) Ltd

No.1 to No.4

J. Unsworth and A.Dunn bought the mine renaming it the Undun Mine, working until 1967.



Beban Mine

The Beban Mine was quite small and opened up in 1935. The owner Frank Beban came to the island in 1907, first to Cumberland, where he worked as a contractor cutting timbers for the mines. Later he then moved to Extension to work as a 'mule stable foreman' at Extension Mines and then opened a lumber mill in Extension to handle the needs of the mines.

In 1937 the Beban Mine flooded in an accident which killed 3 men. The coroner's report named them as Nels and Joe Sheperd and Joe Carr. There were men trapped in the mine as the water flooded through rising ever so slowly. The men climbed upon shelves as high as they could and prayed for the water to stop, for enough air to live, and for the cold temperature not to chill their wet bodies enough to kill them while they hoped that they would live long enough to be rescued.

The commissioner and mining engineer Mr. Ridgeway R. Wilson, was appointed by the government to investigate the flooding of the Beban Mine and Extension Mine on June 11, 1937. He was to determine and report if there was negligence on the part of mine officials or government inspectors that had led to the flooding and the subsequent deaths of the three miners.

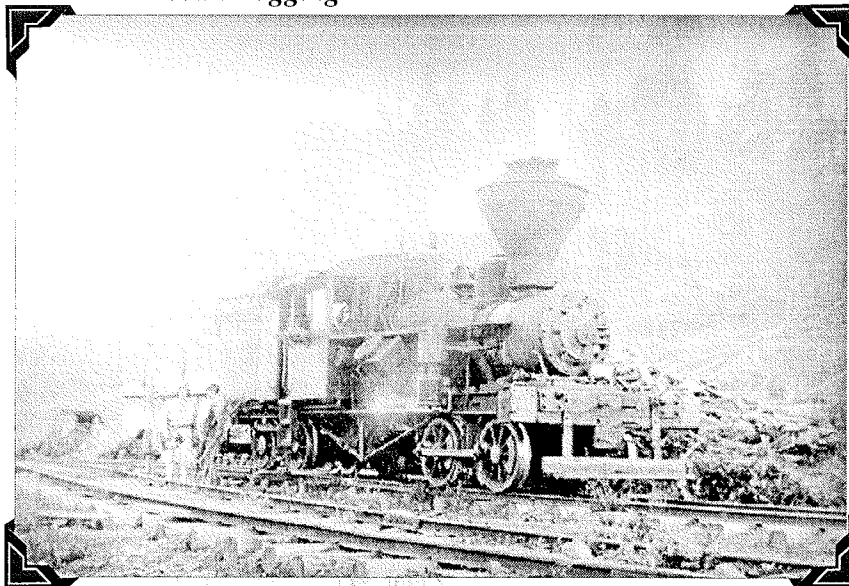
The mine is located at Old No.1 Slope and was later recorded as the 'Chambers' Mine' which worked the coal that was left by the former operators.

In the first 140 working days, the mine produced 2,174 tonnes coal. When the mine was closed the main slope pillars were mined almost to the portal.

The mine closed down in July 2, 1941 and was reported to have produced 75,962 tonnes of coal.

Frank Beban was well known for his company 'Frank Beban Logging'. He died in July of 1952 at the age of 69, survived by his wife Hannah and their four children. Their home known as the 'Beban House' has been moved to the Beban Park property and is used as Nanaimo's Tourist Information Centre.

Beban Logging



(43)

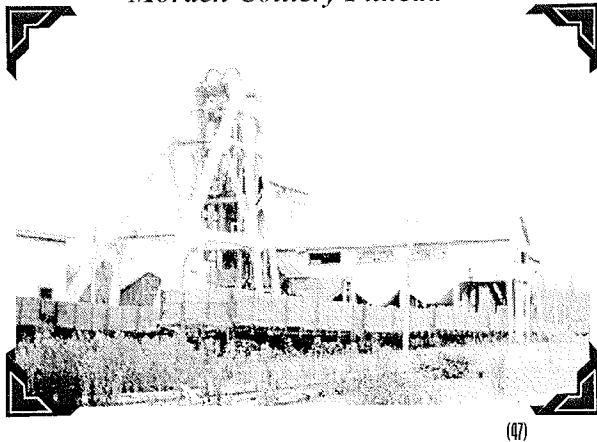
Morden Colliery

The Morden Mine was under construction in 1912, opening for less than a year. In 1913, within weeks of locating a significant seam of coal the mine was shut down due to the miners strike. With the mine shut down, the two shafts were let to flood. The Pacific Coast Coal Mines Ltd. (PCCM) took advantage of the shut down to upgrade the mine. The mine was constructed using reinforced concrete, making the mine unique to any on Vancouver Island and totally fireproof.

"...But the fancy new concrete tibble with it's unique flat hoisting rope, its automatic method of dumping cars, and its well-constructed shaft, did not ensure the mine's success or make it comfortable place to work"
 Lynne Bowen, *Boss Whistle*, p.169

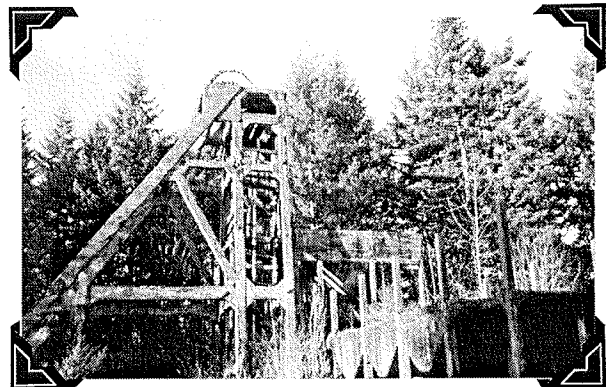
Opening again in 1913 after the strike was settled the mine ran until 1921 producing 76,000 tonnes of coal. The company flooded the mines at the shut down only to have to pump out the water again in 1930. It operated less than a year producing a little over 3000 tonnes.

Morden Colliery Pithead



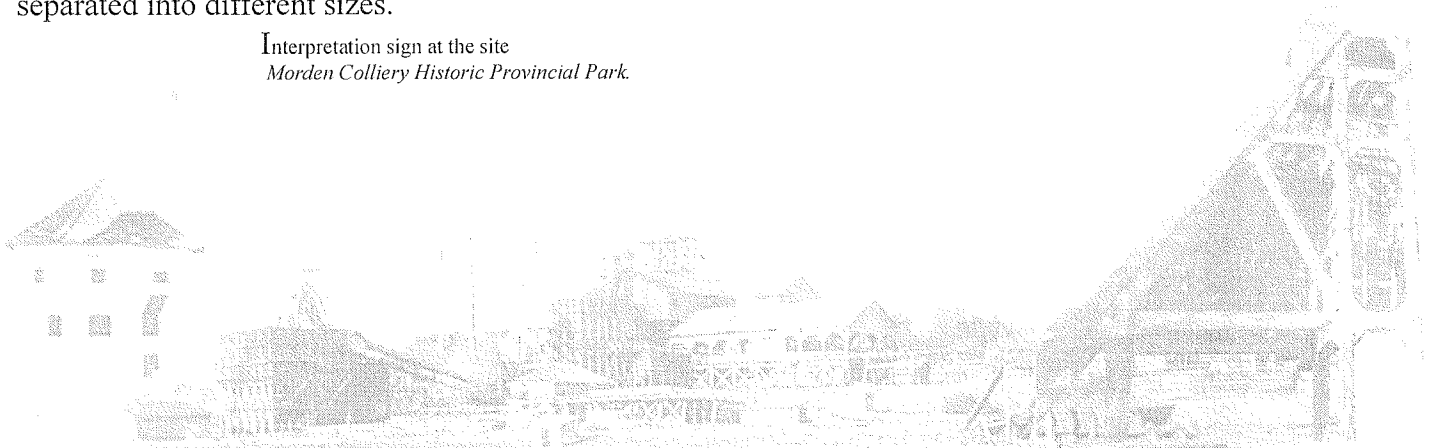
(47)

Today the mine site is a Provincial Park,
Morden Colliery Historic Provincial Park.



"The Pithead structure supported the hoist that moved the wooden cages up and down the shaft. The cages, once filled with coal, would be hoisted all the way up the surface and up to the top of the tibble. Here the cars would dump automatically, sending the coal down through a chute to the sifting screen, where it would be separated into different sizes."

Interpretation sign at the site
 Morden Colliery Historic Provincial Park.



Morden Colliery

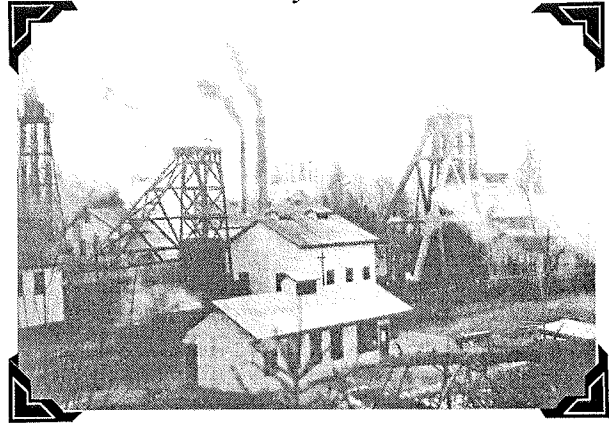
The Morden Mine had the most modern equipment in its day and it was able to produce up to 1500 tonnes of coal every 9 hr shift. Not only was it fire proof but it was electrically powered. In 1917 the top production was only 400 tonnes per day.

The No.4 shaft was only used as an 'air shaft' and an 'escape route' for the miners. An elevator was always ready to take up the miners in case of any emergency.

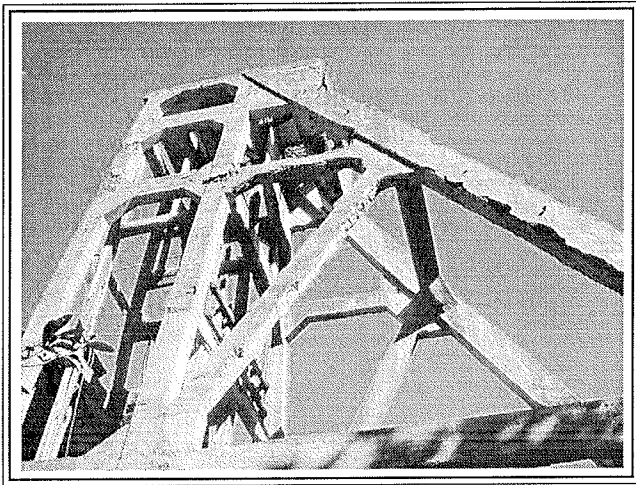
Though this mine was one of the most up to date mines on the island it still had troubles with coal dust and needed improvement with the ventilation to remove any explosive gases.

As shown in the historical picture to the right, the mine site consisted of many buildings which included a boarding house, manager's houses, cottages from South Wellington and a boiler plant. Today if you walk through the bushes you can find concrete foundations and bricks dug deep into the forest floor.

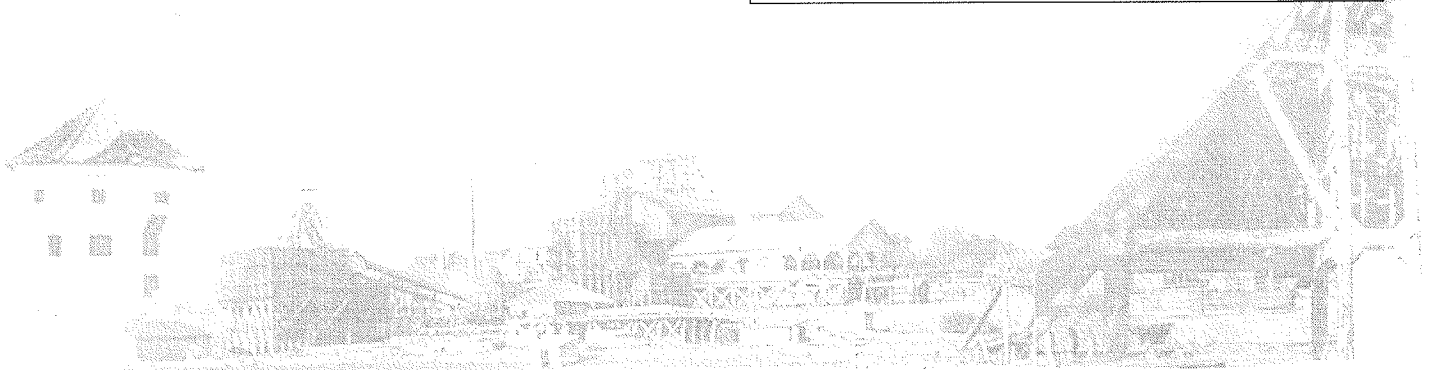
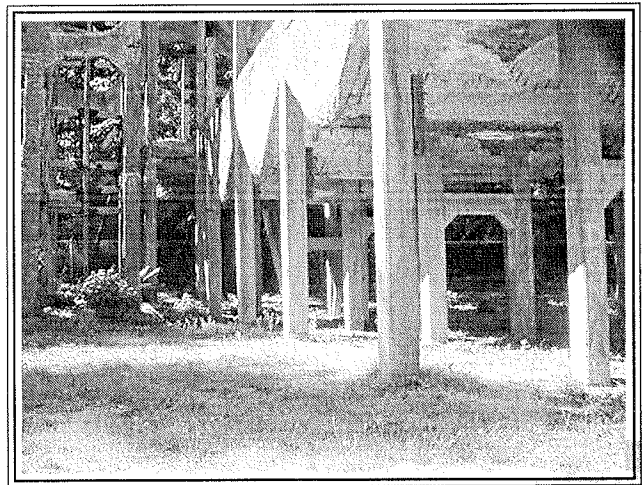
Morden Colliery Pithead



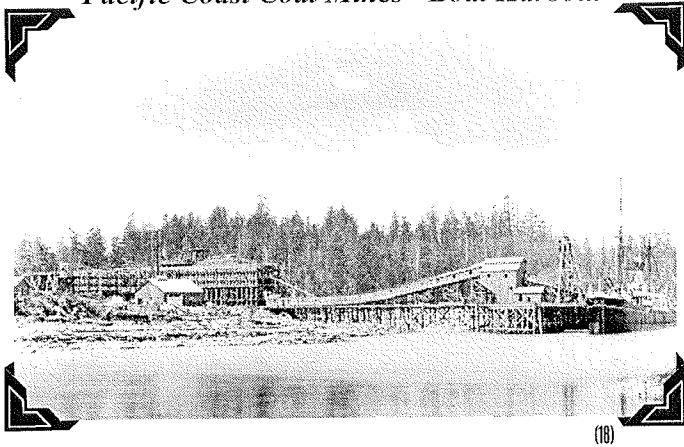
(17)



Concrete Tibble still standing

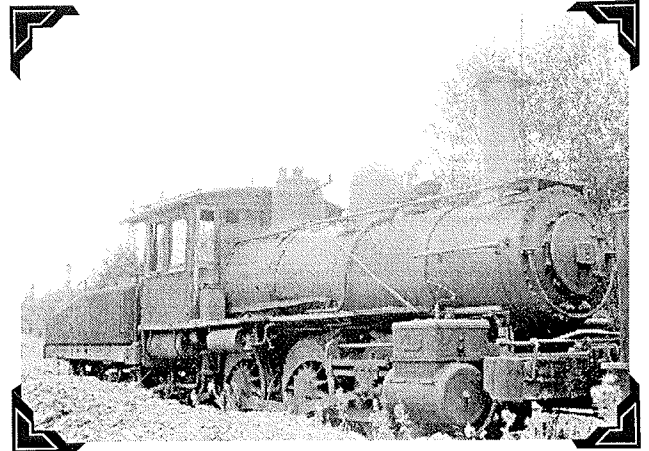


Pacific Coast Coal Mines - Boat Harbour



(18)

Pacific Coast Coal Mines - Engine #3

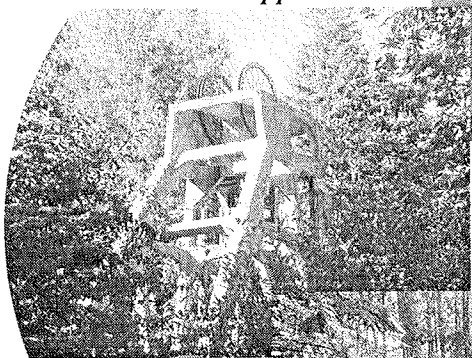


(19)

Morden Colliery Railway

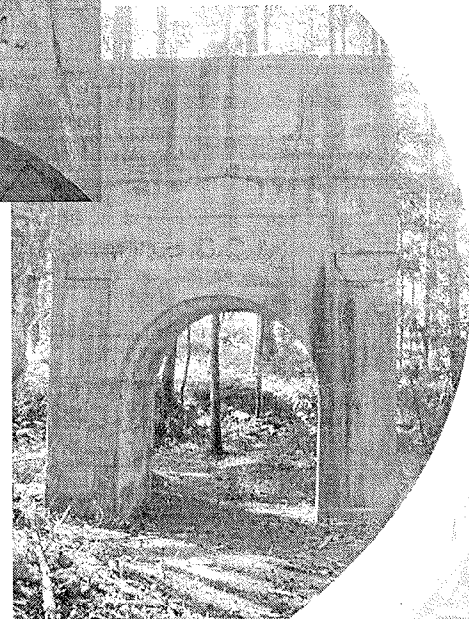
The Pacific Coast Coal Mines Ltd. transported the coal on a railway that went from the South Wellington Mines to Boat Harbour. In South Wellington the railway passed under the E&N railway, to Morden Colliery, over a wooden bridge across the Nanaimo River, past the Wheafsheaf Inn, (which was built in 1889, the Pacific Coast Coal Co. purchased the coal rights beneath the property for \$33,000 from Andrew Mahle in 1910), then the railway continued to Boat Harbour where a new shipping port was established.

Concrete Tipple



Pacific Coast Coal Mines

Building Foundations



Granby Mine

Operating Dates:

Granby No.1 - 1917 to 1932

Granby No.2 - 1929 to 1932

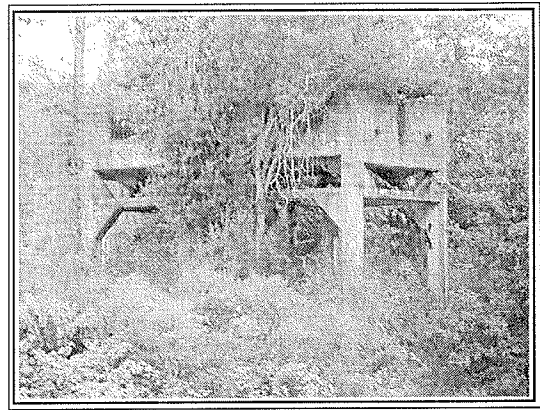
Cassidy Mine - 1937 to 1938

Granby No. 3 & 4 - 1939

Granby No. 5 - 1940 to 1948

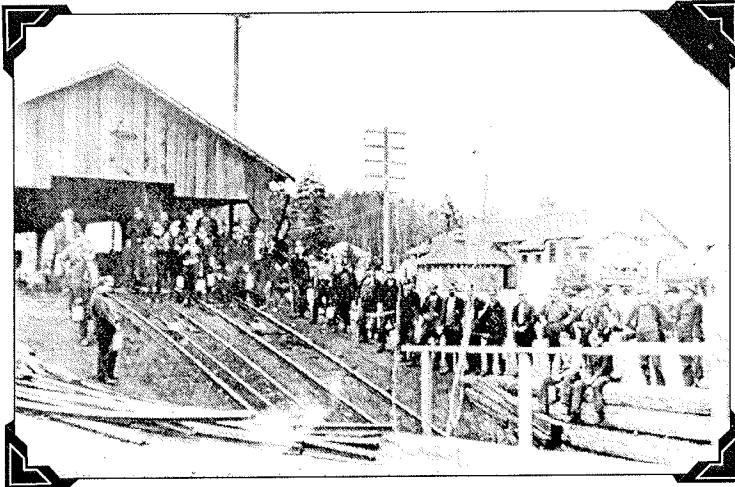
Granby No.7 - 1949 to May 1953

Over 2.5 million tonnes was produced from these mines.

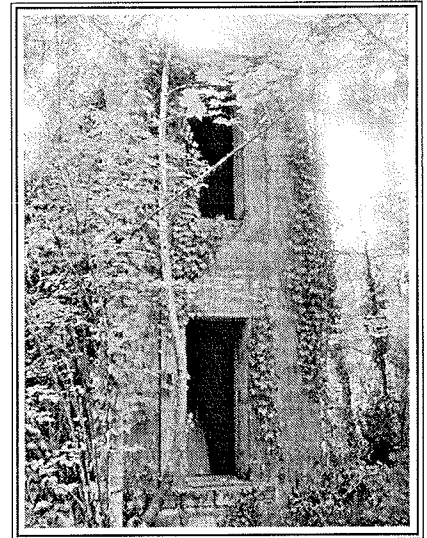


Ruins of the Granby Mine (2004)

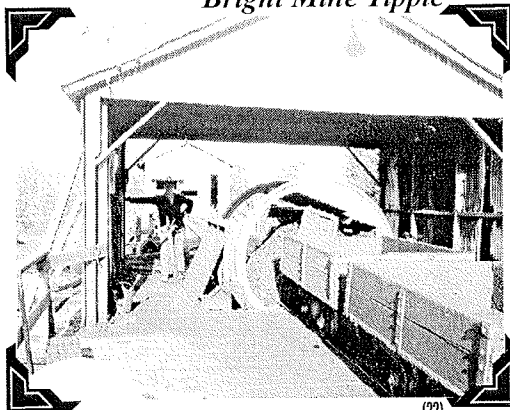
Miners at the Granby Mine Main Slope & Change House



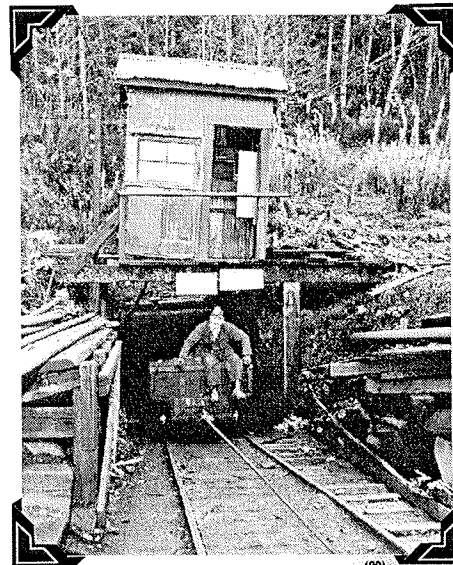
(21)



Bright Mine Tipple



(22)



Last Coal From Bright Mine

(23)



Cassidy (Granby)

The old town of Cassidy, also known as Granby, is located just off the island highway between the Nanaimo River and Haslam Creek. The town was built in 1918 when the Granby Colliery started working on the main slope March 7, 1918.

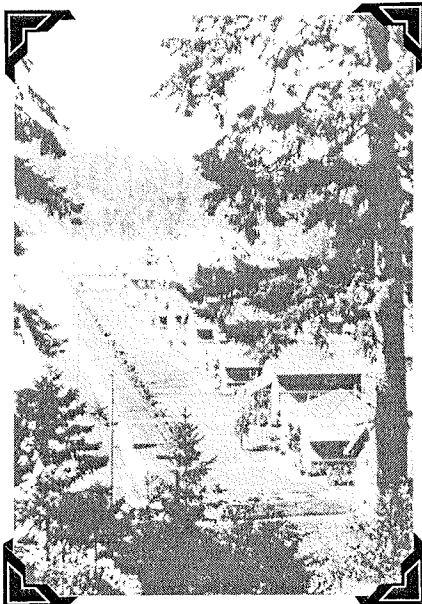
It is hard to visualize the town today as shown in the pictures below. The company had built, residential homes for the company's employees, a mine office, general office, rescue station, mess house, top quality change house with hot and cold running water and two storey 76 room fireproof rooming house.

Town Of Cassidy - These houses were moved to Ladysmith

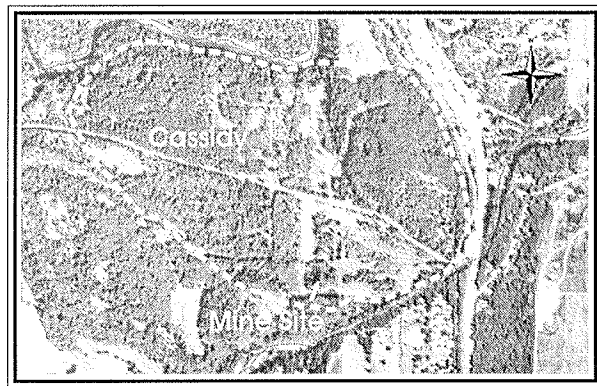
The roads were torn up, the street lamps and telephones poles were taken down, the water main ripped up, leaving nothing behind but your imagination on what it may have been like during it's booming existence.



(33)



(32)



*Cassidy today - town is virtually gone
The forest has taken over and covers
the old ruins. Newer homes are now
in the area where the most up to
date mining town in Canada
once thrived.*



Cassidy (Granby)

Cassidy Hotel

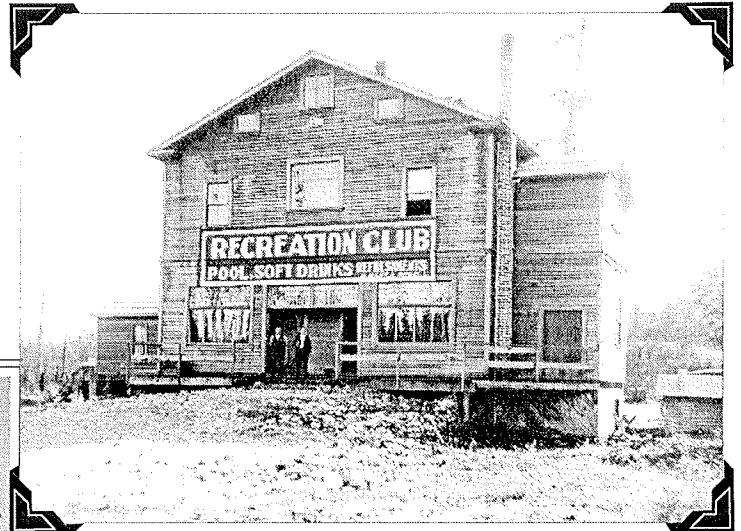
The Cassidy Hotel and Pub was originally built as a recreation centre for the miners at Granby. At that time it didn't have a liquor licence and back then a cold beer was important to a thirsty miner. The original main entrance to the hotel is now being used as the rear entrance.

The building was built across the highway next to the railway station and was moved years later to the location on which it is today.

The Cassidy Hotel was built for the entertainment of miners from the Granby Mine, but the mining company already had excellent facilities for the miners and so the Cassidy Hotel didn't attract the crowds it had planned.

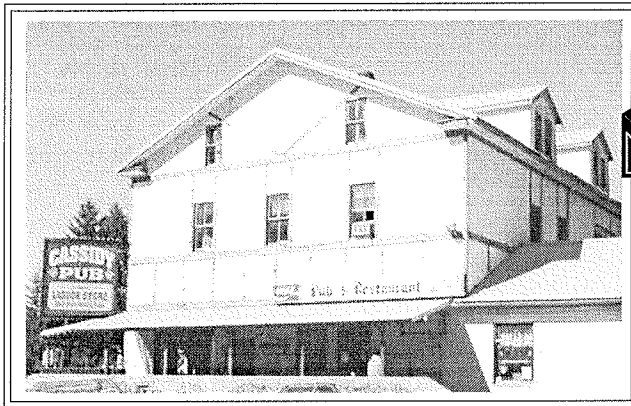
The building had three floors. The top floor held small rooms that were rented out, the second floor and main floor had dance halls.

Cassidy Hotel & Pub - built 1917, completed 1919



(34)

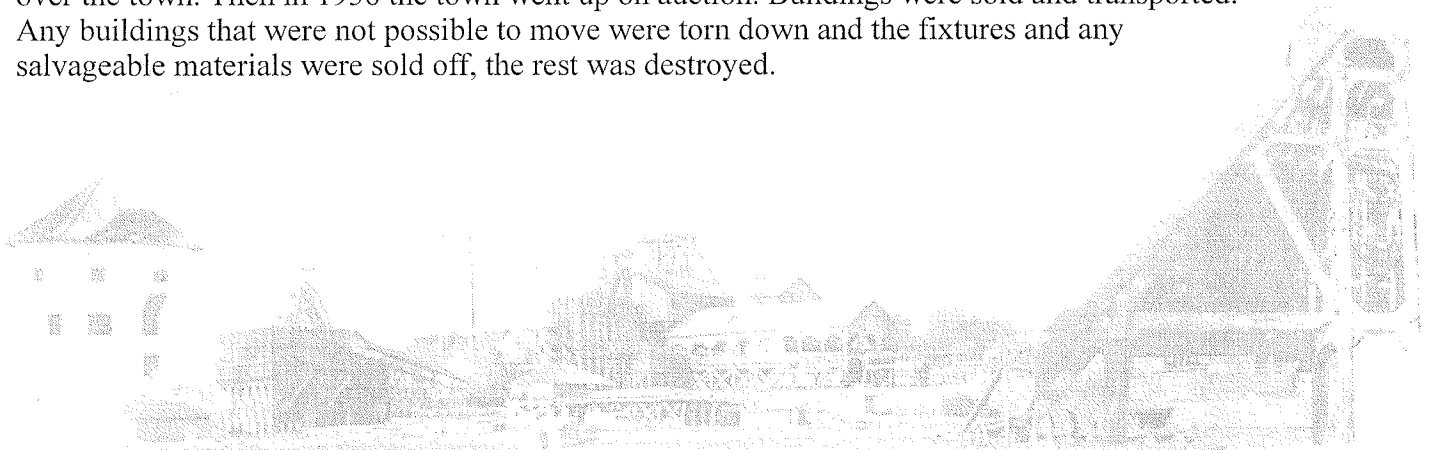
Cassidy Pub today - 2004



Cassidy

By 1928 there were over 500 people living in Cassidy, with 200 miners who worked underground.

The mine closed down in September 1932, as the coal seam ran out. After 15 years of operating the company closed down and the town was dead. For years a lone caretaker was left to keep watch over the town. Then in 1936 the town went up on auction. Buildings were sold and transported. Any buildings that were not possible to move were torn down and the fixtures and any salvageable materials were sold off, the rest was destroyed.



Bright Mine

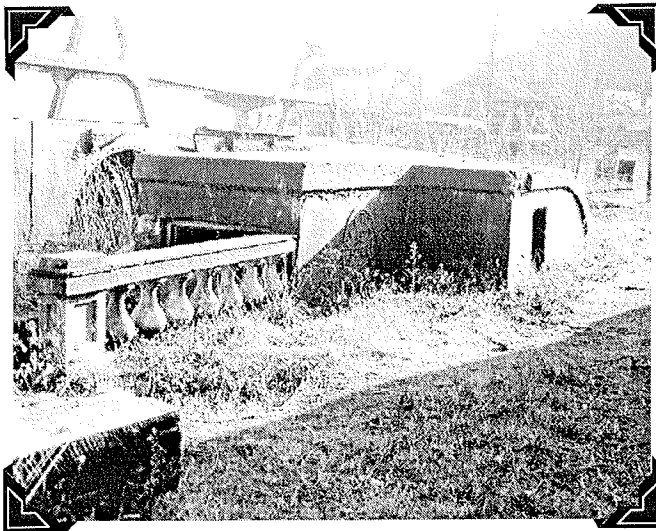
The Bright Mine's first shift started up in April 1950, with the intention of working the Douglas Seam immediately south of the old Granby No. 2 mine workings.

The Granby No.2 Mine slope was closed in September 1932 and let to flood. Later it was pumped out and reopened, forming the main slope of the Bright mine.

It was estimated that the mine had about 817,000 tonnes of viable coal still remained to be mined. The operation consisted of the extraction a series of substantial pillars. The seam was variable and ranges up to 15 metres in thickness.

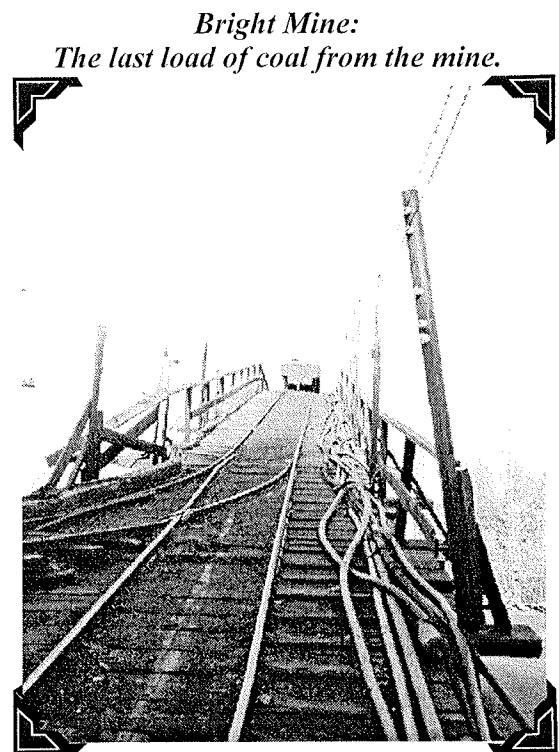
The Old Granby workings are on the upper portion of the northern limb and the Bright Mine workings are at the base. In the last year of operation in 1953 the mining process was confined to the extraction of pillars. Over the three years the mine produced 179,241 tonnes of the highest quality of coal.

The White Rapids Mines were operated as the Riverside mine in 1953 by Mr. J. Biggs (of the Biggs Mine), and the Berkley Creek Mine from 1954 by Mr. R.H. Chambers (of the Chambers Mine) and Mr. A. Vanger.



Bright Mine: Old Fan House

(41)



(42)

Robert Dunsmuir:

In 1883 an agreement between the Federal Government and Robert Dunsmuir was established where Dunsmuir would construct a railway between Esquimalt and Nanaimo and the government in return would grant Dunsmuir \$750,000, two million acres of land on the east side of Vancouver Island from Seymour Narrows to Finlayson Arm, and the coal and ores mineral rights on the granted land.



I would like to send a thank you to everyone who helped and supported me in putting this atlas together:

The staff and volunteers at the Nanaimo Community Archives

The Regional District of Nanaimo

The City of Nanaimo

The Royal BC Museum, BC Archives

The Underground Mine Workings Data was captured from several sources which include:

Lantzville Data (Micro Film): The Regional District of Nanaimo

Historical Coal Railways: Nanaimo Community Archives.

Airphoto Map with highlighted railways by: Robert E. Swanson P.Eng, Department of Railway, Victoria, B.C.

Mine shafts and Underground workings Downtown Nanaimo:

Nanaimo Community Archives: Fire Inspection Reports

The Historical Information and Photographs:

Pacific Spatial Systems Ltd: Shari Lindsay, AScT

Royal BC Museum, BC Archives (as listed below)

Quotes: Lynne Bowen *Three Dollar Dreams* and *Boss Whistle*

Mine data information: Website: www.em.gov.bc.ca/cf/minfile
www.MapPlace.ca

Photos from the Royal BC Museum, BC Archives are as follows:

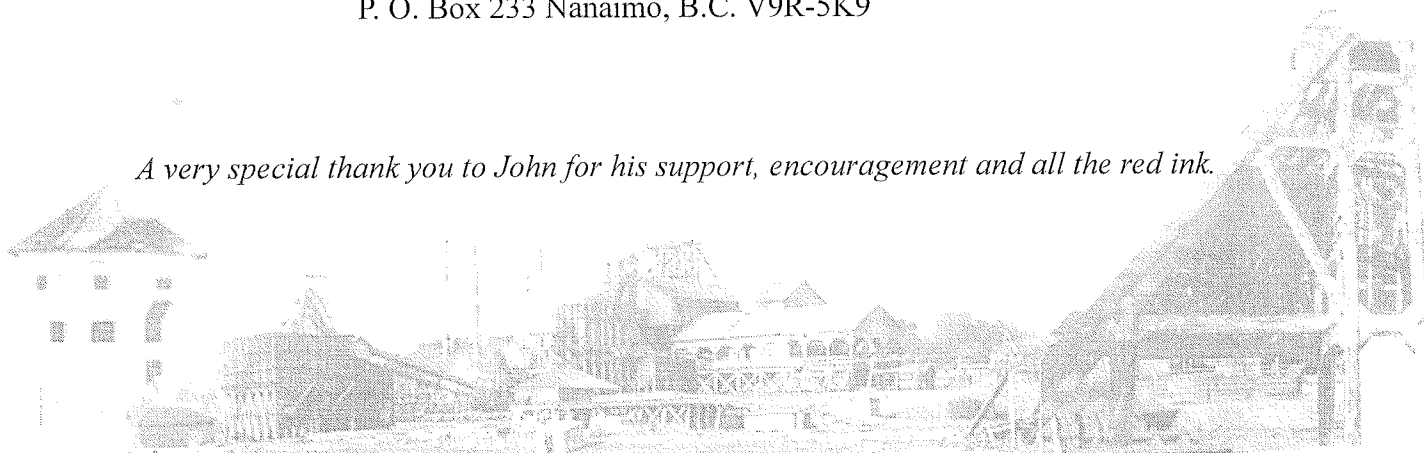
List by picture number & BC Archive call reference number

#1 B-03303	#9 F-05227	#18 A-06574	#25 D-03297	#31 E-02626	#39 F-05226	#45 H-05604
#2 E-01884	#10 I-28453	#19 H-06570	#26 E-01183	#34 E-06691	#40 B-00931	#46 A-06762
#3 E-03039	#11 I-28452	#20 F-02453	#27 D-03314	#35 I-31893	#41 I-28451	#47 H-06571
#6 G-00207	#13 A-04409	#21 E-02628	#28 E-02764	#36 G-00208	#42 I-28454	#48 E-02763
#7 C-04383	#14 C-03711	#23 I-28448	#29 D-03276	#37 A-04412	#43 H-03534	#49 D-03303
#8 E-01871	#15 G-02984	#24 D-03315	#30 E-02768	#38 B-04720	#44 H-06602	

If the readers would like to send in additional mining information or locations of mine shafts for the maps please feel free to write: Shari Lindsay, Pacific Spatial Systems Ltd

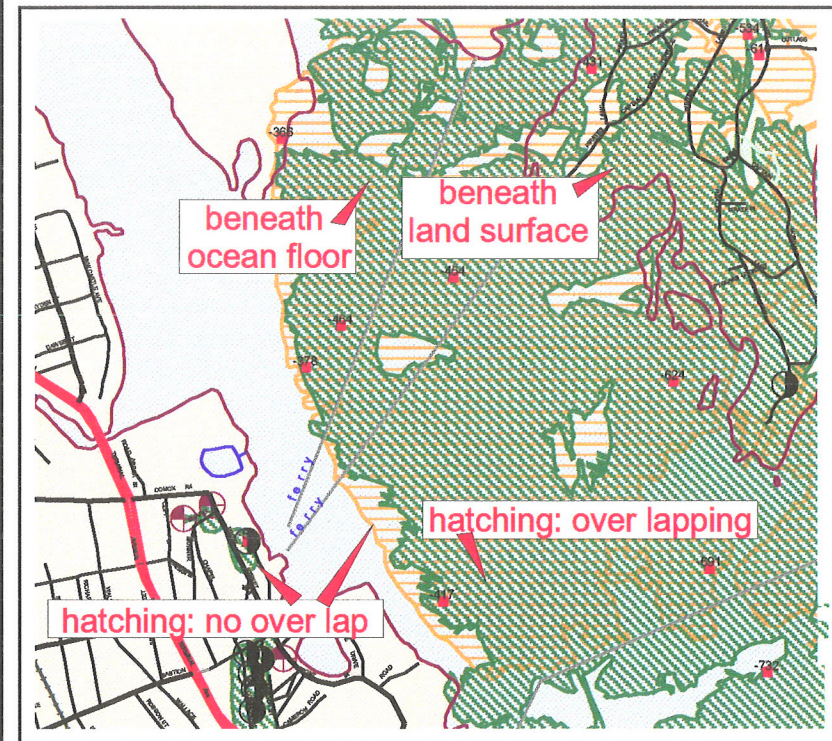
P. O. Box 233 Nanaimo, B.C. V9R-5K9

A very special thank you to John for his support, encouragement and all the red ink.

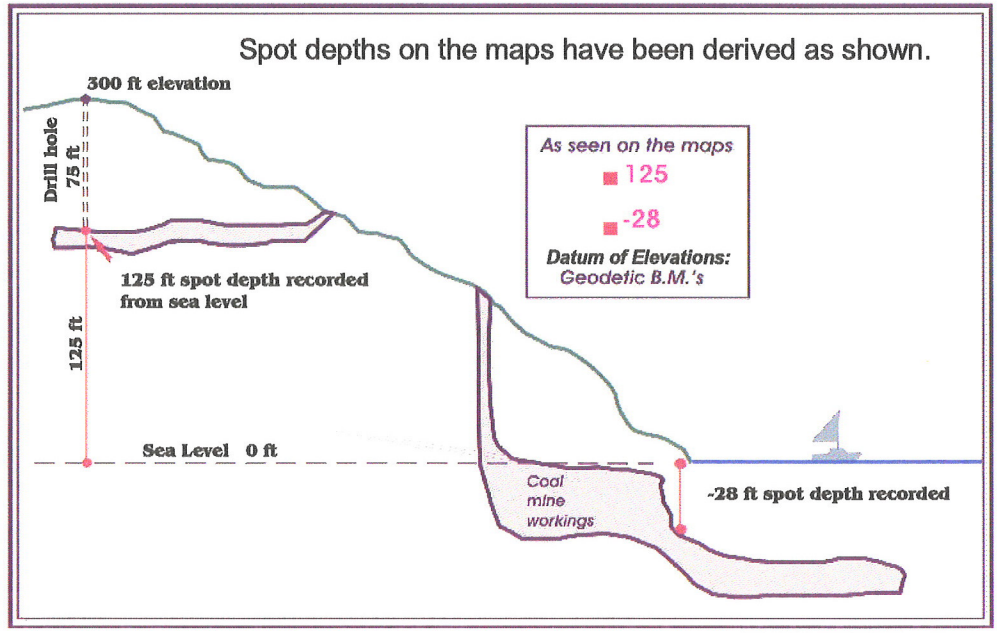


These maps are not waterproof.

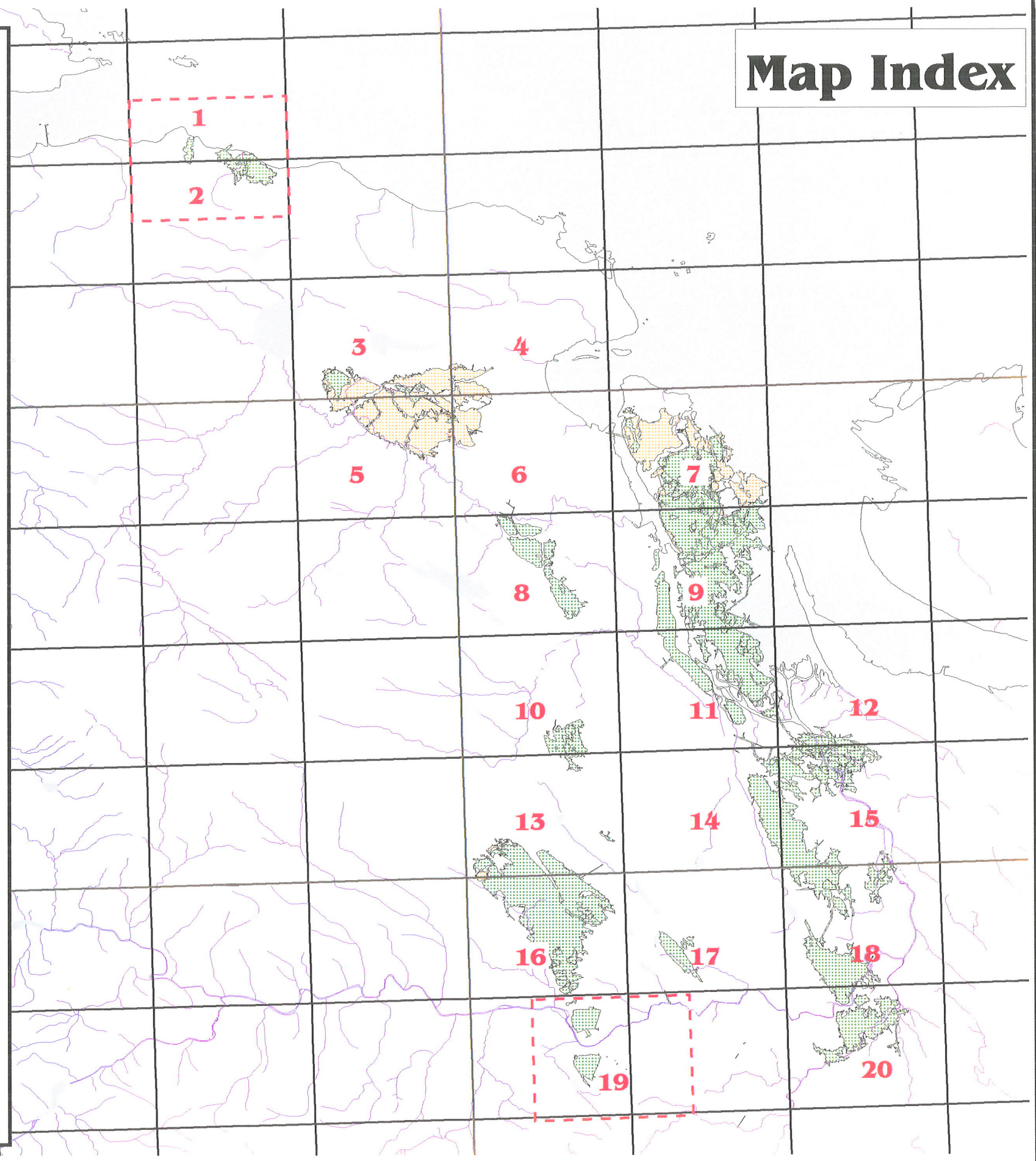
The colouring of the shading will appear to change with the change of background colour.
 Background : Water verses Land
 Overlapping: Upper and Lower Workings overlap



- Underground Coal Mine Workings
- Upper Workings**
- Underground Coal Mine Workings
- Overlapping Workings
- Shafts**
- Entrance (Shaft)
- Entrance (Slope)
- Spot Depth (Feet)
- Datum of Elevations Geodetic B.M.'s
- Old Railway Routes



Map Index



Coal Mine Underground Workings

Legend

- Roads**
- Dirt Road
 - Highway
 - Landmarks (Bridge, Tunnel)
 - Main Roads
 - E & N Railway
 - Roads
 - Rough Road
 - Transportation (Airport, Ferry)

- Planimetric Features**
- Mapsheet Boundary
 - Coastline
 - Rivers
 - Wetlands
 - Water Features

- Lower Workings**
- Underground Coal Mine Workings
- Upper Workings**
- Underground Coal Mine Workings
 - Overlapping Workings

- Shafts**
- Entrance (Shaft)
 - Entrance (Slope)
- Spot Depth (Feet)
-239
Datum of Elevations:
Geodetic B.M.'s
- Old Railway Routes

Map 1 & 2

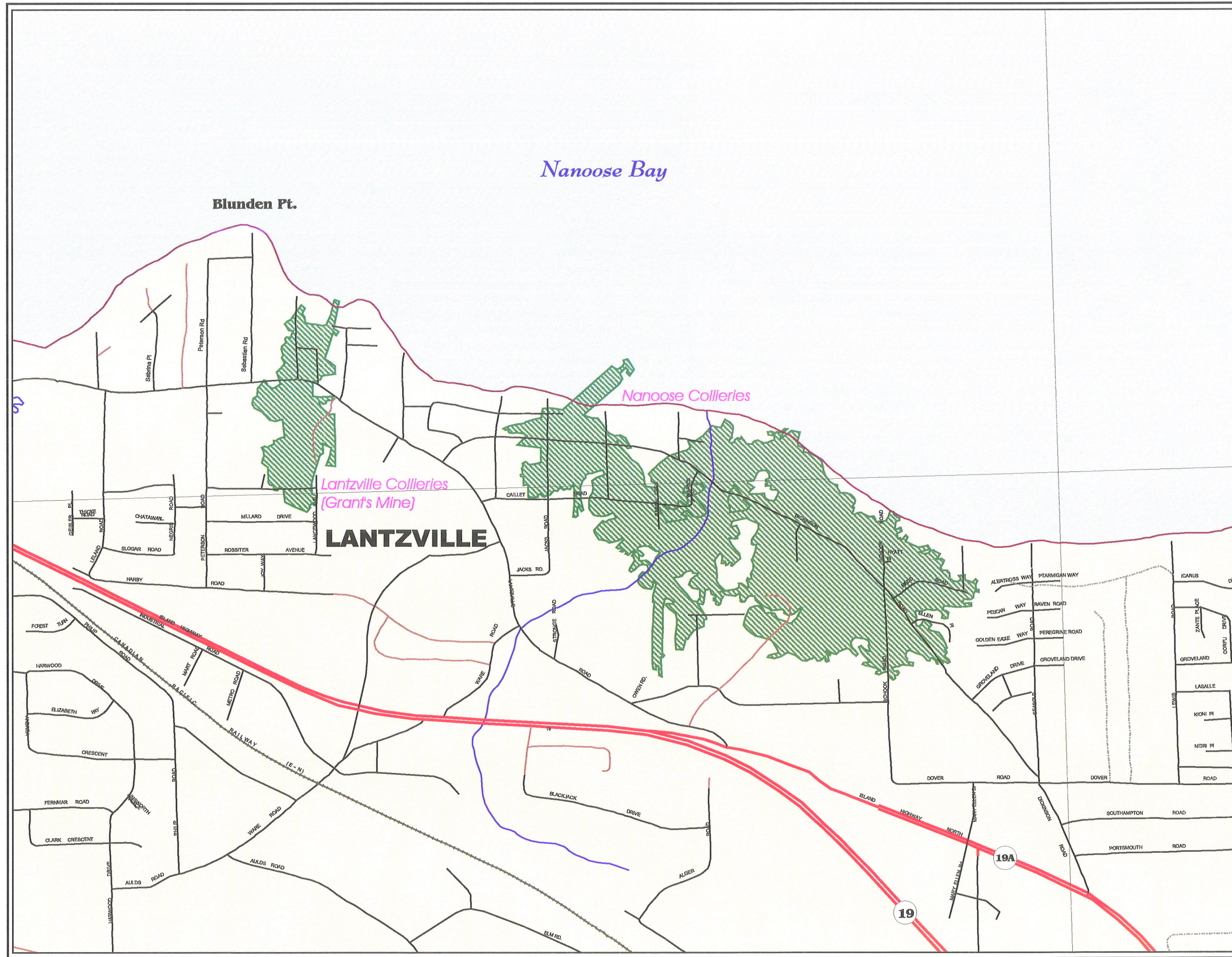


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Meters

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Coal Mine Underground Workings

Legend

- Roads**
- Dirt Road
 - Highway
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 - Main Roads
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- Mapsheet Boundary
 - Coastline
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- Lower Workings**
- Underground Coal Mine Workings
- Upper Workings**
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- Shafts**
- Entrance (Shaft)
 - Entrance (Slope)
 - Spot Depth (Feet) Datum of Elevations: Geodetic B.M.'s
 - Old Railway Routes

Map 3

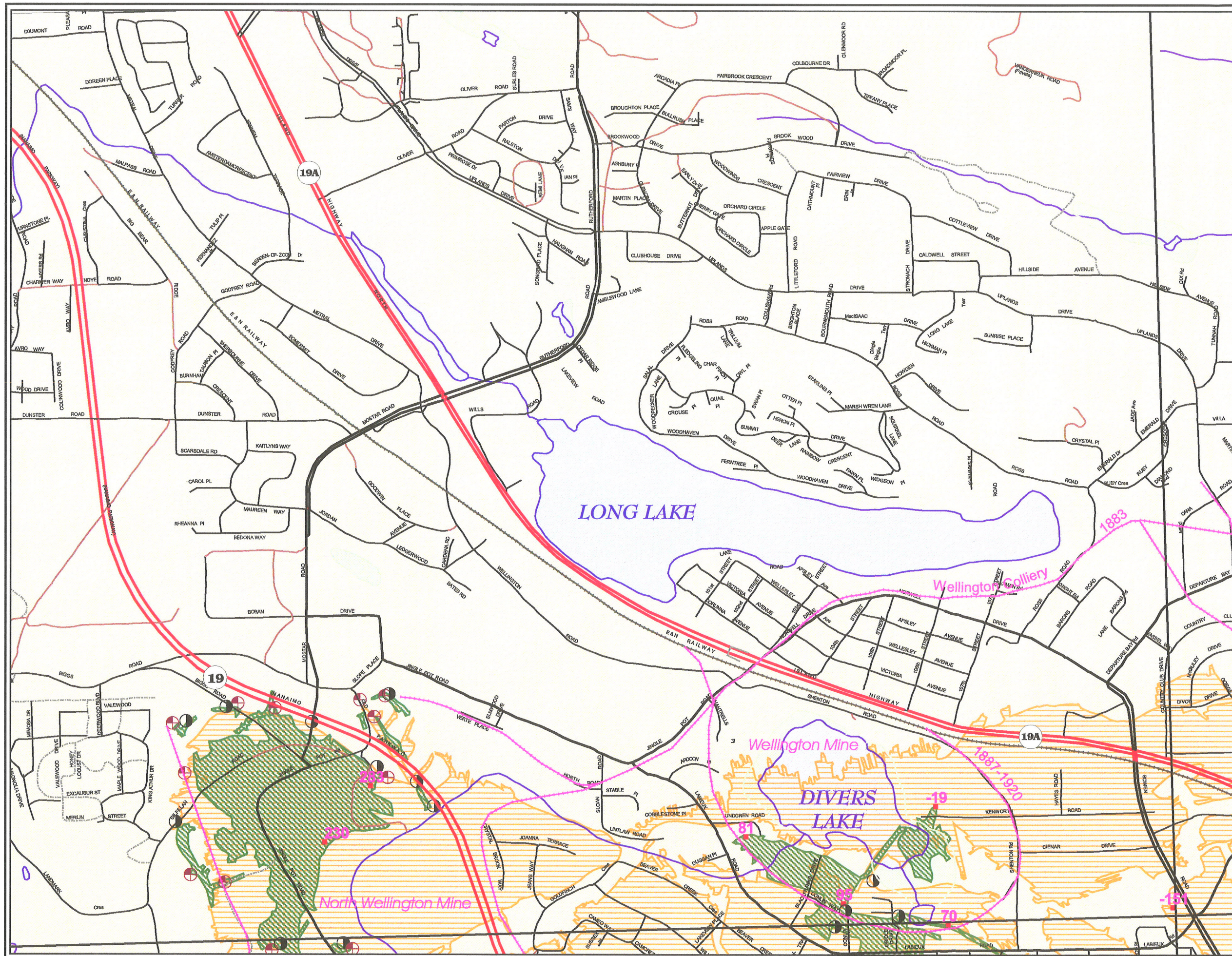


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Coal Mine Underground Workings

Legend

- Roads**
- Dirt Road
 - Highway
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- Planimetric Features**
- Mapsheet Boundary
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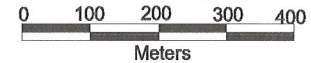
- Lower Workings**
- Underground Coal Mine Workings
- Upper Workings**
- Underground Coal Mine Workings
 - Overlapping Workings

- Shafts**
- Entrance (Shaft)
 - Entrance (Slope)
 - Spot Depth (Feet)
Datum of Elevations:
Geodetic B.M.'s
 - Old Railway Routes

Map 4



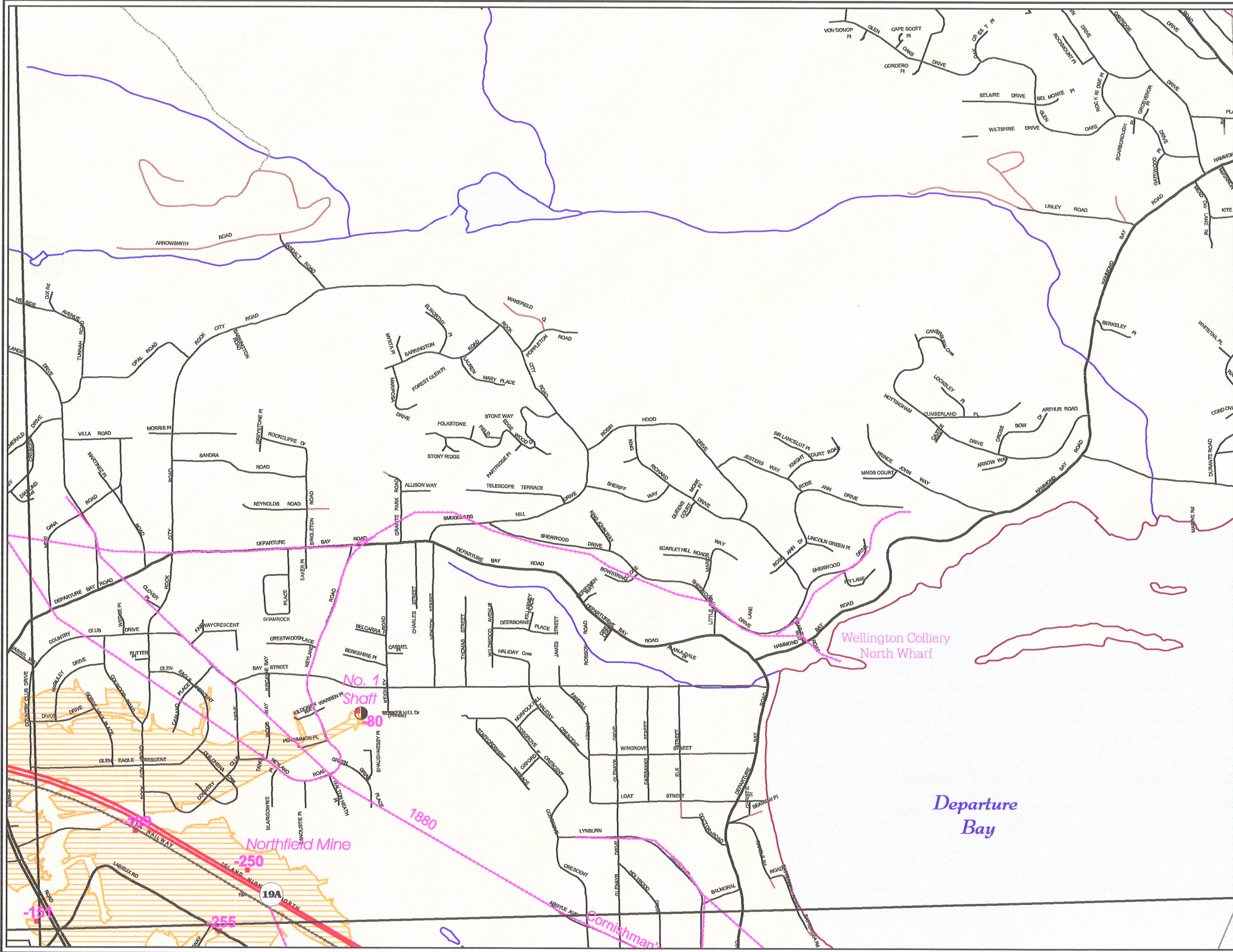
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Coal Mine Underground Workings

Legend

- Roads**
- Dirt Road
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- Entrance (Shaft)
 - Entrance (Slope)
 - Spot Depth (Feet)
 - Datum of Elevations: Geodetic B.M.'s
 - Old Railway Routes

Map 6

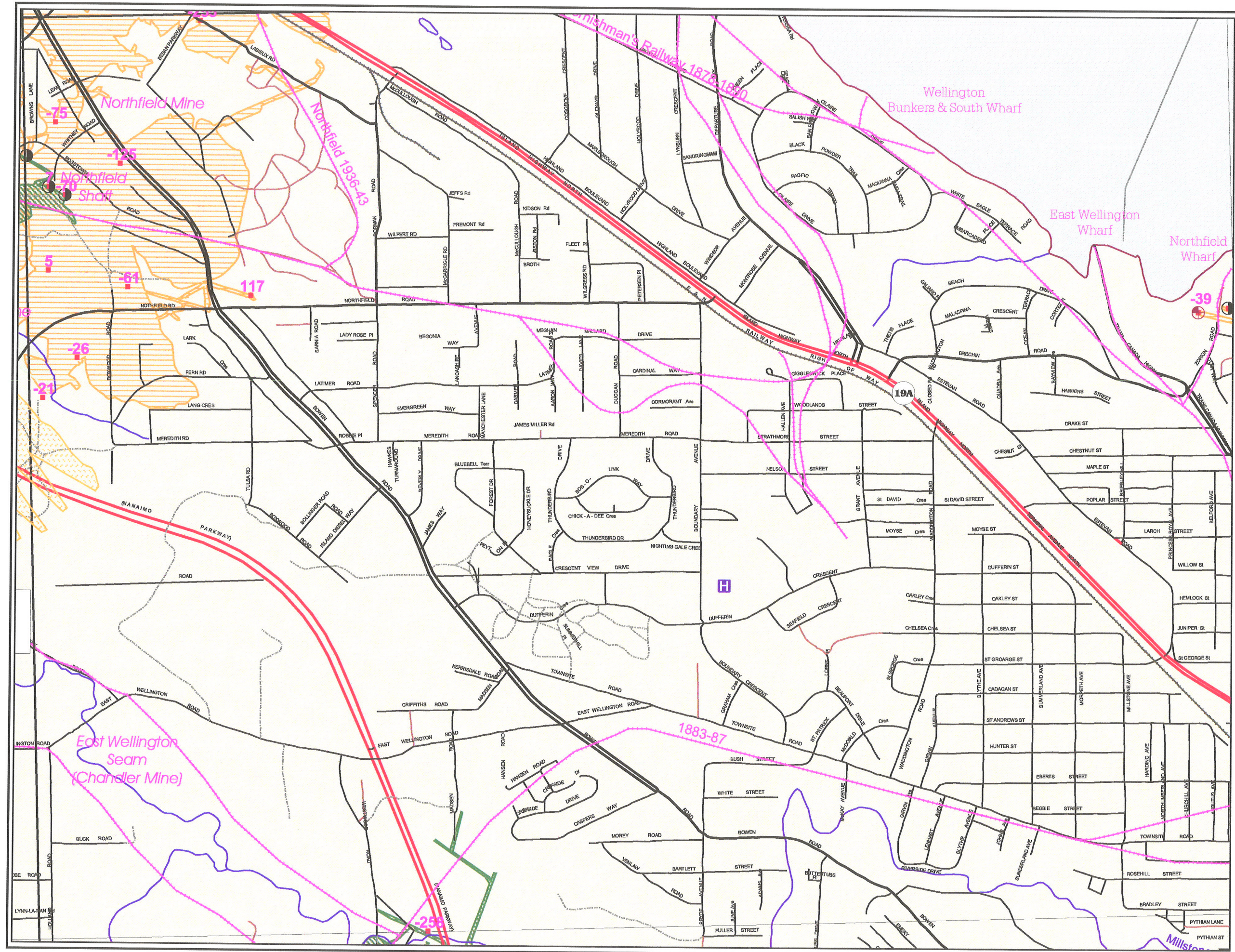


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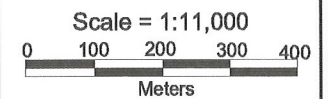


Coal Mine Underground Workings

Legend

- Roads**
- Dirt Road
 - Highway
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 - Main Roads
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- Entrance (Shaft)
 - Entrance (Slope)
- Spot Depth (Feet)**
 Datum of Elevations: Geodetic B.M.'s
- 239
 - Old Railway Routes

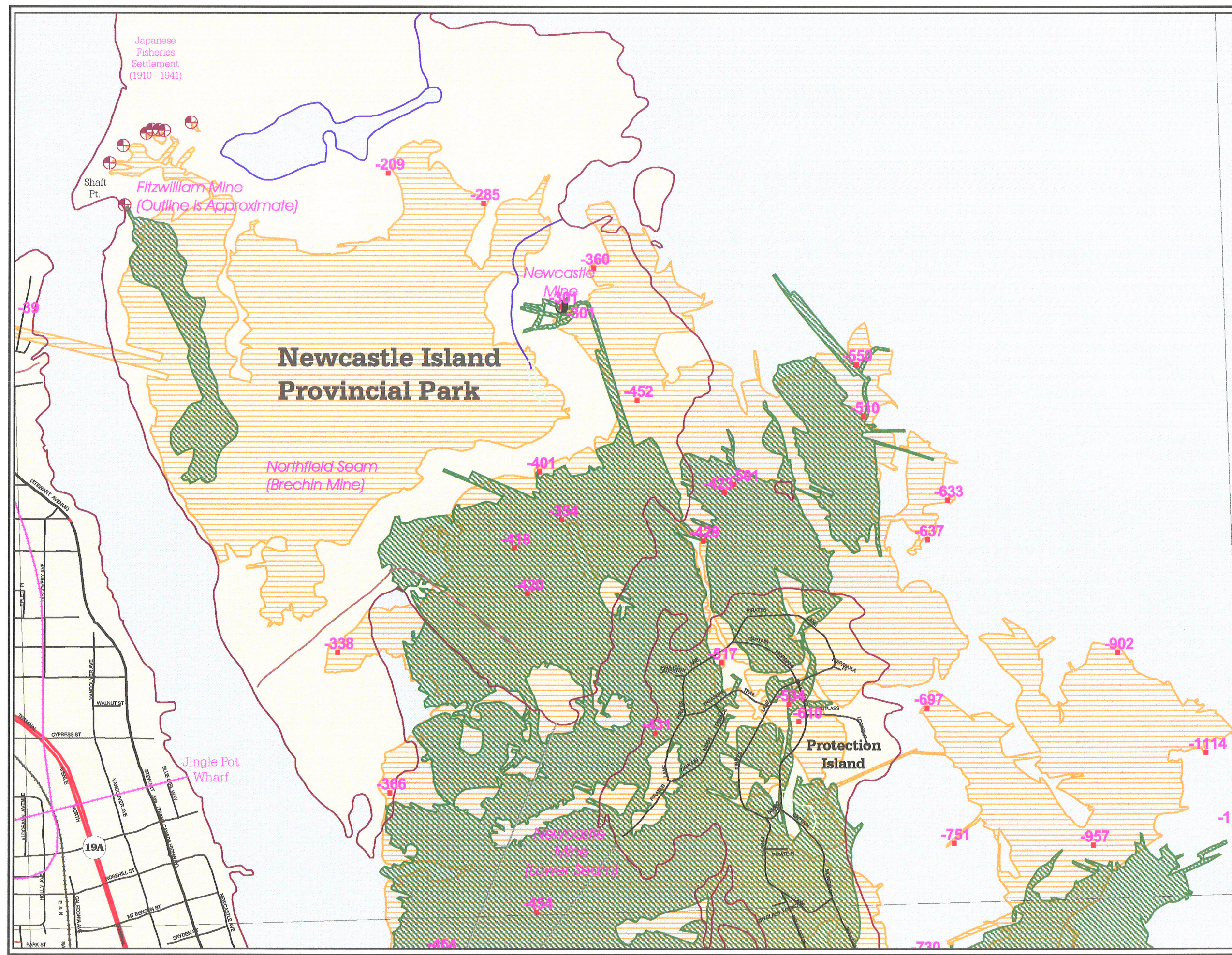
Map 7



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Coal Mine Underground Workings

Legend

- Roads**
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Map 8

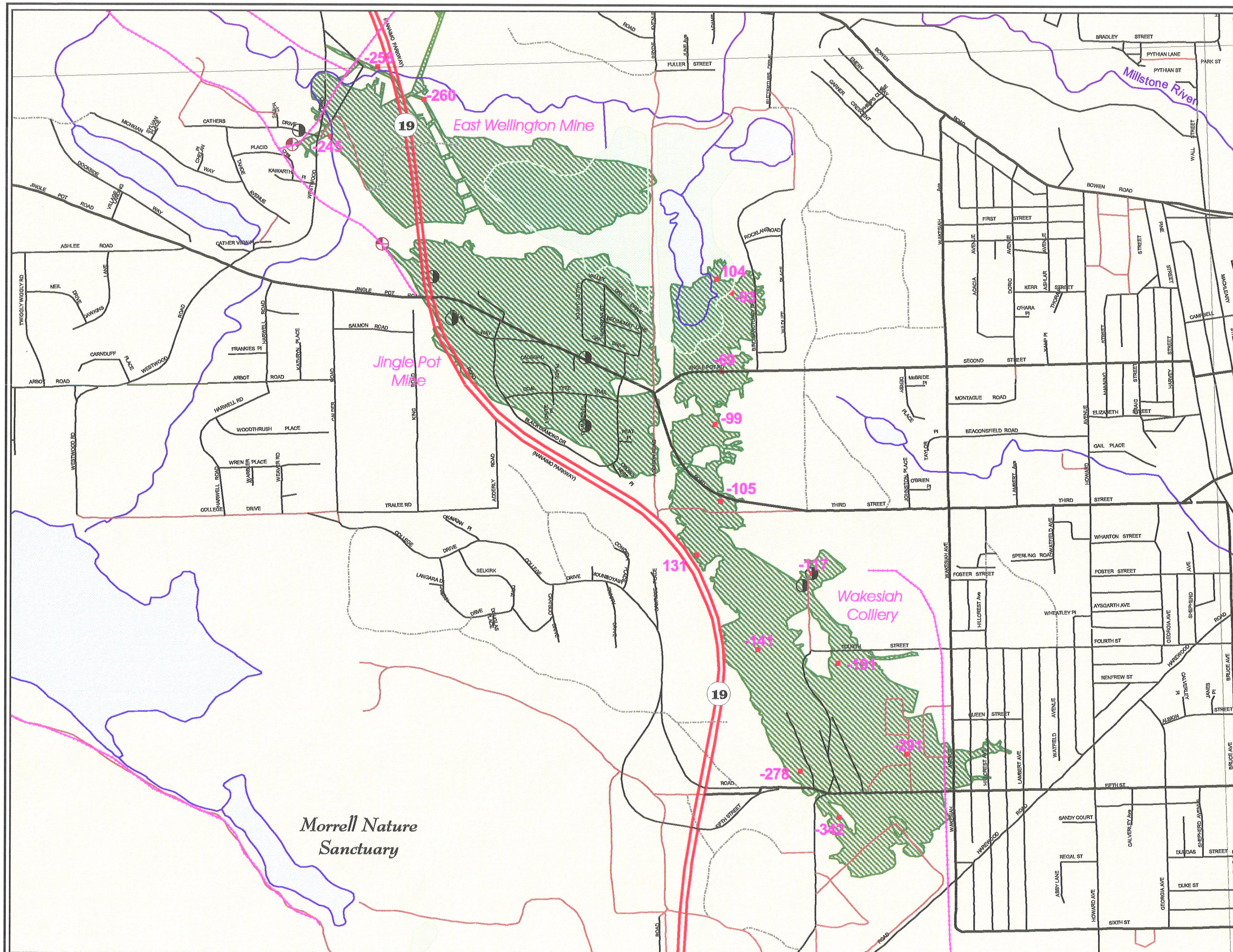


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Meters

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Coal Mine Underground Workings

Legend

- Roads**
- Dirt Road
 - Highway
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 - Rough Road
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- Mapsheet Boundary
 - Coastline
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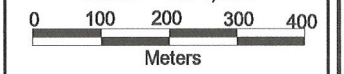
- Lower Workings**
- Underground Coal Mine Workings
- Upper Workings**
- Underground Coal Mine Workings
 - Overlapping Workings

- Shafts**
- Entrance (Shaft)
 - Entrance (Slope)
- Spot Depth (Feet)**
Datum of Elevations: Geodetic B.M.'s
- 239
 - Old Railway Routes

Map 9



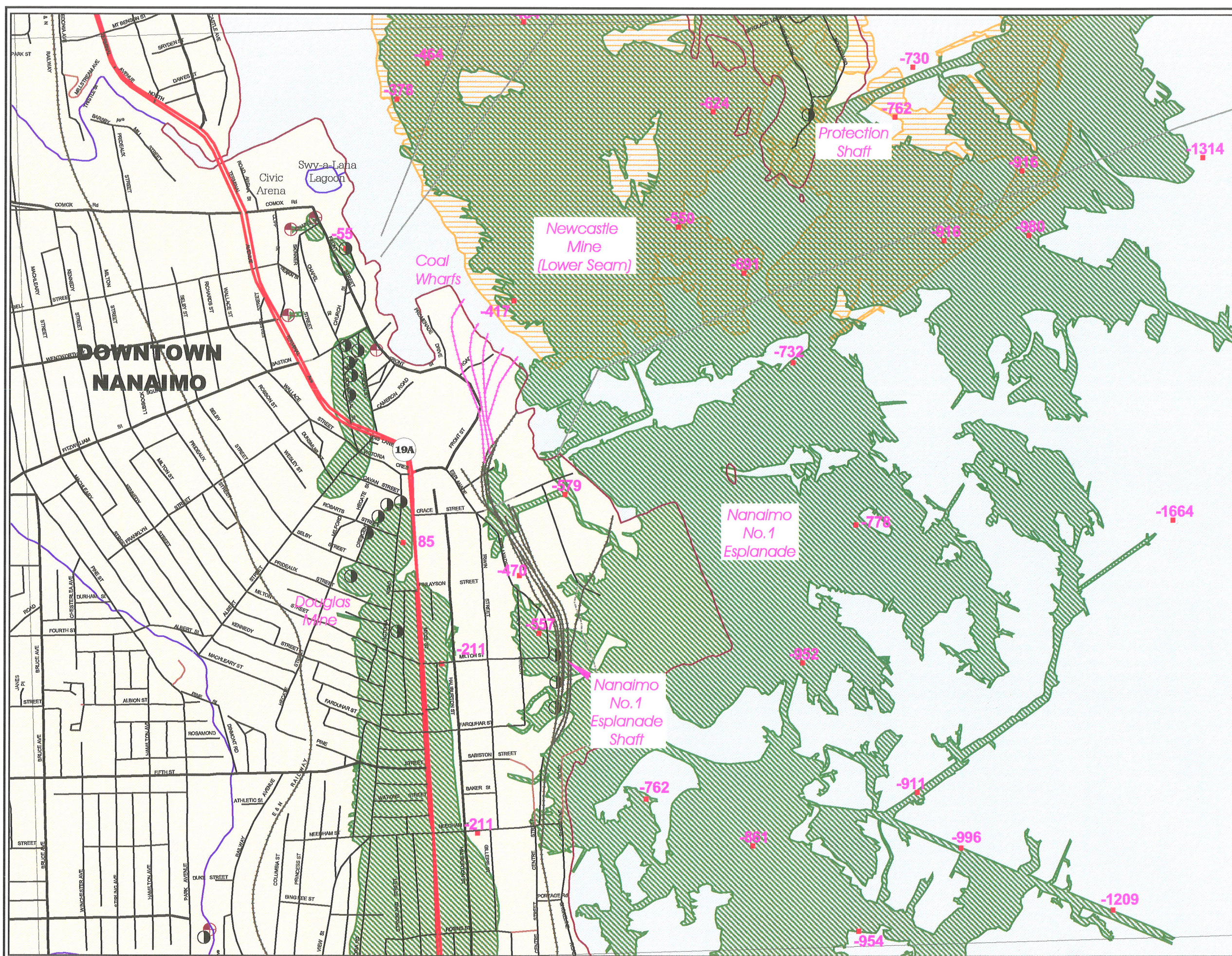
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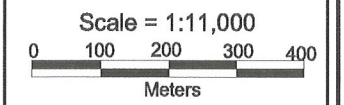


Coal Mine Underground Workings

Legend

- Roads**
- Dirt Road
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- Spot Depth (Feet)**
Datum of Elevations: Geodetic B.M.'s
- 239
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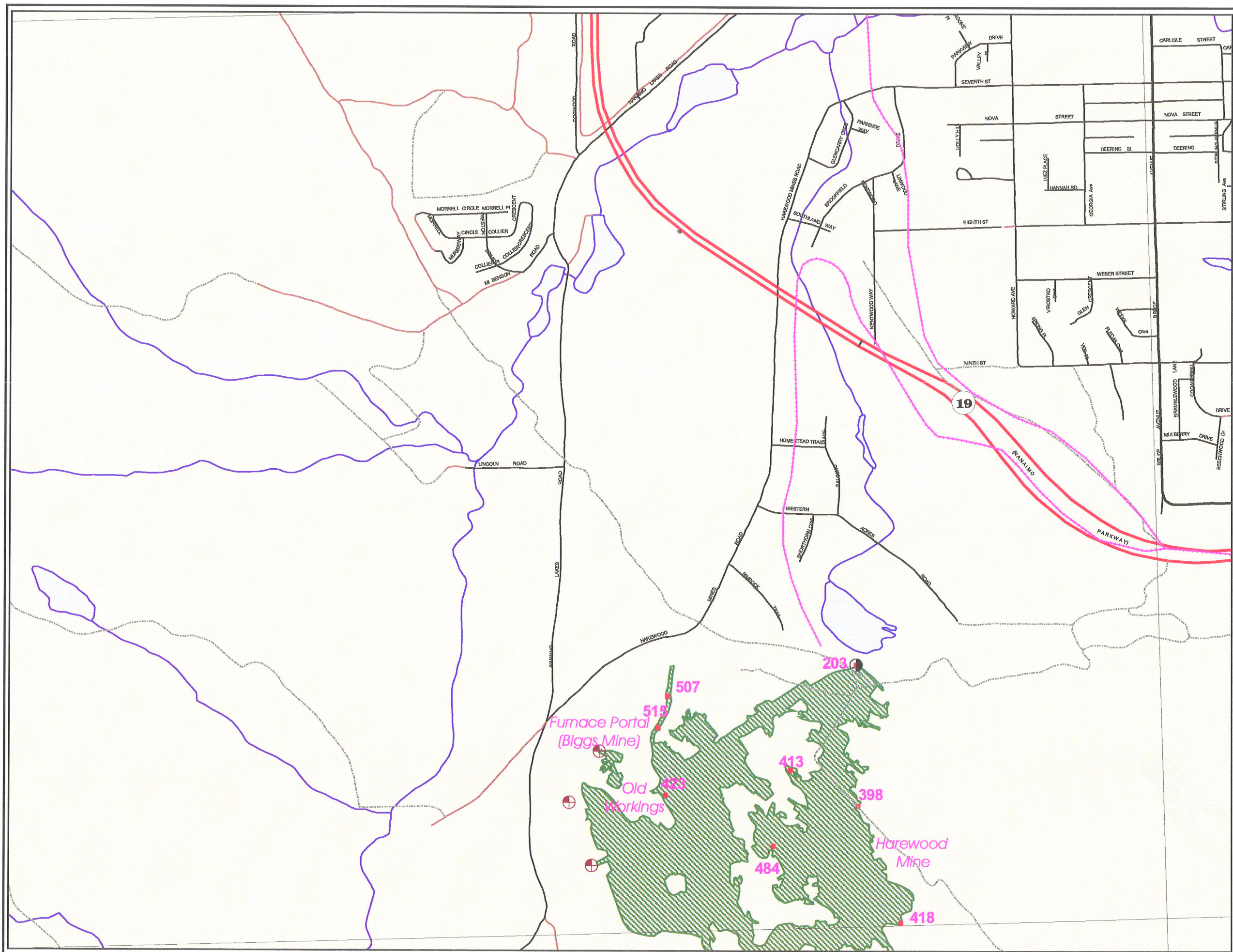
Map 10



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Coal Mine Underground Workings

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- Planimetric Features**
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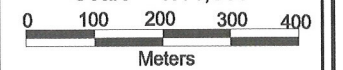
- Lower Workings**
- Underground Coal Mine Workings
- Upper Workings**
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- Entrance (Shaft)
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- Spot Depth (Feet)
Datum of Elevations:
Geodetic B.M.'s
- Old Railway Routes

Map 11



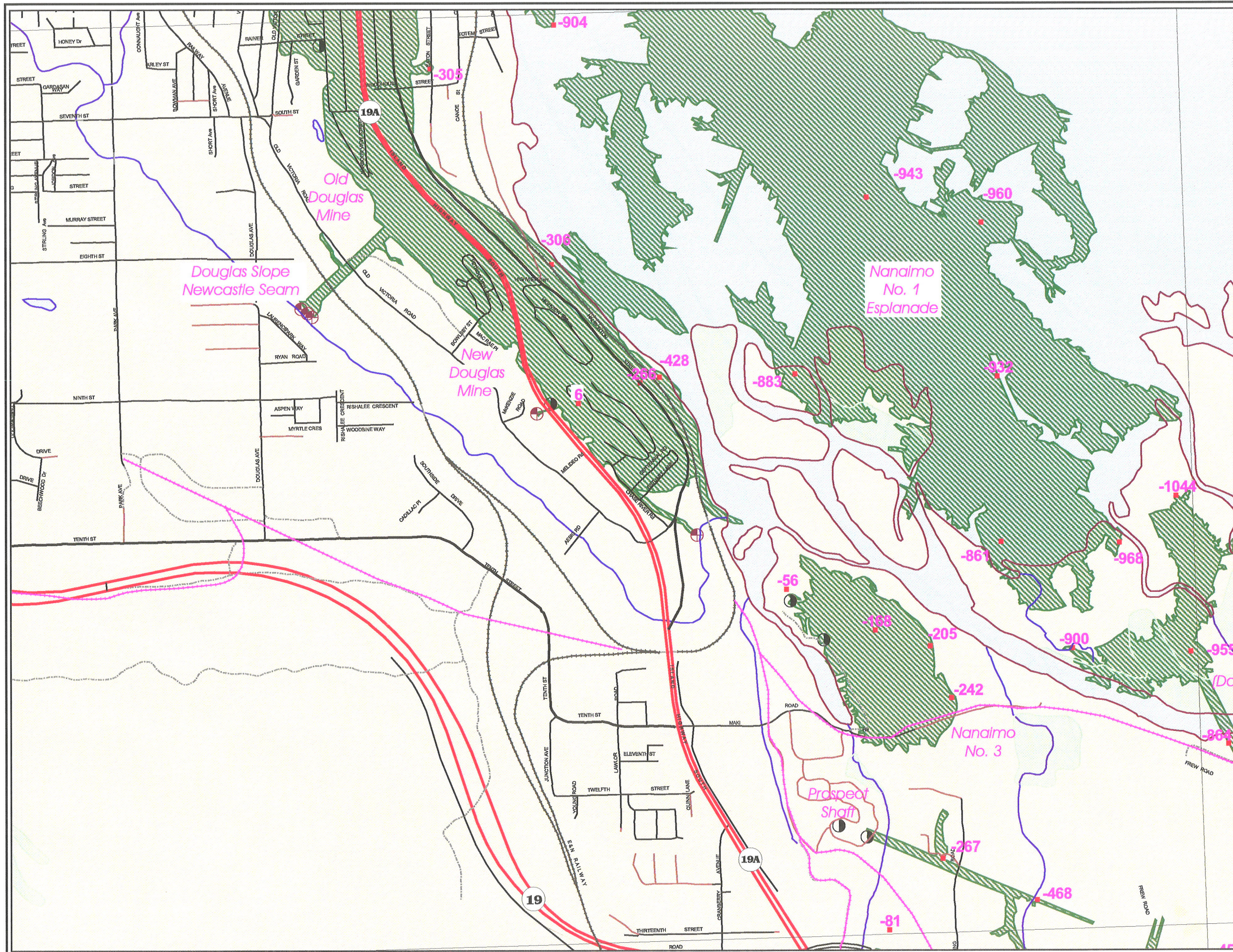
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Coal Mine Underground Workings

Legend

- Roads**
- Dirt Road
 - Highway
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- Underground Coal Mine Workings
 - Overlapping Workings

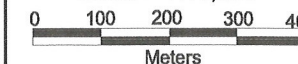
- Shafts**
- Entrance (Shaft)
 - Entrance (Slope)

- Spot Depth (Feet)
- Datum of Elevations: Geodetic B.M.'s
- Old Railway Routes

Map 12



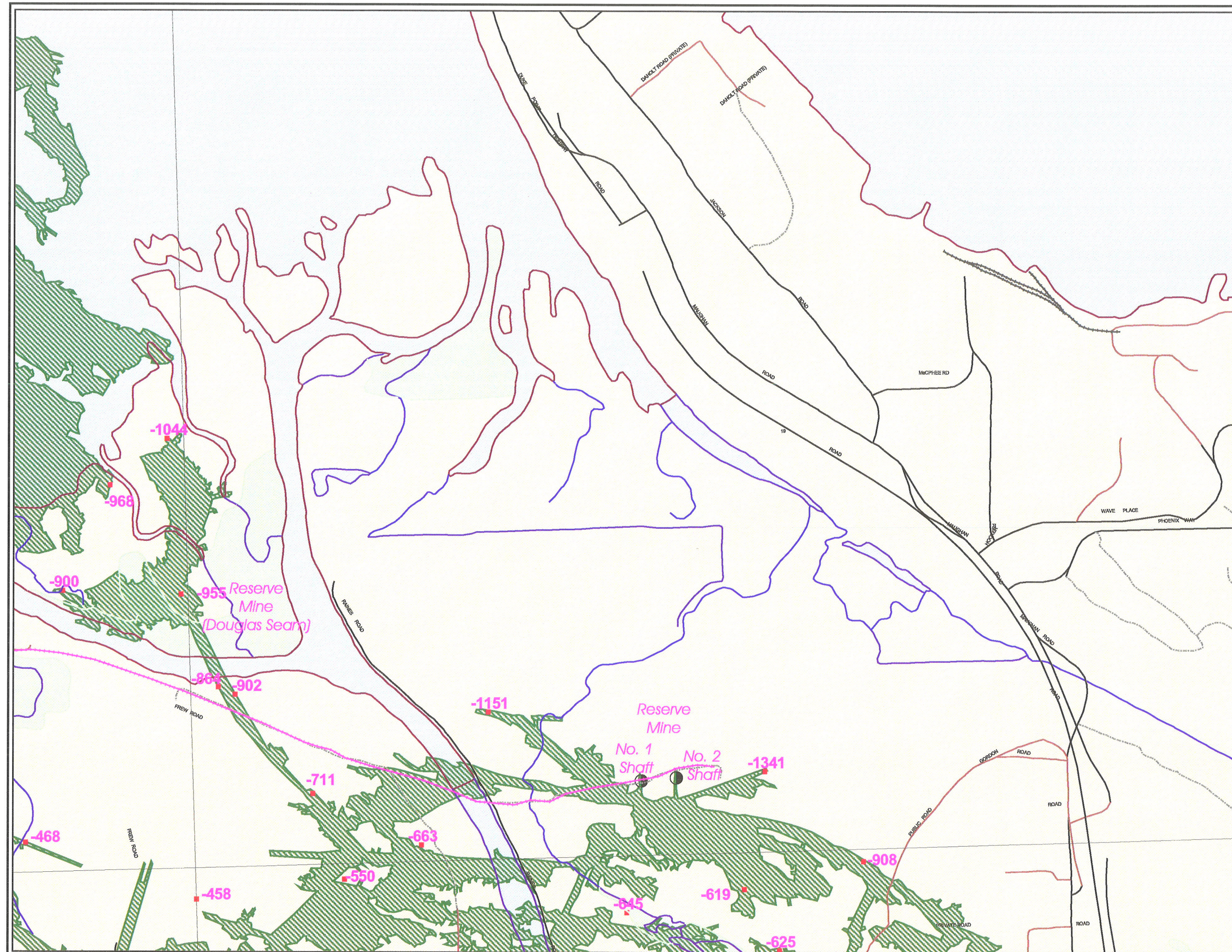
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Coal Mine Underground Workings

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 - Overlapping Workings

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- Entrance (Shaft)
 - Entrance (Slope)

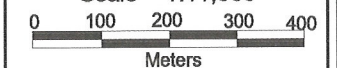
- Spot Depth (Feet)**
 Datum of Elevations: Geodetic B.M.'s

- Old Railway Routes

Map 13



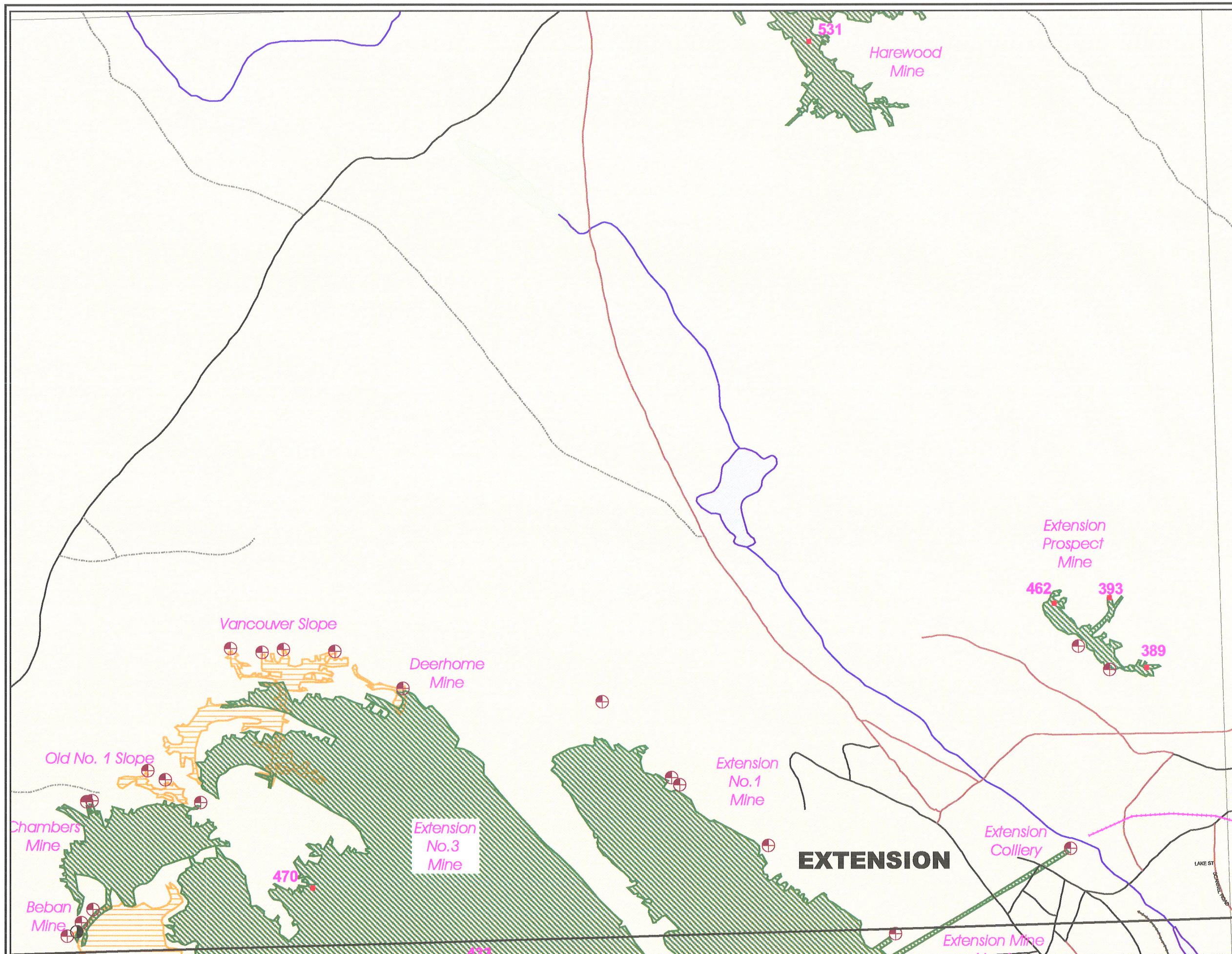
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Coal Mine Underground Workings

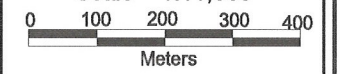
Legend

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- Entrance (Shaft)
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Datum of Elevations: Geodetic B.M.'s
- Old Railway Routes

Map 14



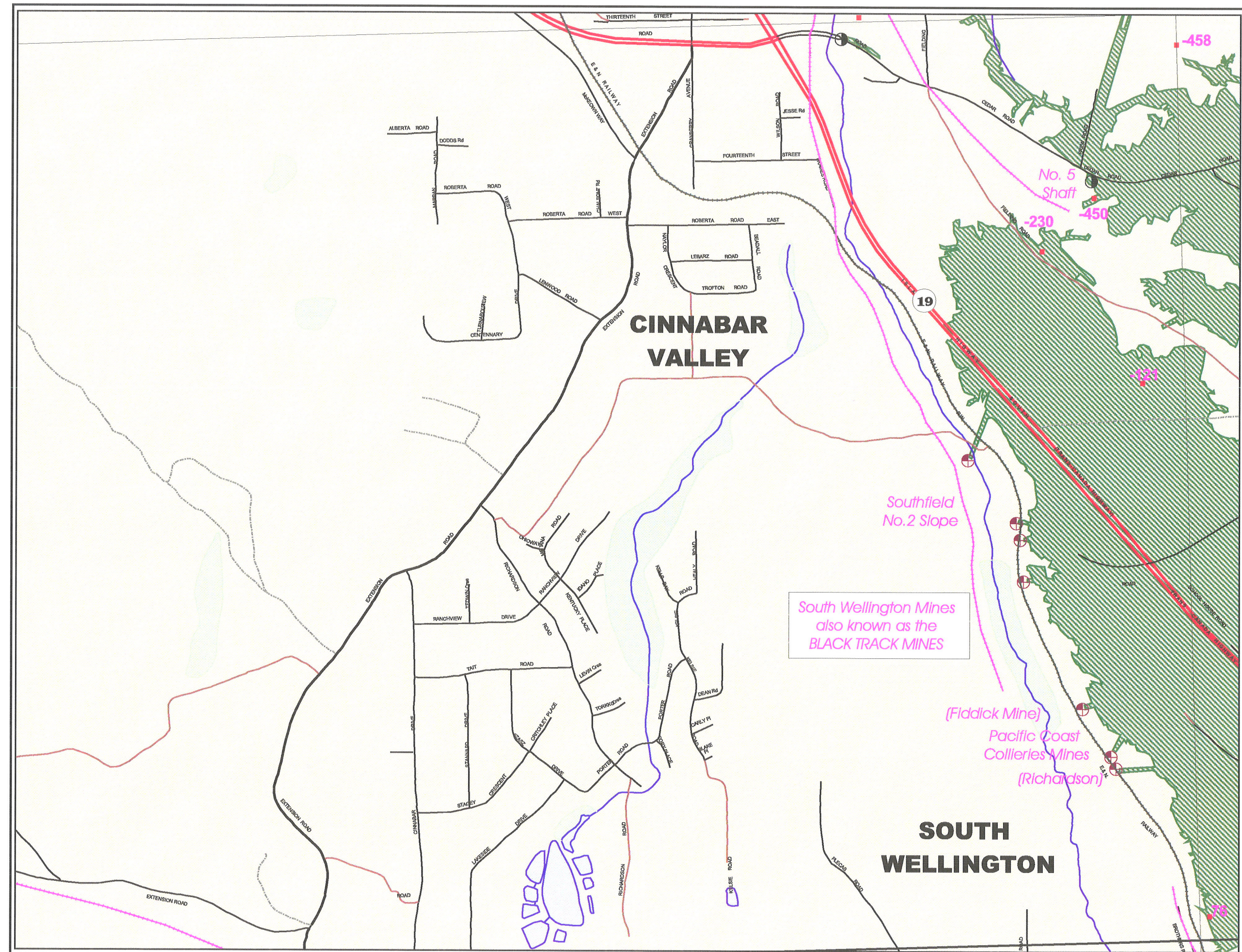
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South Wellington Mines
also known as the
BLACK TRACK MINES

(Fiddick Mine)
Pacific Coast
Collieries Mines
(Richardson)

SOUTH WELLINGTON

Coal Mine Underground Workings

Legend

- Roads**
- Dirt Road
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 - Roads
 - Rough Road
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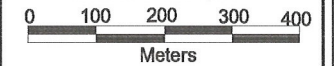
- Lower Workings**
- Underground Coal Mine Workings
- Upper Workings**
- Underground Coal Mine Workings
 - Overlapping Workings

- Shafts**
- Entrance (Shaft)
 - Entrance (Slope)
- Spot Depth (Feet)
Datum of Elevations:
Geodetic B.M.'s
- Old Railway Routes

Map 15



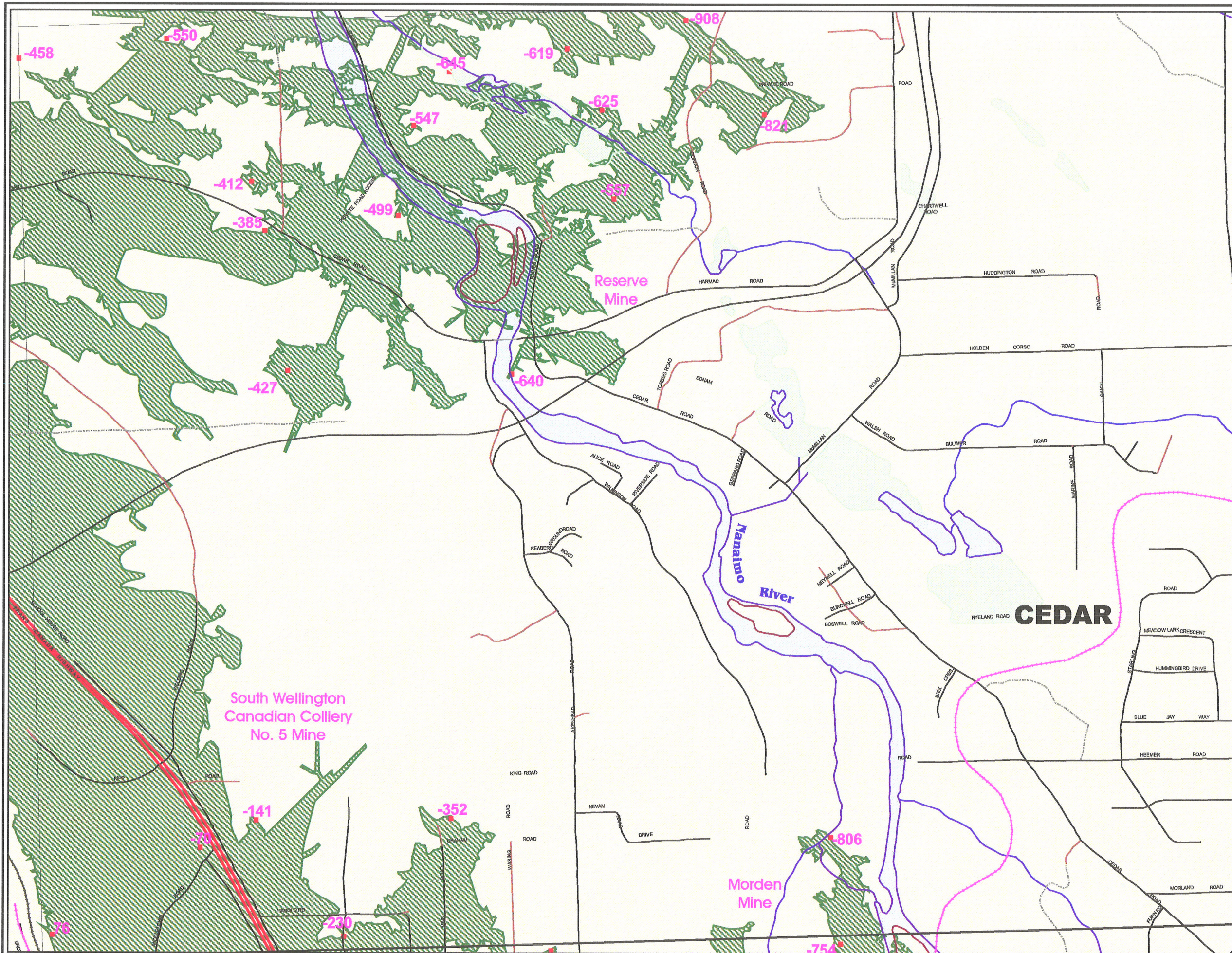
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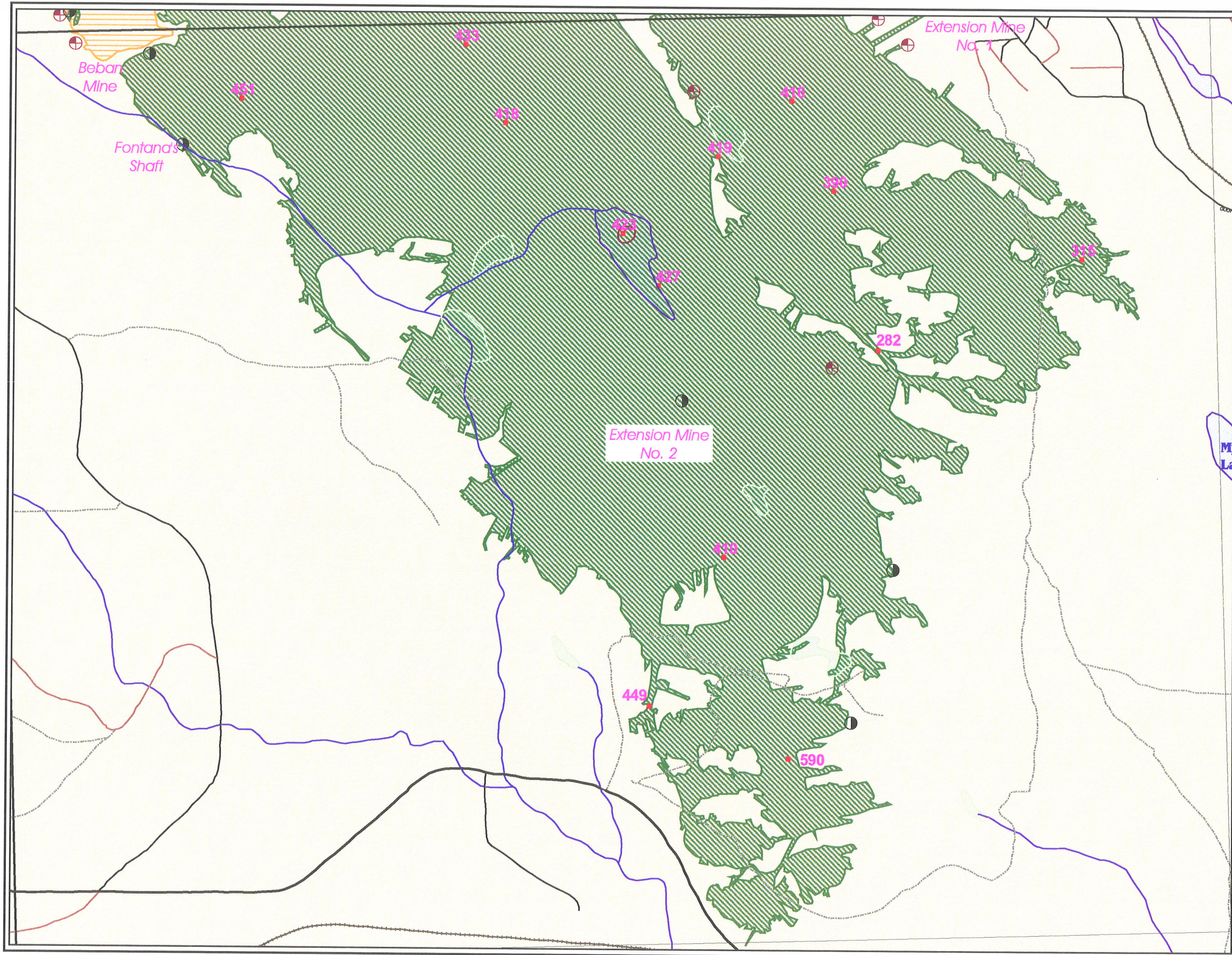


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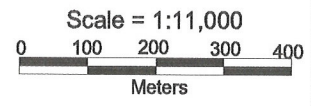


Coal Mine Underground Workings

Legend

- Roads**
 - Dirt Road
 - Highway
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- Shafts**
 - Entrance (Shaft)
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Datum of Elevations: Geodetic B.M.'s
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Map 16



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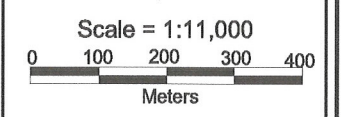
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Coal Mine Underground Workings

Legend

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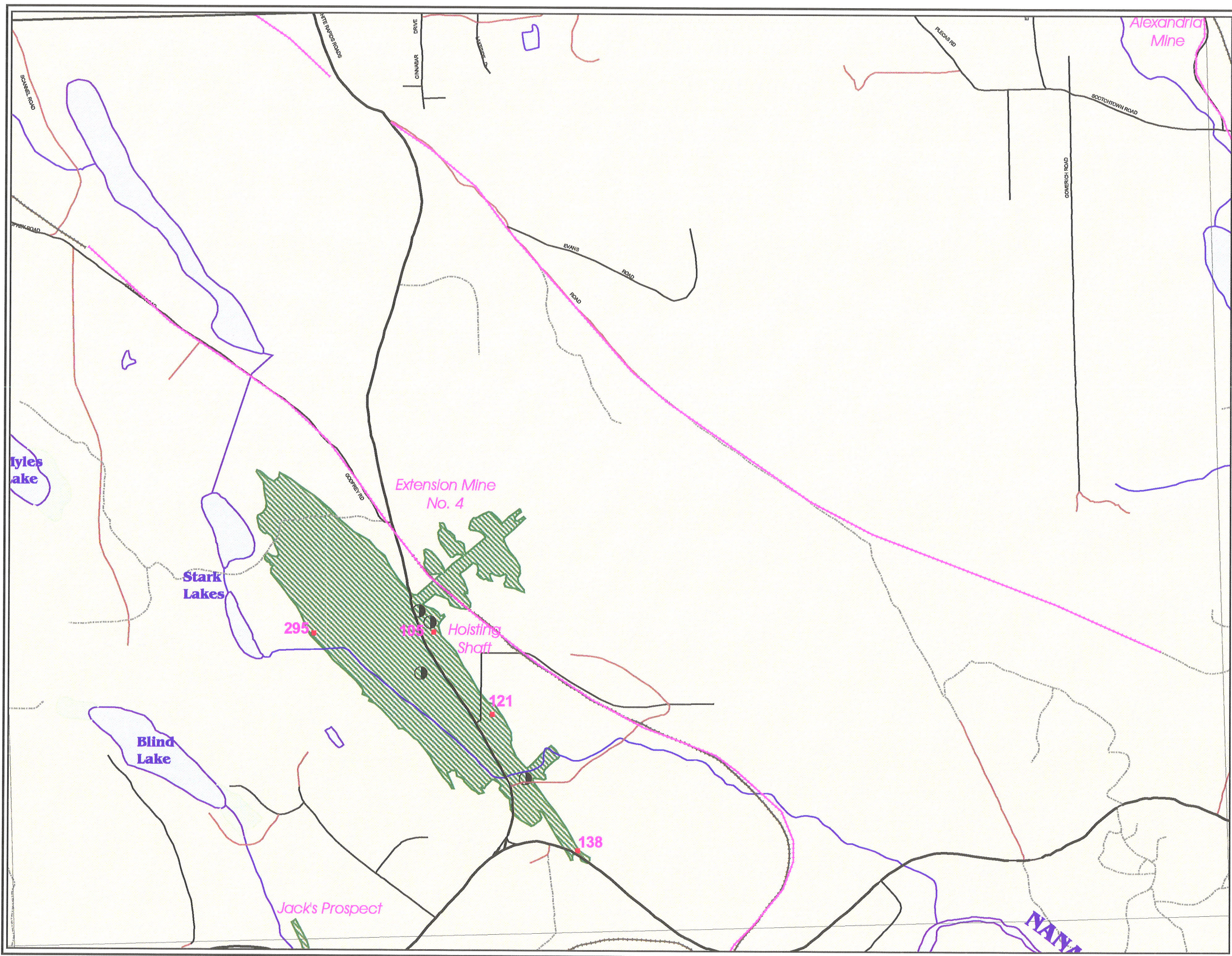
Map 17



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Coal Mine Underground Workings

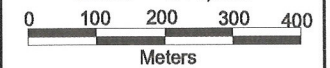
Legend

- Roads**
- Dirt Road
 - Highway
 - Landmarks (Bridge, Tunnel)
 - Main Roads
 - E & N Railway
 - Roads
 - Rough Road
 - Transportation (Airport, Ferry)
- Planimetric Features**
- Mapsheet Boundary
 - Coastline
 - Rivers
 - Wetlands
 - Water Features
- Lower Workings**
- Underground Coal Mine Workings
- Upper Workings**
- Underground Coal Mine Workings
 - Overlapping Workings
- Shafts**
- Entrance (Shaft)
 - Entrance (Slope)
- Spot Depth (Feet)**
Datum of Elevations: Geodetic B.M.'s
- 239
 - Old Railway Routes

Map 18



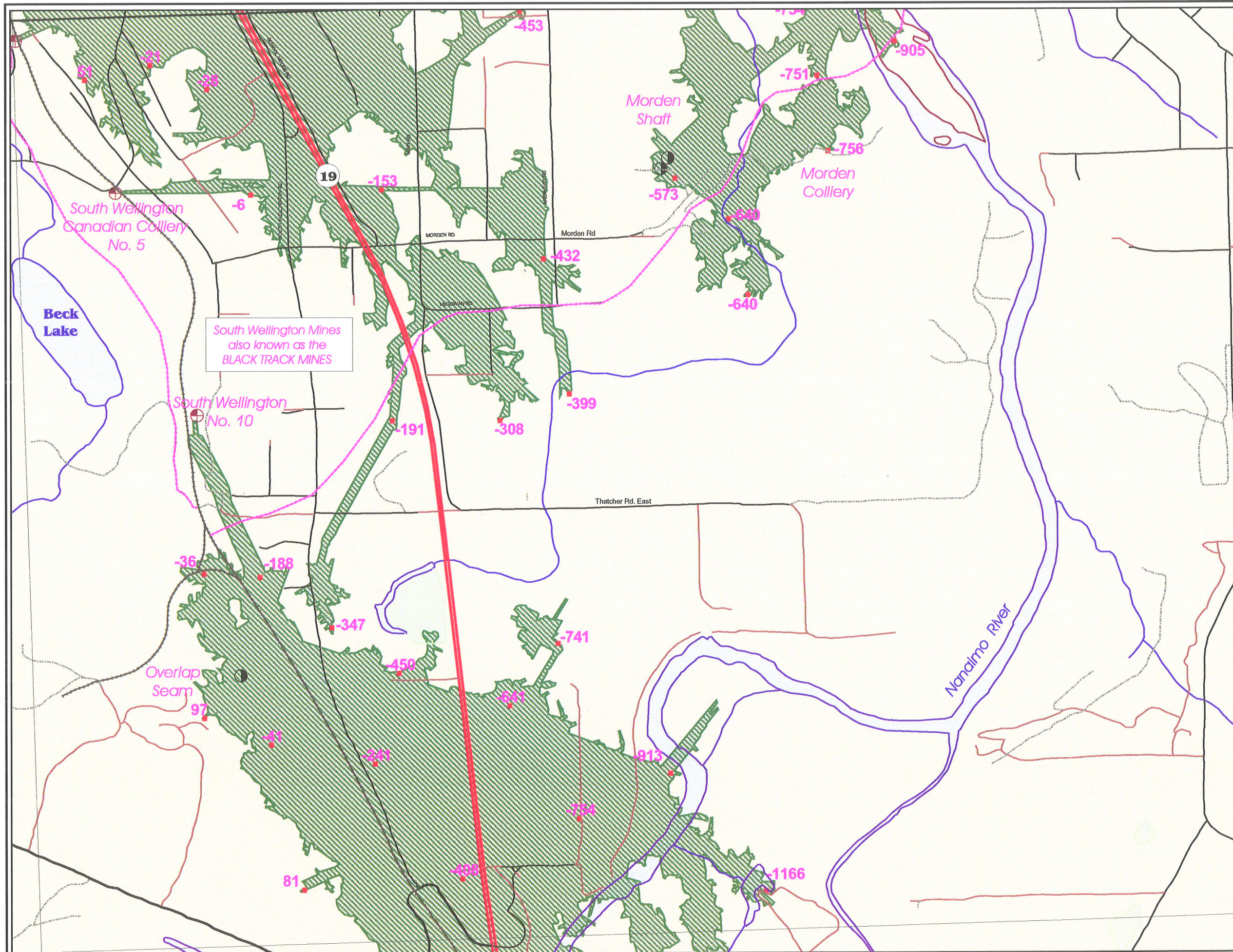
Scale = 1:11,000



The Mining Data is taken from several old data sources. Due to the lack of access to the mines and the possibility of unrecorded workings, the actual locations of the mine workings cannot be confirmed. This data is intended as a 'Guide' only and no responsibility relating to the locations of the mine workings can be accepted.

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Coal Mine Underground Workings

Legend

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 -239
 Datum of Elevations:
 Geodetic B.M.'s
- Old Railway Routes

Map 19



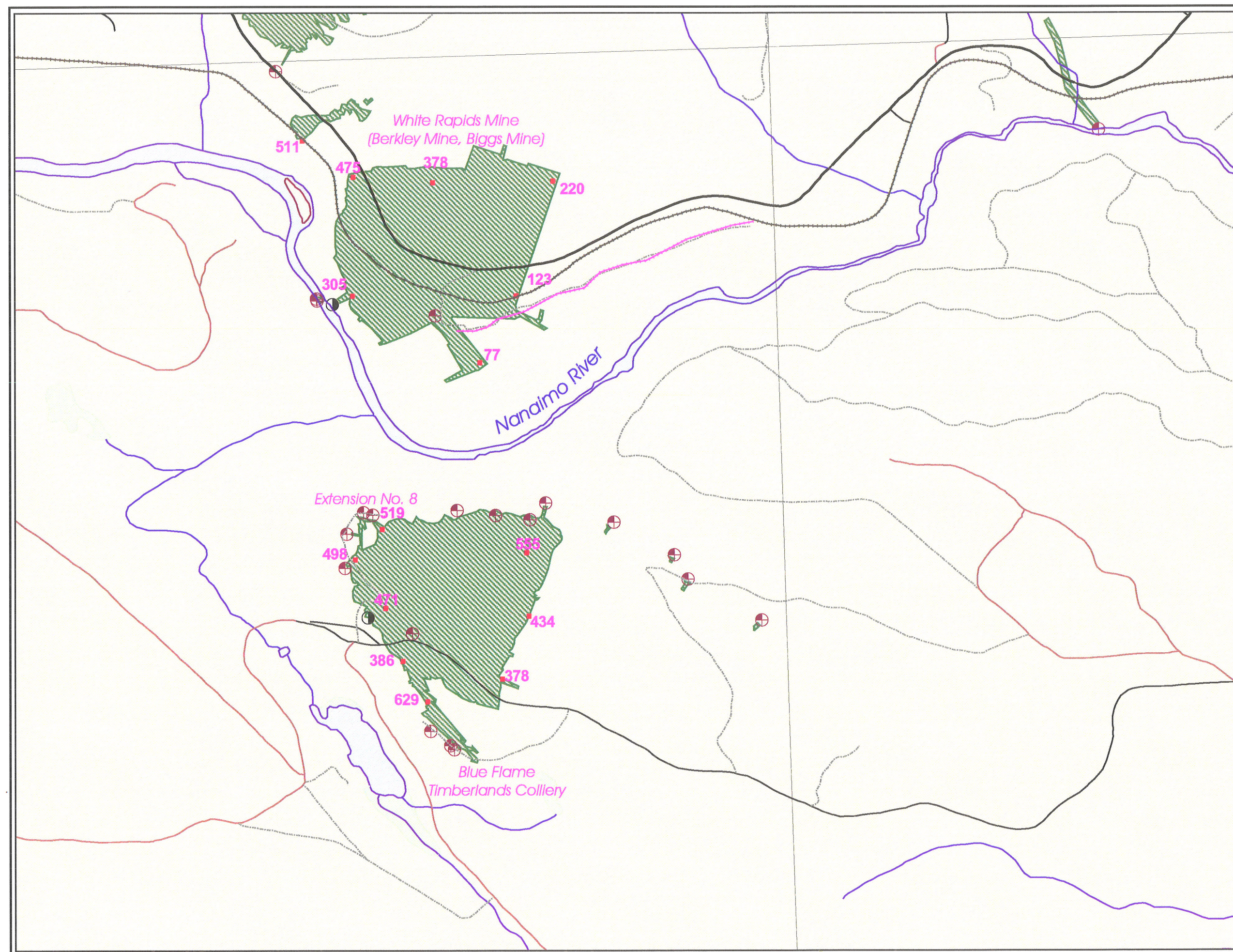
Scale = 1:11,000

Meters

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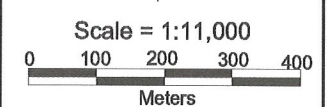


Coal Mine Underground Workings

Legend

- Roads**
- Dirt Road
 - Highway
 - Landmarks (Bridge, Tunnel)
 - Main Roads
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 - Roads
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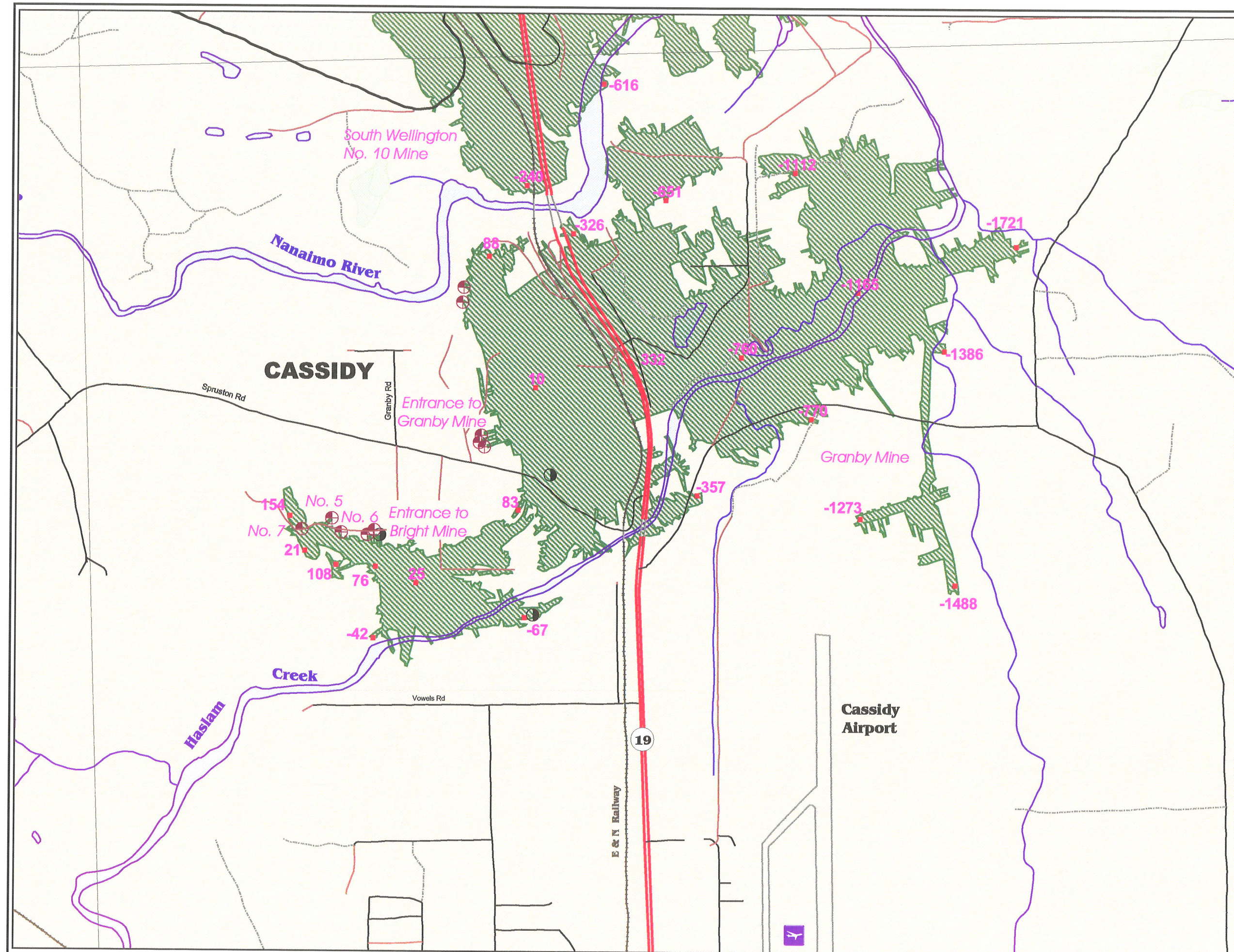
Map 20

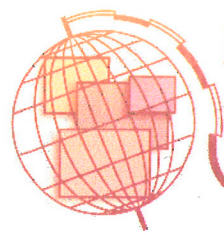


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Pacific Spatial Systems Ltd.

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Est 1988

Providing Digital Map Products and Information System Solutions

Pacific Spatial Systems Ltd. has been in business since 1988 with a qualified production and programming staff who are leaders in innovative system integration. We have the most experience in environmental mapping and ARC/INFO Geographic Information Systems consulting on the west coast of Canada.

We offer our expertise in information management systems, intergrating your existing data into a geographically driven management system.

Our staff uses innovative quality assurance tools to ensure high accuracy in our products . Some of the many services we offer include:

ESRI Arc/Info: NT, Unix and PC Arc/info GIS technical programming

Environmental data analysis / spatial modeling

Population modeling and hydrographic modeling

Airphoto / Remote Sensing GIS

Custom application programming

ARCVIEW application development

Data conversion & capture

Map production

Digital terrain modeling

Project Management, training & ongoing support

We pride ourselves on our ability to understand client's requirements and rely on our many years and wide range of experience to help each client achieve continued success. We provide high quality products that are completed on time and on budget.

Shari Lindsay, AScT
President

Pacific Spatial Systems Ltd
P.O. Box 233
Nanaimo, B.C. V9R 5K9

Mapping Services

- ▶ Composite map production from multiple sources
- ▶ Custom maps to meet client's needs using innovative map production tools
- ▶ Forest Development Plan mapping (Forest Practices Code), inventory
- ▶ Urban, Hydrological, Fishery Habitat, VRI, TEM, BEI

Environmental Analysis /

Spatial Modelling

- ▶ Technical spatial/conventional
- ▶ Demographic/urban geographic
- ▶ Innovative environmental GIS
- Forestry, Ecosystem, Hydrology, Timber, Perspective Views / Visibility Analysis

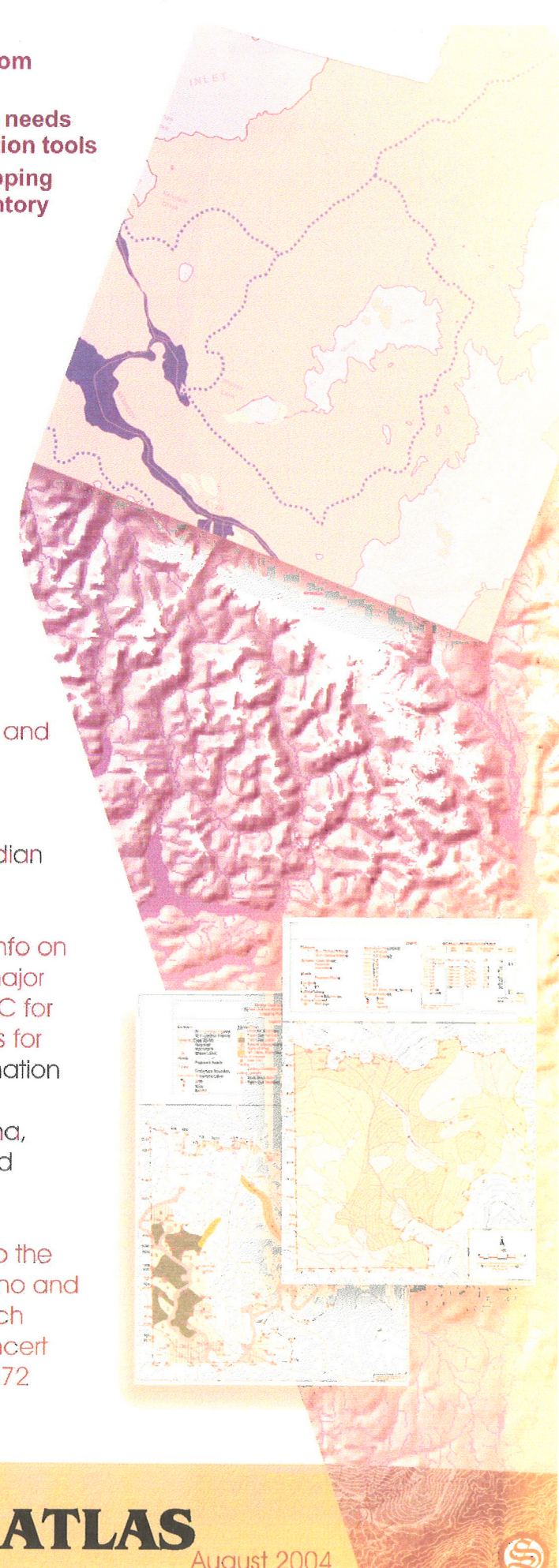
Shari Lindsay, AScT

Born and raised in Nanaimo Shari combined her interest in history and her expertise in GIS to compile and produce the Coal Mine Underground Workings Atlas.

Shari has recently been nominated for a national "Rotman Canadian Woman Entrepreneur of the Year Award."

In 1986 Shari was one of the first GIS technicians to work with Arc/Info on the west coast of Canada. She has been involved with several major GIS projects that include the 1:50,000 Digital Watershed Atlas of BC for the Ministry of Environment, the Emergency Response Oil Spill Atlas for the Southern & Northern Strait of Georgia for the Land Use Coordination Office, Digital Atlases (georeferenced cadastral linework) for The Regional District of Nanaimo, Regional District of Comox/Strathcona, Regional District of Alberni-Clayoquot and French Creek Watershed Assessment.

Her interest in local history began when she was a child listening to the stories told by her grandfather who was born and raised in Nanaimo and who has seen the many historical changes in town. Shari's research experience includes her position as historian for the Nanaimo Concert Band since 1982. The Nanaimo Concert Band was established 1872 and is the oldest continuous operating concert band in Canada.



Coal Mine Underground Workings ATLAS

August 2004

