
MEMORANDUM

To: M. Wei
Sr. Groundwater Hydrologist
Groundwater Section
Water Management Division

Date: Sept 14, 1995

File: 39000-30-329

Establishment of Observation Well No. 329 - Ucluelet

Background

Three production wells were installed between April and May, 1995 in the Lost Shoe Creek aquifer to develop a groundwater source for the Village of Ucluelet. The interpreted boundary (Arengi, 1995) of the Lost Shoe Creek aquifer has been shown in Figure 1. The production well capacities have been determined by the consultant as follows: LSC 1-95 (25.2 L/s or 400 USgpm), LSC 2-95 (28.4 L/s or 450 USgpm) and LSC 3-95 (44.2 L/s or 700 USgpm). The combined capacity of the 3 LSC production wells has been determined as 97.8 L/s (1550 USgpm). The LSC aquifer is unconfined and is characterized by excellent recharge conditions. The LSC aquifer receives recharge from direct precipitation, leakage from Lost Shoe Creek and leakage from local ponds (Arengi, 1995) and has a very high water yielding capability.

In May, 1995, the Corporation of the Village of Ucluelet requested that the Groundwater Section, Water Management Division, assist the Village by installing an automatic water level recorder on one of the test wells to monitor groundwater levels. Although the well field has been installed, the distribution line has not yet been constructed, and it is anticipated that the wells will not be in production until sometime in 1996.

Observation well 329 (previously known as test well 2-80) was constructed during the 1979-1980 Lost Shoe Creek aquifer exploration period.

Observation Well Location

The observation well is located on DL 446 approximately 0.5 kilometres northwest of the Tofino-Ucluelet Highway and the Alberni Highway (Figure 2) and approximately 600 metres (1970 feet) north of the Lost Shoe Creek aquifer well field. The observation well is located 55 metres (180 feet) west of the Tofino-Ucluelet Highway (Figure 3).

Aquifer Vulnerability

As indicated by the Consultants, Pacific Hydrology Consultants Ltd. the Lost Shoe Creek aquifer is vulnerable to contamination from surface, with the greatest

hazard being the indiscriminant disposal of potentially toxic compounds on the ground surface. For these reasons, particular attention should be given to implementation of a wellhead and aquifer protection and management program to ensure that a continued safe supply of potable groundwater is obtained from the Lost Shoe Creek aquifer.

Observation Well Construction Details

Drilling Contractor - Fred's Drilling
Pumping Test Contractor - not pumped
Date Drilled - 1979-1980
Completed Well Depth - 20.4 metres (67 feet)
Well Diameter - 203 mm (8-inch)
Aquifer Description - sand and fine gravel
Well Screen Location - 16.3m - 18.1m (53.5 - 59.5 feet)
Well Screen Type and Size - 3.8mm (0.150 in.)
Static Water Level - 9.106m (29.87 feet) from pointer on recorder stand.

Equipment on Site

1 - aluminum recorder housing w/steel base plate
1 - water level recorder, F-68 Stevens type with 2:1 gage gears - (recorder serial no.F-68-97544-80)
1 - quartz clock w/6 D-cell batteries - (serial No.146471-93E)
1 - 203mm (8-inch) diameter slip-on-sleeve, 60 mm (24-inch) length
1 - 10metre (32.8 feet) stainless steel graduated tape
1 - 127mm (5-inch) diameter float
1 - 170gr. (6-ounce) stainless steel counterweight
1 - wooden recorder stand w/reference pointer

Note: the slip-on-sleeve and steel casing were painted "tremclad green". (Note attached photos)

Purpose of Observation Well

The purpose of this observation well is to monitor the short-term and long-term recharge and withdrawal effects on the Lost Shoe Creek aquifer.

Site Agreement

Brian Epps, Engineering Technician for the Nanaimo Regional Office will forward a standard monitoring agreement to Darwin Kutney. It is intended that this observation well be monitored for a period of at least 10 years.

Sampling Criteria and Sampling Frequency

As the observation well is completed within a developed surficial aquifer the

sample frequency has been determined as once every 2 years (A<2 years) based on criteria developed by Wei and Hodge (criteria for sampling observation wells - 1992). Sampling will be carried out in the late summer or early fall.

Field Observer

Darwin P. Kutney, C.E.T.
Corporation of The Village of Ucluelet
Superintendent of Public Works
Works Yard
P.O. Box 999
Ucluelet, B.C.
VOR 3A0

Phone 726-7744 Fax 726-7335

Darwin Kutney was instructed to change the hydrograph at the end or near the end of each month and forward the data to Brian Epps of the Nanaimo Regional Water Management Office. Mr Kutney was given a 5 year supply of stamped (on-off) hydrographs and 2 year supply of addressed envelopes.

Observer Service Charge

No Charge

Calculation of Correction Factor

Tape Reading from pointer = 7.745m
Static Water Level from pointer = 9.106m
Stick-up from pointer = 1.240m
Correction Factor = +0.121 m

Seam No. To be established Summer 1996

References

Arengi J. , 1995. Completion Report Construction and Testing of Lost Shoe Creek Production Wells 1-95, 2-95, and 3-95 and evaluation of Lost Shoe Creek Aquifer For the Village of Ucluelet. Pacific Hydrology Consultants Ltd. Consulting Hydrogeologists.

W. S. Hodge

W.S. Hodge, P. Geo.
Groundwater Hydrologist
Groundwater Section
Water Management Division
cc. B. Epps, Water Management Technician, Nanaimo Regional Office

NOTE:

more info.
(attachments) is filed
on obs well file #38000-30/329