Indian and Northern Affairs

Affaires indiennes irs et du Nord

P.O. Box 100 Iqaluit, NWT XOA OHO

December 4, 1992

Mrs. Lizzie Pallituq Senior Administrative Officer Hamlet of Clyde River Clyde River, NWT XOA OEO

Dear Mrs Pallituq;

Re: Water Management

Hamlet of Clyde River, NWT

Inspection Report - 23 July, 1992

Vour frie Votre reference

Our file Notire reference DEC 1 0 1992

B9545-5-C97

- 1. Please find the above noted report by Mr. Paul Smith, Water Resources Officer.
- 2. The inspection report has identified a number of concerns which you will wish to note please refer to paragraph 14 of the report.
- 3. The results of the water samples taken are included. No concerns are noted with water quality.
- 4. Please find enclosed a bilingual (Inuktitut/English) explanation of the parameters tested.
- 5. Please feel free to contact our District Office if you have any questions or comments on this report.

Sincerely,

J.M.A. Theriault District Manager Baffin District

cc: Municipal Co-ordinator
Water Resources

DIAND NAP/NWT Region

INSPECTION REPORT

WATER MANAGEMENT

HAMLET OF CLYDE RIVER

13 AUGUST 1992

BY

PAUL SMITH

INSPECTOR UNDER THE NORTHERN INLAND WATERS ACT

NORTHERN AFFAIRS PROGRAM

IQALUIT, NWT

DATE: 17 SEPTEMBER 1992
WATER REGISTER: N/A - UNLICENCED
COMMUNITY

INSPECTION REPORT

Water Supply

1. Water is pumped exclusively from the west side of the water lake, 1 km NW of the community. No concerns were noted at the truck fill point.

Waste Disposal

Sewage

- 2. Sewage continues to be disposed of at the old dump site. This area is littered with sewage bags and much other garbage from the exposed face of the abandoned dump. It will take considerable work to restore this site when the new lagoon is operational.
- 3. The new sewage lagoon under construction at the current waste disposal site will measure 100 \times 64 m. The lagoon is built on clay soil, and will not let water drain through the bottom of the lagoon, so a culvert will be installed at the opposite end of the lagoon to prevent overflow.

Domestic

- 4. This site is well maintained. It is burned and well covered with gravel. The ground was wet in areas, but there was not sufficient leachate for a sample to be collected.
- 5. The abandoned dump site 500 m NE of town exists in the same state as at the time of the last inspection. The exception is that many of the drums have been crushed. Several drums remained uncrushed. Mr. Arreak said that they were full of ice when the crusher was available. The crushed drums will eventually be moved down to the sealift beach.

Waste Metal

- 6. Old vehicles and larger scrap are kept separate and spaced well away from the domestic dump.
- 7. Most of the drums from the drum crushing program are now stacked at the sealift beach. There are several hundred of these barrels. There are also a large number of uncrushed drums on the beach.

Waste Oil

8. An area at the waste disposal site has been designated as waste oil storage and several barrels of waste oil are located there.

Fuel Storage

- 9. Both the Renewable Resource and RCMP Officers expressed concerns with the bulk fuel storage facilities with respect to condition of the site and the possibility of leaks. The fence was not locked. Concerns that were expressed in the 1990 inspection persist today. That is exposed liners and inadequate berming. The fence was noted to be sagging in areas.
- 10. Deficiencies with the warning sign at the sealift intake have been corrected.

Warning Signs

11. No warning signs were posted at either the dump or current sewage disposal area.

Records

12. The Hamlet maintains records of water consumption.

Surveillance Network Program

13. Water quality samples were collected from the following locations:

Misc-CR-01 - Truck fill point (raw water)

Misc-CR-02 - Sewage effluent below old waste disposal site

Misc-CR-04 - Runoff below the abandoned solid waste disposal site - 25 metres from site in drainage creek.

Discussion/Concerns

- 14. Mr. David Arreak, Hamlet Foreman, accompanied me throughout most of the inspection. The inspector met with Mrs. Lizzie Pallituq (SAO) after the inspection and reitterated the topics discussed and concerns noted.
 - a. Deficiencies with the fuel storage facility will have to be addressed by the GNWT.
 - b. When the sewage lagoon is operational, both the abandoned dump and the old dump site that now serves as the sewage disposal area will have to be cleaned up and restored.

Waste metal that can be brought to the new waste metal area should be. The remainder of the garbage should be consolidated and buried.

- c. The Hamlet is requested to place warning signs at the dump site and at the sewage lagoon when construction is complete.
- d. The inspector commends the efforts of the Hamlet to improve waste disposal practices.
- 15. The inspector appreciates the co-operation and assistance received from Lizzie Pallituq and David Arreak while in Clyde River.

DEPARTMENT OF IND. AFFAIRS AND NORTHERN DEVELOPMENT WATER RESOURCES DIVISION, YELLOWKNIFE, NORTHWEST TERRITORIES FIELD SAMPLING AND DATA

Hambet of Clyde River			LICENCE	. ю. С	1.1	,	CLATION					
DATE SAMP			SAMPLED	DBY Smith Clycle River, NT								
ANALYSIS	SAMPLE VOLUME		PRESERVATIVE .		Miss -	Misc -						
				CR-01	16-05	C12-04	C2-0	<u> </u>				
				BOTTLE NUMBER								
MISC. & ARSENIC	1 LITRE	NONE		ιι .	: N		11	·				
HEAVY METALS	500 ML		HNO ₃	11		ľ						
CYANIDE	500 ML	About 6 NaOH to	pellets pH 12	11								
MERCURY	250 ML	2 ML 1:1 2 ML 5%	HNO ₃ + K ₂ Cr ₂ O ₇	11	j							
NUTRLENTS	250 NL	NONE		- 11	j.		٠٠					
BACTERIA	500 ML	y NONE							_			
OIL AND GREASE	1 LITRE (GLASS)	4 ML 1:1	H ₂ SO ₄									
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Water Ten				_	+40 2/min	110X/wich		,				
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Depth of				Surface -		->						
рН	Samping			_								
Conductiv	· + · ·			_	·							
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Misc-CQ	,	Runafic))		oned s	-		500E	୧			
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WATER RESOURCES DIVISION, YELLOWKNIFE, NORTHWEST TERRITORIES RESULTS OF LABORATORY A...LYSIS

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STATION NULL LABORATORY ANALYSIS F PH (units) Conductivi Dissolved Turbidity Colour (co Suspended TDS, Resid Calcium	NUMBER REQUIRED	V C	R-01	VV C	1556 - A	14	lise -	M	risc	T		
LABORATORY ANALYSIS F pH (units) Conductivi Dissolved Turbidity Colour (co Suspended TDS, Resid Calcium	NUMBER EQUIRED ty (µmho/cm	-1		1-	10-0-2	K			201	1		W -
ANALYSIS F pH (units) Conductivi Dissolved Turbidity Colour (co Suspended TDS, Resid Calcium	EQUIRED	19	20 Blod	11 4	2. 04-2-		2-21-1		2-02	-		
pH (units) Conductivi Dissolved Turbidity Colour (co Suspended TDS, Resid Calcium	ty (µmho/cm	✓		19	10000	2	XC001	7	2086 3	╀		- E1
Conductivi Dissolved Turbidity Colour (co Suspended TDS, Resid Calcium	ty (µmho/cm	1	676	\ <u>\</u>	Ang 19/92	V	Land Land	V	7.60	\	2/0/26	√ = ,
Turbidity Colour (co Suspended TDS, Resid Calcium	Oxygen	1	25	1	Aug 19/92		<u> </u>	V	1720		Aug 19/92	MC
Colour (co Suspended TDS, Resid Calcium	ONTROIT				17/					Ľ		
Suspended TDS, Resid Calcium		4	15 L5	14	Aug 18,51			1	260	A	18/12	41
TDS, Resid		5	43	13	Aug 18/4	1-		7	500	1 <	Pug 18/97	M
	ue	V	19	J	1	┞		V	624		101-1/92	m
		1	41.0	14				V	12.0	5	``	
Magnesium		1/	0.6	14				~	4.6	7	Se Aug 20	X
	ess (CaCO ₃)		<u>-5</u>	13	 (-	<u> </u>	4	<u>49</u> 674	17	5 / 1/5	-
Tot. Alkal Sodium	inity(CaCO3.		2.5	1		-		7	101	3	20t2/5/ Sept13	70
Potassium		-	0.5	Ţ				v	37.2	1	27313	
Chloride		1	3.9	M				7	81.8		Sout 9	2
Sulphate		1	<u> </u>	1		_		2	68	ļ_	Sept 10	<u> </u>
Total Coli Fecal Coli	form/count/	-		-	an	1	10+ D	E P	Africa agrical Maria		1042	
Fecal Stre				-	111	1	0 1/4	- F.				-
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BOD ₅				_	lli	4	10		NOV T	1-15	92	
COD		-		_	<u> </u>			-				
Carbon, IC Carbon, TO	,	$\left - \right $		-	1	7/	-		MARKET Y	- 1	OWKNIFE	+
Ammonia Nit					1				N.Vi			
Nitrate + :		2	L0.04	Y	JA	0	he -	Y	20.04		Aug 25	4
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Phosphorus Phosphorus			L0.005	7				7	20.4		Aug 28	a -
Silica Reac			20,000	7							\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
rotal Cyani		1	L0.005		(_	_					not 11/10	4
Available C	yanide (WAO)					/		-		-		
Sulphide		-		\vdash				\dashv		-		-
Dil & Greas Phenols	e	+		\vdash		-						
nenois	~											
. 12	`_(,1/g/L.)	9	L0.5		augzek	2	UP	+		\dashv		-
rsenic	(ug/L)	1	0.2		w21/92/40	7		+		1		-
admium	(ug/L) (µg/L)	-	0.2	C	42174700	\forall		\top				
	(ug/L)	7	3	\dashv	·/ \	1						
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17	\~ <u>D/~/</u>			_		1		- 1				
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Results are expressed in rg/L, except as indicated. T and D refer to

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT WATER SOURCES DIVISION, YELLOWKNIFE, PRIMEST TERRITORIES RESULTS OF LABORATORY ANALYSIS

PROJECT flander of ()	ide Rives	LICENCE NUMBER	NA	•	LOCATION	River, NT
DATE SAMPLED 13 Aug 9)- 	DATE RECEIVED	Aug	18/92	DATE COMPLETE	Ruer, NT D Stept 18/92
STATION NUMBER	MISCCEON					we
LABORATORY NUMBER	920847					
ANALYSIS REQUIRED				ACC.		124
pH (units)						
Conductivity (umho/cm)						
Dissolved Oxygen					12,72,00	1
Turbidity (NTU) Colour (colour U.)						
Suspended Solids						
TDS, Residue Calcium	-			1		
Magnesium						
Tot. Hardness (CaCO ₃)				-		+
Tot. Alkalinity (CaCO ₃) Sodium						<u> </u>
Potassium				DEF	ATT MENT O	<u> </u>
Chloride					171 -176: 17	2.1
Sulphate Total Coliform/count			1		200 27 100 E. L.	-1
Fecal Coli. 100					OCT - 1	1902
Fecal Strep. ml/				-	النا - ا	774
Std. Plate Cnt (cnt/ml)					VATER RESC	U.S.
B005 C0D				DIV	15:0N /E	LOW WIFE!
Carbon, IC				.394	.4.74.1	
Carbon, IOC					:	1
Ammonia Nitrogen /as\ Nitrate + Nitrite				:	!	
Total Kjeldahl N \ N/					i	
Phosphorus O-P as					<u> </u>	
Phosphorus Tot. P Silica Reac. (as SiO ₂					-	
Total Cyanide		-				7
Available Cyanide (WAD)						
Sulphide Oil & Grease						
Phenols						
Arsenic T (ug/L)	105	15/5/2 الاعتاد	٠			
Arsenic T (ug/L) D (ug/L)	10.5	111111111	· Lu	:		
Cadmium T (ug/L) D (ug/L)	J LO.2	Dept 10/92	KP .			<u> </u>
	V 2	11		· · · · · · · · · · · · · · · · · · ·	1	
Copper T (ug/L) D (ug/L)	и 2		:			
	v 53	11 .				
D /110/11			1		1	
Lead T (ug/L) D (ug/L)	V LI	1	-	: 1	ļ	
Mercury T (ug/L) D (ug/L)	X II		!			1
		-				
Nickel T (ug/L) D (ug/L)	V L1	Sept 10/92	(CPC)		:	
Zinc <u>T (ug/L)</u> D (ug/L)	LI	11		,		
	2	"			t.	
CobaltT (ug/L)	LI	11				

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NATER RESOURCES DIVISION, YELLOWKNIFE. NORTHWEST TERRITORIES

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DATE	13 Aug 92			TE CE	IVED 4		XK193	2		DAT	Е	ETED &		
STATION	NUI'BFR	•	1.50 - R-01	V	n. Si	1	Mis' Roul	100	RISC P-06	2	_		V	Ne -
LABORATO	RY NUMBER	19	2086		120863	¥	12006	9	2086	3		-		
<u></u>	REQUIRED	<u> </u>			/ 5.0.0			_			<u> </u>		~	
	vity (umho/cm	12	25		Aug 19/92				7.60 1720		_/	UD 19/92 UDA 42 H		<u>u</u>
Dissolve Turbidit	d Oxygen ' y (NTU)	-	- 15		Ang 18,5	1	uk	V	260	,	A	ca 18/Az	41	
Colour (Suspende	colour U.) d Solids	2	L5 L3	٠	Aug 184	4		7	500	_		Pag 18/92	1	N.
TDS, Res	idue	v	19 L1.0	15		1		V	12.0					_
Magnesiu	m dness (CaCO ₃)	2	0.6			1		V	4.6	7	7	Se Aug 20	Z	2
	alinity(CaCO3)		5 4 2.5	1		-		7	674	4	ا ل	Spt 2/5/	٤	
Potassium Chloride	n	<u>ک</u> پ	0.5	Ĭ		-		2	37.2	1		Septi3	Za	
Sulphate		<u>></u>	2.7 L2	M		1		2	31.8 58		1	Sept 10	3	
Fecal Co	liform/count/				and		10+			=	7	IVED		
Fecal Str Std. Plat	rep, / e Cnt (cnt/m)	5		L	All	2	we	_			\exists			
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Total Kie				+	+1	e	1			-	1	-	1	
Phosphoru		V	L0.005	7		1		1	, 20.4	-	1	lug 28	3	
Total Cya	nide Cyanide (WAO)	7	L0.005	_	(_				7	\$	ot 11/1/20	7	
Sulphide		1				1/1		\exists		-	7		7	
O11 & Gre Phenols	ase	1				_)-	7		-	F		7	
Arsenic	T_(.)\g(L.)	7	L0.5		augzek	2	W	1		1	Ŧ		7	
Cadmium			0.2	a	uziKe/vo	1		7		1	-		7	
Copper	D (μg/L) T (μg/L)	1	3		-, \	1		1		1	F		7	
Iron	- I	<u>.</u> -	55	_	,	Þ	_	7		#	F		7	
	D (ug/L)		LI		"/	7)	1		丰	F		7	
Lead	D (μg/L) T (μg/L)		20,02		we Ay		30	+		#	F		+	
Mercury	D (NE/L)		1		auxhrac	4		1		#			‡	
Nickel	D (µg/L)	1	L /	4		×		1		1			#	
Zinc	T (ug/L) D (ug/L)	1	3	1		X		1		+			#	
Chromium	T (ug/L) D (ug/L)	#		1		Z		1		1			#	
-	I	+		\dashv		_				_	L			

Results are expressed in rg/L, except as indicated. T and D refer to

DEPARTMENT INDIAN AFFAIRS AND NORTHERN DEVELOPMENT WATER RESOURCES DIVISION, YELLOWKNIFE, NORTHEREST TERRITORIES

FIELD SAMPLING AND DATA

LICENSEE/	PROJECT	LICENCI	NO.	i:!		ATION						
Hamlet of DATE SAMP	LED CITY	SAMPLE	BY Smith Clyde River NT									
ANALYSIS	SAMPLE	PRESERVATIVE	STATION NUMBER									
ANALISIS	VOLUME	PREDERVATIVE	Mcs .	Mis -	Misc	next						
]			CR-01	12-UZ	CR-04	Ce-0						
				BOTTLE NUMBER								
MISC. & ARSENIC	1 LITRE	NONE	ι.	· · · · · · · · · · · · · · · · · · ·		• 1						
HEAVY METALS	250 ML	2 HL 1:1 HNO3	11	;	ιι							
CYANIDE	500 ML	About 6 pellets NaOH to pH 12	5									
MERCURY	250 ML	2 ML 1:1 HNO ₃ + 2 ML 5% K ₂ Cr ₂ O ₇		;								
NUTRIENTS	250 ML	NONE	11	11		٠,						
BACTERIA	500 ML	# NONE		:								
OIL AND GREASE	1 LITRE (GLASS)	4 ML 1:1 H ₂ SO ₄										
				:								
Time of S	ampling		10:55	(3.22	14 25							
Air Tempe	rature		5" -		<u>}</u>							
Water Tem	perature			-	1101/m.							
Rate of F	low			MET	210 X/w. x.							
Ice Thick	ness		ν.ι	<u> </u>								
Depth of	Sampling		Sistace-		<u> </u>							
рН								<u> </u>				
Conductiv	ity											
Dissolved												
				·								
Mac. CR-C	: (Water Supply	Lalee -	Fruch	etiu po	the						
Miss CR-C		Jeware efflust			o 3005.3							
Misc-CC	c: 4	Runofe below	alound	mes :	(1£ 3)	256	كوسودلا					
		3.te ~ 25m	from s	<u> </u>	diahas	e cee	:(۷۰					
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DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT WATER GOURCES DIVISION, YELLOWKNIFE, THWEST TERRITORIES RESULTS OF LABORATORY ANALYSIS

Glo

LICE 'C/ PRO	Hanlet & Rive	LICENCE NUMBER	N/A.	LOCATI Clip	ON BURN NT
DATE SAMPLED	Hamlet of Olyde Rive	DATE RECEIVED	Aug 1	18/90 DATE COMPLE	TED Sup 18/92
STATION NU	IMBER BISCORO		3		ve .
LABORATORY	00000				
ANALYSIS R	REQUIRED	,			
pH (units)	ty (umho/cm)				
Dissolved	0xygen				
Turbidity Colour (co	lour U.)				
Suspended TDS, Resid	Solids				\$ 7 T
Calcium Magnesium				100 O 6	
Tot. Hardr	ness (CaCO ₃) linity (CaCO ₃)			L 100 0 10 1-1	lairs /
Sodium	Timey (caco3)			NW	# /
Potassium Chloride					
Sulphate Total Coli	form count				
Fecal Col	1. 100				
Std. Plate	Cnt (cnt/ml)				
COD					
Carbon, I	OC				
Ammonia N Nitrate +	itrogen /as\ Nitrite				
Total Kje Phosphoru	Idahl N \ N/				
Phosphoru	s Tot. P				
Total Cya	ac. (as SiO ₂ nide				
Available Sulphide	Cyanide (WAD)				
Oil & Gre Phenols	ase				
Arsenic	T (ug/L) / LO.5	المحالة المحالة	2 145'		
AI SEITE	D (ug/L)				
Cadmium	T (ug/L)	Dept 10/92	2 KP	1	
Copper	_T (ug/L)	11]
Iron	T (ug/L) V 53 D (ug/L)	11		1	
Lead	T (ug/L) ~ L/ D (ug/L)	1		1	
Mercury	T (ug/L) D (ug/L)	1			1
Nickel	T (ug/L) V L D (ug/L)	Sept 10/92	2140		
Zinc	T (ug/L) / L D (ug/L)	. 41			
Chromium	T (ug/L) 2 D (ug/L)	"			
Cobalt	T (ug/L) / L/ D (ug/L)				

Results are expressed in mg/L, except as indicated. T and D refer to total and dissolved metals respectively.