SUSTAINABLE ENVIRONMENT, ENERGY, HEALTH & SAFETY PROFESSIONAL SERVICES

***NORTECH*, Inc.**

♦

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www.nortechengr.com

May 29, 2020

Sent via email to:
pat.dunstan@markelcorp.com

Badger Fuel
c/o Markel Underwriting Managers, Inc
310 Highway 35 South
Red Bank, New Jersey 07701-5921

ATTN: Pat Dunstan, RN, JD, Senior Claims Examiner

RE: 2018 Activities Summary – Groundwater Confirmation Sampling and Monitoring Well Decommissioning, 578 Canoro Road, North Pole, Alaska ADEC File No. 100.38.217, Hazard ID: 4441

Dear Ms. Dunstan:

NORTECH *Environmental Engineering, Health & Safety* (***NORTECH***) is pleased to provide the following summary of 2018 field activities taken to close the release investigation at 578 Canoro Road in North Pole, Alaska (See Attachment 1, Figures). The following is a brief synopsis of the background, scope of work, methodology, field activities, sampling results with discussion including conclusions and recommendations to complete the closure process with ADEC.

This work was completed in response to the requirements posed in the Alaska Department of Environmental Conservation (ADEC) letter dated September 4, 2018 (Attachment 5, 2018 ADEC Letter). This letter documents the successful completion of "Option #2" and demonstrates that the groundwater meets cleanup levels throughout the Site. This work was undertaken to achieve *Cleanup Complete* without the need for any institutional control or recorded deed notice associated with the property. This has been the objective of all parties from the time of the initial release.

Background

A more detailed history of Site activities can be found in previous reports, specifically, the March 16, 2007 and March 24, 2008 Characterization Reports, and subsequent letter reports dated June 25, 2010, September 28, 2012 and June 4, 2018.

NORTECH conducted initial Site characterization efforts following the release between November 2006 and March 2007 including installing seven groundwater monitoring wells. Characterization events indicated the hydraulic gradient was generally west across the Site, but the heating oil appeared to be moving east. A March 2008 aquifer characterization indicated petroleum migration was controlled by confining layers sloping upward towards the north and east. A well search identified six nearby residential wells located down-gradient. All wells were tested for drinking water standards with results, indicating no offsite drinking water wells were impacted by the release at 578 Canoro Road. No additional sampling of the off-site drinking water wells was required.

The groundwater monitoring program started at the Site with the original installation of monitoring wells in February 2007. Overall, analysis of the diesel range organics (DRO) and benzene, toluene, ethylbenzene, and xylenes (BTEX) data through 2017 indicated that the contaminant concentrations decreased in the monitoring wells. BTEX compounds and other contaminants of concern met the January 2017 updated

ADEC cleanup levels or were less than the LOQ, with the exception of SW5. ADEC updated cleanup levels for many compounds in January 2017 and the 2017 ethylbenzene and xylene levels exceeded the new, lower ADEC cleanup levels in SW5 despite a 50% decrease in concentrations.

Due to the identification of free product in SW5 at the time of installation in 2007, a 4-inch diameter free-product recovery well FRW2 was installed within 5 feet of SW5 in 2007. The intent of the larger diameter FRW2 was to collect free-phase product observed in the ¾-inch diameter SW5. However, FRW2 tested clean at the time of installation and in each of the seven subsequent sampling events.

From 2007 to 2017, SW5 remained above the ADEC cleanup levels for at least one analyte. While SW5 has shown a decreasing trend for all analytes, the detections of contaminants were not consistent with the other wells at the site. Based on the multiple lines of evidence from the well construction methods, sampling, and inspections, ***NORTECH*** concluded that SW5 was not representative of the aquifer conditions and should not be used to evaluate the site for closure. The 2018 ADEC Letter outlined the two potential pathways to closure.

Scope of Work and Objectives

The objective of this work was to complete Option #2 as described by the 2018 ADEC Letter to obtain the additional data necessary to render a *Cleanup Complete* determination for the site. To fulfill the requirements, ***NORTECH*** completed the following tasks:

- Developed and obtained ADEC approval of a Work Plan to document the methods to achieve *Cleanup Complete*
- Installed an alternative point of compliance (TSP2) 2.5 feet from SW5 (between SW5 and FRW2) and collected laboratory analytical samples
- Decommissioned all existing well structures, including the original drinking water well, the shallow and deep monitoring wells, and the recovery wells

Methodology and Field Activities

NORTECH detailed the planned activities to complete Option #2 in the *Work Plan for 2018 Closeout Activities* dated October 31, 2018. This work plan was reviewed and approved by ADEC on November 1, 2018. The final work plan and approval are included in Attachment 5. The work plan indicated that oversight of site activities and groundwater sampling would be completed by a qualified environmental professional as defined by 18 Alaska Administrative Code (AAC) 75, 18 AAC 78, and the ADEC March 2017 Field Sampling Guidance (FSG).

Temporary Sampling Point Installation

NORTECH subcontracted GeoTek Alaska, Inc. (GeoTek) to complete the installation of TSP2 within 2.5 feet of SW5 on the side of FRW2. The temporary sampling point consisted of a single section of 5 feet of 2” diameter PVC screen affixed to 10 feet of blank PVC installed to intersect the groundwater table.

Groundwater Analytical Testing

The ***NORTECH*** QEP purged and sampled TSP2 in accordance with the ADEC-approved work plan. The groundwater samples were analyzed by SGS North America Inc. (SGS), an ADEC-approved laboratory with Alaska facilities in Anchorage and a sample receiving center in Fairbanks, Alaska. The samples were collected, stored in a chilled cooler, and delivered to the Fairbanks office. SGS shipped the samples to its ADEC-approved laboratory in Anchorage for analyses.

Contaminants of Concern

The contaminants of concern (COCs) that are impacting the Site are components of heating oil listed in the table below. ADEC established new groundwater cleanup levels in January 2017 and the table presents the cleanup levels at the time of the release, and the revised cleanup levels that must be met at this time.

ADEC 2008 and Current Cleanup Levels

Contaminant of Concern	2006 Cleanup Levels (mg/L)	January 2017 Cleanup levels (mg/L)
Benzene	0.005	0.0046
Toluene	1.00	1.10
Ethylbenzene	0.700	0.015
Total Xylenes	10.0	0.190
Diesel Range Organics (DRO)	1.5	1.5

Decommissioning Services

GeoTek was also used for the decommissioning of all monitoring wells (including the temporary TSP2), the original water well, and the 18" culvert recovery well. This work was completed in general accordance with ADEC's September 2013 Monitoring Well Guidance regarding decommissioning and the approved work plan.

Variations from Work Plan

Decommissioning activities took place at a significantly colder temperature than expected. Following discussions with the drillers, the installation of slurry grout was not undertaken because a slurry could not be kept sufficiently warm for injection into the small diameter wells. Therefore, the annulus remaining at each former well location was filled with bentonite chips and hydrated. This included several PVC casings that broke below grade during attempted extraction, as well as the culvert recovery well and the original water well. Each remaining structure was abandoned in place in a manner that minimizes potential surface infiltration. Decommissioning activities are detailed for each former structure in the following section.

Field Activities

Groundwater Sampling

NORTECH mobilized to the site and met GeoTek personnel on November 28, 2018 to advance an alternative point of compliance (TSP2) 2.5 feet from previously existing well SW5. The well consisted of 5 feet of 2-inch screen and 10 feet of blank, installed to a depth of 13 feet. Following installation, the well was developed using the ADEC guidance for direct push wells to reduce potential sediment. Depth to water was measured to calculate total water volume in the casing. The well was checked for free product using an interface probe and no free product was measured. Attempts to measure water quality parameters during purging using a YSI water quality meter failed due to water freezing in the tubing and the effort was discontinued. Five well volumes of water were purged using a submersible pump prior to sample collection.

One primary water sample (TSP-2) and one field duplicate (TSP-25) were collected for quality control purposes. A trip blank accompanied the samples through delivery to SGS for analyses of DRO by Method AK 102, and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method SW8021B. TSP-2 was decommissioned once sampling was completed. The PVC casing was removed from the ground intact and the annulus was backfilled with bentonite, pea gravel, and topsoil.

Well Decommissioning

Field staff and GeoTek personnel returned to the site on November 29, 2019 to decommission the monitoring and recovery wells. Most wells were decommissioned by knocking out the bottom of the well and removing the entire length of the casing intact. Four PVC wells broke at least four feet below the surface: SW2, SW5, SW7, and DW2. The remaining well casing and annulus was then filled with bentonite pellets to within one foot of the ground surface and hydrated. The top one foot of each casing and monument area had approximately six inches of pea gravel installed on top of the hydrated bentonite. The former well locations were then filled with topsoil to match the existing grade. The surface monuments of wells in the driveway area were patched with asphalt.

The original steel drinking water well casing could not be extracted and was cutoff approximately one foot below grade. The casing was filled with bentonite chips to the top and hydrated. Additional hydrated bentonite was installed around the top of the casing to create a seal from six inches to one foot below grade. Six inches of topsoil were installed to cover the hydrated bentonite cap and provide a suitable media for regrowth of the lawn.

The 18-inch diameter corrugated culvert recovery well was also decommissioned in place. Initial attempts to extract the culvert unsuccessful when the spiral welding failed and the culvert started to unwind. The top of the pipe was cut off about two feet below grade. The remaining structure was filled with 22 bags of pea gravel to approximately three feet below the ground surface. The top of the interior of the remaining structure (approximately three feet) was filled with bentonite and hydrated. Additional hydrated bentonite was used to create a seal around the top of the remnant structure on the interior and exterior. A total of three bags of bentonite were used to bring the location to approximately one foot below the surface. Additional gravel was installed to within six inches of the surface and then topsoil was installed to match the adjacent ground height.

Figure 4 shows the former subsurface structure locations and includes a table indicating completed removal or the depth at which a portion of the structure remains. Attachment 4 includes a Well Decommissioning Summary that contains a detailed summary of the monitoring well construction and decommissioning methods. Attachment 4 also includes the ADNR Well Record of Decommissioning in for each well.

Results with Discussion

2018 Groundwater Results and Quality Control

The 2018 analytical results are summarized in Attachment 2, Table 1 along with the field duplicate quality control summary. Copies of the laboratory analytical report and the ADEC Laboratory Data Review Checklist (LDRC) are included as Attachment 3 to this report. The laboratory results for sample TSP-2 and duplicate sample TSP-25 indicate that DRO and BTEX concentrations were non-detect at the limits of quantitation, which were below the ADEC cleanup levels for all tested analytes. Based on this, the TSP2 location meets the criteria for cleanup complete.

The field duplicate pair was submitted blind to the laboratory to evaluate potential quality control issues during sampling, handling, and laboratory work. The duplicate pair met RPD goals because the samples were non-detect for each compound at the same order of magnitude. A trip blank was also submitted to the laboratory to evaluate potential cross contamination from other sources. These results were also non-detect. The review of the laboratory report using the LDRC did not identify any concerns that affect data usability for closure as described in this report.

TSP2, SW5 and FRW2 Discussion

Wells SW5 and FRW2 were located approximately five feet from each other on the eastern side of the Site. SW5 has been contaminated since installation (February 2007) with a steadily decreasing trend of all COCs. FRW2, installed to collect free product in the SW5 area, had detections of two COCs below the respective cleanup levels at the time of installation in 2008 and has been non-detect for all COCs since 2011. The differing conditions in these locations, as well as the lack of contaminants at other locations around the property, suggested that samples from SW5 were not representative of the groundwater quality across the Site.

As recommended in the 2018 ADEC Letter Option #2, temporary point TSP2 was installed as an alternative point of compliance and placed between SW5 and FWR2. This was located a distance of 2.5 feet from SW5 to evaluate conditions in the aquifer adjacent to the SW5 well structure. This location was non-detect for the COCs, confirming that SW5 is not representative of the groundwater conditions east of the release. Based on this, data from SW5 should not be used in the evaluation of the site for closure.

Using TSP2 and the historical results from FRW2 to represent conditions east of the release, the Site has achieved the most stringent groundwater cleanup levels in all source area and perimeter groundwater monitoring wells. These results indicate the site no longer poses a threat to human health or the environment. Based on our review, the site meets the criteria for *Cleanup Complete* status without ICs as detailed in the ADEC Site Closure Memorandum and checklist.

Well Decommissioning Discussion

As outlined in the work plan, all groundwater monitoring structures were decommissioned using methods specified in the 2013 ADEC Monitoring Well Guidance. This included the eleven ¾-inch monitoring wells, the 18-inch culvert recovery well, and the original 2-inch drinking water well. While the field crew encountered several challenges during the decommissioning activities, primarily due to the cold weather, each structure was decommissioned in a manner that minimizes the potential the former borehole or structure from providing a conduit for surface water or surface contaminants to reach the aquifer. A decommissioning summary table is included in Attachment 4. We have also included Figure 4 to provide a summary of decommissioning activities, including remaining subsurface structure depths and locations.

Request for Closure Evaluation

This report should be provided to ADEC to document the activities that were completed in 2018. Based on the groundwater results and the successful decommissioning of the former monitoring structures, no additional assessment, monitoring, or decommissioning activities are recommended or considered necessary at this site. We believe this site is meets the criteria for closure without additional work at the site. We request that ADEC review the site for closure under the *Cleanup Complete* criteria as outlined in the 2018 ADEC Letter.

Conclusions and Recommendations

NORTECH has completed the work requested to evaluate the potential for achieving *Cleanup Complete* under Option #2 of the 2018 ADEC Letter. This work included installation and sampling of a temporary sampling point adjacent SW5 and decommissioning of all monitoring and recovery wells at the site. Based on our review of this data and the historical data for the Site, ***NORTECH*** has developed the following Site conclusions and recommendations:

Groundwater Characterization

- TSP2 was installed within 2.5 feet of SW5 as an alternate point of compliance
  - COC concentrations were non-detect at TSP2, meeting the applicable groundwater standards
  - All other groundwater monitoring locations previously met the applicable cleanup levels
- Based on results obtained at the designated alternative point of compliance, the Site meets the criteria for *Cleanup Complete* status

Monitoring Well Decommissioning

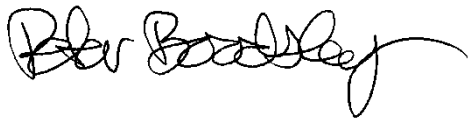
- Eight monitoring wells and TSP2 were decommissioned through complete removal and sealing with bentonite
- The following structures could not be completely removed, and the remaining structures were sealed with bentonite
  - Four monitoring wells (SW1, SW5, SW7, DW2)
  - The product recovery culvert (CRW)
  - The original drinking water well (DWW)
- All former structures have been decommissioned

Project Management Recommendations

- This report should be submitted to ADEC to document the completion of this work
- This letter is the request for evaluation for closure under the *Cleanup Complete* closure criteria

Please contact us at your earliest convenience if you have any questions about the data presented in the report or questions regarding the Site in general.

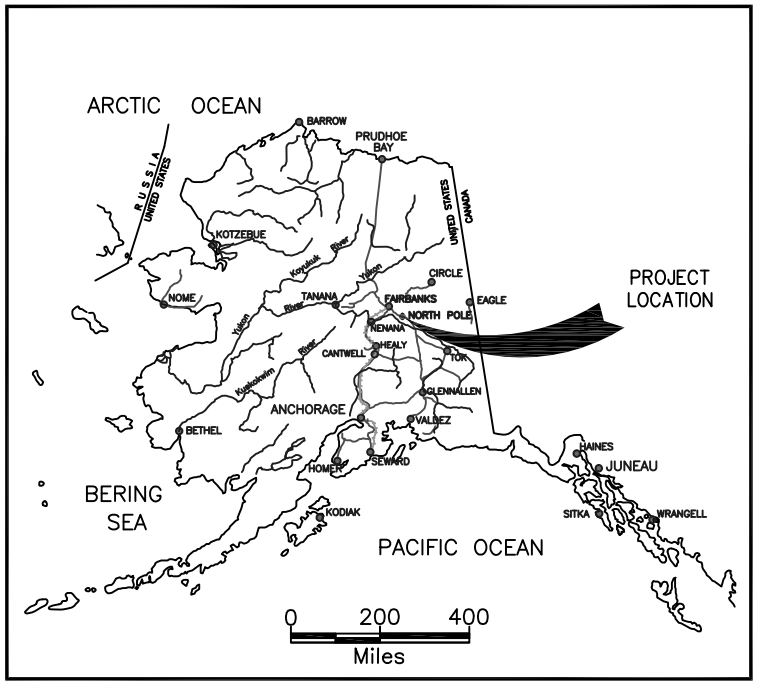
Sincerely,
NORTECH

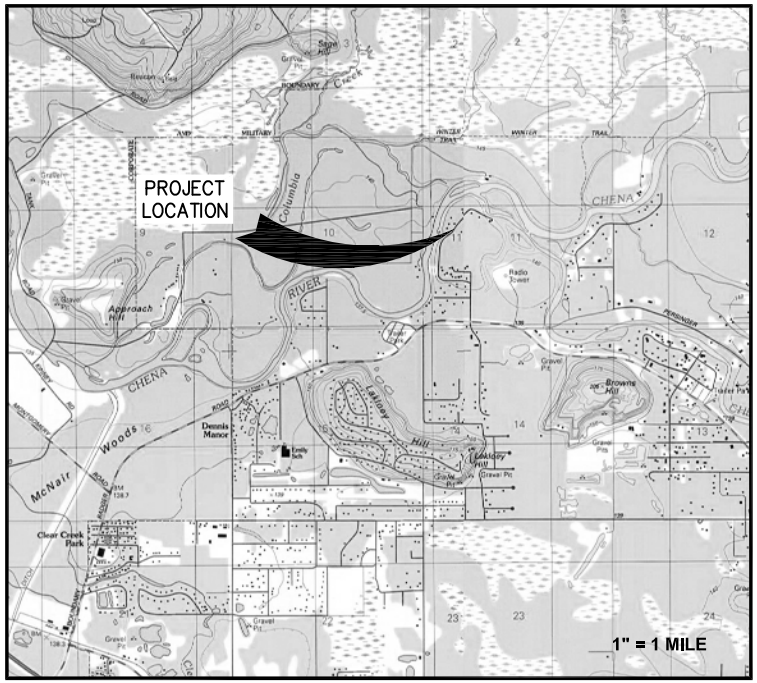


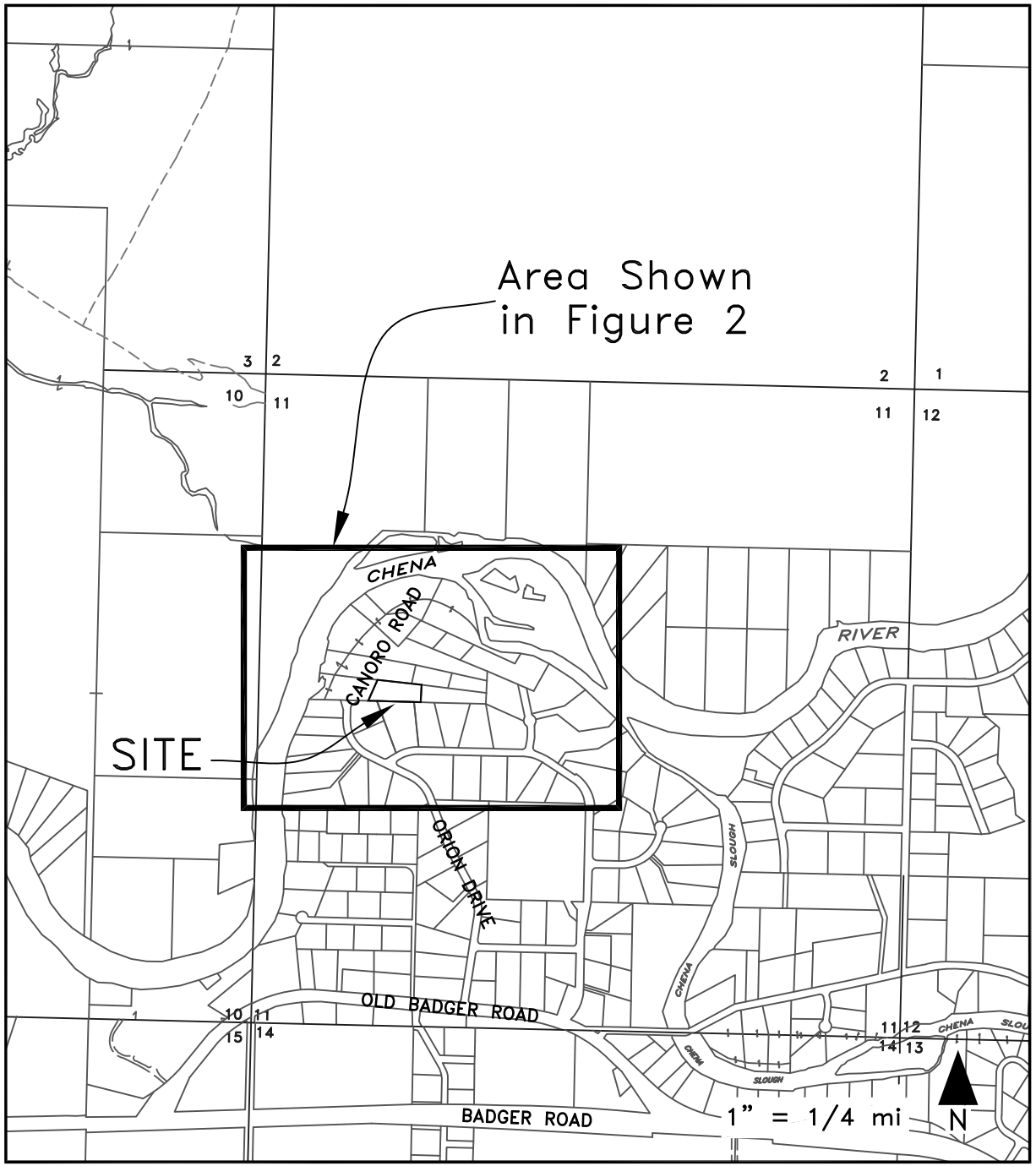
Peter Beardsley, PE
Principal, Environmental Engineer

Attachment 1: Figures
Attachment 2: Laboratory Results Summary Table
Attachment 3: Laboratory Report and Lab Quality Checklist
Attachment 4: Monitoring Well Decommissioning Forms
Decommissioning Summary (all wells)
ADNR Record of Well Decommissioning (one for each well)
Attachment 5 Regulatory Documents
ADEC September 4, 2018 Comments Letter
NORTECH October 31, 2018 Work Plan
ADEC November 1, 2018 Work Plan Approval

Attachment 1







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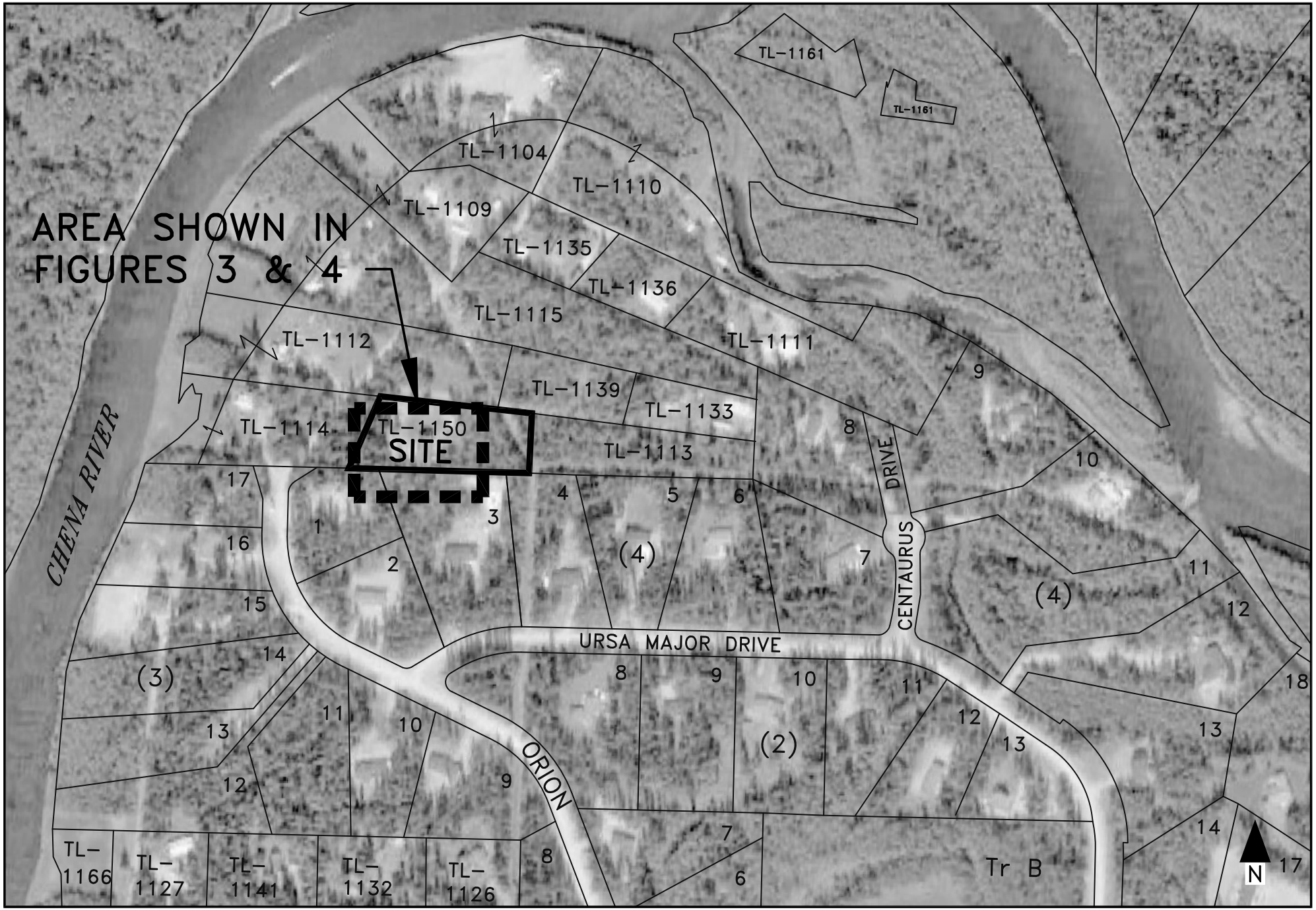
5438 Shaune Dr., Juneau, Alaska 99801 907-586-6813

Location Map
578 Canoro Road
North Pole, Alaska

DATE: 05/29/20	SCALE: AS SHOWN
DESIGN: PLB	PROJECT: 06-1080
DRAWN: PLB	DWG: 061080j(01)

FIGURE 1



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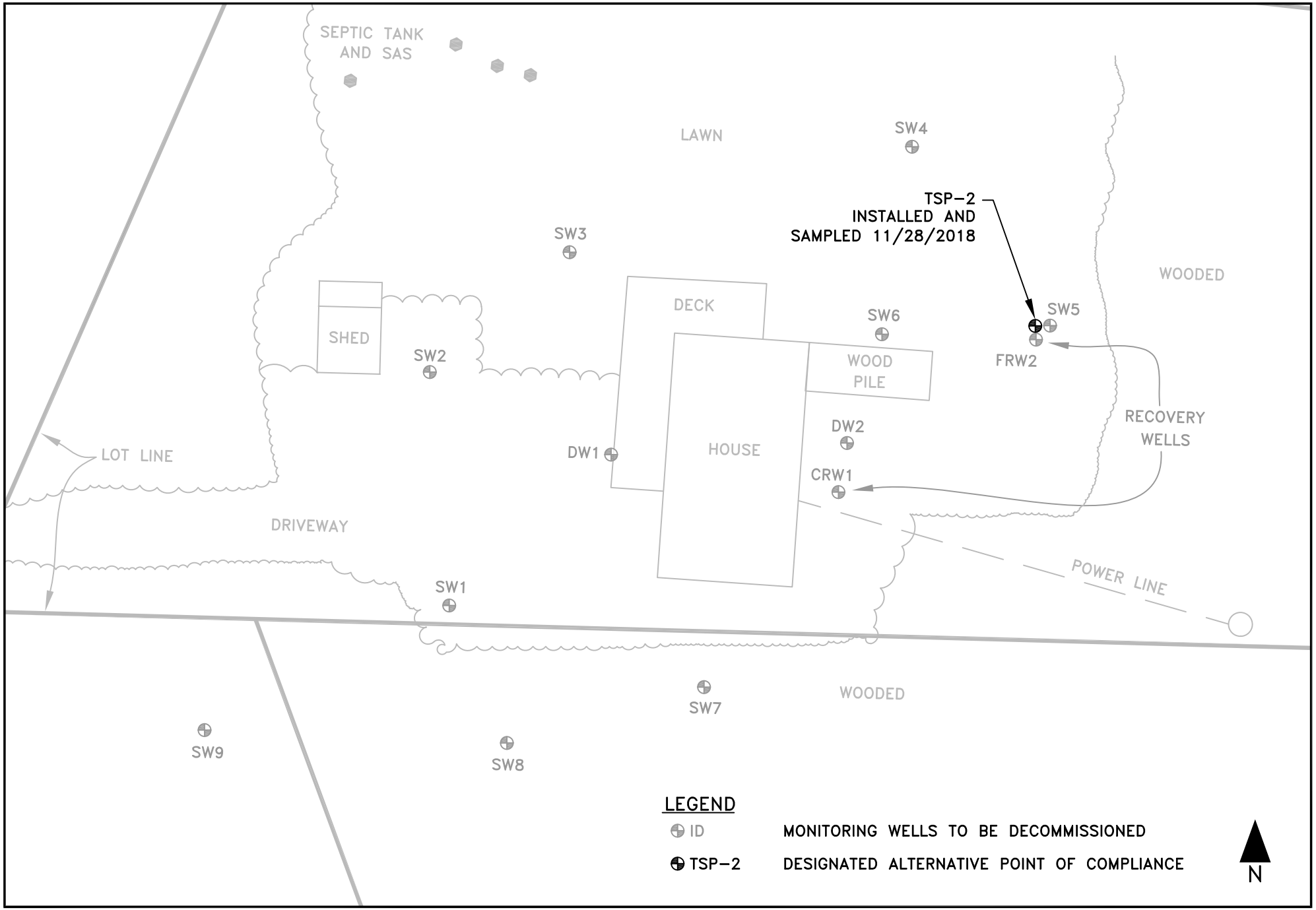
Vicinity Map
578 Canoro Road
North Pole, Alaska

DATE: 05/29/20	SCALE: 1" = 300'
DESIGN: PLB	PROJECT: 06-1080
DRAWN: PLB	DWG: 061080j(02)

FIGURE 2



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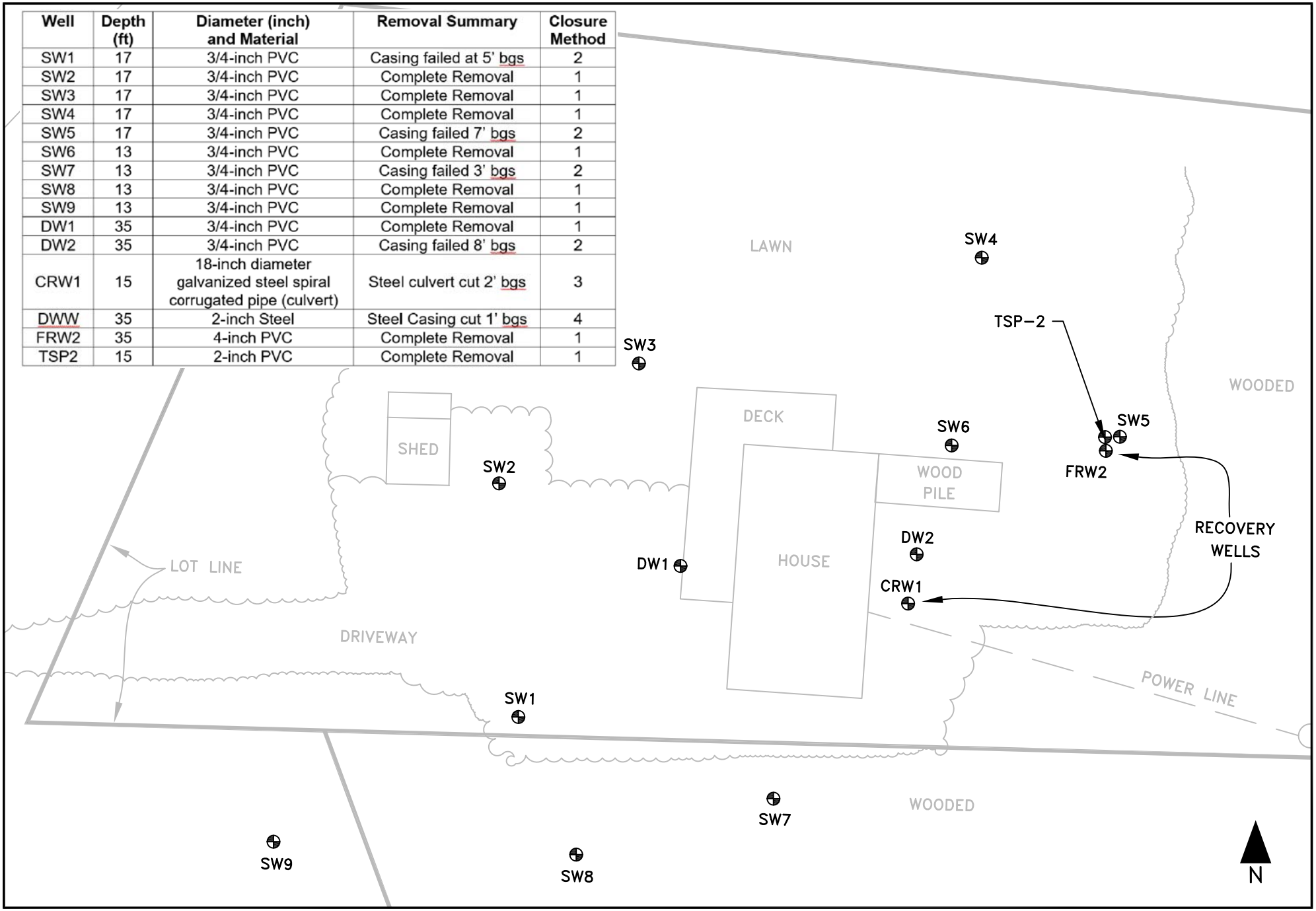
2018 Sample Locations
578 Canoro Road
North Pole, Alaska

DATE: 05/29/20	SCALE: 1" = 30'
DESIGN: PLB	PROJECT: 06-1080
DRAWN: PLB	DWG: 061080j(03)

FIGURE 3

Well	Depth (ft)	Diameter (inch) and Material	Removal Summary	Closure Method
SW1	17	3/4-inch PVC	Casing failed at 5' bgs	2
SW2	17	3/4-inch PVC	Complete Removal	1
SW3	17	3/4-inch PVC	Complete Removal	1
SW4	17	3/4-inch PVC	Complete Removal	1
SW5	17	3/4-inch PVC	Casing failed 7' bgs	2
SW6	13	3/4-inch PVC	Complete Removal	1
SW7	13	3/4-inch PVC	Casing failed 3' bgs	2
SW8	13	3/4-inch PVC	Complete Removal	1
SW9	13	3/4-inch PVC	Complete Removal	1
DW1	35	3/4-inch PVC	Complete Removal	1
DW2	35	3/4-inch PVC	Casing failed 8' bgs	2
CRW1	15	18-inch diameter galvanized steel spiral corrugated pipe (culvert)	Steel culvert cut 2' bgs	3
DWW	35	2-inch Steel	Steel Casing cut 1' bgs	4
FRW2	35	4-inch PVC	Complete Removal	1
TSP2	15	2-inch PVC	Complete Removal	1



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5438 Shaune Dr., Juneau, Alaska 99801 907-586-6813

Decommissioned Monitoring Well Summary
578 Canoro Road
North Pole, Alaska

DATE: 05/29/20	SCALE: 1" = 30'
DESIGN: PLB	PROJECT: 06-1080
DRAWN: PLB	DWG: 061080j(04)

FIGURE 4

Attachment 2

Table 1
28-Nov-18

Sample ID	Benzene	Toluene	Ethyl-benzene	Total Xylenes	DRO
Units	mg/L	mg/L	mg/L	mg/L	mg/L
ADEC Limits	0.0046	1.10	0.015	0.190	1.5
TSP-2	0.0005U	0.001U	0.001U	0.003U	.577U
TSP-25	0.0005U	0.001U	0.001U	0.003U	0.588U

Notes:

DRO	Diesel range organics
U	Analyte not detected at the listed limit of quantitation (LOQ)
Shade	Analyte detected in concentration below the 2016 ADEC Cleanup level
Bold	Analyte detected at concentration exceeding the ADEC Cleanup level

2017 Quality Control Summary

Sample ID	TSP-2	TSP-25	RPD
Analyte	mg/L	mg/L	%
B	ND	ND	**NA**
T	ND	ND	**NA**
E	ND	ND	**NA**
X	ND	ND	**NA**
DRO	ND	ND	**NA**

Notes:

NA	The calculation is not applicable.
ND	Analyte not detected
RPD	Relative percent difference

Attachment 3

Laboratory Report of Analysis

To: Nortech
2400 College Rd
Fairbanks, AK 99709
(907)452-5688

Report Number: **1189975**

Client Project: **06-1080 Canoro Road**

Dear Peter Beardsley,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Jennifer at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Alaska Division Technical Director

Stephen Ede
2018.12.13
08:19:49 -09'00'

Jennifer Dawkins Date
Project Manager
Jennifer.Dawkins@sgs.com

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Case Narrative

SGS Client: **Nortech**
SGS Project: **1189975**
Project Name/Site: **06-1080 Canoro Road**
Project Contact: **Peter Beardsley**

Refer to sample receipt form for information on sample condition.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry (Provisionally Certified as of 12/06/2018 for Uranium by EPA200.8 and TDS by SM 2540C) & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
TSP-2	1189975001	11/28/2018	12/03/2018	Water (Surface, Eff., Ground)
TSP-25	1189975002	11/28/2018	12/03/2018	Water (Surface, Eff., Ground)
Trip Blank	1189975003	11/28/2018	12/03/2018	Water (Surface, Eff., Ground)

Method	Method Description
SW8021B	BTEX 8021
AK102	DRO Low Volume (W)

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Results of **TSP-2**

Client Sample ID: **TSP-2**
Client Project ID: **06-1080 Canoro Road**
Lab Sample ID: 1189975001
Lab Project ID: 1189975

Collection Date: 11/28/18 11:00
Received Date: 12/03/18 10:30
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.577	U	0.577	0.173	mg/L	1		12/11/18 14:06
Surrogates								
5a Androstane (surr)	87.5		50-150		%	1		12/11/18 14:06

Batch Information

Analytical Batch: XFC14838
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 12/11/18 14:06
Container ID: 1189975001-A

Prep Batch: XXX40977
Prep Method: SW3520C
Prep Date/Time: 12/07/18 09:35
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 12/12/2018 4:57:55PM

Results of **TSP-2**

Client Sample ID: **TSP-2**
Client Project ID: **06-1080 Canoro Road**
Lab Sample ID: 1189975001
Lab Project ID: 1189975

Collection Date: 11/28/18 11:00
Received Date: 12/03/18 10:30
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		12/04/18 16:31
Ethylbenzene	1.00 U		1.00	0.310	ug/L	1		12/04/18 16:31
o-Xylene	1.00 U		1.00	0.310	ug/L	1		12/04/18 16:31
P & M -Xylene	2.00 U		2.00	0.620	ug/L	1		12/04/18 16:31
Toluene	1.00 U		1.00	0.310	ug/L	1		12/04/18 16:31
Xylenes (total)	3.00 U		3.00	0.930	ug/L	1		12/04/18 16:31
Surrogates								
1,4-Difluorobenzene (surr)	87.1		77-115		%	1		12/04/18 16:31

Batch Information

Analytical Batch: VFC14586
Analytical Method: SW8021B
Analyst: NRO
Analytical Date/Time: 12/04/18 16:31
Container ID: 1189975001-C

Prep Batch: VXX33598
Prep Method: SW5030B
Prep Date/Time: 12/04/18 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 12/12/2018 4:57:55PM

Results of **TSP-25**

Client Sample ID: **TSP-25**
Client Project ID: **06-1080 Canoro Road**
Lab Sample ID: 1189975002
Lab Project ID: 1189975

Collection Date: 11/28/18 11:05
Received Date: 12/03/18 10:30
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.588	U	0.588	0.176	mg/L	1		12/11/18 14:16
Surrogates								
5a Androstane (surr)	88.3		50-150		%	1		12/11/18 14:16

Batch Information

Analytical Batch: XFC14838
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 12/11/18 14:16
Container ID: 1189975002-A

Prep Batch: XXX40977
Prep Method: SW3520C
Prep Date/Time: 12/07/18 09:35
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Print Date: 12/12/2018 4:57:55PM

Results of **TSP-25**

Client Sample ID: **TSP-25**
Client Project ID: **06-1080 Canoro Road**
Lab Sample ID: 1189975002
Lab Project ID: 1189975

Collection Date: 11/28/18 11:05
Received Date: 12/03/18 10:30
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		12/04/18 16:49
Ethylbenzene	1.00 U		1.00	0.310	ug/L	1		12/04/18 16:49
o-Xylene	1.00 U		1.00	0.310	ug/L	1		12/04/18 16:49
P & M -Xylene	2.00 U		2.00	0.620	ug/L	1		12/04/18 16:49
Toluene	1.00 U		1.00	0.310	ug/L	1		12/04/18 16:49
Xylenes (total)	3.00 U		3.00	0.930	ug/L	1		12/04/18 16:49
Surrogates								
1,4-Difluorobenzene (surr)	89.5		77-115		%	1		12/04/18 16:49

Batch Information

Analytical Batch: VFC14586
Analytical Method: SW8021B
Analyst: NRO
Analytical Date/Time: 12/04/18 16:49
Container ID: 1189975002-C

Prep Batch: VXX33598
Prep Method: SW5030B
Prep Date/Time: 12/04/18 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 12/12/2018 4:57:55PM

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **06-1080 Canoro Road**
Lab Sample ID: 1189975003
Lab Project ID: 1189975

Collection Date: 11/28/18 11:00
Received Date: 12/03/18 10:30
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		12/04/18 15:00
Ethylbenzene	1.00 U		1.00	0.310	ug/L	1		12/04/18 15:00
o-Xylene	1.00 U		1.00	0.310	ug/L	1		12/04/18 15:00
P & M -Xylene	2.00 U		2.00	0.620	ug/L	1		12/04/18 15:00
Toluene	1.00 U		1.00	0.310	ug/L	1		12/04/18 15:00
Xylenes (total)	3.00 U		3.00	0.930	ug/L	1		12/04/18 15:00
Surrogates								
1,4-Difluorobenzene (surr)	93.9		77-115		%	1		12/04/18 15:00

Batch Information

Analytical Batch: VFC14586
Analytical Method: SW8021B
Analyst: NRO
Analytical Date/Time: 12/04/18 15:00
Container ID: 1189975003-A

Prep Batch: VXX33598
Prep Method: SW5030B
Prep Date/Time: 12/04/18 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Method Blank

Blank ID: MB for HBN 1789512 [VXX/33598]
Blank Lab ID: 1490302

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1189975001, 1189975002, 1189975003

Results by **SW8021B**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	0.930	ug/L
Surrogates				
1,4-Difluorobenzene (surr)	101	77-115		%

Batch Information

Analytical Batch: VFC14586
Analytical Method: SW8021B
Instrument: Agilent 7890 PID/FID
Analyst: NRO
Analytical Date/Time: 12/4/2018 11:37:00AM

Prep Batch: VXX33598
Prep Method: SW5030B
Prep Date/Time: 12/4/2018 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Blank Spike Summary

Blank Spike ID: LCS for HBN 1189975 [VXX33598]
Blank Spike Lab ID: 1490303
Date Analyzed: 12/04/2018 12:13

Spike Duplicate ID: LCSD for HBN 1189975 [VXX33598]
Spike Duplicate Lab ID: 1490304
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1189975001, 1189975002, 1189975003

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	100	89.3	89	100	90.9	91	(80-120)	1.80	(< 20)
Ethylbenzene	100	88.3	88	100	89.7	90	(75-125)	1.60	(< 20)
o-Xylene	100	89.3	89	100	87.0	87	(80-120)	2.60	(< 20)
P & M -Xylene	200	180	90	200	177	88	(75-130)	2.00	(< 20)
Toluene	100	87.1	87	100	89.4	89	(75-120)	2.60	(< 20)
Xylenes (total)	300	270	90	300	264	88	(79-121)	2.20	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50	98	98	50	103	103	(77-115)	4.50	

Batch Information

Analytical Batch: **VFC14586**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890 PID/FID**
Analyst: **NRO**

Prep Batch: **VXX33598**
Prep Method: **SW5030B**
Prep Date/Time: **12/04/2018 06:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Method Blank

Blank ID: MB for HBN 1789548 [XXX/40977]
Blank Lab ID: 1490456

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1189975001, 1189975002

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	88	60-120		%

Batch Information

Analytical Batch: XFC14838
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: CMS
Analytical Date/Time: 12/11/2018 12:28:00PM

Prep Batch: XXX40977
Prep Method: SW3520C
Prep Date/Time: 12/7/2018 9:35:00AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1189975 [XXX40977]
Blank Spike Lab ID: 1490457
Date Analyzed: 12/11/2018 12:38

Spike Duplicate ID: LCSD for HBN 1189975 [XXX40977]
Spike Duplicate Lab ID: 1490458
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1189975001, 1189975002

Results by **AK102**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	20	19.2	96	20	19.3	97	(75-125)	0.53	(< 20)
Surrogates									
5a Androstane (surr)	0.4	93.4	93	0.4	90.3	90	(60-120)	3.30	

Batch Information

Analytical Batch: **XFC14838**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **CMS**

Prep Batch: **XXX40977**
Prep Method: **SW3520C**
Prep Date/Time: **12/07/2018 09:35**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 12/12/2018 4:58:00PM

SGS

SGS North
CHAIN OF CU

1189975

Locations Nationwide

Alaska	Maryland
New Jersey	New York
North Carolina	Indiana
West Virgina	Kentucky

www.us.sgs.com

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Section 1

CLIENT: Norkech

CONTACT: Peter Beardsley PHONE NO: 907 4525888

PROJECT NAME: Canoro Road PROJECT/ PWSID/ PERMIT#: 06-K880

REPORTS TO: Norkech E-MAIL: Peter@norkechenergy.com

INVOICE TO: Norkech QUOTE #: P.O. #:

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	Section 3 # CONTAINERS	Type C = COMP G = GRAB MI = Multi Incre-mental Soils	Preservative: DRO AK102	Preservative: HCl	REMARKS/ LOC ID
1 A-E	TSP-2	10/28/18	11:00	W	5	G	X	X	
2 A-E	TSP-25		11:05	W	5	G	X	X	
3 A-C	trip blank			W	3	G		X	

Section 5

	Date	Time	Received By:
Relinquished By: (1)	11/29/18	1515	
Relinquished By: (2)	11-29-18	1600	
Relinquished By: (3)			
Relinquished By: (4)	12/3/18	1030	NSW

Section 4

DOD Project? Yes No

Cooler ID:

Data Deliverable Requirements:

Requested Turnaround Time and/or Special Instructions:

Temp Blank °C: Chilled or Ambient [ ]

(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

(See attached Sample Receipt Form)

[ ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301

[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

ANC: 1.2 DSS
CS: 1F, 1B

http://www.sgs.com/terms-and-conditions

SGS

1189975

FAIRBANKS SAMPLE RECEIPT FORM

Note: This form is to be completed by Fairbanks Receiving Staff for all samples

Review Criteria:	Condition:	Comments/Actions Taken
Were **custody seals** intact? Note # & location, if applicable. COC accompanied samples?	Yes No N/A Yes No N/A	*Exemption permitted if sampler hand carries/delivers.*
Temperature blank compliant* (i.e., 0-6°C) *If >6°C, were samples collected <8 hours ago?* *If <0°C, were all sample containers ice free?* Cooler ID:_____@_____w/Therm. ID:_____ Cooler ID:_____@_____w/Therm. ID:_____ Cooler ID:_____@_____w/Therm. ID:_____ Cooler ID:_____@_____w/Therm. ID:_____ Cooler ID:_____@_____w/Therm. ID:_____ If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank and "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note ambient ( ) or chilled ( ). Please check one.	Yes No Yes No N/A Yes No N/A	*Exemption permitted if chilled & collected <8hrs ago* *Note: Identify containers received at non-compliant temperature. Use form FS-0029 if more space is needed.*
Delivery Method: Client (hand carried) Other:_____	Tracking/AB# : Or see attached Or N/A	
→For samples received with payment, note amount ($) and whether cash / check / CC (**circle one**) was received.		
Were samples in **good condition** (no leaks/cracks/breakage)? Packing material used (specify all that apply): Bubble Wrap Separate plastic bags Vermiculite Other:_____	Yes No N/A	*Note: some samples are sent to Anchorage without inspection by SGS Fairbanks personnel.*
Were **Trip Blanks** (i.e., VOAs, LL-Hg) in cooler with samples?	Yes No N/A	
For **RUSH/SHORT Hold Time**, were COC/Bottles flagged accordingly? Was Rush/Short HT email sent, if applicable?	Yes No N/A Yes No N/A	

Additional notes (if applicable):

*IDs per COC are correct.

Profile #:

Note to Client: any "no" circled above indicates non-compliance with standard procedures and may impact data quality.

e-Sample Receipt Form

SGS Workorder #: **1189975** | 1189975

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		N/A Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	Yes	1F, 1R
COC accompanied samples?	Yes	
N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 1.2 °C Therm. ID: D55
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
If samples received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled".		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis)	Yes	
		N/A ***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

F1029_SRFpm_201800727

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1189975001-A	HCL to pH < 2	OK			
1189975001-B	HCL to pH < 2	OK			
1189975001-C	HCL to pH < 2	OK			
1189975001-D	HCL to pH < 2	OK			
1189975001-E	HCL to pH < 2	OK			
1189975002-A	HCL to pH < 2	OK			
1189975002-B	HCL to pH < 2	OK			
1189975002-C	HCL to pH < 2	OK			
1189975002-D	HCL to pH < 2	OK			
1189975002-E	HCL to pH < 2	OK			
1189975003-A	HCL to pH < 2	OK			
1189975003-B	HCL to pH < 2	OK			
1189975003-C	HCL to pH < 2	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

Laboratory Data Review Checklist

Completed By:

Scott Hummel

Title:

Chemist

Date:

January 3, 2019

CS Report Name:

06-1080 Canoro Road

Report Date:

December 13, 2018

Consultant Firm:

NORTECH, Inc.

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1189975

ADEC File Number:

100.38.217

Hazard Identification Number:

4441

1189975

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☑ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ Yes ☑ No Comments:

   Samples were not transferred and were analyzed by SGS North America, Inc. in Anchorage, Alaska.

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   ☐ Yes ☑ No Comments:

   Sample date is missing from *TSP-25*.

   b. Correct Analyses requested?

   ☑ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☐ Yes ☑ No Comments:

   Temperature exemption for these samples, they were marked as 'chilled' and delivered to the laboratory's receiving office within 8 hours of sample collection.

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   ☑ Yes ☐ No Comments:

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

   ☑ Yes ☐ No Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☐ Yes ☒ No Comments:

Samples were noted to be received in good condition.

e. Data quality or usability affected?

Comments:

Data quality or usability are not affected.

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

☐ Yes ☒ No Comments:

There were no discrepancies identified in the case narrative.

c. Were all corrective actions documented?

☐ Yes ☒ No Comments:

No corrective actions were documented.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The case narrative does not note any effect upon data quality or usability.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☒ Yes ☐ No Comments:

b. All applicable holding times met?

☒ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☐ Yes ☒ No Comments:

Soil samples were not submitted with this work order.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☒ Yes ☐ No Comments:

e. Data quality or usability affected?

☐ Yes ☒ No Comments:

Data quality or usability are not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☒ Yes ☐ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☒ Yes ☐ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

No samples are affected, method blank results are reported less than LOQ.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No Comments:

No data flags are necessary.

v. Data quality or usability affected?

Comments:

Data quality or usability are not affected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☑ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☐ Yes ☑ No Comments:

No metal or inorganic analyses were requested in this work order.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No %R or RPDs are outside of acceptable limits, no samples are affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☑ No Comments:

No data flags are necessary.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality or usability are not affected.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☑ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☑ Yes ☐ No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐ Yes ☑ No Comments:

There are no failed surrogate recoveries associated with this work order.

iv. Data quality or usability affected?

Comments:

Data quality or usability are not affected.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?
(If not, enter explanation below.)

☑ Yes ☐ No Comments:

Trip Blank was submitted with this work order.

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☑ Yes ☐ No Comments:

iii. All results less than LOQ?

☑ Yes ☐ No Comments:

iv. If above LOQ, what samples are affected?

Comments:

No samples are affected, reported results are below LOQ.

v. Data quality or usability affected?

Comments:

Data quality or usability are not affected.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☑ Yes ☐ No Comments:

ii. Submitted blind to lab?

☑ Yes ☐ No Comments:

Sample duplicate pair *TSP-2/TSP-25* submitted with this work order.

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☑ Yes ☐ No Comments:

RPDs are not calculable, results are non-detect.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality or usability are not affected.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below).

☐ Yes ☑ No ☐ Not Applicable

An equipment blank was not submitted with this work order.

i. All results less than LOQ?

☐ Yes ☒ No Comments:

ii. If above LOQ, what samples are affected?

Comments:

No samples are affected.

iii. Data quality or usability affected?

Comments:

Data quality or usability are not affected.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☐ Yes ☒ No Comments:

No additional data flags or qualifiers are necessary.

Attachment 4

NORTECH, Inc.

♦

Accounting Office:
2400 College Rd
Fairbanks, AK 99709
907.452.5688
907.452.5694 Fax

♦

3105 Lakeshore Drive
Suite A106
Anchorage, AK 99517
907.222.2445
907.222.0915 Fax

♦

5438 Shaune Drive
Suite B
Juneau, AK 99801
907.586.6813
907.586.6819 Fax

♦

www.nortechengr.com

Well Decommissioning Summary
578 Canoro Road, North Pole, Alaska
November 29, 2018

Decommissioning activities completed by GeoTek Alaska, Inc., under the supervision of a ***NORTECH*** qualified environmental professional.

Well	Depth (ft)	Diameter (inch) and Material	Removal Summary	Closure Method
SW1	17	3/4-inch PVC	Casing failed at 5’ bgs	2
SW2	17	3/4-inch PVC	Complete Removal	1
SW3	17	3/4-inch PVC	Complete Removal	1
SW4	17	3/4-inch PVC	Complete Removal	1
SW5	17	3/4-inch PVC	Casing failed 7’ bgs	2
SW6	13	3/4-inch PVC	Complete Removal	1
SW7	13	3/4-inch PVC	Casing failed 3’ bgs	2
SW8	13	3/4-inch PVC	Complete Removal	1
SW9	13	3/4-inch PVC	Complete Removal	1
DW1	35	3/4-inch PVC	Complete Removal	1
DW2	35	3/4-inch PVC	Casing failed 8’ bgs	2
CRW1	15	18-inch diameter galvanized steel spiral corrugated pipe (culvert)	Steel culvert cut 2’ bgs	3
DWW	35	2-inch Steel	Steel Casing cut 1’ bgs	4
FRW2	35	4-inch PVC	Complete Removal	1
TSP2	15	2-inch PVC	Complete Removal	1

1. Monument removed, bottom of well knocked out, well removed intact, remaining borehole filled with Benseal® bentonite pellets from water table to 1 foot below grade, hydrated, and filled with pea gravel and/or topsoil to surface.
2. Monument removed, bottom of well knocked out, well casing failed at specified depth during removal, remaining casing and borehole filled with Benseal® bentonite pellets from water table to 1 foot below grade, hydrated, and filled with pea gravel and/or topsoil to surface.
3. Plastic cover atop culvert removed, spiral weld failed during removal, top of culvert cut off 2 feet below grade, remaining structure and borehole filled with 22 pea gravel to within 3 feet of surface, 3 bags of Benseal® bentonite pellets were placed from 3 feet to 1 feet below grade, hydrated, and capped with pea gravel to within six inches of surface and covered with topsoil.
4. Steel casing could not be extracted, cut off 1 foot below grade, structure filled with bentonite to the top of the casing and hydrated to create a seal over the top, covered with topsoil.

Environmental Monitoring Well Decommissioning

Department of Natural Resources
Division of Mining, Land & Water
550 w 7th Ave., Suite 1020
Anchorage, AK 99501-3562
dnr.water.reports@alaska.gov

Department of Environmental Conservation
Division of Environmental Health, Drinking Water Program
555 Cordova Street
Anchorage, AK 99501
dec.eh.drinkingwater.reports@alaska.gov

State Of Alaska

Well Record of Decommissioning

This form is intended to convey information regarding the decommisioning of a water well as required by both DEC and DNR. Add additional datasheets as necessary.

Well Decommissioner or Contractor		Well and Owner Particulars *	
Name:	Peter Beardsley	Owner's name and address:	Timothy Ballard
Company:	NORTECH Environmental	Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	SW1

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well			Former Well Description (Not reqiured if original well log attached).																			
Public water system? (**See note ****)	Yes:	No: X	Original Driller's Name: GHomestead Drilling											Well depth (ft bls): 17		Date of completion: Feb / 2007					
If so, PWSID number:			Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:	N/A Unknown			Static water (ft bls): 8		Flowing artesian?	Yes:	No: X	N/A Unknown		
Single Family Domestic,?	Yes:	No: X		Driven?	Yes: X	No:		Capped?	Yes: X	No:	N/A Unknown			Bedrock (ft bls): NA		Flood prone site?	Yes: X	No:	N/A Unknown		
Commercial/ Fishery?	Yes:	No:		Jetted?	Yes:	No:		Screened?	Yes: X	No:	N/A Unknown			Casing type: PVC		Well condition?	Good: X	Poor:	N/A Unknown		
Irrigation/Agricultural?	Yes:	No:		Dug?	Yes:	No:		Perforated?	Yes:	No: X	N/A Unknown			Diameter (inches): 3/4 inch		Grouted?	Yes: X	No:	N/A Unknown		
Heating / Cooling?	Yes:	No:		Unknown?	Yes:	No:		Well liner present?	Yes:	No: X	N/A Unknown			Stickup (ft): NA		Well house?	Yes:	No: X	N/A Unknown		

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:	Reason for well decommissioning:	Decommissioning process Decommissioned Nov. 29, 2018											
Include notes regarding any deviations from state approved methodes of decommissioning the well.	Environmental project complete	Casing cut below grade?	Yes:	No:	N/A Unknown		Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown			
Closed in accordance with DEC MW decommissioning requirements under an approved work plan Nov. 29, 2018. Casing broken at 5' bgs. Sealed with bentonite to 1' bgs , backfilled with gravel to grade.		Casing fully removed?	Yes:	No:	N/A Unknown		Plumbing removed from casing?	Yes:	No:	N/A Unknown X			
		Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown		Liner (if any) removed?	Yes:	No:	N/A Unknown X			
		Casing welded closed?	Yes:	No:	N/A Unknown		Electric wiring removed from site?	Yes:	No:	N/A Unknown X			
	Excavation and Fill Details	Borehole refilled?	Yes: X	No:	N/A Unknown		Attached an original well log?	Yes:	No: X	N/A Unknown			
	Excavation Depth (ft)?	Screened area filled with gravel?	Yes: X	No:	N/A Unknown		Well log listed at DNR?	Yes:	No:	N/A Unknown X			
	Type of fill used?	Perforated area filled with gravel?	Yes: X	No:	N/A Unknown		Local authorities notified?	Yes:	No:	N/A Unknown X			
	Volume of fill (cu ft)?	Excavated pit refilled?	Yes:	No:	N/A Unknown		DEC notified of decommissioning?	Yes: X	No:	N/A Unknown			
	# Bags of bentonite in casing? 1	Pit area mounded?	Yes:	No:	N/A Unknown		DNR notified of decommissioning?	Yes:	No: X	N/A Unknown			

Signatures (* => are required)**

Owner***: NA

Date: _____ / _____ / _____

Decommisioner / Contractor***: Peter Beardsley

Date: November 12, 2019 / _____ / _____

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
3) Attach any maintenance or water usage records that may apply to this well and provide an adequate locational description, including maps or sketches. Use additional pages as needed.
4) This form is under development and is subject to change. Please submit suggestions for changes or improvements to either DNR or DEC at the addresses listed above.

Please attach schematics and photos to further document the information provided on this form. This is particularly important for public water supply wells and also any other wells that might impact the public water supply.

Environmental Monitoring Well Decommissioning

Department of Natural Resources
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550 w 7th Ave., Suite 1020
Anchorage, AK 99501-3562
dnr.water.reports@alaska.gov

Department of Environmental Conservation
Division of Environmental Health, Drinking Water Program
555 Cordova Street
Anchorage, AK 99501
dec.eh.drinkingwater.reports@alaska.gov

State Of Alaska

Well Record of Decommissioning

This form is intended to convey information regarding the decommisioning of a water well as required by both DEC and DNR. Add additional datasheets as necessary.

Well Decommissioner or Contractor		Well and Owner Particulars *	
Name:	Peter Beardsley	Owner's name and address:	Timothy Ballard
Company:	NORTECH Environmental	Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	SW2

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well			Former Well Description (Not reqiured if original well log attached).																			
Public water system? (**See note ****)	Yes:	No: X	Original Driller's Name: GHomestead Drilling											Well depth (ft bls): 17		Date of completion: Feb / 2007					
If so, PWSID number:			Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:	N/A Unknown			Static water (ft bls): 8		Flowing artesian?	Yes:	No: X	N/A Unknown		
Single Family Domestic,?	Yes:	No: X		Driven?	Yes: X	No:		Capped?	Yes: X	No:	N/A Unknown			Bedrock (ft bls): NA		Flood prone site?	Yes: X	No:	N/A Unknown		
Commercial/ Fishery?	Yes:	No:		Jetted?	Yes:	No:		Screened?	Yes: X	No:	N/A Unknown			Casing type: PVC		Well condition?	Good: X	Poor:	N/A Unknown		
Irrigation/Agricultural?	Yes:	No:		Dug?	Yes:	No:		Perforated?	Yes:	No: X	N/A Unknown			Diameter (inches): 3/4 inch		Grouted?	Yes: X	No:	N/A Unknown		
Heating / Cooling?	Yes:	No:		Unknown?	Yes:	No:		Well liner present?	Yes:	No: X	N/A Unknown			Stickup (ft): NA		Well house?	Yes:	No: X	N/A Unknown		

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:	Reason for well decommissioning:	Decommissioning process Decommissioned Nov. 29, 2018											
Include notes regarding any deviations from state approved methodes of decommissioning the well.	Environmental project complete	Casing cut below grade?	Yes:	No:	N/A Unknown		Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown			
Closed in accordance with DEC MW decommissioning requirements under an approved work plan on Nov. 29, 2018. Casing removed intact. Sealed with bentonite to 1' bgs , backfilled with gravel to grade.		Casing fully removed?	Yes:	No:	N/A Unknown		Plumbing removed from casing?	Yes:	No:	N/A Unknown	X		
		Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown		Liner (if any) removed?	Yes:	No:	N/A Unknown	X		
		Casing welded closed?	Yes:	No:	N/A Unknown		Electric wiring removed from site?	Yes:	No:	N/A Unknown	X		
	Excavation and Fill Details	Borehole refilled?	Yes: X	No:	N/A Unknown		Attached an original well log?	Yes:	No: X	N/A Unknown			
	Excavation Depth (ft)?	Screened area filled with gravel?	Yes: X	No:	N/A Unknown		Well log listed at DNR?	Yes:	No:	N/A Unknown	X		
	Type of fill used?	Perforated area filled with gravel?	Yes: X	No:	N/A Unknown		Local authorities notified?	Yes:	No:	N/A Unknown	X		
	Volume of fill (cu ft)?	Excavated pit refilled?	Yes:	No:	N/A Unknown		DEC notified of decommissioning?	Yes: X	No:	N/A Unknown			
	# Bags of bentonite in casing? 1	Pit area mounded?	Yes:	No:	N/A Unknown		DNR notified of decommissioning?	Yes:	No: X	N/A Unknown			

Signatures (* => are required)**

Owner***: NA	Decommisioner / Contractor***: Peter Beardsley
Date: ____/____/____	Date: November 12, 2019

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
3) Attach any maintenance or water usage records that may apply to this well and provide an adequate locational description, including maps or sketches. Use additional pages as needed.
4) This form is under development and is subject to change. Please submit suggestions for changes or improvements to either DNR or DEC at the addresses listed above.

Please attach schematics and photos to further document the information provided on this form. This is particularly important for public water supply wells and also any other wells that might impact the public water supply.

Environmental Monitoring Well Decommissioning

Department of Natural Resources
Division of Mining, Land & Water
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State Of Alaska

Well Record of Decommissioning

This form is intended to convey information regarding the decommisioning of a water well as required by both DEC and DNR. Add additional datasheets as necessary.

Well Decommissioner or Contractor		Well and Owner Particulars *	
Name:	Peter Beardsley	Owner's name and address:	Timothy Ballard
Company:	NORTECH Environmental	Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	SW3

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well

Public water system? (**See note ****)	Yes:	No: X	
If so, PWSID number:			
Single Family Domestic,?	Yes:	No: X	
Commercial/ Fishery?	Yes:	No:	
Irrigation/Agricultural?	Yes:	No:	
Heating / Cooling?	Yes:	No:	

Former Well Description (Not reqiured if original well log attached).

Original Driller's Name: GHomestead Drilling

Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:
	Driven?	Yes: X	No:		Capped?	Yes: X	No:
	Jetted?	Yes:	No:		Screened?	Yes: X	No:
	Dug?	Yes:	No:		Perforated?	Yes:	No: X
	Unknown?	Yes:	No:		Well liner present?	Yes:	No: X

Well depth (ft bls):	17	Date of completion:	Feb / 2007		
Static water (ft bls):	8	Flowing artesian?	Yes:	No: X	
Bedrock (ft bls):	NA	Flood prone site?	Yes: X	No:	
Casing type:	PVC	Well condition?	Good: X	Poor:	
Diameter (inches):	3/4 inch	Grouted?	Yes: X	No:	
Stickup (ft):	NA	Well house?	Yes:	No: X	

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:

Include notes regarding any deviations from state approved methodes of decommissioning the well.

Closed in accordance with DEC MW decommissioning requirements under an approved work plan on Nov. 29, 2018.
Casing removed intact.
Sealed with bentonite to 1' bgs , backfilled with gravel to grade.

Reason for well decommissioning:

Environmental project complete

Excavation and Fill Details

Excavation Depth (ft)?	
Type of fill used?	
Volume of fill (cu ft)?	
# Bags of bentonite in casing?	1

Decommissioning process Decommissioned Nov. 29, 2018

Casing cut below grade?	Yes:	No:		Well disinfected prior to decommissioning?	Yes:	No: X	
Casing fully removed?	Yes:	No:		Plumbing removed from casing?	Yes:	No:	N/A X
Borehole Casing filled with bentonite?	Yes: X	No:		Liner (if any) removed?	Yes:	No:	N/A X
Casing welded closed?	Yes:	No:		Electric wiring removed from site?	Yes:	No:	N/A X
Borehole refilled?	Yes: X	No:		Attached an original well log?	Yes:	No: X	
Screened area filled with gravel?	Yes: X	No:		Well log listed at DNR?	Yes:	No:	N/A Unknown X
Perforated area filled with gravel?	Yes: X	No:		Local authorities notified?	Yes:	No:	N/A Unknown X
Excavated pit refilled?	Yes:	No:		DEC notified of decommissioning?	Yes: X	No:	
Pit area mounded?	Yes:	No:		DNR notified of decommissioning?	Yes:	No: X	

Signatures (* => are required)**

Owner***: NA

Date: _____ / _____ / _____

Decommisioner / Contractor***: Peter Beardsley

Date: November 12, 2019 / _____ / _____

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
3) Attach any maintenance or water usage records that may apply to this well and provide an adequate locational description, including maps or sketches. Use additional pages as needed.
4) This form is under development and is subject to change. Please submit suggestions for changes or improvements to either DNR or DEC at the addresses listed above.

Please attach schematics and photos to further document the information provided on this form. This is particularly important for public water supply wells and also any other wells that might impact the public water supply.

Environmental Monitoring Well Decommissioning

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Well Record of Decommissioning

This form is intended to convey information regarding the decommisioning of a water well as required by both DEC and DNR. Add additional datasheets as necessary.

Well Decommissioner or Contractor		Well and Owner Particulars *	
Name:	Peter Beardsley	Owner's name and address:	Timothy Ballard
Company:	NORTECH Environmental	Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	SW4

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well			Former Well Description (Not reqiured if original well log attached).																			
Public water system? (**See note ****)	Yes:	No: X	Original Driller's Name: GHomestead Drilling											Well depth (ft bls): 17		Date of completion: Feb / 2007					
If so, PWSID number:			Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:	N/A Unknown			Static water (ft bls): 8		Flowing artesian?	Yes:	No: X	N/A Unknown		
Single Family Domestic,?	Yes:	No: X		Driven?	Yes: X	No:		Capped?	Yes: X	No:	N/A Unknown			Bedrock (ft bls): NA		Flood prone site?	Yes: X	No:	N/A Unknown		
Commercial/ Fishery?	Yes:	No:		Jetted?	Yes:	No:		Screened?	Yes: X	No:	N/A Unknown			Casing type: PVC		Well condition?	Good: X	Poor:	N/A Unknown		
Irrigation/Agricultural?	Yes:	No:		Dug?	Yes:	No:		Perforated?	Yes:	No: X	N/A Unknown			Diameter (inches): 3/4 inch		Grouted?	Yes: X	No:	N/A Unknown		
Heating / Cooling?	Yes:	No:		Unknown?	Yes:	No:		Well liner present?	Yes:	No: X	N/A Unknown			Stickup (ft): NA		Well house?	Yes:	No: X	N/A Unknown		

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:	Reason for well decommissioning:	Decommissioning process Decommissioned Nov. 29, 2018									
Include notes regarding any deviations from state approved methodes of decommissioning the well.	Environmental project complete	Casing cut below grade?	Yes:	No:	N/A Unknown	Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown
Closed in accordance with DEC MW decommissioning requirements under an approved work plan on Nov. 29, 2018. Casing removed intact. Sealed with bentonite to 1' bgs , backfilled with gravel to grade.		Casing fully removed?	Yes:	No:	N/A Unknown	Plumbing removed from casing?	Yes:	No:	N/A X Unknown
		Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown	Liner (if any) removed?	Yes:	No:	N/A X Unknown
		Casing welded closed?	Yes:	No:	N/A Unknown	Electric wiring removed from site?	Yes:	No:	N/A X Unknown
	Excavation and Fill Details	Borehole refilled?	Yes: X	No:	N/A Unknown	Attached an original well log?	Yes:	No: X	N/A Unknown
	Excavation Depth (ft)?	Screened area filled with gravel?	Yes: X	No:	N/A Unknown	Well log listed at DNR?	Yes:	No:	N/A Unknown X
	Type of fill used?	Perforated area filled with gravel?	Yes: X	No:	N/A Unknown	Local authorities notified?	Yes:	No:	N/A Unknown X
	Volume of fill (cu ft)?	Excavated pit refilled?	Yes:	No:	N/A Unknown	DEC notified of decommissioning?	Yes: X	No:	N/A Unknown
	# Bags of bentonite in casing? 1	Pit area mounded?	Yes:	No:	N/A Unknown	DNR notified of decommissioning?	Yes:	No: X	N/A Unknown

Signatures (* => are required)**

Owner***: NA	Decommisioner / Contractor***: Peter Beardsley
Date: ____/____/____	Date: November 12, 2019

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
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Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	SW5

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well			Former Well Description (Not reqiured if original well log attached).																			
Public water system? (**See note ****)	Yes:	No: X	Original Driller's Name: GHomestead Drilling											Well depth (ft bls): 17		Date of completion: Feb / 2007					
If so, PWSID number:			Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:	N/A Unknown			Static water (ft bls): 8		Flowing artesian?	Yes:	No: X	N/A Unknown		
Single Family Domestic,?	Yes:	No: X		Driven?	Yes: X	No:		Capped?	Yes: X	No:	N/A Unknown			Bedrock (ft bls): NA		Flood prone site?	Yes: X	No:	N/A Unknown		
Commercial/ Fishery?	Yes:	No:		Jetted?	Yes:	No:		Screened?	Yes: X	No:	N/A Unknown			Casing type: PVC		Well condition?	Good: X	Poor:	N/A Unknown		
Irrigation/Agricultural?	Yes:	No:		Dug?	Yes:	No:		Perforated?	Yes:	No: X	N/A Unknown			Diameter (inches): 3/4 inch		Grouted?	Yes: X	No:	N/A Unknown		
Heating / Cooling?	Yes:	No:		Unknown?	Yes:	No:		Well liner present?	Yes:	No: X	N/A Unknown			Stickup (ft): NA		Well house?	Yes:	No: X	N/A Unknown		

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:	Reason for well decommissioning:	Decommissioning process Decommissioned Nov. 29, 2018											
Include notes regarding any deviations from state approved methodes of decommissioning the well.	Environmental project complete	Casing cut below grade?	Yes:	No:	N/A Unknown		Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown			
Closed in accordance with DEC MW decommissioning requirements under an approved work plan on Nov. 29, 2018. Casing broken 7' bgs. Sealed with bentonite to 1' bgs , backfilled with gravel to grade.		Casing fully removed?	Yes:	No:	N/A Unknown		Plumbing removed from casing?	Yes:	No:	N/A Unknown	X		
		Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown		Liner (if any) removed?	Yes:	No:	N/A Unknown	X		
		Casing welded closed?	Yes:	No:	N/A Unknown		Electric wiring removed from site?	Yes:	No:	N/A Unknown	X		
	Excavation and Fill Details	Borehole refilled?	Yes: X	No:	N/A Unknown		Attached an original well log?	Yes:	No: X	N/A Unknown			
	Excavation Depth (ft)?	Screened area filled with gravel?	Yes: X	No:	N/A Unknown		Well log listed at DNR?	Yes:	No:	N/A Unknown	X		
	Type of fill used?	Perforated area filled with gravel?	Yes: X	No:	N/A Unknown		Local authorities notified?	Yes:	No:	N/A Unknown	X		
	Volume of fill (cu ft)?	Excavated pit refilled?	Yes:	No:	N/A Unknown		DEC notified of decommissioning?	Yes: X	No:	N/A Unknown			
	# Bags of bentonite in casing? 1	Pit area mounded?	Yes:	No:	N/A Unknown		DNR notified of decommissioning?	Yes:	No: X	N/A Unknown			

Signatures (* => are required)**

Owner***: NA

Date: _____ / _____ / _____

Decommisioner / Contractor***: Peter Beardsley

Date: November 12, 2019 / _____ / _____

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
3) Attach any maintenance or water usage records that may apply to this well and provide an adequate locational description, including maps or sketches. Use additional pages as needed.
4) This form is under development and is subject to change. Please submit suggestions for changes or improvements to either DNR or DEC at the addresses listed above.

Please attach schematics and photos to further document the information provided on this form. This is particularly important for public water supply wells and also any other wells that might impact the public water supply.

Environmental Monitoring Well Decommissioning

Department of Natural Resources
Division of Mining, Land & Water
550 w 7th Ave., Suite 1020
Anchorage, AK 99501-3562
dnr.water.reports@alaska.gov

Department of Environmental Conservation
Division of Environmental Health, Drinking Water Program
555 Cordova Street
Anchorage, AK 99501
dec.eh.drinkingwater.reports@alaska.gov

State Of Alaska

Well Record of Decommissioning

This form is intended to convey information regarding the decommisioning of a water well as required by both DEC and DNR. Add additional datasheets as necessary.

Well Decommissioner or Contractor		Well and Owner Particulars *	
Name:	Peter Beardsley	Owner's name and address:	Timothy Ballard
Company:	NORTECH Environmental	Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	SW6

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well			Former Well Description (Not reqiured if original well log attached).																				
Public water system? (**See note ****)	Yes:	No: X	Original Driller's Name: GeoTek Alaska												Well depth (ft bls): 13		Date of completion: Aug 2008						
If so, PWSID number:			Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:	N/A Unknown				Static water (ft bls): 8		Flowing artesian?	Yes:	No: X	N/A Unknown			
Single Family Domestic,?	Yes:	No: X		Driven?	Yes: X	No:		Capped?	Yes: X	No:	N/A Unknown				Bedrock (ft bls): NA		Flood prone site?	Yes: X	No:	N/A Unknown			
Commercial/ Fishery?	Yes:	No:		Jetted?	Yes:	No:		Screened?	Yes: X	No:	N/A Unknown				Casing type: PVC		Well condition?	Good: X	Poor:	N/A Unknown			
Irrigation/Agricultural?	Yes:	No:		Dug?	Yes:	No:		Perforated?	Yes:	No: X	N/A Unknown				Diameter (inches): 3/4 inch		Grouted?	Yes: X	No:	N/A Unknown			
Heating / Cooling?	Yes:	No:		Unknown?	Yes:	No:		Well liner present?	Yes:	No: X	N/A Unknown				Stickup (ft): NA		Well house?	Yes:	No: X	N/A Unknown			

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:	Reason for well decommissioning:	Decommissioning process Decommissioned Nov. 29, 2018											
Include notes regarding any deviations from state approved methodes of decommissioning the well.	Environmental project complete	Casing cut below grade?	Yes:	No:	N/A Unknown	Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown
		Casing fully removed?	Yes:	No:	N/A Unknown	Plumbing removed from casing?	Yes:	No:	N/A X Unknown
Closed in accordance with DEC MW decommissioning requirements under an approved work plan on Nov. 29, 2018. Casing withdrawn intact. Sealed with bentonite to 1' bgs , backfilled with gravel to grade.		Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown	Liner (if any) removed?	Yes:	No:	N/A X Unknown
		Casing welded closed?	Yes:	No:	N/A Unknown	Electric wiring removed from site?	Yes:	No:	N/A X Unknown
	Excavation and Fill Details	Borehole refilled?	Yes: X	No:	N/A Unknown	Attached an original well log?	Yes:	No: X	N/A Unknown
	Excavation Depth (ft)?	Screened area filled with gravel?	Yes: X	No:	N/A Unknown	Well log listed at DNR?	Yes:	No:	N/A Unknown X
	Type of fill used?	Perforated area filled with gravel?	Yes: X	No:	N/A Unknown	Local authorities notified?	Yes:	No:	N/A Unknown X
	Volume of fill (cu ft)?	Excavated pit refilled?	Yes:	No:	N/A Unknown	DEC notified of decommissioning?	Yes: X	No:	N/A Unknown
	# Bags of bentonite in casing? 1	Pit area mounded?	Yes:	No:	N/A Unknown	DNR notified of decommissioning?	Yes:	No: X	N/A Unknown

Signatures (* => are required)**

Owner***: NA	Decommisioner / Contractor***: Peter Beardsley
Date: _____ / _____ / _____	Date: November 12, 2019

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
3) Attach any maintenance or water usage records that may apply to this well and provide an adequate locational description, including maps or sketches. Use additional pages as needed.
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Please attach schematics and photos to further document the information provided on this form. This is particularly important for public water supply wells and also any other wells that might impact the public water supply.

Environmental Monitoring Well Decommissioning

Department of Natural Resources
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Division of Environmental Health, Drinking Water Program
555 Cordova Street
Anchorage, AK 99501
dec.eh.drinkingwater.reports@alaska.gov

State Of Alaska

Well Record of Decommissioning

This form is intended to convey information regarding the decommisioning of a water well as required by both DEC and DNR. Add additional datasheets as necessary.

Well Decommissioner or Contractor		Well and Owner Particulars *	
Name:	Peter Beardsley	Owner's name and address:	Timothy Ballard
Company:	NORTECH Environmental	Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	SW7

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well			Former Well Description (Not reqiured if original well log attached).																	
Public water system? (**See note ****)	Yes:	No: X	Original Driller's Name: GeoTek Alaska											Well depth (ft bls): 13		Date of completion: Aug 2008				
If so, PWSID number:			Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:	N/A Unknown			Static water (ft bls): 8		Flowing artesian?	Yes:	No: X	N/A Unknown	
Single Family Domestic,?	Yes:	No: X		Driven?	Yes: X	No:		Capped?	Yes: X	No:	N/A Unknown			Bedrock (ft bls): NA		Flood prone site?	Yes: X	No:	N/A Unknown	
Commercial/ Fishery?	Yes:	No:		Jetted?	Yes:	No:		Screened?	Yes: X	No:	N/A Unknown			Casing type: PVC		Well condition?	Good: X	Poor:	N/A Unknown	
Irrigation/Agricultural?	Yes:	No:		Dug?	Yes:	No:		Perforated?	Yes:	No: X	N/A Unknown			Diameter (inches): 3/4 inch		Grouted?	Yes: X	No:	N/A Unknown	
Heating / Cooling?	Yes:	No:		Unknown?	Yes:	No:		Well liner present?	Yes:	No: X	N/A Unknown			Stickup (ft): NA		Well house?	Yes:	No: X	N/A Unknown	

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:	Reason for well decommissioning:	Decommissioning process Decommissioned Nov. 29, 2018									
Include notes regarding any deviations from state approved methodes of decommissioning the well.	Environmental project complete	Casing cut below grade?	Yes:	No:	N/A Unknown	Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown
Closed in accordance with DEC MW decommissioning requirements under an approved work plan on Nov. 29, 2018. Casing broken 3' bgs. Sealed with bentonite to 1' bgs , backfilled with gravel to grade.		Casing fully removed?	Yes:	No:	N/A Unknown	Plumbing removed from casing?	Yes:	No:	N/A X Unknown
		Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown	Liner (if any) removed?	Yes:	No:	N/A X Unknown
		Casing welded closed?	Yes:	No:	N/A Unknown	Electric wiring removed from site?	Yes:	No:	N/A X Unknown
	Excavation and Fill Details	Borehole refilled?	Yes: X	No:	N/A Unknown	Attached an original well log?	Yes:	No: X	N/A Unknown
	Excavation Depth (ft)?	Screened area filled with gravel?	Yes: X	No:	N/A Unknown	Well log listed at DNR?	Yes:	No:	N/A Unknown X
	Type of fill used?	Perforated area filled with gravel?	Yes: X	No:	N/A Unknown	Local authorities notified?	Yes:	No:	N/A Unknown X
	Volume of fill (cu ft)?	Excavated pit refilled?	Yes:	No:	N/A Unknown	DEC notified of decommissioning?	Yes: X	No:	N/A Unknown
	# Bags of bentonite in casing? 1	Pit area mounded?	Yes:	No:	N/A Unknown	DNR notified of decommissioning?	Yes:	No: X	N/A Unknown

Signatures (* => are required)**

Owner***: NA	Decommisioner / Contractor***: Peter Beardsley
Date: _____ / _____ / _____	Date: November 12, 2019

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
3) Attach any maintenance or water usage records that may apply to this well and provide an adequate locational description, including maps or sketches. Use additional pages as needed.
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Environmental Monitoring Well Decommissioning

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State Of Alaska

Well Record of Decommissioning

This form is intended to convey information regarding the decommisioning of a water well as required by both DEC and DNR. Add additional datasheets as necessary.

Well Decommissioner or Contractor		Well and Owner Particulars *	
Name:	Peter Beardsley	Owner's name and address:	Timothy Ballard
Company:	NORTECH Environmental	Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	SW8

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well

Public water system? (**See note ****)	Yes:	No: X	
If so, PWSID number:			
Single Family Domestic,?	Yes:	No: X	
Commercial/ Fishery?	Yes:	No:	
Irrigation/Agricultural?	Yes:	No:	
Heating / Cooling?	Yes:	No:	

Former Well Description (Not reqiured if original well log attached).

Original Driller's Name: GeoTek Alaska

Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:	N/A Unknown
	Driven?	Yes: X	No:		Capped?	Yes: X	No:	N/A Unknown
	Jetted?	Yes:	No:		Screened?	Yes: X	No:	N/A Unknown
	Dug?	Yes:	No:		Perforated?	Yes:	No: X	N/A Unknown
	Unknown?	Yes:	No:		Well liner present?	Yes:	No: X	N/A Unknown

Well depth (ft bls):	13	Date of completion:	Aug / 2008	
Static water (ft bls):	8	Flowing artesian?	Yes:	No: X N/A Unknown
Bedrock (ft bls):	NA	Flood prone site?	Yes: X	No: N/A Unknown
Casing type:	PVC	Well condition?	Good: X	Poor: N/A Unknown
Diameter (inches):	3/4 inch	Grouted?	Yes: X	No: N/A Unknown
Stickup (ft):	NA	Well house?	Yes:	No: X N/A Unknown

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:

Include notes regarding any deviations from state approved methodes of decommissioning the well.

Closed in accordance with DEC MW decommissioning requirements under an approved work plan on Nov. 29, 2018.
Casing withdrawn intact.
Sealed with bentonite to 1' bgs , backfilled with gravel to grade.

Reason for well decommissioning:

Environmental project complete

Excavation and Fill Details

Excavation Depth (ft)?	
Type of fill used?	
Volume of fill (cu ft)?	
# Bags of bentonite in casing?	1

Decommissioning process Decommissioned Nov. 29, 2018

Casing cut below grade?	Yes:	No:	N/A Unknown	Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown
Casing fully removed?	Yes:	No:	N/A Unknown	Plumbing removed from casing?	Yes:	No:	N/A X Unknown
Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown	Liner (if any) removed?	Yes:	No:	N/A X Unknown
Casing welded closed?	Yes:	No:	N/A Unknown	Electric wiring removed from site?	Yes:	No:	N/A X Unknown
Borehole refilled?	Yes: X	No:	N/A Unknown	Attached an original well log?	Yes:	No: X	N/A Unknown
Screened area filled with gravel?	Yes: X	No:	N/A Unknown	Well log listed at DNR?	Yes:	No:	N/A Unknown X
Perforated area filled with gravel?	Yes: X	No:	N/A Unknown	Local authorities notified?	Yes:	No:	N/A Unknown X
Excavated pit refilled?	Yes:	No:	N/A Unknown	DEC notified of decommissioning?	Yes: X	No:	N/A Unknown
Pit area mounded?	Yes:	No:	N/A Unknown	DNR notified of decommissioning?	Yes:	No: X	N/A Unknown

Signatures (* => are required)**

Owner***: NA

Date: _____ / _____ / _____

Decommisioner / Contractor***: Peter Beardsley

Date: November 12, 2019 / _____ / _____

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
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Well Record of Decommissioning

This form is intended to convey information regarding the decommisioning of a water well as required by both DEC and DNR. Add additional datasheets as necessary.

Well Decommissioner or Contractor		Well and Owner Particulars *	
Name:	Peter Beardsley	Owner's name and address:	Timothy Ballard
Company:	NORTECH Environmental	Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	SW9

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well			Former Well Description (Not reqiured if original well log attached).																	
Public water system? (**See note ****)	Yes:	No: X	Original Driller's Name: GeoTek Alaska											Well depth (ft bls): 13		Date of completion: Aug 2008				
If so, PWSID number: _____			Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:	N/A Unknown			Static water (ft bls): 8		Flowing artesian?	Yes:	No: X	N/A Unknown	
Single Family Domestic,?	Yes:	No: X		Driven?	Yes: X	No:		Capped?	Yes: X	No:	N/A Unknown			Bedrock (ft bls): NA		Flood prone site?	Yes: X	No:	N/A Unknown	
Commercial/ Fishery?	Yes:	No:		Jetted?	Yes:	No:		Screened?	Yes: X	No:	N/A Unknown			Casing type: PVC		Well condition?	Good: X	Poor:	N/A Unknown	
Irrigation/Agricultural?	Yes:	No:		Dug?	Yes:	No:		Perforated?	Yes:	No: X	N/A Unknown			Diameter (inches): 3/4 inch		Grouted?	Yes: X	No:	N/A Unknown	
Heating / Cooling?	Yes:	No:		Unknown?	Yes:	No:		Well liner present?	Yes:	No: X	N/A Unknown			Stickup (ft): NA		Well house?	Yes:	No: X	N/A Unknown	

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:	Reason for well decommissioning:	Decommissioning process Decommissioned Nov. 29, 2018									
Include notes regarding any deviations from state approved methodes of decommissioning the well.	Environmental project complete	Casing cut below grade?	Yes:	No:	N/A Unknown	Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown
Closed in accordance with DEC MW decommissioning requirements under an approved work plan on Nov. 29, 2018. Casing withdrawn intact. Sealed with bentonite to 1' bgs , backfilled with gravel to grade.		Casing fully removed?	Yes:	No:	N/A Unknown	Plumbing removed from casing?	Yes:	No:	N/A X Unknown
		Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown	Liner (if any) removed?	Yes:	No:	N/A X Unknown
		Casing welded closed?	Yes:	No:	N/A Unknown	Electric wiring removed from site?	Yes:	No:	N/A X Unknown
	Excavation and Fill Details	Borehole refilled?	Yes: X	No:	N/A Unknown	Attached an original well log?	Yes:	No: X	N/A Unknown
	Excavation Depth (ft)?	Screened area filled with gravel?	Yes: X	No:	N/A Unknown	Well log listed at DNR?	Yes:	No:	N/A Unknown X
	Type of fill used?	Perforated area filled with gravel?	Yes: X	No:	N/A Unknown	Local authorities notified?	Yes:	No:	N/A Unknown X
	Volume of fill (cu ft)?	Excavated pit refilled?	Yes:	No:	N/A Unknown	DEC notified of decommissioning?	Yes: X	No:	N/A Unknown
	# Bags of bentonite in casing? 1	Pit area mounded?	Yes:	No:	N/A Unknown	DNR notified of decommissioning?	Yes:	No: X	N/A Unknown

Signatures (* => are required)**

Owner***: NA	Decommisioner / Contractor***: Peter Beardsley
Date: _____ / _____ / _____	Date: November 12, 2019 / _____ / _____

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
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Well Decommissioner or Contractor		Well and Owner Particulars *	
Name:	Peter Beardsley	Owner's name and address:	Timothy Ballard
Company:	NORTECH Environmental	Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	DW1

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well

Public water system? (**See note ****)	Yes:	No: X
If so, PWSID number:		
Single Family Domestic,?	Yes:	No: X
Commercial/ Fishery?	Yes:	No:
Irrigation/Agricultural?	Yes:	No:
Heating / Cooling?	Yes:	No:

Former Well Description (Not reqiured if original well log attached).

Original Driller's Name: GHomestead Drilling

Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:
	Driven?	Yes: X	No:		Capped?	Yes: X	No:
	Jetted?	Yes:	No:		Screened?	Yes: X	No:
	Dug?	Yes:	No:		Perforated?	Yes:	No: X
	Unknown?	Yes:	No:		Well liner present?	Yes:	No: X

Well depth (ft bls):	35	Date of completion:	Feb / 2007		
Static water (ft bls):	8	Flowing artesian?	Yes:	No: X	N/A Unknown
Bedrock (ft bls):	NA	Flood prone site?	Yes: X	No:	N/A Unknown
Casing type:	PVC	Well condition?	Good: X	Poor:	N/A Unknown
Diameter (inches):	3/4 inch	Grouted?	Yes: X	No:	N/A Unknown
Stickup (ft):	NA	Well house?	Yes:	No: X	N/A Unknown

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:

Include notes regarding any deviations from state approved methodes of decommissioning the well.

Closed in accordance with DEC MW decommissioning requirements under an approved work plan on Nov. 29, 2018.
Casing withdrawn intact.
Sealed with bentonite to 1' bgs , backfilled with gravel to grade.

Reason for well decommissioning:

Environmental project complete

Excavation and Fill Details

Excavation Depth (ft)?	
Type of fill used?	
Volume of fill (cu ft)?	
# Bags of bentonite in casing?	1

Decommissioning process Decommissioned Nov. 29, 2018

Casing cut below grade?	Yes:	No:	N/A Unknown	Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown
Casing fully removed?	Yes:	No:	N/A Unknown	Plumbing removed from casing?	Yes:	No:	N/A X Unknown
Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown	Liner (if any) removed?	Yes:	No:	N/A X Unknown
Casing welded closed?	Yes:	No:	N/A Unknown	Electric wiring removed from site?	Yes:	No:	N/A X Unknown
Borehole refilled?	Yes: X	No:	N/A Unknown	Attached an original well log?	Yes:	No: X	N/A Unknown
Screened area filled with gravel?	Yes: X	No:	N/A Unknown	Well log listed at DNR?	Yes:	No:	N/A Unknown X
Perforated area filled with gravel?	Yes: X	No:	N/A Unknown	Local authorities notified?	Yes:	No:	N/A Unknown X
Excavated pit refilled?	Yes:	No:	N/A Unknown	DEC notified of decommissioning?	Yes: X	No:	N/A Unknown
Pit area mounded?	Yes:	No:	N/A Unknown	DNR notified of decommissioning?	Yes:	No: X	N/A Unknown

Signatures (* => are required)**

Owner***: NA

Date: _____ / _____ / _____

Decommisioner / Contractor***: Peter Beardsley

Date: November 12, 2019 / _____ / _____

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
3) Attach any maintenance or water usage records that may apply to this well and provide an adequate locational description, including maps or sketches. Use additional pages as needed.
4) This form is under development and is subject to change. Please submit suggestions for changes or improvements to either DNR or DEC at the addresses listed above.

Please attach schematics and photos to further document the information provided on this form. This is particularly important for public water supply wells and also any other wells that might impact the public water supply.

Environmental Monitoring Well Decommissioning

Department of Natural Resources
Division of Mining, Land & Water
550 w 7th Ave., Suite 1020
Anchorage, AK 99501-3562
dnr.water.reports@alaska.gov

Department of Environmental Conservation
Division of Environmental Health, Drinking Water Program
555 Cordova Street
Anchorage, AK 99501
dec.eh.drinkingwater.reports@alaska.gov

State Of Alaska

Well Record of Decommissioning

This form is intended to convey information regarding the decommisioning of a water well as required by both DEC and DNR. Add additional datasheets as necessary.

Well Decommissioner or Contractor		Well and Owner Particulars *	
Name:	Peter Beardsley	Owner's name and address:	Timothy Ballard
Company:	NORTECH Environmental	Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	DW2

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well			Former Well Description (Not reqiured if original well log attached).																	
Public water system? (**See note ****)	Yes:	No: X	Original Driller's Name: GHomestead Drilling										Well depth (ft bls): 35		Date of completion: Feb / 2007					
If so, PWSID number:			Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:	N/A Unknown		Static water (ft bls): 8		Flowing artesian?	Yes:	No: X	N/A Unknown		
Single Family Domestic,?	Yes:	No: X		Driven?	Yes: X	No:		Capped?	Yes: X	No:	N/A Unknown		Bedrock (ft bls): NA		Flood prone site?	Yes: X	No:	N/A Unknown		
Commercial/ Fishery?	Yes:	No:		Jetted?	Yes:	No:		Screened?	Yes: X	No:	N/A Unknown		Casing type: PVC		Well condition?	Good: X	Poor:	N/A Unknown		
Irrigation/Agricultural?	Yes:	No:		Dug?	Yes:	No:		Perforated?	Yes:	No: X	N/A Unknown		Diameter (inches): 3/4 inch		Grouted?	Yes: X	No:	N/A Unknown		
Heating / Cooling?	Yes:	No:		Unknown?	Yes:	No:		Well liner present?	Yes:	No: X	N/A Unknown		Stickup (ft): NA		Well house?	Yes:	No: X	N/A Unknown		

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:	Reason for well decommissioning:	Decommissioning process Decommissioned Nov. 29, 2018									
Include notes regarding any deviations from state approved methodes of decommissioning the well.	Environmental project complete	Casing cut below grade?	Yes:	No:	N/A Unknown		Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown	
Closed in accordance with DEC MW decommissioning requirements under an approved work plan on Nov. 29, 2018. Casing broken 7' bgs. Sealed with bentonite to 1' bgs , backfilled with gravel to grade.		Casing fully removed?	Yes:	No:	N/A Unknown		Plumbing removed from casing?	Yes:	No:	N/A Unknown	X
		Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown		Liner (if any) removed?	Yes:	No:	N/A Unknown	X
		Casing welded closed?	Yes:	No:	N/A Unknown		Electric wiring removed from site?	Yes:	No:	N/A Unknown	X
	Excavation and Fill Details	Borehole refilled?	Yes: X	No:	N/A Unknown		Attached an original well log?	Yes:	No: X	N/A Unknown	
	Excavation Depth (ft)?	Screened area filled with gravel?	Yes: X	No:	N/A Unknown		Well log listed at DNR?	Yes:	No:	N/A Unknown	X
	Type of fill used?	Perforated area filled with gravel?	Yes: X	No:	N/A Unknown		Local authorities notified?	Yes:	No:	N/A Unknown	X
	Volume of fill (cu ft)?	Excavated pit refilled?	Yes:	No:	N/A Unknown		DEC notified of decommissioning?	Yes: X	No:	N/A Unknown	
	# Bags of bentonite in casing? 1	Pit area mounded?	Yes:	No:	N/A Unknown		DNR notified of decommissioning?	Yes:	No: X	N/A Unknown	

Signatures (* => are required)**

Owner***: NA

Date: _____ / _____ / _____

Decommisioner / Contractor***: Peter Beardsley

Date: November 12, 2019 / _____ / _____

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
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Please attach schematics and photos to further document the information provided on this form. This is particularly important for public water supply wells and also any other wells that might impact the public water supply.

Environmental Monitoring Well Decommissioning

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550 w 7th Ave., Suite 1020
Anchorage, AK 99501-3562
dnr.water.reports@alaska.gov

Department of Environmental Conservation
Division of Environmental Health, Drinking Water Program
555 Cordova Street
Anchorage, AK 99501
dec.eh.drinkingwater.reports@alaska.gov

State Of Alaska

Well Record of Decommissioning

This form is intended to convey information regarding the decommisioning of a water well as required by both DEC and DNR. Add additional datasheets as necessary.

Well Decommissioner or Contractor		Well and Owner Particulars *	
Name:	Peter Beardsley	Owner's name and address:	Timothy Ballard
Company:	NORTECH Environmental	Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	Water Well (Original)

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well			Former Well Description (Not reqiured if original well log attached).																	
Public water system? (**See note ****)	Yes:	No: X	Original Driller's Name: Not Known											Well depth (ft bls):	35	Date of completion:	Not Known			
If so, PWSID number:			Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:	N/A Unknown			Static water (ft bls):	8	Flowing artesian?	Yes:	No: X	N/A Unknown	
Single Family Domestic,?	Yes: X	No:		Driven?	Yes: X	No:		Capped?	Yes: X	No:	N/A Unknown			Bedrock (ft bls):	NA	Flood prone site?	Yes: X	No:	N/A Unknown	
Commercial/ Fishery?	Yes:	No:		Jetted?	Yes:	No:		Screened?	Yes: X	No:	N/A Unknown			Casing type:	Steel	Well condition?	Good: X	Poor:	N/A Unknown	
Irrigation/Agricultural?	Yes:	No:		Dug?	Yes:	No:		Perforated?	Yes:	No: X	N/A Unknown			Diameter (inches):	2 inch	Grouted?	Yes: X	No:	N/A Unknown	
Heating / Cooling?	Yes:	No:		Unknown?	Yes:	No:		Well liner present?	Yes:	No: X	N/A Unknown			Stickup (ft):	NA	Well house?	Yes:	No: X	N/A Unknown	

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:	Reason for well decommissioning:	Decommissioning process Decommissioned Nov. 29, 2018									
Include notes regarding any deviations from state approved methodes of decommissioning the well.	Environmental project complete	Casing cut below grade?	Yes:	No:	N/A Unknown	Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown
Closed in accordance with DEC MW decommissioning requirements under an approved work plan on Nov. 29, 2018. Casing cut at 1' bgs. Sealed with bentonite to 0.5' bsg , backfilled with topsoil to grade.	**Excavation and Fill Details**	Casing fully removed?	Yes:	No:	N/A Unknown	Plumbing removed from casing?	Yes:	No:	N/A X Unknown
		Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown	Liner (if any) removed?	Yes:	No:	N/A X Unknown
		Casing welded closed?	Yes:	No:	N/A Unknown	Electric wiring removed from site?	Yes:	No:	N/A X Unknown
	Excavation Depth (ft)?	Borehole refilled?	Yes: X	No:	N/A Unknown	Attached an original well log?	Yes:	No: X	N/A Unknown
	Type of fill used?	Screened area filled with gravel?	Yes: X	No:	N/A Unknown	Well log listed at DNR?	Yes:	No:	N/A Unknown X
	Volume of fill (cu ft)?	Perforated area filled with gravel?	Yes: X	No:	N/A Unknown	Local authorities notified?	Yes:	No:	N/A Unknown X
	# Bags of bentonite in casing? 1	Excavated pit refilled?	Yes:	No:	N/A Unknown	DEC notified of decommissioning?	Yes: X	No:	N/A Unknown
		Pit area mounded?	Yes:	No:	N/A Unknown	DNR notified of decommissioning?	Yes:	No: X	N/A Unknown

Signatures (* => are required)**

Owner***: NA

Date: _____ / _____ / _____

Decommisioner / Contractor***: Peter Beardsley

Date: November 12, 2019 / _____ / _____

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
3) Attach any maintenance or water usage records that may apply to this well and provide an adequate locational description, including maps or sketches. Use additional pages as needed.
4) This form is under development and is subject to change. Please submit suggestions for changes or improvements to either DNR or DEC at the addresses listed above.

Please attach schematics and photos to further document the information provided on this form. This is particularly important for public water supply wells and also any other wells that might impact the public water supply.

Environmental Monitoring Well Decommissioning

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Department of Environmental Conservation
Division of Environmental Health, Drinking Water Program
555 Cordova Street
Anchorage, AK 99501
dec.eh.drinkingwater.reports@alaska.gov

State Of Alaska

Well Record of Decommissioning

This form is intended to convey information regarding the decommisioning of a water well as required by both DEC and DNR. Add additional datasheets as necessary.

Well Decommissioner or Contractor		Well and Owner Particulars *	
Name:	Peter Beardsley	Owner's name and address:	Timothy Ballard
Company:	NORTECH Environmental	Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	CRW1

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well			Former Well Description (Not reqiured if original well log attached).																			
Public water system? (**See note ****)	Yes:	No: X	Original Driller's Name: GFairbanks Pumping and Thawing											Well depth (ft bls): 14		Date of completion: Nov / 2006					
If so, PWSID number:			Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:	N/A Unknown			Static water (ft bls): 8		Flowing artesian?	Yes:	No: X	N/A Unknown		
Single Family Domestic,?	Yes:	No: X		Driven?	Yes:	No:		Capped?	Yes: X	No:	N/A Unknown			Bedrock (ft bls): NA		Flood prone site?	Yes: X	No:	N/A Unknown		
Commercial/ Fishery?	Yes:	No:		Jetted?	Yes:	No:		Screened?	Yes: X	No:	N/A Unknown			Casing type: galv stl		Well condition?	Good: X	Poor:	N/A Unknown		
Irrigation/Agricultural?	Yes:	No:		Dug?	Yes: X	No:		Perforated?	Yes:	No: X	N/A Unknown			Diameter (inches): 18		Grouted?	Yes: X	No:	N/A Unknown		
Heating / Cooling?	Yes:	No:		Unknown?	Yes:	No:		Well liner present?	Yes:	No: X	N/A Unknown			Stickup (ft): 2		Well house?	Yes:	No: X	N/A Unknown		

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:	Reason for well decommissioning:	Decommissioning process Decommissioned Nov. 29, 2018											
Include notes regarding any deviations from state approved methodes of decommissioning the well.	Environmental project complete	Casing cut below grade?	Yes:	No:	N/A Unknown		Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown			
Closed in accordance with DEC MW decommissioning requirements under an approved work plan.		Casing fully removed?	Yes:	No:	N/A Unknown		Plumbing removed from casing?	Yes:	No:	N/A X Unknown			
.		Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown		Liner (if any) removed?	Yes:	No:	N/A X Unknown			
Casing cut down 2' bgs. Backfilled with pea-gravel from GW interface to 3' bgs. Sealed with 3 bags bentonite to 1'bgs. Topped with gravel and topsoil.		Casing welded closed?	Yes:	No:	N/A Unknown		Electric wiring removed from site?	Yes:	No:	N/A X Unknown			
	Excavation and Fill Details	Borehole refilled?	Yes: X	No:	N/A Unknown		Attached an original well log?	Yes:	No: X	N/A Unknown			
	Excavation Depth (ft)?	Screened area filled with gravel?	Yes: X	No:	N/A Unknown		Well log listed at DNR?	Yes:	No:	N/A Unknown X			
	Type of fill used?	Perforated area filled with gravel?	Yes: X	No:	N/A Unknown		Local authorities notified?	Yes:	No:	N/A Unknown X			
	Volume of fill (cu ft)?	Excavated pit refilled?	Yes:	No:	N/A Unknown		DEC notified of decommissioning?	Yes: X	No:	N/A Unknown			
	# Bags of bentonite in casing? 3	Pit area mounded?	Yes:	No:	N/A Unknown		DNR notified of decommissioning?	Yes:	No: X	N/A Unknown			

Signatures (* => are required)**

Owner***: NA

Date: _____ / _____ / _____

Decommisioner / Contractor***: Peter Beardsley

Date: November 12, 2019 / _____ / _____

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
3) Attach any maintenance or water usage records that may apply to this well and provide an adequate locational description, including maps or sketches. Use additional pages as needed.
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Please attach schematics and photos to further document the information provided on this form. This is particularly important for public water supply wells and also any other wells that might impact the public water supply.

Environmental Monitoring Well Decommissioning

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State Of Alaska

Well Record of Decommissioning

This form is intended to convey information regarding the decommisioning of a water well as required by both DEC and DNR. Add additional datasheets as necessary.

Well Decommissioner or Contractor

Name:	Peter Beardsley
Company:	NORTECH Environmental
Address:	2400 College Road, Fairbanks, Alaska 99709
(continued):	
Phone:	907-452-5688
Email:	peter@nortechengr.com

Well and Owner Particulars *

Owner's name and address:	Timothy Ballard
Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Well Name or Number:	FRW2

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well

Public water system? (**See note ****)	Yes:	No: X		
If so, PWSID number:				
Single Family Domestic,?	Yes:	No: X		
Commercial/ Fishery?	Yes:	No:		
Irrigation/Agricultural?	Yes:	No:		
Heating / Cooling?	Yes:	No:		

Former Well Description (Not reqiured if original well log attached).

Original Driller's Name: Homestead Drilling

Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No: N/A Unknown
	Driven?	Yes: X	No:		Capped?	Yes: X	No: N/A Unknown
	Jetted?	Yes:	No:		Screened?	Yes: X	No: N/A Unknown
	Dug?	Yes:	No:		Perforated?	Yes:	No: X N/A Unknown
	Unknown?	Yes:	No:		Well liner present?	Yes:	No: X N/A Unknown

Well depth (ft bls):	35	Date of completion:	Jun / 2008	
Static water (ft bls):	8	Flowing artesian?	Yes:	No: X N/A Unknown
Bedrock (ft bls):	NA	Flood prone site?	Yes: X	No: N/A Unknown
Casing type:	PVC	Well condition?	Good: X	Poor: N/A Unknown
Diameter (inches):	4	Grouted?	Yes: X	No: N/A Unknown
Stickup (ft):	NA	Well house?	Yes:	No: X N/A Unknown

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:

Include notes regarding any deviations from state approved methodes of decommissioning the well.

Closed in accordance with DEC MW decommissioning requirements under an approved work plan on Nov. 29, 2018.
Casing withdrawn intact.
Sealed with bentonite to 1' bgs , backfilled with gravel to grade.

Reason for well decommissioning:

Environmental project complete

Excavation and Fill Details

Excavation Depth (ft)?	
Type of fill used?	
Volume of fill (cu ft)?	
# Bags of bentonite in casing?	1

Decommissioning process

Decommissioned Nov. 29, 2018

Casing cut below grade?	Yes:	No:	N/A Unknown	Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown
Casing fully removed?	Yes:	No:	N/A Unknown	Plumbing removed from casing?	Yes:	No:	N/A X Unknown
Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown	Liner (if any) removed?	Yes:	No:	N/A X Unknown
Casing welded closed?	Yes:	No:	N/A Unknown	Electric wiring removed from site?	Yes:	No:	N/A X Unknown
Borehole refilled?	Yes: X	No:	N/A Unknown	Attached an original well log?	Yes:	No: X	N/A Unknown
Screened area filled with gravel?	Yes: X	No:	N/A Unknown	Well log listed at DNR?	Yes:	No:	N/A Unknown X
Perforated area filled with gravel?	Yes: X	No:	N/A Unknown	Local authorities notified?	Yes:	No:	N/A Unknown X
Excavated pit refilled?	Yes:	No:	N/A Unknown	DEC notified of decommissioning?	Yes: X	No:	N/A Unknown
Pit area mounded?	Yes:	No:	N/A Unknown	DNR notified of decommissioning?	Yes:	No: X	N/A Unknown

Signatures (*** => are required)

Owner***: NA

Date: _____ / _____ / _____

Decommisioner / Contractor***: Peter Beardsley

Date: November 12, 2019 / _____ / _____

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
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State Of Alaska

Well Record of Decommissioning

This form is intended to convey information regarding the decommisioning of a water well as required by both DEC and DNR. Add additional datasheets as necessary.

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Company:	NORTECH Environmental	Well location - Street & number:	578 Canoro Road, North Pole, Alaska 99705
Address:	2400 College Road, Fairbanks, Alaska 99709	Well location - Subdivision, Lot & Block:	2005 Lakloey-Persinger Neighborhood, Tax Lot 1150
(continued):		Meridian: Fairbanks Township: 1S Range: 1E Section: 11 Quarters:	
Phone:	907-452-5688	GPS (to 5 places): Latitude: 64.841958 Longitude: -147.503025 Datum:	NAD83
Email:	peter@nortechengr.com	Well Name or Number:	TSP2

Please check all boxes that apply and provide all requested information. Do not check boxes that do not apply. * **Note, Do not enter locational information for public water supplies - see note**, below.**

Details of Former Well			Former Well Description (Not reqiured if original well log attached).																	
Public water system? (**See note ****)	Yes:	No: X	Original Driller's Name: GeoTek Alaska											Well depth (ft bls): 13		Date of completion: Nov 28, 2018				
If so, PWSID number: _____			Well Type	Drilled?	Yes:	No:	Finish	Cased?	Yes: X	No:	N/A Unknown			Static water (ft bls): 8		Flowing artesian?	Yes:	No: X	N/A Unknown	
Single Family Domestic,?	Yes:	No: X		Driven?	Yes: X	No:		Capped?	Yes: X	No:	N/A Unknown			Bedrock (ft bls): NA		Flood prone site?	Yes: X	No:	N/A Unknown	
Commercial/ Fishery?	Yes:	No:		Jetted?	Yes:	No:		Screened?	Yes: X	No:	N/A Unknown			Casing type: PVC		Well condition?	Good: X	Poor:	N/A Unknown	
Irrigation/Agricultural?	Yes:	No:		Dug?	Yes:	No:		Perforated?	Yes:	No: X	N/A Unknown			Diameter (inches): 2 inch		Grouted?	Yes: X	No:	N/A Unknown	
Heating / Cooling?	Yes:	No:		Unknown?	Yes:	No:		Well liner present?	Yes:	No: X	N/A Unknown			Stickup (ft): NA		Well house?	Yes:	No: X	N/A Unknown	

** Public Water System decommissioning may require additional documentation, please contact DEC in this regard.

Decommissioning notes:	Reason for well decommissioning:	Decommissioning process Decommissioned Nov. 28, 2018											
Include notes regarding any deviations from state approved methodes of decommissioning the well.	Environmental project complete	Casing cut below grade?	Yes:	No:	N/A Unknown	Well disinfected prior to decommissioning?	Yes:	No: X	N/A Unknown
Closed in accordance with DEC MW decommissioning requirements under an approved work plan on Nov. 29, 2018. Casing withdrawn intact. Sealed with bentonite to 1' bgs , backfilled with gravel to grade.		Casing fully removed?	Yes:	No:	N/A Unknown	Plumbing removed from casing?	Yes:	No:	N/A X Unknown
		Borehole Casing filled with bentonite?	Yes: X	No:	N/A Unknown	Liner (if any) removed?	Yes:	No:	N/A X Unknown
		Casing welded closed?	Yes:	No:	N/A Unknown	Electric wiring removed from site?	Yes:	No:	N/A X Unknown
	Excavation and Fill Details	Borehole refilled?	Yes: X	No:	N/A Unknown	Attached an original well log?	Yes:	No: X	N/A Unknown
	Excavation Depth (ft)?	Screened area filled with gravel?	Yes: X	No:	N/A Unknown	Well log listed at DNR?	Yes:	No:	N/A Unknown X
	Type of fill used?	Perforated area filled with gravel?	Yes: X	No:	N/A Unknown	Local authorities notified?	Yes:	No:	N/A Unknown X
	Volume of fill (cu ft)?	Excavated pit refilled?	Yes:	No:	N/A Unknown	DEC notified of decommissioning?	Yes: X	No:	N/A Unknown
	# Bags of bentonite in casing? 1	Pit area mounded?	Yes:	No:	N/A Unknown	DNR notified of decommissioning?	Yes:	No: X	N/A Unknown

Signatures (* => are required)**

Owner***: NA	Decommisioner / Contractor***: Peter Beardsley
Date: _____ / _____ / _____	Date: November 12, 2019 / _____ / _____

1) Deliver this form to DNR and DEC within 45 days of decommissioning, as per state regulations 11 AAC 93.140.
2) Attach an original water well log, if available. A blank water well log form is available for use if the lithology and well construction details are known but the original water well log is missing.
3) Attach any maintenance or water usage records that may apply to this well and provide an adequate locational description, including maps or sketches. Use additional pages as needed.
4) This form is under development and is subject to change. Please submit suggestions for changes or improvements to either DNR or DEC at the addresses listed above.

Please attach schematics and photos to further document the information provided on this form. This is particularly important for public water supply wells and also any other wells that might impact the public water supply.

Attachment 5

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation

Division of Spill Prevention and Response
Contaminated Sites Program

610 University Ave.
Fairbanks, Alaska 99709-3643
Main: 907.451.2911
Fax: 907.451.5105

File: 100.38.217

September 4, 2018

Markel Underwriting Manager, Inc.
Attn: Pat Dunstan, RN, JD, Senior Claims Examiner
310 Highway 35 South
Red Bank, New Jersey 07701-5921

Re: ADEC Comments – 2017 Groundwater Monitoring and IAQ Assessment, 578 Canoro Road, North Pole, Alaska
Hazard ID: 4441

Dear Ms. Dunstan,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has reviewed the above-referenced report, submitted by Nortech Engineering on June 4, 2018, for an ongoing site investigation at 578 Canoro Road in North Pole, Alaska. In addition to the planned site investigation, ADEC requested specific tasks be completed before the ADEC could consider the site for closure. This letter describes ADEC's review of the report and recommendations regarding possible site closure.

Nortech staff collected groundwater samples from wells SW5, FRW2, DW2, and DWW and the drinking water was sampled from the domestic drinking water through the hose bib prior to water softening and filter equipment. An Indoor Air Quality (IAQ) Assessment was conducted within the crawlspace, garage, occupied portion of the house, and in outdoor air. Results indicate decreasing contaminant levels in all monitoring wells. Although ethylbenzene and total xylenes continue to decrease in SW5, the current groundwater results are above ADEC's groundwater cleanup levels in 18 AAC 75.345, Table C. The IAQ Assessment did not indicate vapor intrusion was occurring from groundwater sources. In addition, the domestic water supply continues to have clean water with no detection of contaminants. The remaining contaminants found in monitoring well SW5 prevent the ADEC from concluding the site meets the requirements for the designation of "Cleanup Complete" unless institutional controls (ICs) are established at the site.

ADEC recommends one of the following approaches to reach site closure:

1) meet all requirements listed in the closure memorandum (CSP Site Closure Memorandum, August 30, 2016) for the section "Cleanup Complete with ICs", or
2) demonstrate the groundwater meets cleanup levels throughout the site by installing a temporary well point in the area of SW5.

Please note that if IC's are established for the site, ADEC will record a Notice of Environmental Contamination with the property deed at the Alaska State Recorder's Office, and will require that the current landowner sign an IC agreement.

If contaminant concentrations in groundwater meet applicable cleanup levels at the designated alternative points of compliance, then ADEC concurs with Nortech's assessment that a decommissioning plan should be developed to document the planned removal of the monitoring wells, recovery wells, and the original drinking water well.

Thank you for your efforts at this site. Please contact me at (907) 451-2911 or via email at laura.jacobs@alaska.gov if you have any questions or concerns about this letter.

Sincerely,

Laura Jacobs
Environmental Program Specialist

ecc: Peter Beardsley, Environmental Engineer, Nortech
Doug Dusek, Environmental Specialist, Nortech

NORTECH

SUSTAINABLE ENVIRONMENT, ENERGY,
HEALTH & SAFETY PROFESSIONAL SERVICES

***NORTECH* Inc.**

♦

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907.452.5694 Fax

♦

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Suite A106
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907.222.2445
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♦

5438 Shaune Drive
Suite B
Juneau, AK 99801
907.586.6813
907.586.6819 Fax

♦

www.nortechengr.com

October 31, 2018

Alaska Department of Environmental Conservation
610 University Avenue
Fairbanks, AK 99709

ATTN: Laura Jacobs
Project Manager

RE: Work Plan for 2018 Closeout Activities
578 Canoro Road , North Pole, Alaska (ADEC File No. 100.38.217)

Ms. Jacobs:

NORTECH is pleased to submit this work plan for closeout activities at 578 Canoro Road in North Pole, Alaska. The objective is to complete the activities described in the September 4, 2018, letter from the Alaska Department of Environmental Conservation (ADEC) to demonstrate the Site meets the criteria for "Cleanup Complete." This includes decommissioning all wells at the property, as well as utilizing a temporary groundwater access point to demonstrate that the area of (within two feet) of SW5 meets the groundwater cleanup levels. Following is a brief synopsis of the Site history and ***NORTECH***'s proposed work plan for the closeout scope of work.

Background

In late November 2006, Badger Fuel personnel inadvertently delivered approximately 470 gallons of heating oil under pressure to the drinking water well at the Site. An estimated 250 to 300 gallons of fuel was reportedly recovered during the initial response by Fairbanks Pumping and Thawing. Fairbanks Pumping and Thawing and ***NORTECH*** also cleaned and flushed the house distribution system and laboratory results indicated the house system met ADEC drinking water standards. A temporary holding tank and then replacement water supply system were installed to provide water to the house.

Site characterization and drinking water evaluation have been ongoing since November 2006. Over the years, this has included the installation of 12 groundwater monitoring wells, groundwater elevation monitoring, and soil and groundwater sampling and analysis. Groundwater elevation monitoring and laboratory sampling data indicated that the hydraulic gradient was generally to the west across the site. A geophysics assessment (ground penetrating radar (GPR), continuous direct push core soil borings, and soil electrical conductivity (EC) measurements) indicated petroleum migration was controlled by confining layers that slope upward towards the north and east, resulting in product migration to the east of the source (SW-5 area). Smear zone contamination then migrated west from this area.

This geophysics and contaminant migration data was used to identify a suitable location for the new drinking water well for the residence on the property. This new well was installed in 2008 and has met the ADEC cleanup levels during each test. In addition, a well search was completed to identify potential drinking water wells on adjacent properties. Each of these wells was also tested and none were impacted with contaminants from the release.

In 2009, dissolved contamination across the Site consisted primarily of benzene with results indicated that the dissolved benzene plume appeared to have stabilized within or close to the borders of the Site. Results from 2012 and a trend analysis of the 2007 – 2012 demonstrated a significant decline in contaminant concentrations across the Site and SW-5 as the only location that exceeded the cleanup levels. Additional sampling in 2013 and 2017 confirmed these trends. While the benzene and DRO concentrations in SW-5 met the cleanup levels in 2017, risk-based revisions to the cleanup levels resulted in ethylbenzene and total xylenes exceeding the cleanup levels while also having a continued downward trend.

The laboratory results in SW-5 (which had observed free product at the time of installation in 2007) and FRW-2 (a 4" well installed five feet from SW-5 to collect free product) have appeared inconsistent over time. Contaminant concentrations in SW5 have been elevated since installation with a decreasing trend since 2011, while no COCs have been observed above the detection limits in FRW-2 since 2011. The close proximity and divergent results of SW-5 and FRW-2 suggest that the continued presence of contamination in SW-5 may be related to differences in well construction rather than the groundwater at the water table itself. The specific concern identified is that the fine mesh screen that holds the sand pack on the pre-packed direct push well SW-5 is acting to hold contaminants within the well structure, resulting in field observations and laboratory results that are above the ADEC cleanup level, but are not representative of the actual groundwater at the Site.

Additional sampling of the drinking water well and evaluation of vapor intrusion were also completed in 2017 to these potential exposure pathways. The drinking water well remains free of contamination, confirming that drinking water is not an exposure pathway or potential risk to the residents. Similarly, screening of the residence for potential vapor intrusion documented that the indoor air exposure pathway is incomplete for occupants of the structure.

Objectives and Scope of Work

Based on the 2017 results and exposure analysis, ***NORTECH*** requested ADEC review the data and provide potential regulatory pathways to closure of the Site. The ADEC's September 4, 2018 letter titled "ADEC comments – 2017 Groundwater Monitoring and IAQ Assessment, 578 Canoro Road, North Pole, Alaska" identified two potential closure options:

1. Meet all requirements listed in the closure memorandum (CSP Site Closure Memorandum, August 30, 2016) for the section "Cleanup Complete with ICs", OR
2. Demonstrate the groundwater meets cleanup levels throughout the site by installing a temporary well point in the area of SW5.

Based on our conviction that SW-5 is not representative of the groundwater conditions in the aquifer, the objective of this work plan is to meet the requirements of Option 2 and reach Cleanup Complete. In addition, decommissioning activities are necessary to prevent any of these structures from becoming potential contaminant migration pathways from the surface to the aquifer. In order to meet these objectives, ***NORTECH*** proposes the following scope of work:

- Advance a temporary sampling point (TSP) within 2-3 feet of SW-5 to evaluate conditions at this location
- Decommission all existing monitoring wells and other characterization/remediation hardware, including the monitoring wells, free product recovery wells (including the culvert), and removal of the former drinking water well

Methodology

Temporary Groundwater Sampling Point

As indicated above, ***NORTECH*** will collect a groundwater sample from the top of the water table within 2-3 feet of SW-5 to try to characterize the groundwater at this location. This sample will be collected from a temporary groundwater sampling point that is installed by GeoTek Alaska (GTA) using direct push methods. The temporary sampling point will consist of a 2" PVC slotted well screen and riser installed to at least five feet below the groundwater surface. Any annulus from the removal of the direct push tooling will be filled with washed sand following typical monitoring well installation.

Prior to sampling, the depth to groundwater will be measured with an interface probe to identify the groundwater elevation. Previous sampling events were completed using a peristaltic pump, which is no longer acceptable to ADEC. Instead, this temporary sampling point will be sampled using a submersible pump to be consistent with the 2017 FSG and updated sampling procedures. Purging will consist of three to five well volumes and/or until the suspended silt is minimized per visual inspection and field parameters, including dissolved oxygen, pH, ORP, and conductivity, have stabilized. Purge water will be disposed of following receipt of analytical results.

Based on the previous sampling events at SW-5, the samples from this temporary sampling point will be analyzed using AK102 for DRO and EPA Method 8021B for BTEX compounds. Samples will be delivered to the SGS Environmental Services in Fairbanks for analysis at the laboratory in Anchorage. A field duplicate and trip blank will also be included in the sample set. Field sampling will be completed in general accordance with the 2017 Field Sampling Guidance (FSG).

Following sampling, the temporary groundwater sampling point will be decommissioned according to the ADEC *Well Guidance Contaminated Sites Program* document. This will include removing the PVC casing and grouting the remaining annulus as described for the other shallow monitoring wells in the following section.

ADEC Monitoring Well Decommissioning

The Alaska Department of Environmental Conservation (ADEC) September 2013 *Monitoring Well Guidance Contaminated Sites Program* document identifies the methods and means to meet the requirements of 18 AAC 75 and 18 AAC 78 for monitoring well design, construction, installation, maintenance, and decommissioning. The decommissioning of all monitoring wells and well points at the site will be completed in accordance with this document. The key principles described in that document that will be followed at this site are:

1. The preferred method is to decommission a well by first knocking out the bottom of the screen with a steel drill rod/pipe, allowing the well itself to be used as a tremie pipe.
2. Remove the well casing and screen until the screened interval is above the groundwater interface, allowing the aquifer material to collapse into the borehole.
3. Once the casing has been withdrawn to about the groundwater interface, add sealing grout to the well until the materials are near ground surface.
4. Sealing grouts will be properly mixed and prepared in accordance with manufacture recommendations prior to placement.
5. Sealing grouts will be installed to approximately 2 feet bgs. Complete by filling the remaining 2' with sand or gravel, and repair asphalt/cement as necessary.

GeoTek Alaska (GTA), under ***NORTECH's*** direction, will complete the decommissioning field work necessary to remove the existing groundwater monitoring and remediation structures from the Site. The decommissioning of the monitoring wells will be undertaken in accordance to the ADEC guidelines as stated above. The table below provides a summary of the items that will be decommissioned at the site, as well the approach that will be used for decommissioning for each type structure. Each of these structures is also shown in the attached Figure 3 from the 2017 report.

Number of Items	Depth (ft) bgs	Diameter (in) and Material	Decommissioning Approach
2	35'	0.75" PVC	Punch/drill out bottom plug, remove, grout
9	15'	0.75" PVC	Punch/drill out bottom plug, remove, grout
1	35'	2" Steel	Remove, grout annulus
1	35'	4" PVC	Punch/drill out bottom plug, remove, grout
1	20'	18" Steel (Culvert)	Remove, backfill with sand, grout above gw

Grout will be a bentonite slurry installed with a grout injection rod from the bottom up. Any structure that breaks during removal will be completely grouted. Structures abandoned below grade will be cut/broken at least 24 inches below grade with grout installed at least six inches above the cut structure. All abandoned structures will be noted in the decommissioning report. The top 12 inches of all locations will be filled with top soil and seeded. Seed may be purchased and provided to the landowner for installation in the spring if mutually agreeable.

Decommissioning the monitoring wells is expected to take two days and a third day of field work will be necessary to decommission the culvert. Snow removal will be completed with the drill rig and a snow blower as necessary to minimize damage to the existing lawn surface. All decommissioned materials will be disposed of as regular construction and demolition debris. No debris is expected to be of a hazardous nature requiring special handling.

2018 Report

A report will be prepared upon receipt of the groundwater sampling results. This report will include an analysis of the conditions observed during the 2018 sampling event and comparison to previous SW-5 results. The report will specifically evaluate the reported contaminant concentrations and quality of the results for closure of the site through a Cleanup Complete determination.

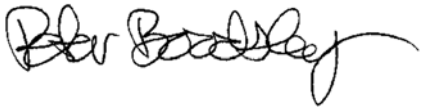
The report will also provide the details of the decommissioning activities, including identification and details of any structures that could not be completely removed. The report will include photographs of the site activities and final site conditions. The report will also include a Well Record of Decommissioning form for each well, as per ADEC guidance, upon completion. The report will also include any other documentation, as required by the ADEC, Markel and the homeowner.

Schedule

Pending approval of this work plan, our target date for completion of the work is the week of November 8. The intent is to complete the work as soon as possible to limit the impacts of seasonal frost, which can become a significant impediment to subsurface structure removal. Groundwater results would be available within approximately four weeks of completion the field work and a final report would be completed within eight weeks of completion of field work.

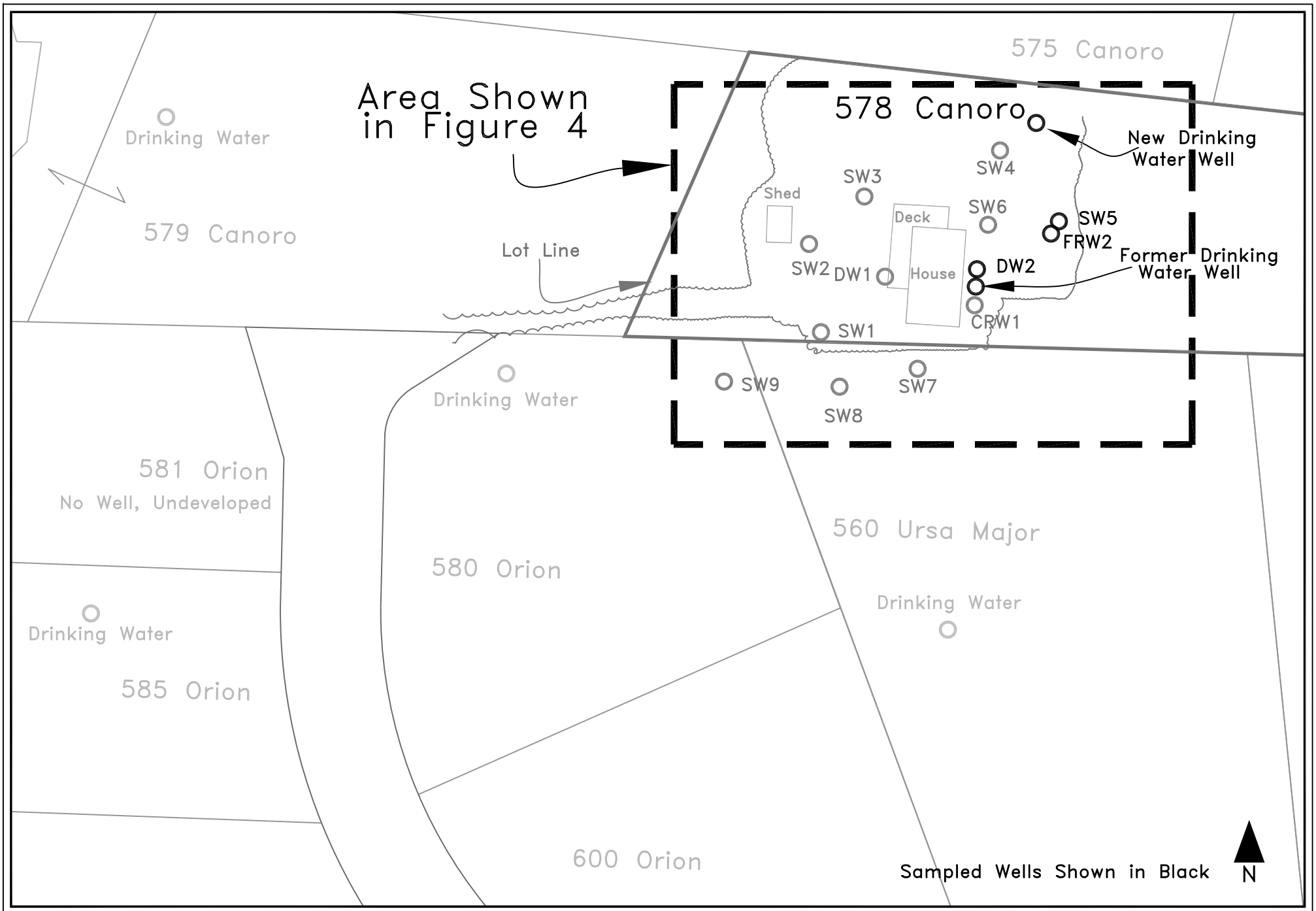
We trust that this information is sufficient for your needs at the present time. If you have any questions or comments, please contact me and your earliest convenience.

Sincerely,
NORTECH



Peter Beardsley, PE
President and CEO

Attachment: Figure 3 from 2017 Report



NORTECH

ENVIRONMENT, ENERGY, HEALTH & SAFETY CONSULTANTS
2400 College Road, Fairbanks, AK. 99709, 907-452-5688
3105 Lakeshore Dr., Anchorage, AK. 99517 907-222-2445
5438 Shaune Dr., Juneau, Alaska 99801 907-586-6813

Nearby Properties and Drinking Water Wells
578 Canoro Road
North Pole, Alaska

DATE: 11/27/2017	SCALE: 1" = 75'
DESIGN: PLB	PROJECT: 06-1080
DRAWN: PLB	DWG: 061080i(03)

FIGURE 3

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation

Division of Spill Prevention and Response
Contaminated Sites Program

610 University Ave.
Fairbanks, Alaska 99709-3643
Main: 907.451.2911
Fax: 907.451.5105

File: 100.38.217

November 1, 2018

Markel Underwriting Manager, Inc.
Attn: Pat Dunstan, RN, JD, Senior Claims Examiner
310 Highway 35 South
Red Bank, New Jersey 07701-5921

Re: ADEC Comments – *Work Plan for 2018 Closeout Activities, 578 Canoro Road, North Pole, Alaska*
Hazard ID: 4441

Dear Ms. Dunstan,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has reviewed the above-referenced work plan, submitted by Nortech on October 31, 2108 for work to be completed at the contaminated site known as "578 Canoro Road, North Pole, Alaska".

ADEC will approve Nortech's proposed plans to collect sample information in the temporary well near SW-5 while at the same time decommissioning the other monitoring wells. However, depending on the results of this sample event, additional well installation may be necessary.

Thank you for your efforts at this site. Please contact me at (907) 451-2911 or via email at laura.jacobs@alaska.gov if you have any questions or concerns about this letter.

Sincerely,

Laura Jacobs
Environmental Program Specialist

E-cc: Peter Beardsley, Nortech
Doug Dusek, Nortech