

Quarterly Oil and Gas Water Management Summary



Fourth Quarter 2020 (Oct - Dec)



PURPOSE

This *Quarterly Oil and Gas Water Management Summary* presents short-term water use and water licence data from the Q4 October to December 2020 period.

Previous annual water use reports and quarterly water management summaries are available on the BC Oil and Gas Commission website at www.bcogc.ca.

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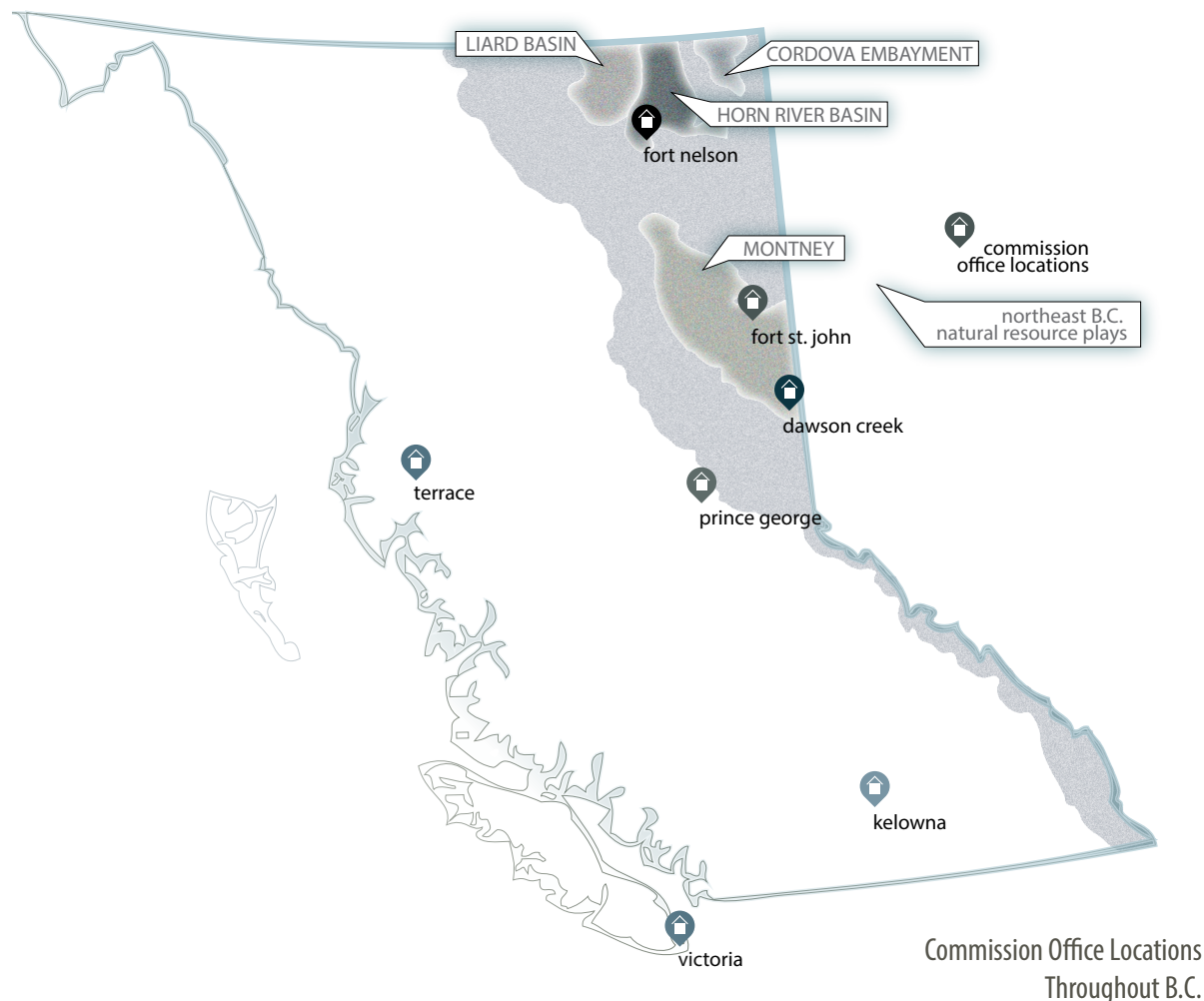
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BC OIL AND GAS COMMISSION

The [BC Oil and Gas Commission](#) (Commission) is the provincial regulatory agency with responsibilities for regulating oil and gas activities in British Columbia, including exploration, development, pipeline transportation and reclamation.

The Commission's core services include reviewing and assessing applications for industry activity, consulting with First Nations, cooperating with partner agencies, and ensuring industry complies with provincial legislation and all regulatory requirements. The public interest is protected by ensuring public safety, respecting those affected by oil and gas activities, conserving the environment, and ensuring equitable participation in production.

The Commission is responsible for reviewing, assessing, and making decisions on water authorizations from both surface and subsurface water sources. The Commission has the expertise and tools to make informed water allocation decisions, and protecting and maintaining environmental and community water needs are its first priorities.



HOW WATER IS USED

Water is used for various purposes in the oil and gas industry.



The largest use of water for oil and gas activities is for hydraulic fracturing.

However, water is used for other purposes, such as:



Seismic or geophysical exploration



Drilling



Machine washing



Dust control



Water floods (to enhance oil recovery)



Ice road freezing



Hydrostatic testing of pipelines

HOW WATER IS ACCESSED

There are different ways the oil and gas industry may access water in British Columbia. Some methods are managed through provincial legislation, including:

- **Water licences** issued under the Water Sustainability Act (WSA) for surface and groundwater. The Commission has staff designated as Regional Water Managers with authority for issuing and administering long-term water licences.
- **Short-term surface water use or diversion approvals** issued under Section 10 of the WSA. Short-term water use is administered by the Commission.
- **Water source wells** authorized by the Commission under the Oil and Gas Activities Act (OGAA). Water source wells are a specific type of well where the water withdrawn is intended for injection into an underground formation to enhance oil or natural gas recovery.
- **Flowback water** that returns to the surface after being injected for hydraulic fracturing.
- **Produced water** that flows to the surface as a by-product of oil and gas production.

The oil and gas industry can access water by means outside of regulatory oversight:



- **Private agreements** can be made with land owners or others who have a source of surface water supply such as a dugout or a groundwater well. In some cases, private agreements may require a Waterworks water licence under the WSA.

SHORT-TERM WATER APPROVAL AND USE

During October to December of 2020, there were 370 short-term water use approvals in place, representing 957 withdrawal locations, held by 45 companies (Table 1).

The total water volume associated with short-term approvals active on the last day of the fourth quarter was 19,361,870 m³.

A total of 712,308 m³ was reported as withdrawn by oil and gas operators in 2020.

TABLE 1 - SUMMARY OF SHORT-TERM APPROVAL AND USE FOR OIL AND GAS ACTIVITIES FROM JANUARY TO DECEMBER 2020

	Q1	Q2	Q3	Q4
SHORT-TERM				
Companies with Active Approvals	49	44	44	45
Active Approvals	254	273	305	370
Approved Withdrawal Locations	734	768	815	957
Volume Available for Use (m ³)	13,053,459	14,404,277	15,891,446	19,361,870
Cumulative Volume Reported Withdrawn (m ³)	192,708	314,524	533,934	712,308

A break-down of short-term water approval and use by OGC Water Management Basin is listed in Table 4.

LONG-TERM WATER LICENCES AND USE

In the fourth quarter of 2020, there were 98 active oil and gas related water licences, representing 103 withdrawal locations, held by 26 companies (Table 2).

The total annual volume available for use for water licences was 32,427,435 m³.

A total of 3,531,423 m³ of licenced water was reported withdrawn in 2020. Companies with active licences in Q4 are listed in Table 3.

TABLE 2 - SUMMARY OF WATER LICENCE AND USE FOR OIL AND GAS ACTIVITIES FROM JANUARY TO DECEMBER 2020

	Q1	Q2	Q3	Q4
WATER LICENCE				
Companies with Active Water Licences	23	26	29	26
Active Water Licences	90	95	98	98
Licensed Withdrawal Locations	95	100	103	103
Annual Volume Available for Use for Water Licences (m ³)	30,383,754	30,687,608	31,247,345	32,427,435
Cumulative Volume Reported Withdrawn (m ³)	623,394	*1,629,837	*2,666,243	3,531,423

A break-down of water licence allocation and use by OGC Water Management Basin is listed in Table 4.

*Totals updated in Q4 due to delayed reporting.

TABLE 3: OIL AND GAS RELATED WATER LICENCES THAT WITHDREW WATER FROM OCTOBER TO DECEMBER 2020

LICENCE #	LICENCEE	SOURCE	OGC WATER MGMT BASIN	ANNUAL APPROVAL (m³/YR)	2020 WATER USE (m³/YR)
C112155	Whitecap Resources Inc.	Peace River	Lower Peace River	1,825,000	160,057
C132688	Canadian Natural Resources Ltd (CNRL)	Charlie Lake	Lower Beaton River	394,000	1,186
C133847	Petronas Energy Canada	Unnamed Aquifer	Cameron River	7,374	100
C134093	Petronas Energy Canada	Grewatsch Creek Tributary	Upper Beaton River	54,368	269
C134104	Petronas Energy Canada	Unnamed Stream	Lower Halfway River	50,235	404
C134110	Petronas Energy Canada	Unnamed Stream	Cameron River	79,045	900
C134283	Ovintiv Canada ULC	Kiskatinaw River	Lower Kiskatinaw River	1,000,000	307,036
C134469	ConocoPhillips Canada	Halfway River	Lower Halfway River	3,650,000	162,241
C134471	Petronas Energy Canada	Sikanni Chief River	Upper Sikanni Chief	2,993,000	109,800
C500172	Tervita Corporation	Aquifer 634	Lower Peace River	36,500	1,200
C500226	Veresen Energy Pipeline	Aquifer 621	Smoky River	5,500	1,059
C500335	Petronas Energy Canada	FSJ Aquifer	Upper Beaton River	13,670	5,309
C500345	Ovintiv Canada ULC	Unnamed Stream	Lower Kiskatinaw River	102,100	89,243
C501120	Canlin Energy Corp.	FSJ Aquifer	Upper Beaton River	1,825	55
C501773	Black Swan Energy Ltd.	FSJ Aquifer	Upper Beaton River	19,710	1,437
C501791	CNRL	Aquifer 931	Milligan Creek	36,500	3,077
C501793	CNRL	Aquifer 931	Milligan Creek	36,500	3,008
C501794	CNRL	Aquifer 931	Milligan Creek	51,100	3,889
C501797	CNRL	Aquifer 931	Milligan Creek	23,725	3,077
C501865	Boundry Lake Sand & Gravel	FSJ Unconsolidated	Lower Peace River	10,950	163
C502134	Petronas Energy Canada	FSJ Unconsolidated	Cameron River	4,015	487
C502277	Peaceland Farm Ltd.	Aquifer 908	Lower Halfway River	360,000	3,449
C502452	CNRL	FSJ Aquifer	Kahntah River	3,650	88
C502455	CNRL	Dawson Creek Aquifer	Smoky River	1,095	89
C502462	CNRL	FSJ Aquifer	Kahntah River	7,300	697
C502467	CNRL	FSJ Aquifer	Upper Beaton River	3,650	56
C502795	CNRL	Aquifer 451	Blueberry River	3,650	264
C502900	Pineview Trucking and Excavating Ltd.	Unconsolidated Aquifer	Parsnip River (Outside NEBC)	98,550	6,533

TABLE 4 - SUMMARY OF WATER ALLOCATION
AND USE FOR OIL AND GAS ACTIVITIES IN 2020,
ORGANIZED BY OGC WATER MANAGEMENT BASIN
(Page 1 of 4)

MAJOR and Sub-Basin Name	OIL AND GAS RELATED SHORT-TERM WATER USE APPROVALS - SECTION 10					OIL AND GAS RELATED WATER LICENCES - SECTION 9					
	NUMBER OF WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m³)	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2020 (m³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m³)	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2020 (m³)	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m³)
BEATTON RIVER (sub-basin of Peace River)											
Upper Beatton River	21	365,110	0.073%	46,283	0.009%	18	2,105,519	0.422%	59,865	0.012%	499,408,440
Middle Beatton River	18	259,396	0.104%	5,580	0.002%	1	1,095	0.000%	60	0.000%	249,152,995
Middle Beatton Total (incl. Upper Beatton)	39	624,506	0.083%	51,863	0.007%	19	2,106,614	0.281%	59,925	0.008%	748,561,435
Milligan Creek	15	123,550	0.065%	2,380	0.001%	6	235,425	0.123%	52,864	0.028%	191,536,686
Blueberry River	41	1,004,506	0.343%	80,151	0.027%	3	195,275	0.067%	1,077	0.000%	293,278,540
Doig River	9	91,000	0.028%	954	0.000%	1	51,100	0.016%	0	0.000%	323,069,523
Lower Beatton River	25	155,738	0.113%	1,350	0.001%	1	394,000	0.285%	9,193	0.007%	138,262,629
BEATTON TOTAL	129	1,999,300	0.118%	136,698	0.008%	30	2,986,414	0.176%	123,059	0.007%	1,694,708,813
HALFWAY RIVER (sub-basin of Peace River)											
Chowade River	0					0					327,027,527
Upper Halfway River	0					1	72,000	0.009%	0	0.000%	795,962,409
Upper Halfway Total (includes Chowade)	0	0	0.000%	0	0.000%	1	72,000	0.006%	0	0.000%	1,122,989,936
Graham River	1	2,400	0.000%	0	0.000%	0					860,627,172
Cameron River	44	1,215,696	0.543%	116,346	0.052%	18	961,919	0.430%	72,589	0.032%	223,679,567
Lower Halfway River	8	842,595	0.556%	7,582	0.005%	9	5,448,688	3.596%	1,027,988	0.678%	151,526,991
HALFWAY TOTAL	53	2,060,691	0.087%	123,928	0.005%	28	6,482,607	0.275%	1,100,577	0.047%	2,358,823,666
MOBERLY RIVER (sub-basin of Peace River)											
Moberly River	0	0	0.000%	1,101	0.000%	0					391,714,995
MOBERLY TOTAL	0	0	0.000%	1,101	0.000%	0	0	0.000%	0	0.000%	391,714,995
PINE RIVER (sub-basin of Peace River)											
Burnt River	1	39,000	0.005%	0	0.000%	0					737,930,022
Sukunka River	12	289,000	0.028%	572	0.000%	0					1,047,282,572
Sukunka River Total (includes Burnt)	13	328,000	0.018%	572	0.000%	0	0	0.000%	0	0.000%	1,785,212,594
Upper Pine River	1	18,000	0.001%	0		0					1,466,884,035
Murray River	9	223,850	0.008%	6,146	0.000%	1	5,475	0.000%	779	0.000%	2,698,285,017
Lower Pine River	26	544,510	0.396%	89,135	0.065%	1	650,000	0.472%	101,813	0.074%	137,619,889
PINE TOTAL	49	1,114,360	0.018%	95,853	0.002%	2	655,475	0.011%	102,592	0.002%	6,088,001,535

OIL AND GAS RELATED SHORT-TERM WATER USE APPROVALS - SECTION 10

OIL AND GAS RELATED WATER LICENCES - SECTION 9

MAJOR and Sub-Basin Name	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m³)	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2020 (m³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m³)	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2020 (m³)	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m³)
KISKATINAW RIVER (sub-basin of Peace River)											
West Kiskatinaw River	0					0					117,515,115
East Kiskatinaw River	0					0					105,452,962
Middle Kiskatinaw River	9	147,846	0.262%	2,533	0.004%	1	600,000	1.065%	0	0.000%	56,347,972
Middle Kiskatinaw Total (incl. West & East)	9	147,846	0.053%	2,533	0.001%	1	600,000	0.215%	0	0.000%	279,316,049
Lower Kiskatinaw River	38	1,344,569	1.500%	13,411	0.015%	9	2,948,317	3.288%	811,499	0.905%	89,659,847
KISKATINAW TOTAL	47	1,492,415	0.404%	15,944	0.004%	10	3,548,317	0.962%	811,499	0.220%	368,975,896
PEACE RIVER											
Peace Arm	0					3	9,125,000	N/A	36,154	N/A	N/A
Upper Peace River	3	762,000	0.002%	0	0.000%	0					36,423,413,429
Lynx Creek	1	4,000	0.013%	0	0.000%	0					30,436,635
Farrell Creek	6	324,412	0.356%	65,097	0.072%	0					91,018,843
Cache Creek	8	106,120	0.142%	544	0.001%	5	577,230	0.774%	108,268	0.145%	74,603,546
Pouce Coupe River	24	850,864	0.333%	48,482	0.019%	4	1,650,200	0.645%	66,131	0.026%	255,686,202
Lower Peace River	17	813,516	0.711%	48,724	0.043%	8	4,204,919	3.673%	716,122	0.626%	114,470,012
PEACE TOTAL (incl. Kisk/Pine/Moberly/Half/Beatton)	337	9,527,678	0.020%	536,371	0.001%	90	29,226,162	0.061%	3,064,402	0.006%	47,891,853,572
SMOKY RIVER											
Smoky River	3	9,000	0.000%	0	0.000%	2	6,595	0.000%	5,212	0.000%	2,669,506,123
SMOKY TOTAL	3	9,000	0.000%	0	0.000%	2	6,595	0.000%	5,212	0.000%	2,669,506,123
MUSKWA RIVER (sub-basin of Fort Nelson River)											
Upper Muskwa River	0					0					1,725,201,511
Middle Muskwa River	0					0					1,973,711,816
Middle Muskwa Total (incl. Upper Muskwa)	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	3,698,913,327
Lower Muskwa River	0					0					646,841,560
MUSKWA TOTAL	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	4,345,754,887
PROPHET RIVER (sub-basin of Fort Nelson River)											
Upper Prophet River	2	1,500	0.000%	176	0.000%	1	36,593	0.002%	0	0.000%	1,470,271,289
Middle Prophet River	6	31,200	0.005%	242	0.000%	0					621,428,680
Middle Prophet Total (incl. Upper Prophet)	8	32,700	0.002%	418	0.000%	1	36,593	0.002%	0	0.000%	2,091,699,969
Lower Prophet River	1	3,900	0.001%	0	0.000%	0					272,262,427
PROPHET TOTAL	9	36,600	0.002%	418	0.000%	1	36,593	0.002%	0	0.000%	2,363,962,396

OIL AND GAS RELATED SHORT-TERM WATER USE APPROVALS - SECTION 10						OIL AND GAS RELATED WATER LICENCES - SECTION 9					
MAJOR and Sub-Basin Name	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m³)	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2020 (m³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m³)	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2020 (m³)	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m³)
SIKANNI CHIEF RIVER (sub-basin of Fort Nelson River)											
Upper Sikanni Chief River	4	50,000	0.006%	0	0.000%	3	3,117,689	0.386%	442,061	0.055%	807,771,692
Middle Sikanni Chief River	25	337,473	0.036%	6,500	0.001%	4	29,203	0.003%	300	0.000%	949,755,794
Middle Sikanni Chief Total (incl. Upper Sikanni)	29	387,473	0.022%	6,500	0.000%	7	3,146,892	0.179%	442,361	0.025%	1,757,527,486
Lower Sikanni Chief	24	199,480	0.023%	16,122	0.002%	0					875,678,142
SIKANNI CHIEF TOTAL	53	586,953	0.022%	22,622	0.001%	7	3,146,892	0.120%	442,361	0.017%	2,633,205,628
FORT NELSON RIVER											
Kahntah River	31	178,248	0.044%	3,000	0.001%	2	10,950	0.003%	3,544	0.001%	400,582,903
Fontas River	4	27,200	0.005%	3,915	0.001%	0					591,531,903
Fontas Total (includes Kahntah)	35	205,448	0.021%	6,915	0.001%	2	10,950	0.001%	3,544	0.000%	992,114,806
Klua Creek	0					0					402,135,448
Upper Fort Nelson River	0					0					276,181,026
Upper Fort Nelson Total (incl. Sikanni Chief Total, Kahntah, Fontas, Klua)	88	792,401	0.018%	29,537	0.001%	9	3,157,842	0.073%	445,905	0.010%	4,303,636,908
Snake River	0					0					310,763,522
Sahtaneh River	9	35,700	0.008%	1,324	0.000%	0					474,904,729
Middle Fort Nelson River	8	45,230	0.009%	5,121	0.001%	0					515,348,901
Middle Ft Nelson Total (incl. Upper Ft. Nelson total, Muskwa Total, Prophet Total, Snake, Sahtaneh)	114	909,931	0.007%	36,400	0.000%	10	3,194,435	0.026%	445,905	0.004%	12,314,371,343
Kiwigana River	21	179,400	0.041%	1,436	0.000%	0					441,657,543
Lower Fort Nelson River	0	0	0.000%	896	0.000%	0					312,768,938
FORT NELSON TOTAL	135	1,089,331	0.008%	38,732	0.000%	10	3,194,435	0.024%	445,905	0.003%	13,068,797,824
LIARD RIVER											
Muncho River	0					0					551,551,360
Upper Liard River	0					0					33,125,817,465
Upper Liard Total (incl. Muncho)	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	33,677,368,825
Grayling River	0					0					630,833,914
Upper Toad River	0					0					1,521,055,576
Racing River	0					0					1,488,336,681
Lower Toad River	0					0					419,472,722
Beaver River	0					0					10,862,659,426
Middle Liard River	0					0					463,652,312

OIL AND GAS RELATED SHORT-TERM WATER USE APPROVALS - SECTION 10						OIL AND GAS RELATED WATER LICENCES - SECTION 9					
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LIARD RIVER con't											
Middle Liard Total (incl. Upper Liard Total, Grayling, Upper Toad, Racing, Lower Toad, Beaver)	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	49,063,379,456
Capot-Blanc Creek	0	0	0.000%	280	0.000%	0					183,879,851
Dunedin River	0					0					820,464,167
Lower Liard River	4	52,000	0.004%	11,975	0.001%	0					1,236,634,664
LIARD TOTAL (incl. Fort Nelson)	139	1,141,331	0.002%	50,987	0.000%	10	3,194,435	0.005%	445,905	0.001%	64,373,155,962
PETITOT RIVER											
Sahdoanah River	25	75,200	0.030%	3,090	0.001%	0					252,625,362
Upper Petitot River	35	53,200	0.004%	0	0.000%	0					1,476,579,488
Tsea River	27	178,234	0.041%	549	0.000%	0					434,062,484
Middle Petitot River	20	76,700	0.011%	0	0.000%	0					698,562,753
Middle Petitot Total (incl. Sahdoanah, Upper Petitot, Tsea)	107	383,334	0.013%	3,639	0.000%	0	0	0.000%	0	0.000%	2,861,830,087
Lower Petitot River	30	428,400	0.047%	7,848	0.001%	0					904,314,069
PETITOT TOTAL	137	811,734	0.022%	11,487	0.000%	0	0	0.000%	0	0.000%	3,766,144,156
HAY RIVER											
Upper Kotcho River	0					0					311,519,217
Kyklo River	2	26,720	0.018%	3,523	0.002%	0					145,897,691
Shekilie River	35	332,100	0.074%	120	0.000%	0					450,747,494
Lower Kotcho River	3	14,400	0.005%	2,221	0.001%	0					311,519,217
Lower Kotcho Total (includes Upper Kotcho, Kyklo, Shekilie)	40	373,220	0.031%	5,864	0.000%	0	0	0.000%	0	0.000%	1,219,683,619
Hay River	28	212,300	0.039%	9,444	0.002%	0					538,672,352
HAY TOTAL	68	585,520	0.033%	15,308	0.001%	0	0	0.000%	0	0.000%	1,758,355,971
CHINCHAGA RIVER											
Chinchaga River	41	279,100	0.255%	773	0.001%	0					109,492,680
CHINCHAGA TOTAL	41	279,100	0.255%	773	0.001%	0	0	0.000%	0	0.000%	109,492,680
OTHER (outside Northeast B.C.)	236	7,007,507	N/A	97,382	N/A	1	243	N/A	15,904	N/A	N/A
GRAND TOTAL	961	19,361,870	0.016%	712,308	0.001%	103	32,427,435	0.027%	3,531,423	0.003%	120,568,508,464



Previous annual water reports and quarterly updates
are available on the Commission's website at:

<https://www.bcogc.ca/data-reports>.

For specific questions or enquiries
regarding this data, please contact:

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