

WATER SOURCE STUDY

Tuluksak Native Community Tuluksak, Alaska

Prepared by: CE2 Engineers, Inc.



Utility Core Site Well Test Pumping Tuluksak, Alaska

May 2011 FINAL





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I. Introduction

A. Summary and Need

In Fall 2000, the Tuluksak Native Community (TNC) approved a plan for the development of a piped utility system and to co-locate their power plant, bulk fuel storage, community water source, water treatment plant and water storage tank to an area approximately one-quarter mile south of the community. This area is now known as the Utility Core Site.

Two wells have been drilled at this site to serve as the future water source for the community.

Before proceeding with design and construction of proposed water system improvements, there was a desire to review all potential water sources to ensure that fair consideration was given to all viable alternatives. CE2 Engineers, Inc. (CE2) was contracted to prepare a water source study, evaluating water source alternatives, including existing wells (washeteria, cemetery, BIA school and utility core site) and the Tuluksak River.

Documents used in the development of this water source study, and presented in the appendices, include:

- "Final Tuluksak River Site Inspection Report", September 2009, Technical Direction Document Number 08-02-0017; Prepared for USEPA by Ecology & Environment, Inc. (Cover Sheet and Section 8—Summary and Conclusions only, Appendix A)
- Well Log—Existing Washeteria Well (Appendix B)
- Well Logs & Pump Test Data—Utility Core Site Wells (Appendix C)
- Water Quality Results Dated 10-27-05—Utility Core Site 2005 Wells (Appendix D)

Capital cost estimates were developed through this study to determine and illustrate the cost differences between water source alternatives A, B and C. These estimates are provided in Section IV, Comparison of Alternatives.

II. Background

A. Project Setting

1. Location and Access

The community of Tuluksak lies on the south bank of the Tuluksak River approximately 1.5 miles upstream of its confluence with the Kuskokwim River. The village is 35 miles northeast of Bethel in the Bethel Recording District, and lies at approximately 61.1025° north latitude and 160.96167° west longitude. The village area encompasses 3.1 square miles of land and 0.1 square miles of water. Annual precipitation averages 16 inches in this area, with snowfall of 50 inches. Summer temperatures range from 82° to 42° Fahrenheit; winter average temperatures can be from 40° to -42° Fahrenheit.

2. Environmental Conditions

The topography of the area is generally low wetlands with small knolls, lakes, sloughs and old river channels. Undisturbed areas are forested with black spruce, some mature white spruce and willow brush. The village itself is partially forested.

General near surface geology at the site is primarily the result of reworked floodplain deposits. A thin layer of organic soil typically covers the ground surface over silt with silty sand at depth. Sporadic permafrost is present throughout the project area. Where the ground is unfrozen, the groundwater level is close to the level of the river and will vary with the regional water table.

The village of Tuluksak has silty sand fill material available for the construction of embankments. In 2003 Duane Miller Associates LLC collected a bulk sample from the existing borrow site and tested its gradation. The results show that the fill material is a silty, fine-grained sand, with slightly over 12% finer than the 0.02 mm size. Cleaner material is available, but difficult to mine in an efficient manner.

3. Present and Projected Population

The year 2000 population, certified by the State of Alaska Department of Commerce, Community and Economic Development (DCCED), was 428 persons. Assuming a 1.5% growth rate, the estimated 2010 population is 497, and the design year 2030 population is projected to be 669.

4. Proposed Sanitation Improvements

In Fall 2000, TNC approved a plan for the development of a piped utility system and to co-locate their power plant, bulk fuel storage, community water source, water treatment plant and water storage tank to an area approximately one-

quarter mile south of the community. This area is now known as the Utility Core Site.

Construction completed to date includes the access road to the utility core site and wastewater lagoon, construction of the utility core site building pad, construction of the new power plant, and drilling of two new wells on the site.

Construction is underway on Phases I and II of the wastewater system improvements, including installation of new gravity sewer mains, lift station, force main and the wastewater treatment lagoon. Future phases of the wastewater improvement project call for extension of gravity sewer mains to serve additional portions of the village.

5. Design Criteria—Water Demand

Assuming a demand of 50 gallons per capita per day (gpcd), the design maximum daily demand (Year 2030) is 43,485 gallons per day (gpd).

The design peak per capita demand is 65 gpcd.

For the design year 2030, the peak daily system design demand is:

$$Q_{2030MAX} = (43,485 \text{ gpd})/(1,440 \text{ min/day}) = 30 \text{ gal/minute (gpm)}$$

The peak hourly design demand = 4 * Q2030MAX = 4 * 30 gpm = 120 gpm

B. Existing Source History

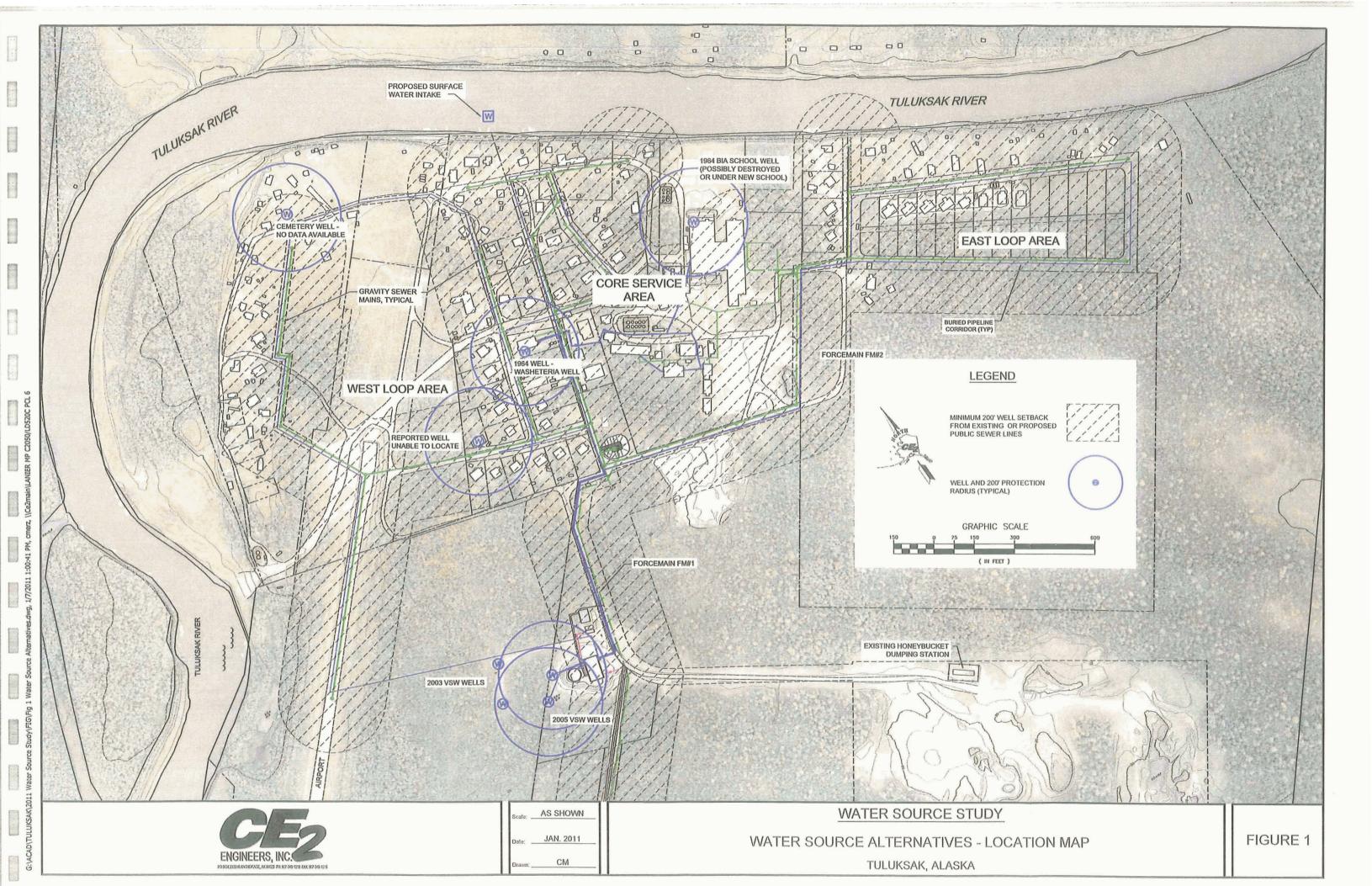
Existing historic and proposed drinking water sources that were evaluated in this study are described below and are shown on the next page in Figure 1.

1. Washeteria Well

This well is currently in use as the water source for the village. Records indicate that the well is 49 feet deep, is screened from 34 to 49 feet, and has a static water level of 10.5 feet.

2. Cemetery Well

This well is located beneath a house currently occupied by Mr. Nelson Napoka and family. We attempted on several occasions to get access to this well for testing, but the residents were unwilling to allow access.



3. BIA School Well

This well was reportedly served the old elementary school. CE2 Senior Design Engineer Lloyd Persson, P.E. visited the site, along with a maintenance representative from the school, but was unable to locate the well. A later observation of the site by CE2 Design Engineer Mike Erdman, P.E., and CE2 Construction Manager David Harvey revealed no sign of the well. It appears likely that the well casing was buried when the old school, which had been destroyed by fire, was demolished and hauled from the site.

4. 2003/2005 Utility Core Site Well Field

In 2003, two wells were drilled on Airport property to the west of the Utility Core Site. It was subsequently learned that the State of Alaska was unable to grant an easement for these wells.

In 2005, two 6-inch wells were drilled at the Utility Core Site, approximately 1,350 linear feet southeast from the existing well and water treatment plant. The wells were drilled through numerous layers of very dense sand. Water-bearing layers were found from 135 to 159 feet from the ground surface in well W05-1, and from 172 to 191 feet from the ground surface in well W05-2. The static water level in both wells was approximately 13 feet below the land surface. At the time they were drilled, both wells were developed and then test pumped at 75 gpm for a 24-hour period. The drawdown at 75 gpm was approximately 21 feet static water level, indicating that each well has a specific capacity of 3.57 gpm per linear foot of drawdown. This indicates that the wells have sufficient capacity to meet the anticipated design pumping rates without drawing the water level in the wells down to near the pump level.

5. Tuluksak River

The river has been a traditional water source for the village.

6. Other

There are reportedly other wells within the townsite area. However, CE2 was unable to locate or obtain any specific information about these wells.

III. Evaluation of Alternative Water Sources

A. Water Sources

1. Washeteria Well

This well is currently in use, so it is a known entity; however, the well location does not provide the minimum separation distance from proposed wastewater collection system improvements, existing honey bucket pits, and other possible sources of contamination.



Figure 2—Washeteria Fuel Storage Adjacent to the Existing Well

The well is very shallow (screened from 34-49 feet), making it more susceptible to contamination. Although it is currently designated as a groundwater source, it is likely this well could be reclassified as groundwater under the influence of surface water, which would subject it to additional regulatory requirements.

The water from this well has very high iron levels.

2. Cemetery Well

The Cemetery Well is located beneath a house currently occupied by Mr. Nelson Napoka and his family (see Figure 3, next page). The residents were unwilling to allow us access, so we were unable to inspect or test this well.

The location does not meet the minimum separation distance requirements from the proposed wastewater collection system improvements, existing honey bucket pits, and other possible sources of contamination.



Figure 3—Old Pumphouse and Cemetery Well (under building)

This well has not been included for further evaluation as a potential water source.

3. BIA School Well

Several unsuccessful attempts have been made to locate this well, which was reportedly near the old school. It is believed that the well may have been destroyed when the burned school building was demolished and removed.

This well has not been included for further evaluation as a potential water source.

4. 2005 Utility Core Site Well Field

This source meets all minimum separation distance requirements, and is adjacent to the power plant and proposed water treatment plant site.



Figure 4—Utility Core Site and 2005 VSW Wells

5. Tuluksak River

The river has been a traditional water source for the village. Some villagers have expressed concern that the river water may be contaminated as a result of placer mining which has occurred along the upper reaches of the river for more than 100 years. EPA studies of the river have concluded that hazardous substances are migrating from the mine sites to the river. Elevated concentrations of arsenic, cadmium, chromium, cobalt, copper and nickel were detected in river sediments at various locations as far downstream as Fog River (18 river miles upstream from Tuluksak), but were not detected in a sample of river water. Three additional samples collected between the Fog River confluence and the village of Tuluksak showed no elevated concentrations of contaminants.

The quality of river water often varies greatly during the year, which complicates the design and operation of treatment systems. A trained and experienced water system operator would be needed to monitor raw water quality and adjust the treatment system accordingly.

Since this would be a surface water source, additional regulatory requirements would apply, adding additional operational complexity and expense.

6. Other

Several other wells are reportedly located within the townsite area; however, the specific locations are unknown. The general location does not provide the required separation distance from proposed wastewater collection system improvements and other possible sources of contamination.

These wells have not been included for further evaluation as potential water sources.

IV. Comparison of Alternatives

Based upon the assessment of existing and potential sources above, the following alternative water sources were selected for further consideration and evaluation.

- Source A Existing Washeteria Well
- Source B Existing Utility Core Site Wells
- Source C Tuluksak River

As is often the case, the alternatives have various advantages and disadvantages, which can complicate the selection process. To simplify the comparison and evaluation of alternatives, the following selection criteria were established, and each alternative was evaluated based upon these criteria.

A. Selection Criteria

1. Raw Water Quality and Treatability

This criterion addresses the quality of the raw water, and our assessment of the ease with which the water can be treated.

2. Operational Complexity and Reliability

This criterion addresses the complexity of operating the water source and water treatment system. For example, the operation of a well source is relatively simple, as compared to a river intake.

3. Source Protection—Vulnerability to Contamination

This criterion addresses the susceptibility of the water source to contamination. For example, a shallow well is more susceptible to contamination from the surface than a deeper well. A river source would be susceptible to contamination from activities upstream.

4. Development Costs

The current plan calls for the water source and water treatment plant to be colocated at the utility core site. For the purpose of this study, we have assumed that the water treatment plant will remain at the utility core site, regardless of which water source option is selected. This site offers a significant advantage, in that it allows for the use of waste heat from the adjacent power plant, greatly reducing the energy cost to operate the plant and add heat to the water circulation loops.

Water sources other than the utility core site wells will require construction of a raw water supply line to the water treatment plant site, adding to the development cost for those sources.

5. Operation and Maintenance Costs

This criterion factors in the differences in operation and maintenance costs for the different options.

B. Scoring Matrix

Presenting alternatives for comparison in a scoring matrix is sometimes helpful to decision makers, but must be used with care, because the selection and weighting of criteria, and scoring, are somewhat subjective. The scoring matrix, presented on the following page, was prepared to focus the decision process. The left column contains criteria thought to be important to making a selection between the alternative water sources. Next to each criterion is a weighting factor that assigns a relative importance (1 low to 10 high) to each of the criterion. For example, annual O&M cost is paid entirely by utility customers and was given a weight of "8" versus development cost, which was judged less important to the ultimate decision, and therefore weighted as "6".

The scoring boxes to the right of the criteria weighting factors allow the user to assign a score (1 low to 5 high) to evaluate each alternative source for each criterion and numerically score that criterion for each alternative. As an example, for the criterion "Development Cost", Source A has the lowest cost and scores a "5" (high numbers being "best") and Source C, having the highest development cost of the alternatives, scores a "1". For each criterion the weighting factor is multiplied by the score for each alternative and the result is entered in the far right column.

The matrix is presented here mainly to give decision-makers another way to look at the alternatives.

SCORING MATRIX ANALYSIS	Weighting	er rce		S	Scorin Best →	T. C.		Weighted Score
Criteria	Wei	Water Source	1	2	3	4	5	Wei Scor
1) Raw Water Quality &		Α	100	٧				20
Treatability	10	В			٧			30
		С					٧	50
2) Operational Complexity &		Α				V		32
Reliability	8	В			at he ard	٧		32
		С		٧				16
3) Source Protection—		Α	٧			1000		7
Vulnerability of Source to	7	В					٧	35
Contamination		С		٧				14
4) Development Costs		Α		٧				12
, ,	6	В					v	30
		С	٧					6
5) Operation & Maintenance		Α			٧			24
Costs	8	В					٧	40
		С	100	٧				16
SCORING SUMMARY								
Source A—Existing Washeteria Wo	ell							95
Source B—Existing Utility Core Sit	e 2005 V	Vells*						167
Source C—Tuluksak River								102

^{*} Highest Score

C. Scoring Rationale

1. Scoring Rationale for Raw Water Quality and Treatability
The following table provides a comparison of water quality analyses of samples
from the utility core site wells and the Tuluksak River. The results show some
advantage to the river water quality (no arsenic detected, lower levels of iron

and color). However, this needs to be offset by the knowledge that the quality of river water often varies greatly throughout the year, which can cause difficulties in maintaining consistent treatment efficiency.

Table 1—Comparison of Select Water Quality Parameters

Parameter	Units	Utility Core Site north well W05-1	Utility Core Site south well W05-2	Tuluksak River	MCL
Arsenic	ug/L	16.3	49.6	0	10
Color, True	PCU	400	282	20	5
Color, Apparent	PCU	255	78		
Hardness (CaCO3)	mg/L	102	100	43	
HAA5 Formation Pot.	ug/L	61	109		
Iron	mg/L	15	10.5	2.28	0.3
Langlier Index @ 40 deg F	Lang	-0.93	-0.63	-2.18	
Manganese	mg/L	0.4	0.375	0.354	50
pН	рН	7.0	7.0	6.8	
Total Diss. Solids	mg/L	135	145	77	500
Total Org. Carbon Total Organic Carbon,	mg/L	2.1	3.2	16.4	
Dissolved	mg/L	1.7	2	2.51	
TTHM Formation Pot.	ug/L	239	333		
Turbidity	NTU	105	28.7	13.1	
E. Coli	Present/Absent	Absent	Absent	Absent	Absent
Total Coliform	Present/Absent	Absent	Absent	Present	Absent

Notes:

- Most results shown are an average of several samples.
- 2. An entry of "0" equals non detect or less than the method recording limit (MRL).
- 3. MCL = Maximum Contaminant Limit
- 4. Highlighted cells indicate result exceeds MCL

Previous data for the washeteria well has shown that is has extremely high levels of iron (up to 70 mg/l), which has caused problems with the treatment process.

Therefore, we assigned scores of "5" to the Tuluksak River water, "3" to the utility core site wells and "2" to the Washeteria well.

2. Scoring Rationale for Operational Complexity and Reliability

For each of the alternative sources, we would anticipate a treatment system consisting of coagulation/flocculation, filtration and disinfection. However, the river source can be expected to have higher turbidities during breakup (300 NTU or higher), and will almost certainly be less consistent. This will require additional attention on the part of the operator, and possibly frequent adjustment of the treatment process, jar testing to modify coagulant dosage, more frequent filter backwash, and consequently a higher operation cost. Thus, the Washeteria and utility core site wells were scored highest, and the River Source was scored lower.

3. Scoring Rationale for Source Protection

The utility core site wells were purposely located away from the village and sources of contamination to meet ADEC minimum source protection requirements, and thus was assigned the highest score of "5". The Tuluksak River surface water is susceptible to spills or other contamination of the river, such as migration of mine waste from upstream and fuel spills, and was assigned a score of "2". These contaminants would not be removed by a typical treatment system. Modifications to the treatment process would be required if these contaminants began to appear in the raw water. The Washeteria well draws from a shallow aquifer, and does not meet the ADEC minimum source protection separation distances, so it was assigned the lowest score of "1".

4. Scoring Rationale for Development Costs

The alternatives were scored based upon the estimated capital cost of the improvements associated with each. Estimated capital costs for each source are presented in the tables below.

Table 2— Raw Water Supply Line Capital Cost Estimate - Source A, Washeteria Well

Capital Cost Estimate - Raw Water Supply Line Source A - Washeteria Well

Work Item	Quantity	Unit	Unit Cost	Total Cost			
Mob & Demob	1	LS	\$50,000	\$50,000			
Buried Arctic Water Main w/ Glycol Heat Trace	1,500	LF	\$225	\$337,500			
Easements	1	LS	\$5,000	\$5,000			
Misc Utilities	1	LS	\$5,000	\$5,000			
	Estimated Construction Cost						
		Conting	ency (10%)	\$39,750			
			Subtotal	\$437,250			
	VSW	Adminis	tration (8%)	\$34,980			
Eng	Engineering & Administration (10%)						
C	Construction	Manage	ment (12%)	\$52,470			
	TOTA	L PROJ	ECT COST	\$568,425			

Table 3— Raw Water Supply Line Capital Cost Estimate – Source B, 2005 Utility Core Site Wells

Capital Cost Estimate - Raw Water Supply Line Source B - 2005 Utility Core Site Wells

Work Item	Quantity	Unit	Unit Cost	Total Cost
Mob & Demob	1	LS	\$50,000	\$50,000
Buried Arctic Water Main w/ Glycol Heat Trace	400	LF	\$225	\$90,000
Misc Utilities	1	LS	\$5,000	\$5,000
E	\$145,000			
	(Continger	ncy (10%)	\$14,500
			Subtotal	\$159,500
	VSW A	dministra	ation (8%)	\$12,760
Engin	\$15,950			
Co	ent (12%)	\$19,140		
	TOTAL	. PROJE	CT COST	\$207,350

Table 4—Raw Water Supply Line Capital Cost Estimate - Source C, Tuluksak River

Capital Cost Estimate - Raw Water Supply Line Source C - Tuluksak River

Work Item	Quantity	Unit	Unit Cost	Total Cost
Mob & Demob	1	LS	\$50,000	\$50,000
Buried Arctic Water Main w/ Glycol Heat Trace	3,000	LF	\$225	\$675,000
Intake Structures	2	LS	\$35,000	\$70,000
Easements	1	LS	\$15,000	\$15,000
Misc Utilities	1	LS	\$25,000	\$25,000
E	ction Cost	\$835,000		
	(Continge	ency (10%)	\$83,500
			Subtotal	\$918,500
	ation (8%)	\$73,480		
Engin	tion (10%)	\$91,850		
Co	nent (12%)	\$110,220		
	TOTAL	. PROJE	CT COST	\$1,194,050

The utility core site wells scored the highest, because their location adjacent to the water treatment plant site makes them the least costly to develop. The

Tuluksak River was scored the lowest, because this source is furthest from the WTP site, requiring a lengthy raw water transmission line, and it would also require winter and summer intake structures.

5. Scoring Rationale for O&M Costs: Develop O&M cost estimate
The primary difference in operation and maintenance costs between the
alternative sources would be the heating and maintenance cost of the raw water
transmission line. Obviously the longer lines will have a higher O&M cost. In
addition, Tuluksak River source would have additional cost to transition between
the summer and winter surface water intake structures each spring and fall, and
for maintenance and repair of these structures.

As a result, the utility core site wells have the lowest cost, and were assigned the highest score. The Tuluksak River has the highest cost, and was assigned the lowest score. The following table outlines the differences in O&M costs.

Table 5—Annual O&M Cost Comparison

Annual Operation & Maintenance Cost Comparison Raw Water Transmission Line

Work Item	Washeteria Well (1,500 LF)	Utility Core Site Wells (400 LF)	Tuluksak River (3,000 LF)
Heating/Freeze Protection	\$10,000	\$1,000	\$20,000
Routine Operation & Repairs	\$1,500	\$400	\$3,000
Intake Structure Operation & Repairs	\$0	\$0	\$2,500
Annual O&M Cost	\$11,500	\$1,400	\$25,500
Monthly Cost per Service	\$6	\$1	\$14

Assumptions:

- 1. Heat requirement 10 BTU/Ft-Hr
- 2. Diesel 100,000 BTU/Gal
- 3. Diesel \$7.71/Gal
- 4. Core site RW line will drain back to wells and require only intermittent heat trace.

V. Recommendations

A. Water Source—Utility Core Site Wells

Based upon a thorough review and evaluation of the criteria contained herein, we recommend selection of the existing 2005 utility core site wells. Although each alternative presented advantages and disadvantages, we believe the advantages of the Utility Core Site make it the best option for the Village of Tuluksak. The key advantages include:

Deep Groundwater Source

- The source is well protected from contamination, and a groundwater source has simpler regulatory requirements. The two wells also provide redundancy, so the water source can remain in operation if maintenance to one of the wells is needed.
- Located Adjacent to Treatment Plant & Power Plant Site
 - The location of all these facilities at a common site minimizes the cost of transporting raw water, and provides operational efficiency. The availability of waste heat from the power plant will substantially reduce utility costs for the treatment plant and water circulation loops.

Consistent Water Quality

- The water quality from the groundwater source can be expected to be relatively consistent, as compared to the variability of surface water quality. This will provide for a more stable water treatment system operation. The water treatment system for a surface water source would require closer monitoring, and adjustment of the treatment process in response to changes in raw water quality.
- The ability to successfully treat the water from the utility core site wells by conventional treatment was demonstrated by the CE2 Water Treatment Study (report dated January 2007).

Consistent Water Intake

 The water intake from the river source would have to be changed seasonally, and water would be unavailable during the transition periods at breakup and freeze-up. In contrast, the wells will supply water year-round from submersible pumps and buried supply lines to the treatment plant.

B. Community Resolution Accepting the Water Source Selection Recommendation

TNC resolution 11-05-01 affirms the Water Source Study recommendation to continue development of a new water treatment facility utilizing the utility core site wells. This resolution was approved on May 20, 2011, and is provided on the following page.

Tuluksak Native Community P.O. Box 95 Tuluksak AK. 99679 Phone: (907) 695-6420 Fax: (907) 695-6932

RESOLUTION Water Source Selection

Resolution Number 11-05-09

A Resolution Selecting the Proposed Water Source for Ongoing Sanitation Improvements

WHEREAS: The Tuluksak Native Community Council, hereinafter called the Council, is the governing body of Tuluksak, Alaska, and

WHEREAS: Tuluksak Native Community has received funding for planning, design, and construction through the State of Alaska, Village Safe Water Program for piped water and sewer facilities, including a water treatment facility;

WHEREAS: The Council has reviewed the Draft Water Source Study dated January 2011. comparing water source alternatives for the proposed water treatment facility, as prepared by CE2 Engineers and reviewed by the State of Alaska Village Safe Water Program, and

WHEREAS: The Council has discussed the alternatives presented in the 2014 Draft Water Source Study and agrees with the recommendation, repeated here; "Based upon a thorough review and evaluation of the criteria contained herein, we recommend selection of the existing Utility Core Site wells."

NOW THEREFORE BE IT RESOLVED; that the Tuluksak Native Community hereby accepts the recommendation made in the 2011 Water Source Study and chooses to pursue construction of water treatment plant utilizing the Utility Core Site wells drilled in 2005 (described in the study as "Source B") as the selected water source for the proposed water treatment facility.

We, the undersigned, hereby certify that the Council is composed of 5 members, of whom Tonstitute a QUORUM, were present and that the foregoing resolution was PASSED AND APPROVED by the Tuluksak Native Community, this 20th day of May 2011.

Vote: 5 Yeas O Nays

Attest: Mas K Phan Council Member

VI. Appendices

Appendices to this water source study are:

Appendix A "Final Tuluksak River Site Inspection Report", September 2009, Technical Direction Document Number: 08-02-0017; Prepared for

USEPA; Prepared by Ecology & Environment, Inc. (Cover Sheet and

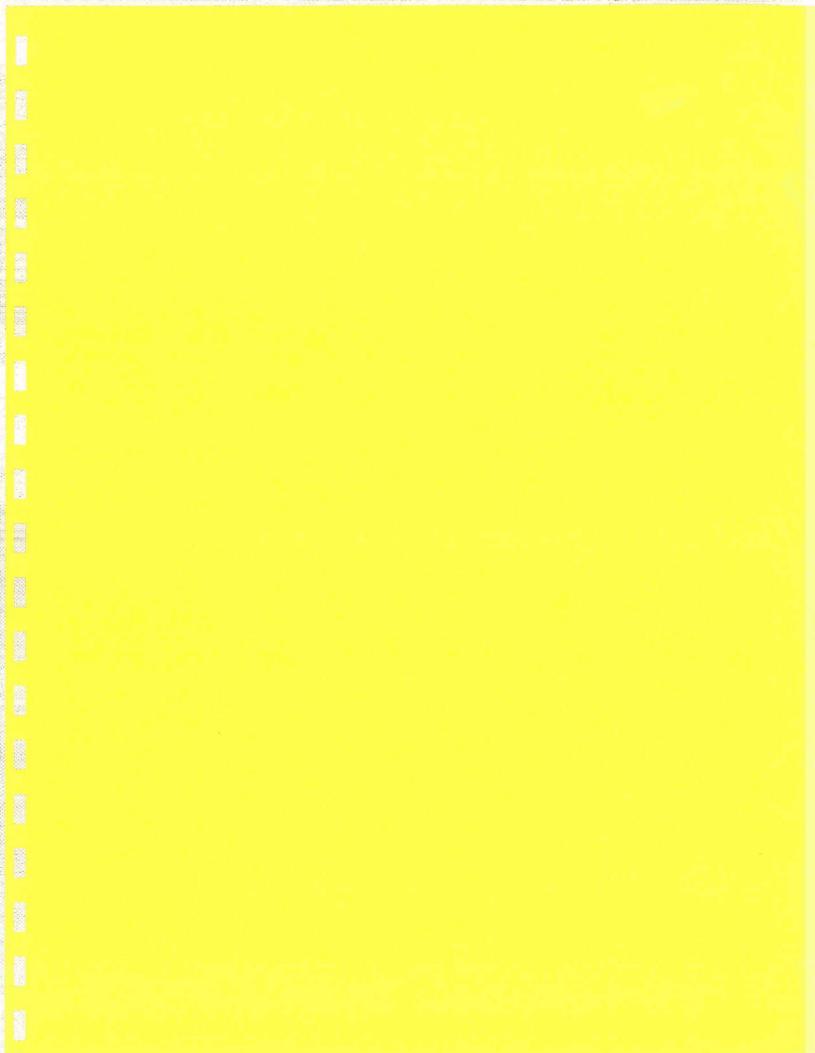
Section 8—Summary and Conclusions only)

Appendix B Well Log—Existing Washeteria Well

Appendix C Well Logs & Pump Test Data—Utility Core Site Wells

Appendix D Water Quality Results Dated 10-27-05—Utility Core Site 2005

Wells



Appendix A

"Final Tuluksak River Site Inspection Report", September 2009,
Technical Direction Document Number: 08-02-0017;
Prepared for USEPA; Prepared by Ecology &
Environment, Inc. (Cover Sheet and Section 8—
Summary and Conclusions only)

Final Tuluksak River Site Inspection Report

Tuluksak, Alaska

Technical Direction Document Number: 08-02-0017

September 2009

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
1200 Sixth Avenue, Mail Stop ECL-112
Seattle, Washington 98101

Prepared by:

ECOLOGY AND ENVIRONMENT, INC. 720 Third Avenue, Suite 1700 Seattle, Washington 98104

Summary and Conclusions

In September 2008, the START conducted a field sampling event at the Tuluksak River site located near Tuluksak, Alaska. The city of Tuluksak is located at the confluence of the Kuskokwim and Tuluksak rivers. The Nyac townsite lies approximately 70 miles upstream of the city of Tuluksak on the Tuluksak River. Placer mining has been conducted at a number of locations in the upper reaches of the Tuluksak River for over 100 years. Additionally, dredging of the Tuluksak River has been conducted. Dredging and mining created an estimated volume of greater than 65,000,000 cubic yards of dredge spoil, dragline pile, and waste sand materials. The START collected 33 sediment samples during the two-day field event at various locations along Bear Creek, Granite Creek, and the Tuluksak River.

8.1 Sources

Sources associated with placer mining activities in the Tuluksak River include the Granite Creek dragline pile, three waste sand piles, and the dredge spoils piles on the Tuluksak River (Figure 2-1). A total of nine samples were collected from the sources, three from each location. Three TAL metals (cobalt, copper and nickel) were detected at significant concentrations in the waste sand pile samples, no TAL metals were detected at elevated concentrations in the dragline pile, and six TAL metals (cadmium, chromium, cobalt, copper, nickel, and zinc) were detected at significant concentrations in the dredge spoils piles samples. Based on analytical results, two of these sources appear to contain hazardous substances at significant concentrations.

8.2 Targets

There are no drinking water intakes located within the TDL. Surface water is not used as a water supply for more than five acres of commercial food crops, in commercial food preparation, or to water livestock.

No commercial fishing is known to occur along the Tuluksak River. Tribal members have reported eating fish caught from the Tuluksak River and the primary fishing area along the Tuluksak River is below the confluence with the Fog River; however, a fish camp was located within the TDL above the confluence with the Fog River, therefore a fishery is located within the influence of the site. Fish harvesting on the Tuluksak River is not recorded and limited sport fishing occurs.

8. Summary and Conclusions

Detailed wetland information is not available for the area. Observations during the sampling event indicate there are approximately 124 miles of wetland frontage along the TDL. There are no Federal- or State-listed threatened or endangered species within the TDL.

A total of 21 target samples were collected. The TAL metals cobalt, copper, and nickel were detected at elevated concentrations in sediment samples from the excavated area on Bear Creek. The TAL metal cobalt was detected at elevated concentrations in the Tuluksak River sediment sample collected above the confluence with Bear Creek. The TAL metals arsenic, cadmium, chromium, cobalt, copper, and nickel were detected at elevated concentrations in Granite Creek. The TAL metals cobalt and nickel were detected at elevated concentrations in the Tuluksak River sediment samples collected between the confluences of Bear Creek and the Fog River. No TAL metals were detected at elevated concentrations in the Tuluksak River sediment samples collected below the confluence with the Fog River.

8.3 Conclusions

Based on the results of the SI field sampling event, it appears that hazardous substances are migrating from sources to surface water targets. The TAL metals cobalt, copper, and nickel were detected at significant concentrations in the waste sand piles and the dredge spoils piles; and also were detected at elevated concentrations in the samples from Bear Creek and Granite Creek. Cobalt and nickel were detected at elevated concentrations in the Tuluksak River. Contaminated sediments are present from sample location TP01SD on Bear Creek downstream on the Tuluksak River to sample location TR04SD near the confluence with the Fog River. Fisheries and wetlands are present within this zone of contamination.

Table 7-4 Tuluksak River Sediment Samples Analytical Results Summary (Between Bear Creek and Fog River Confluences)

EPA Sample ID	08384302	08384217	08384215	08384214	08384213	08384212	08384211	08384210	08384209	08384208	08384207	08384206	08384205	08384204	08384203
CLP Sample ID	MJAAF7	MJAA72	MJAA70	NJAA69	NJAA68	MJAA67	MJAA66	MJAA65	MJAA64	MJAA63	MJAA62	MUAA61	MJAA60	MJAA59	MJAA58
Station Location	BG02SD	TR18SD	TR16SD	TR15SD	TR14SD	TR13SD	TR12SD	TR11SD	TR10SD	TR09SD	TR08SD	TR07SD	TR06SD	TR05SD	TR04SD
Description	Backo	round	alla e e e						Tuluksak Rive	e r	diam'r				
Target Analyte List	Metals (mg/kg)													
Aluminum	15400	5050	19800	13500	13000	17700	15500	11200	13200	11400	13900	13300	16300	13700	18400
Arsenic	15.8	4.5	23.1	11.8	15.1	12.7	14.2	8.4	10.5	7.3	8.7	7.3	8.7	13.6	17,8
Barium	161	72.4	152	103	87.1	135	121	76.1	98.5	62.7	85.8	76.4	104	134	161
Cadmium	1.4	0.69	1.9	1.4	1.4	1.6	1.6	1.1	1.4	1.2	1.5	1.5	1.8	1.8	2.2
Calcium	4580	1630	4340	2620	3000	4190	3720	2510	2720	2230	2420	2390	3040	2880	3500
Chromium	13.3	9.8	25.9	17.3	17.6	19.8	18.7	14.2	16.4	15.8	20.3	21.2	26.1	18.8	25.1
Cobalt	10.1 JQ	5.8 JQ	<u>17.0</u>	10.4	11.2	13.5	13.5	8.6	10.8	9.3	10.9	10.9	11.8	9.4	12.3
	(11.7 SQL)	(6.1 SQL)					<u> </u>								
Copper	18.8	5.0	27.0	23,4	24.1	24.9	24.1	16.1	17.7	17.4	18.3	16.7	18.5	17.0	23.3
Iron	23900 JL	13500	35600	27200	26800	29300	30400	21200	25100	23500	27100	27700	33400	34100	39300
Lead	6.5	3.1	6.0	4.7	5,2	7.0	5.6	3.8	4.2	3.8	4.6	4.4	6.0	5.9	8.4
Magnesium	4380 JL	2770	9710	7930	6770	6550	7680	5360	6370	6100	6600	6450	7010	5060	5850
Manganese	1120 JL	322	670	665	591	637	768	501	505	536	715	537	395	401	519
Nickel	8.5 JQ	6.4	23.6	15.6	15.7	16.3	17.4	12.9	15.7	16.1	20.6	23.0	26,2	16.4	21.6
	(9.3 SQL)														
Potassium	555 JQ	749	1000	875	800	1130	978	616 JQ	757	507 JQ	603 JQ	499 JQ	596 JQ	529 JQ	560 JQ
Vanadium	51,0	29.7	75.6	57.9	54.1	64.4	61.6	43.9	51.1	44.7	50.2	44.7	50.9	45,3	57.3
Zinc	61.5 JL	25.8 JL	75.6 JL	59.8 JL	55.9 JL	59.0 JL	64.3 JL	43.0 JL	51.9 JL	50.0 JL	58.2 JL	61.6 JL	72.0 JL	54.1 JL	72.7 JL

Note:

Bold type indicates the result is above the sample quantitation limit.

Underline type indicates the sample result is elevated as defined in Section 5.

Key:

CLP = Contract Laboratory Program.

EPA = United States Environmental Protection Agency.

ID = Identification.

J = The analyte was positively identified. The associated numerical value is an estimate.

L = Low bias.

mg/kg = milligrams per kilogram.

Q = The result is estimated because the concentration is below the contract required quantitation limit.

SQL = Sample Quantitation Limit.

Table 7-5 Tuluksak River Sediment Samples Analytical Results Summary (Below Fog River Confluence)

EPA Sample ID CLP Sample ID Station Location	08384302 MJAAF7 BG02SD	08384217 MJAA72 TR18SD	08384228 MJAA83 FR01SD Fog River	08384202 MJAA57 TR03SD	08384201 MJAA56 TR02SD	08384200 MJAA55 TR01SD
Description		round	Contribution		Tuluksak River	
Target Analyte List Met					1	
Aluminum	15400	5050	15300	14000	15100	13400
Arsenic	15.8	4.5	17.6	12.3	27.0	28.1
Barium	161	72.4	150	94.7	165	163
Cadmium	1.4	0.69	2.0	1.9	2.7	2.3
Calcium	4580	1630	3840	2900	3780	2890
Chromium	13.3	9.8	25.3	26.3	26.5	22.4
Cobalt	10.1 JQ	5.8 JQ	10.6	15.1	11.4	10.6
	(11.7 SQL)	(6.1 SQL)				
Copper	18.8	5.0	24.8	26.4	21.2	22.1
Iron	23900 JL	13500	37900	32600	46300	41300
Lead	6.5	3.1	8.7	7.1	7.6	8.2
Magnesium	4380 JL	2770	4580	6490	5170	4030
Manganese	1120 JL	322	583	939	443	575
Mercury	0.23 U	0.12 U	0.12 JQ	0.12 U	0.20 U	0.20
-			(0.21 SQL)			
Nickel	8.5 JQ	6.4	25.7	32.2	26.5	21.4
	(9.3 SQL)					
Potassium	555 JQ	749	566 JQ	578 JQ	660 JQ	585 JQ
Vanadium	51.0	29.7	42.5	50.1	45.4	40.5
Zinc	61.5 JL	25.8 JL	72.7 JL	77.6 JL	77.9 JL	70.9 JL

Note:

Bold type indicates the result is above the sample quantitation limit.

Underline type indicates the sample result is elevated as defined in Section 5.

Key:

- CLP = Contract Laboratory Program.
- EPA = United States Environmental Protection Agency.
 - ID = Identification.
 - J = The analyte was positively identified. The associated numerical value is an estimate.
 - L = Low bias.
- mg/kg = milligrams per kilogram.
 - Q = The result is estimated because the concentration is below the contract required quantitation limit.
- SQL = Sample Quantitation Limit.
 - U = The analyte was not detected at or above the reported limit.



Appendix B
Well Log—Existing Washeteria Well

WELL LOG

U.S. PUBLIC HEALTH SERVICE, DIVISION OF INDIAN HEALTH

.ionTuluk	sak, Alaska	DATE STARTEDJuly 27, 1981 _ DRILLERFowler - Anderson
DATE COMPLETED_	AUGUST /, 1981	STALLED 45' DIAMETER 6"
IDIAL DEFIN OF WE	SCREEN SIZE 15	XXXXX 2-1/2 LENGTH
STATIC WATER LEVE	EL 10'6" TOC HRS. PUMPE	ED 24@ 28 GPM DRAWDOWN
	HOLE DIAMETER CASING DIAMETER I 16" FORMATION	· · · · · · · · · · · · · · · · · · ·
0 - 8'	Clay - black fine sand-wood	SOIL DATA TO 15 FT. FEET THAWED BOTTOM OF FROST & MATERIAL SEASONAL OR PERMA FROST_Seasonal
8' - 13'	Silt - very fine	WATER DATA FIELD TEST TASTE None
13' - 30'	Fine black soil and sand	APPEARANCE FRESH Clear AFTER 24 HOURS Brownish IRON CHLORIDES. TDS
30' - 40'	H^20 - sand is getting course	PUMP TEST <u>10'6"</u> STATIC LEVEL PUMPING LEVEL 17'10 © 28 GPM AFTER 24 HRS.
40' - 49'	Much H ² 0 good size rocks course sand	HIGHEST RECOMMENDED PUMP RATE WILL STATIC LEVEL CHANGE WITH TIDES <u>negative</u> or frost
	·	
1		
YELOP PROCEDUR	E Surge block	I I
ESTIMATED MAN HO	URS FOR DRILLING	HOURS FOR TOTAL JOB
CREW Hark And	derson - Glen Fowler	

Appendix C

Well Logs & Pump Test Data—Utility Core Site Wells

CE2 ENGINEERS, INC. DRILLING LOG

	#WELL
Well Owner Commis Supply	mity of Tujuksak, Alaska Use of Well Public Water
Location (address of:	Township, Range, Section, if known)
GPS Coordinates	
	Depth of Hole 159 feet Cased to 135 feet
Static water level 12	1. (above) (below) land surface.
Finish of well (check	one): Open End () Screen () Perforated ()
Describe screen or pur	foration 15', DIO Shot 10', OIF Shot ToT 27'
Well pumping test at, of drawdown from st	75 gallons per (Hour) (Minute) for 24 hours with 26 ft. atte level.
Date of completion _	WELL LOG DRILLER MY LAST MY LAST
	WELL LOG MY LAST
Depth in feet from ground surface	Give details of formations penetrated, size of material, color and hardness.
D TO 19	FINE SAND
19 TO 461	FINE ANCKY SAND TWATER
41 70 66	GRAY SAND Y WATER GG PEA CRAVEL
66 TO 72	CORS SAND TWATER SOME PEACRAVEL
72 TO 135	PACK GAND VERY LITTHE WATER
135 TO 188	LITTEE STRIPS OF WATER IN THE
TO	PACKAAN SOM PEA GRAVEL MOSLEY
TO	FINE SAND
59 10/61	17 ARP PACK SAND NOWATER
TO	

PUMPING TEST RECORD ODER Division of Water Water Resources Section

I WELL

Paga No.

OWNER TULUKSAK Marin.... __ Townsido ___ Courty. ODNR Log#_____Other Wall ID _____ DRILLING Individual Melling Measurements Company Conducting Text -Distance From Pumping Well Type of Test MEATOR

Measuring Point To Monaging Equipment Used Profits
Static Weter Level (S.1 /2 CASING Elevation Above Ground 31 BIATIC WELDE LOVE (SO) 12 哈勒 D新典 A Change la This Lines Discharge Rate (GPM) Pumping Statud (In New Status Comments Mary Lord Clock The Delay (Include Woodles Consistons) (8) (S . S.) (Use Millery Time) 12' 8" 76 9,5

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	8: 25	3 5	32 4
	8:30	15	32 12-
	8140	8 5	32 10
	8:45	5 5	32 40.6
Marios	8:55	1 10	39 19-
	9:05	10	32 (4)
	9:10	\$ 10	23 4
	9:20	10 10	82 #
	9: 20	11 10	32 11.6
	9140	12 10	72 /20
	10:40	13 60	1 2 2 7.6 1
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	12:40	13 60	32 1/1
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	19:40	50 60	33
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PUMPING TEST RECORD

#/WELL

Observation Wells
ODNR-Division of Water
Water Resources Section Owner TULUKSAK Location of wall on property . Towns 10 Date 9-18-05 ODNR Log#____ Other Well ID _ Took Radne) Company Conducting Text R. L. D. RIKLING Individual Making Measuraments Type of Test DROW POINN Distance From Pumping Well Mensuring Equipmora Used PAPTH ME LTER

Static Water Laval (\$0) 12 - Massuring P Massuring Point TOP CASING Elevation Above Ground 31

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CE2 ENGINEERS, INC. DRILLING LOG

Well Owner Commun Supply	dity of Tulukaak, Alaska # 2 WELL Use of Well Public Water
Location (siddress of: T	ownship, Rango, Section, if known)
ALL MANAGEMENT AND ASSESSMENT AND ASSESSMENT AND ASSESSMENT AND ASSESSMENT ASSESSMENT ASSESSMENT ASSESSMENT AS	
OPS Coordinates	
Size of casing 6"	Depth of Hole 171 feet Cased to 172 feet
Static water level 13	Tr. (above) (below) land surface.
Finish of well (check c	one): Open End () Screen (>) Perforated()
Describe screen or perfe	oration 21'18" TITAL, 1010 -1010-104 - 1030
Well pumping test at Z of drawdown from stat	gallons per (Hour) (Minute) for 24 hours with 201120 ft.
Date of completion	7-7-05
	WELL LOG De Longhille Ju
Depth in feet from	DRILLER OF OF OF
ground surface	Give details of formations penetrated, size of material, color and hardness.
_0_TO_4	TOP Join
# TO 10	BROWN SAND
10 TO:16	FROXEN SILT,
16 TO 24	FINE BAND
24 TO 50	FINE BAND & WATER
50 TO 515	CORSE BAND PER GRAVEL
5/ TO16/E	FINE GAND & WATER
E/2 TO: 82	PACK SAND NO WATER
8210 TO 83	FINE SAND & WATER
83 TO:107	PACKSAND
107 TO: 108	SAND TPEMGRAVEL DWATER WATER TESTED ?
104 TO 125	PACK SAND
125 TO 169	PACK SAND & LITTLE STREAKS OF WATER.
167 TO:/91	CORSE SAND PER CRAVEL WILLER
(O-1/1)	STREAKS OF PACK SAND IN BETWEEN
	LAYERS OF SANDA WATER,
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OWNER ---

Location of well on property -

PUMPING TEST RECORD
Observation Wells
ODNR-Division of Water
Water Resources Section
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PUMPING TEST RECORD

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Observation Wells
ODNR-Division of Water
Water Resources Section
Address

Page No. _______

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Appendix D Water Quality Results

WATER SOURCE STUDY - TULUKSAK, ALASKA Comparison of Water Quality Parameters

		Utility C	ore Site North We	II W05-1		Utility Core Site	South Well W05-2		Tuluksak River	MCL
Parameter	Units	9/30/2005 @ 9:00 AM	9/30/2005 @ 9:05 AM	6/20/2006 @ 4:15 PM	9/30/2005 @ 9:20 AM	9/30/2005 @ 9:40 AM	6/20/2006 @ 4:05 PM	12/10/2008 @ 2:15 PM	11/17/2010 @ 4:05 PM	
Alkalinity	mg/L as CaCO3	107	108	108	107	108	108	105	45.2	
Aluminum	mg/L	0.0626	0.223	0	0.08	0	0	0	0	200
Arsenic	ug/L	6.48	6.03	36.3	42,7	49.9	49.9	55.7	0	10
Bromide	mg/L		0	0	0	0	0	0		
Calcium	mg/L	34.7	34.7	32.4	31.6	31.4	34.3	32.2	11200	
Chloride	mg/L	2.54	2.36	3.09	2,29	2.28	2.49	3.87	1.66	250
Chlorine Demand	mg/L		. 27		21	21				
Color, True	PCU		400		400	400		45	20	5
Color, Apparent	PCU	350 .	250	65	90	90	55	55		
Fluoride	mg/L	0	0	0	0	0	0	0.217	0	2
Hardness (CaCO3)	mg/L	100	100	106	98	98	104	100	43	
HAA5 Formation Pot.	ug/L		61		109	109				
Iron	mg/L	13.5	16.4		10.5	9.33	8.41	8.32	2.28	0.3
Langlier Index @ 40 deg F	Lang	-0.73	-0.91	-1.15	-0.78	-0.91	-0.1997	-0.99	-2.18	
Manganese	mg/L	0.365	0.503	0.331	0.375	0.361	0.326	0.343	300	50
Magnesium	mg/L	3.82	3.76	3.84	4.67	4.64	4.54	5.32	3670	
Nitrate	mg/L	0	0	0	0	0	0	0		10
Nitrite	mg/L	0	0.029	0	0	0	0	0		1
Total Nitrate/Nitrite	mg/L								0.194	10
рН	pH	7.1	6.9	7.06	7.1	6.9	6.98	7	6.8	
Sodium	mg/L	0	0	2.65	0	0	2.47	0	3770	250000
Sulfate	mg/L	2	1.86	2.18	0	0	0	2.01	6.37	250
Total Diss. Solids	mg/L	114	115	176	136	133	185	126	77	500
Total Org. Carbon	mg/L		2.1	47.1 ^{1.}	2.3	2.3	48 ^{1.}	3.2	16.4	
Total Organic Carbon, Dissolved	mg/L		1.7	44.8 1.	2	2	45.7 ^{1.}		2.51	
TTHM Formation Pot.	ug/L		239		333	333		105		
Turbidity	ИТИ		105		29.1	29.1		28	13.1	
UV-254	cm-1			0.054			0.09			
Zinc	ug/L	307	121	0	17	6.01	0	0	0	5000

Note 1. The Total Organic Carbon (TOC) and TOC, Dissolved sample data collected on June 20, 2006 are extremely high and are not consistent with other samples and have been dismissed as an erroneous sampling error.

WATER SOURCE STUDY - TULUKSAK, ALASKA Comparison of Water Quality Parameters

		Utility C	ore Site North We	ell W05-1		Utility Core Site	South Well W05-2		Tuluksak River	MCL
Primary Inorganics	Units	9/30/2005 @ 9:00 AM	9/30/2005 @ 9:05 AM	6/20/2006 @ 4:15 PM	9/30/2005 @ 9:20 AM	9/30/2005 @ 9:40 AM	6/20/2006 @ 4:05 PM	12/10/2008 @ 2:15 PM	711/17/2010 @ 4:05 PM	
Antimony	ug/L	0	0	0	0	0	0		0	6
Barium	ug/L	- 141	145	146	169	169	184		29.7	2000
Berylium	ug/L	0	0	0	0	0	0		0	4
Cadmium	ug/L	0	0	0	0	0	0		0	5
Chromium	ug/L	13.6	7.53	0	16.5	13.6	0		0	100
Cyanide	ug/L	0	0	0	0	0	0		0	0.2
Mercury	mg/L	0	0	0	0	0	0		0	2
Nickel	ug/L	3.3	2.87	0	2.24	2.01	0		0	100
Selenium	ug/L	0	0.547	0	0	0	0		0	50
Thallium	ug/L	0	0.0516	0	0	0	0		0	2
			,							
Secondary Chem. Contaminants	Units									
Copper	ug/L	0.293	1.41	0	0.542	0.542	0		0	1000
E. Coli	Present/Absent	Absent	Absent		Absent	Absent			Absent	Absent
Foaming Agents	mg/L	0	0		0	0				0
Odor	TON	0	0	. 0	0	0	2		0	0
Silver	ug/L		0.148	0	0.131	0.131			0	100
Total Coliform	Present/Absent	Absent	Absent		Absent	Absent			Present	Absent

Notes:

- 1. An entry of "0" equals non detect or less than the method recording limit (MRL).
- 2. MCL = Maximum Contaminant Limit
- 3. Highlighted cells indicate result exceeds MCL



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010 Fax: 907-349-1015

Client Sample ID: Tuluksak 2005 North Well

Client Project: Location:

Tuluksak - Treatment Design Package

Tuluksak 05 North Well

Sample Matrix: Aqueous

COC #: PWS#: Comments:

Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518 Phone: 907-258-2155

Fax: 907-258-6634

Report Date:

10/27/2005

Receipt Date:

9/30/2005 9/30/2005

Sample Date: Sample Time:

9:05:00AM

Collected By:

LP

Flag Definitions:

MRL = Method Reporting Limit MCL = Maximum Contaminant Limit B = Present also in Method Blank H = Exceeds Regulatory Limit M = Matrix Interference

J = Estimated Value D = Lost to Dilution

** = RL higher than MCL; target not detected

Sample Comment:

Lab#:

A0509324-01A

Analysis Method	***************************************					Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
4500-NO2-B (Aqueous) - Nitrite					Test was o	conducted by	.: Analytica	ı - Anchor	uge
Nitrite as N	0.0290	mg/L		0.020	1		10/2/2005	10/2/200	5 AJ

Lab#:

A0509324-01B

Analysis Method			-		17.00	Prep	Prep	Analysis
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date Analyst
2120B/2120B (Aqueous) - True Color					Test was a	conducted b	y: Analytice	a - Anchorage
Color	250	Color Unit	Н	5.0	15	2120B	10/1/2005	10/1/2005 EK

Lab#:

A0509324-01C

Analysis Method		711007					Prep	Prep	Analysis	
Parameter	4	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
2120B/2120B (Aquec	ous) - Appare	nt Color				Test was o	conducted b	y: Analytica	ı - Anchore	ige
Color		350	Color Unit	Н	5.0	15	2120B	10/1/2005	10/1/2005	5 EK

Lab#:

A0509324-01E

Parameter Result Units Flags MRL MCL Method Date Date Analyst	Analysis Method						Prep	Prep	Analysis	
	Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst

4500-NO3E (Aqueous) - Nitrate

Test was conducted by: Analytica - Anchorage



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Fax: 907-349-1015

Client Sample ID: Client Project:

Tuluksak 2005 North Well

Location:

Tuluksak 05 North Well

Sample Matrix: COC #:

PWS#:

Comments:

Tuluksak - Treatment Design Package

Aqueous

Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518

Phone: 907-258-2155 Fax: 907-258-6634

Report Date:

10/27/2005

Receipt Date:

9/30/2005

Sample Date:

9/30/2005

Sample Time:

9:05:00AM

Collected By: LP

Flag Definitions:

MRL = Method Reporting Limit

MCL = Maximum Contaminant Limit B = Present also in Method Blank

H = Exceeds Regulatory Limit

M = Matrix Interference

J = Estimated Value

D = Lost to Dilution

** = RL higher than MCL; target not detected

Sample Comment:

Lab#:

A0509324-01E

Analysis Method Parameter		Result	Units	Flags	MRL	MCL	Prep Method	Prep Date	Analysis Date	Analyst
4500-NO3E (Aqueou	ıs) - Nitrate					Test was a	conducted by	v: Analytica	- Anchore	nge
Nitrate as N		<mrl< td=""><td>mg/L</td><td></td><td>0.10</td><td>10</td><td></td><td>10/6/2005</td><td>10/6/2005</td><td>5 AJ</td></mrl<>	mg/L		0.10	10		10/6/2005	10/6/2005	5 AJ

Lab#:

A0509324-01F

Analysis Method				Prep	Prep	Analysis
Parameter	Result	Units	Flags MRL	MCL Method	Date	Date Analyst
5540C (Aqueous) - Surfactants a	s MBAS			Test was conducted b	y: Analytic	a - Anchorage
MBAS Foaming Agents	<mrl< td=""><td>mg/L</td><td>0.10</td><td></td><td>10/12/200</td><td>0510/2/2005 AJ</td></mrl<>	mg/L	0.10		10/12/200	0510/2/2005 AJ

Lab#:

A0509324-01G

Analysis Method						Prep	Prep	Analysis
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date Analyst
2150B/2150B (Aqueous) - Odor					Test was o	conducted b	y: Analytica	ı - Anchorage
Odor	NO ODO	T.O.N.		1.0		2150B	10/1/2005	10/1/2005 MA

Lab#:

A0509324-01H

Analysis Method					Prep	Prep	Analysis
Parameter	Result	Units	Flags MRL	MCL	Method	Date	Date Analyst

4500-CNE/4500-CNB (Aqueous) - Total CN

Test was conducted by: Analytica - Thornton



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Report Date:

Receipt Date:

Sample Date:

Sample Time:

Collected By:

Flag Definitions:

CE2

Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010 Fax: 907-349-1015

Client Sample ID: Client Project:

Tuluksak 2005 North Well

Location:

Tuluksak - Treatment Design Package

Sample Matrix: COC #:

PWS#: Comments:

Tuluksak 05 North Well Aqueous

MCL = Maximum Contaminant Limit B = Present also in Method Blank H = Exceeds Regulatory Limit M = Matrix Interference J = Estimated Value D = Lost to Dilution

** = RL higher than MCL; target not detected

10/27/2005

9/30/2005

9/30/2005

LP

MRL = Method Reporting Limit

9:05:00AM

Sample Comment:

Lab#:

A0509324-01H

Analysis Method				Prep	Prep	Analysis
Parameter	Result	Units	Flags MRL	MCL Method	Date	Date Analyst
4500-CNE/4500-CNB (Aque	ous) - Total CN			Test was conducted	by: Analyt	ica - Thornton
Cyanide	<mrl< td=""><td>mg/L</td><td>0.0069</td><td>4500-CNB</td><td>10/10/200</td><td>0510/13/2005 STONE</td></mrl<>	mg/L	0.0069	4500-CNB	10/10/200	0510/13/200 5 STONE

Lab#:

A0509324-011

Analysis Method		·				Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
300.0/300.0 (Aqueous) - Anions		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Test was	conducted	by: Analytic	a - Fairbai	ıks
Bromide	<mrl< td=""><td>mg/L</td><td></td><td>0.10</td><td></td><td>300.0</td><td>10/5/2005</td><td>10/5/2005</td><td>KAH</td></mrl<>	mg/L		0.10		300.0	10/5/2005	10/5/2005	KAH
Chloride	2.36	mg/L		0.50	250	300.0	10/5/2005	10/5/2005	KAH
Fluoride	<mrl< td=""><td>mg/L</td><td></td><td>0.20</td><td>4.0</td><td>300.0</td><td>10/5/2005</td><td>10/5/2005</td><td>KAH</td></mrl<>	mg/L		0.20	4.0	300.0	10/5/2005	10/5/2005	KAH
Sulfate	1.86	mg/L		0.75	250	300.0	10/5/2005	10/5/2005	KAH

Lab#:

A0509324-01J

Analysis Method						Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date A	analyst
150.1/150.1 (Aqueous) - pH					Test was	conducted by	y: Analytice	a - Anchorag	;e
pH	7.2	pН		0.0		150.1	10/1/2005	10/1/2005	EK
2330B (Aqueous) - Langelier Index					Test was	conducted by	y: Analytice	a - Anchorag	re



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Fax: 907-349-1015

Client Sample ID:

Client Project: Location:

Sample Matrix:

COC #: PWS#: Comments:

Tuluksak 2005 North Well

Tuluksak - Treatment Design Package Tuluksak 05 North Well

Aqueous

Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518

Phone: 907-258-2155 Fax: 907-258-6634

Report Date:

10/27/2005

Receipt Date:

9/30/2005

Sample Date:

9/30/2005 9:05:00AM

Sample Time: Collected By:

LP

Flag Definitions:

MRL = Method Reporting Limit

MCL = Maximum Contaminant Limit B = Present also in Method Blank

H = Exceeds Regulatory Limit
M = Matrix Interference

J = Estimated Value

D = Lost to Dilution

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Sample Comment:

Lab#:

A0509324-01J

Analysis Method Parameter	Result	Units	Flags	MRL	MCL	Prep Method	Prep Date	Analysis Date	Analyst
2330B (Aqueous) - Langelier Index					Test was a	conducted b	y: Analytica	- Anchore	ige
Langelier Index/Corrosivity	-0.63	Lang units		-1.0			10/21/200	510/21/200)5 KN
2320B/2320B (Aqueous) - Total Alka	alinity				Test was a	conducted b	y: Analytice	a - Anchore	nge
/ Alkalinity, Total	108	mg/L CaCO3		4.0		2320B	10/8/2005	10/8/2003	5 AJ
2540C/2540C (Aqueous) - TDS					Test was conducted by: Analytica - Anchorage				
/ Total Dissolved Solids	115	mg/L		20	500	2540C	10/6/2005	10/6/2005	S AJ
\$2130B/2130B (Aqueous) - Turbidity					Test was o	conducted b	y: Analytica	ı - Anchore	ige
Turbidity	105	NTU	H	0.20	1	2130B	10/2/2005	10/2/2005	AJ

Lab#:

A0509324-01K

	Analysis Method						Prep	Prep	Analysis	
£.	Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date .	Analyst
National Property of the Parks	245.1 (Aqueous) - Total Hg					Test was	conducted	by: Analyti	ca - Thornic	on
	Mercury	<mrl< td=""><td>mg/L</td><td></td><td>0.00020</td><td>0.002</td><td></td><td>10/10/200</td><td>510/11/200:</td><td>5KAW</td></mrl<>	mg/L		0.00020	0.002		10/10/200	510/11/200:	5KAW
	2340B (Aqueous) - Total Hardness					Test was	conducted	by: Analytic	ca - Thornto	on
ì	Hardness, Total	100	mg/L		1.0			10/7/2005	10/7/2005	CJ
j	200.7/200.7 (Aqueous) - Treatment D	esign				Test was	conducted	by: Analytic	ca - Thornto	m
4	Aluminum	0.223	mg/L	Н	0.050	0.2	200.7	10/6/2005	10/6/2005	CCJ
Oless,	Calcium	34.7	mg/L		0.10		200.7	10/6/2005	10/6/2005	CCJ-



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Fax: 907-349-1015

Client Sample ID: Tuluksak 2005 North Well

Client Project:

Tuluksak - Treatment Design Package

Location:

Tuluksak 05 North Well

Sample Matrix: COC #:

PWS#: Comments: Aqueous

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Report Date:

10/27/2005

Receipt Date:

9/30/2005

Sample Date: Sample Time: 9/30/2005 9:05:00AM

Collected By:

LP

Flag Definitions:

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M = Matrix Interference

J = Estimated Value

D = Lost to Dilution

** = RL higher than MCL; target not detected

Sample Comment:

Lab#:

A0509324-01K

Edon.	32-1 011C								
Analysis Method Parameter	Result	Units	Flags	MRL	MCL	Prep Method	Prep Date	Analysis	Analyst
200.7/200.7 (Aqueous) - Tre.		Onns	Flags	MIKE			d by: Analytic		
	· ·	/*							
√ Iron	16.4	mg/L	Н	0.050	0.3	200.7	10/6/2005	10/6/2005	5 CCJ
Magnesium	3.76	mg/L		0.10		200.7	10/6/2005	10/6/2005	2 CC1
Manganese	0.503	mg/L	Н	0.0100	0.05	200.7	10/6/2005	10/6/2005	5 CCJ
^ਪ Sodium	<mrl< td=""><td>mg/L</td><td></td><td>3.0</td><td></td><td>200.7</td><td>10/6/2005</td><td>10/6/2005</td><td>5 CCJ</td></mrl<>	mg/L		3.0		200.7	10/6/2005	10/6/2005	5 CCJ
200.8/200.8 (Aqueous) - Prin	nary and Secondary				Test was	conducted	l by: Analytic	ca - Thorn	ton
^t Antimony	<mrl< td=""><td>ug/L</td><td></td><td>0.10</td><td>6.0</td><td>200.8</td><td>10/11/200</td><td>510/12/200</td><td>)5 KS</td></mrl<>	ug/L		0.10	6.0	200.8	10/11/200	510/12/200)5 KS
Arsenic	10.6	ug/L		0.15	50	200.8	10/11/2003	510/11/200)5 KSB
Barium	145	ug/L		0.25	2000	200.8	10/11/2005	510/11/200)5 KSB
Beryllium	<mrl< td=""><td>ug/L</td><td></td><td>0.15</td><td>4.0</td><td>200.8</td><td>10/11/2005</td><td>510/12/200</td><td>)5 KS</td></mrl<>	ug/L		0.15	4.0	200.8	10/11/2005	510/12/200)5 KS
Cadmium	<mrl< td=""><td>ug/L</td><td></td><td>0.20</td><td>5.0</td><td>200.8</td><td>10/11/2005</td><td>510/11/200</td><td>5 KSB</td></mrl<>	ug/L		0.20	5.0	200.8	10/11/2005	510/11/200	5 KSB
Chromium	7.53	ug/L		0.15	100	200.8	10/11/2005	510/11/200	5 KSB
Copper	1.41	ug/L		0.10	1300	200.8	10/11/2005	510/11/200	5 KSB
Nickel	2.87	ug/L		0.15	100	200.8	10/11/2005	510/11/200	5 KSB
Selenium	0.547	ug/L		0.50	50	200.8	10/11/2005	510/11/200	5 KSB
Silver	0.148	ug/L		0.10	100	200.8	10/11/2005	510/11/200	5 KSB
Thallium	0.0516	ug/L		0.050	2.0	200.8	10/11/2005	10/12/200	5 KS



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Client Sample ID:

Tuluksak 2005 North Well

Client Project:

Tuluksak - Treatment Design Package

Location:

Tuluksak 05 North Well

Sample Matrix: COC #:

PWS#:

Comments:

Aqueous

Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518 Phone: 907-258-2155

Fax: 907-258-6634

Report Date:

10/27/2005

Receipt Date:

9/30/2005

Sample Date:

9/30/2005

Sample Time:

9:05:00AM

Collected By: LP

Flag Definitions:

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H = Exceeds Regulatory Limit M = Matrix Interference

J = Estimated Value D = Lost to Dilution

** = RL higher than MCL; target not detected

Sample Comment:

Lab#:

A0509324-01K

Analysis Method						Prep	Prep	Analysis
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date Analyst
200.8/200.8 (Aqueous) - Prin				Test was	conducted	by: Analyt	ica - Thornton	
Zine	121	ug/L		0.25	5000	200.8	10/11/200	0510/11/2005 KSB

Lab#:

Analysis Method						Prep	Prep	Analysi	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	•	Analyst
524.2 (Aqueous) - VOA DW					Test was	conducted	by: Analyti	ica - Thori	iton
1,1,1,2-Tetrachloroethane	<mrl< td=""><td>ug/L</td><td></td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L		0.50			10/12/200	510/12/20	05 MBI
1,1,1-Trichloroethane	<mrl< td=""><td>ug/L</td><td></td><td>0.50</td><td>200</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L		0.50	200		10/12/200	510/12/20	05 MBI
1,1,2,2-Tetrachloroethane	<mrl< td=""><td>ug/L</td><td></td><td>1.0</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L		1.0			10/12/200	510/12/20	05 MBI
1,1,2-Trichloroethane	<mrl< td=""><td>ug/L</td><td></td><td>1.0</td><td>5,0</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L		1.0	5,0		10/12/200	510/12/20	05 MBI
1,1-Dichloroethane	<mrl< td=""><td>ug/L</td><td></td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L		0.50			10/12/200	510/12/20	05 MBI
1,1-Dichloroethene	<mrl< td=""><td>ug/L</td><td></td><td>1.0</td><td>7.0</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L		1.0	7.0		10/12/200	510/12/20	05 MBI
1,1-Dichloropropene	<mrl< td=""><td>ug/L</td><td></td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L		0.50			10/12/200	510/12/20	05 MBI
1,2,3-Trichlorobenzene	<mrl< td=""><td>ug/L</td><td></td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L		0.50			10/12/200	510/12/20	05 MBI
1,2,3-Trichloropropane	<mrl< td=""><td>ug/L</td><td></td><td>1.0</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L		1.0			10/12/200	510/12/20	05 MBI
1,2,4-Trichlorobenzene	<mrl< td=""><td>ug/L</td><td></td><td>1.0</td><td>70</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L		1.0	70		10/12/200	510/12/20	05 MBI
1,2,4-Trimethylbenzene	<mrl< td=""><td>ug/L</td><td></td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI ⁻</td></mrl<>	ug/L		0.50			10/12/200	510/12/20	05 MBI ⁻



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010 Fax: 907-349-1015

Client Sample ID: Client Project:

Tuluksak - Treatment Design Package

Location:

Sample Matrix: COC #: PWS#: Comments:

Tuluksak 2005 North Well

Tuluksak 05 North Well Aqueous

Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518 Phone: 907-258-2155 Fax: 907-258-6634

Report Date: 10/27/2005 Receipt Date: 9/30/2005 Sample Date: 9/30/2005 Sample Time: 9:05:00AM

Collected By: LP

Flag Definitions:

MRL = Method Reporting Limit MCL = Maximum Contaminant Limit B = Present also in Method Blank H = Exceeds Regulatory Limit M = Matrix Interference J = Estimated Value

D = Lost to Dilution ** = RL higher than MCL; target not detected

Sample Comment:

Lab#

A0509324-011

Lab#: A0509324-0)IL								
Analysis Method						Prep	Prep	Analysis	
Parameter	Result	Units	Flags 1	MRL	MCL	Method	Date	Date	Analyst
524.2 (Aqueous) - VOA DW					Test was	s conducted	l by: Analyt	ica - Thorn	ton
1,2-Dibromoethane	<mrl< td=""><td>ug/L</td><td>(</td><td>0.50</td><td>0.050</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	(0.50	0.050		10/12/200	0510/12/20	05 MBI
1,2-Dichlorobenzene	<mrl< td=""><td>ug/L</td><td>C</td><td>0.50</td><td>600</td><td></td><td>10/12/200</td><td>510/12/20</td><td>O5 MBI</td></mrl<>	ug/L	C	0.50	600		10/12/200	510/12/20	O5 MBI
1.2-Dichloroethane	<mrl< td=""><td>ug/L</td><td>C</td><td>0.50</td><td>5.0</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	C	0.50	5.0		10/12/200	510/12/20	05 MBI
1,2-Dichloropropane	<mrl< td=""><td>ug/L</td><td>C</td><td>0.50</td><td>5.0</td><td></td><td>10/12/200</td><td>510/12/200</td><td>05 MBI</td></mrl<>	ug/L	C	0.50	5.0		10/12/200	510/12/200	05 MBI
1,3,5-Trimethylbenzene	<mrl< td=""><td>ug/L</td><td>C</td><td>).50</td><td></td><td></td><td>10/12/200</td><td>510/12/200</td><td>05 MBI</td></mrl<>	ug/L	C).50			10/12/200	510/12/200	05 MBI
1,3-Dichlorobenzene	<mrl< td=""><td>ug/L</td><td>0</td><td>).50</td><td></td><td></td><td>10/12/200</td><td>510/12/200</td><td>)5 MBI</td></mrl<>	ug/L	0).50			10/12/200	510/12/200)5 MBI
1,3-Dichloropropane	<mrl< td=""><td>ug/L</td><td>0</td><td>).50</td><td></td><td></td><td>10/12/200</td><td>510/12/200</td><td>)5 MBI</td></mrl<>	ug/L	0).50			10/12/200	510/12/200)5 MBI
1,4-Dichlorobenzene	<mrl< td=""><td>ug/L</td><td>0</td><td>).50</td><td>75</td><td></td><td>10/12/200</td><td>510/12/200</td><td>)5 MBI</td></mrl<>	ug/L	0).50	75		10/12/200	510/12/200)5 MBI
2,2-Dichloropropane	<mrl< td=""><td>ug/L</td><td>0</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/200</td><td>)5 MBI</td></mrl<>	ug/L	0	0.50			10/12/200	510/12/200)5 MBI
2-Chlorotoluene	<mrl< td=""><td>ug/L</td><td>0</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/200</td><td>)5 MBI</td></mrl<>	ug/L	0	0.50			10/12/200	510/12/200)5 MBI
4-Chlorotoluene	<mrl< td=""><td>ug/L</td><td>0</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/200</td><td>)5 MBI</td></mrl<>	ug/L	0	0.50			10/12/200	510/12/200)5 MBI
4-Isopropyltoluene	<mrl< td=""><td>ug/L</td><td>0</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/200</td><td>)5 MBI</td></mrl<>	ug/L	0	0.50			10/12/200	510/12/200)5 MBI
Benzene	<mrl< td=""><td>ug/L</td><td>0</td><td>0.50</td><td>5.0</td><td></td><td>10/12/200</td><td>510/12/200</td><td>5 MBI</td></mrl<>	ug/L	0	0.50	5.0		10/12/200	510/12/200	5 MBI
Bromobenzene	<mrl< td=""><td>ug/L</td><td>0</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/200</td><td>5 MBI</td></mrl<>	ug/L	0	0.50			10/12/200	510/12/200	5 MBI
Bromochloromethane	<mrl< td=""><td>ug/L</td><td>0</td><td>.50</td><td></td><td></td><td>10/12/200</td><td>510/12/200</td><td>5 MBI</td></mrl<>	ug/L	0	.50			10/12/200	510/12/200	5 MBI
Bromodichloromethane	<mrl< td=""><td>ug/L</td><td>0</td><td>.50</td><td></td><td></td><td>10/12/200</td><td>510/12/200</td><td>5 MBI</td></mrl<>	ug/L	0	.50			10/12/200	510/12/200	5 MBI



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010

Fax: 907-349-1015

Client Project:

Tuluksak 05 North Well

Location:

Sample Matrix: COC #:

PWS#: Comments:

Client Sample ID: Tuluksak 2005 North Well

Tuluksak - Treatment Design Package

Aqueous

Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518 Phone: 907-258-2155

Fax: 907-258-6634

Report Date: 10/27/2005 Receipt Date: 9/30/2005 Sample Date: 9/30/2005 Sample Time: 9:05:00AM

Collected By: LP

Flag Definitions:

MRL = Method Reporting Limit MCL = Maximum Contaminant Limit B = Present also in Method Blank H = Exceeds Regulatory Limit M = Matrix Interference

J = Estimated Value D = Lost to Dilution

** = RL higher than MCL; target not detected

Sample Comment:

Lab#:

Eath. A0007024-0	UIL					
Analysis Method				Prep	Prep	Analysis
Parameter	Result	Units	Flags MRL	MCL Meth	od Date	Date Analys
524.2 (Aqueous) - VOA DW				Test was condu	cted by: Analy	tica - Thornton
Bromoform	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/2005 MBI
Bromomethane	<mrl< td=""><td>ug/L</td><td>2.0</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	2.0		10/12/20	0510/12/2005 MBI
Carbon Tetrachloride	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50	5.0	10/12/20	0510/12/2005 MBI
Chlorobenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>100</td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50	100	10/12/20	0510/12/2005 MBI
Chloroethane	<mrl< td=""><td>ug/L</td><td>2.0</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	2.0		10/12/20	0510/12/2005 MBI
Chloroform	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/2005 MBI
Chloromethane	<mrl< td=""><td>ug/L</td><td>2.5</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	2.5		10/12/20	0510/12/2005 MBI
Cis-1,2-Dichloroethene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>70</td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50	70	10/12/20	0510/12/2005 MBI
Cis-1,3-Dichloropropene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/2005 MBI
Dibromochloromethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/2005 MBI
Dibromomethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/2005 MBI
Dichlorodifluoromethane	<mrl< td=""><td>ug/L</td><td>2.0</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	2.0		10/12/20	0510/12/2005 MBI
Ethylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>700</td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50	700	10/12/20	0510/12/2005 MBI
Hexachlorobutadiene	<mrl< td=""><td>ug/L</td><td>1.0</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	1.0		10/12/20	0510/12/2005 MBI
Isopropylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/2005 MBI
m&p Xylenes	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/2005 MBI
		_				



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010 Fax: 907-349-1015

Client Sample ID: Client Project:

Tuluksak 2005 North Well

Location:

Sample Matrix: COC #:

PWS#: Comments: Tuluksak - Treatment Design Package

Tuluksak 05 North Well

Aqueous

Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518 Phone: 907-258-2155 Fax: 907-258-6634

Report Date:

10/27/2005

Receipt Date:

9/30/2005 9/30/2005

Sample Date: Sample Time:

9:05:00AM

Collected By:

LP

Flag Definitions:

MRL = Method Reporting Limit MCL = Maximum Contaminant Limit B = Present also in Method Blank

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J = Estimated Value D = Lost to Dilution

** = RL higher than MCL; target not detected

Sample Comment:

Lab#∙

A0509324-011

Lab#: A0509324-0	UIL						
Analysis Method					Prep	Prep	Analysis
Parameter	Result	Units	Flags MRL	MCL	Method	Date	Date Analyst
524.2 (Aqueous) - VOA DW				Test was	conducted	by: Analyt	ica - Thornton
Methylene Chloride	<mrl< td=""><td>ug/L</td><td>2.0</td><td>5.0</td><td></td><td>10/12/200</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	2.0	5.0		10/12/200	0510/12/2005 MBI
Naphthalene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50			10/12/200	0510/12/2005 MBI
n-Butylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>)510/12/2005 MBI</td></mrl<>	ug/L	0.50			10/12/200)510/12/2005 MBI
n-Propylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50			10/12/200	0510/12/2005 MBI
O-Xylene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50			10/12/200	0510/12/2005 MBI
sec-Butylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>)510/12/2005 MBI</td></mrl<>	ug/L	0.50			10/12/200)510/12/2005 MBI
Styrene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>100</td><td></td><td>10/12/200</td><td>510/12/2005 MBI</td></mrl<>	ug/L	0.50	100		10/12/200	510/12/2005 MBI
tert-Butyl Methyl Ether	<mrl< td=""><td>ug/L</td><td>1.0</td><td></td><td></td><td>10/12/200</td><td>510/12/2005 MBI</td></mrl<>	ug/L	1.0			10/12/200	510/12/2005 MBI
tert-Butylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/2005 MBI</td></mrl<>	ug/L	0.50			10/12/200	510/12/2005 MBI
Tetrachloroethene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td></td><td>10/12/200</td><td>510/12/2005 MBI</td></mrl<>	ug/L	0.50	5.0		10/12/200	510/12/2005 MBI
Toluene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>1000</td><td></td><td>10/12/200</td><td>510/12/2005 MBI</td></mrl<>	ug/L	0.50	1000		10/12/200	510/12/2005 MBI
trans-1,2-Dichloroethene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>100</td><td></td><td>10/12/200</td><td>510/12/2005 MBI</td></mrl<>	ug/L	0.50	100		10/12/200	510/12/2005 MBI
trans-1,3-Dichloropropene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/2005 MBI</td></mrl<>	ug/L	0.50			10/12/200	510/12/2005 MBI
Trichloroethene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td></td><td>10/12/200</td><td>510/12/2005 MBI</td></mrl<>	ug/L	0.50	5.0		10/12/200	510/12/2005 MBI
Trichlorofluoromethane	<mrl< td=""><td>ug/L</td><td>2.0</td><td></td><td></td><td>10/12/200</td><td>510/12/2005 MBI</td></mrl<>	ug/L	2.0			10/12/200	510/12/2005 MBI
Trichlorotrifluoroethane	<mrl< td=""><td>ug/L</td><td>1.0</td><td></td><td></td><td>10/12/200</td><td>510/12/2005 MBI</td></mrl<>	ug/L	1.0			10/12/200	510/12/2005 MBI
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Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010

Fax: 907-349-1015

Client Sample ID: Client Project:

Tuluksak 2005 North Well

Chent Project: Location: Tuluksak - Treatment Design Package Tuluksak 05 North Well

Sample Matrix:

Aqueous

COC #: PWS#:

Comments:

Triple Mairix. Aque

Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518 Phone: 907-258-2155 Fax: 907-258-6634

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Report Date: Receipt Date: 10/27/2005 9/30/2005

Sample Date: Sample Time: 9/30/2005 9:05:00AM

Collected By: I

LP

Flag Definitions:

MRL = Method Reporting Limit
MCL = Maximum Contaminant Limit
B = Present also in Method Blank
H = Exceeds Regulatory Limit
M = Matrix Interference

J = Estimated Value
D = Lost to Dilution

** = RL higher than MCL; target not detected

Sample Comment:

Lab#:

A0509324-01L

Analysis Method						Prep	Prep	Analysis	5
Parameter	Result	Units	Flags	MRL	MCL N	lethod	Date	Date	Analyst
524.2 (Aqueous) - VOA DW					Test was co	onducted	by: Analyti	ica - Thorn	iton
Vinyl Chloride	<mrl< td=""><td>ug/L</td><td></td><td>0.50</td><td>2.0</td><td></td><td>10/12/200</td><td>)510/12/20</td><td>05 MBI</td></mrl<>	ug/L		0.50	2.0		10/12/200)510/12/20	05 MBI
Xylenes, Total	<mrl< td=""><td>ug/L</td><td></td><td>1.0</td><td>10000</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L		1.0	10000		10/12/200	0510/12/20	05 MBI
Surrogate Recoveries									
1,2-Dichloroethane-d4	83.7	% Recov		1.0			10/12/200)510/12/20	05 MBI
Dibromofluoromethane	119	% Recov		1.0			10/12/200	0510/12/20	05 MBI
p-Bromofluorobenzene	92.0	% Recov		1.0			10/12/200	0510/12/20	05 MBI
Toluene D-8	88.4	% Recov		1.0			10/12/200	510/12/20	05 MBI

Lab#:

A0509324-01M

					Prep	Prep	Analysis	
Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
4-UVA	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Test was o	conducted t	by: Analytice	ı - Anchora	ge
0.132	cm-1		0.020		5910B	10/2/2005	10/2/2005	АJ
	4-UVA	4-UVA	4-UVA	4-UVA	4-UVA Test was a	Result Units Flags MRL MCL Method 4-UVA Test was conducted to	Result Units Flags MRL MCL Method Date 4-UVA Test was conducted by: Analytical	Result Units Flags MRL MCL Method Date Date 4-UVA Test was conducted by: Analytica - Anchora

Lab#:

A0509324-01N

Analysis Method					Prep	Prep	Analysis	
Parameter	Result	Units	Flags MRL	MCL	Method	Date	Date Analyst	



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010

Fax: 907-349-1015

Client Project:

Client Sample ID: Tuluksak 2005 North Well Tuluksak - Treatment Design Package

Location:

Tuluksak 05 North Well

Sample Matrix: COC #:

PWS#: Comments: Aqueous

Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518

Phone: 907-258-2155 Fax: 907-258-6634

Report Date:

10/27/2005

Receipt Date:

9/30/2005

Sample Date: Sample Time: 9/30/2005 9:05:00AM

Collected By:

LP

Flag Definitions:

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Sample Comment:

Lab#:

A0509324-01N

Analysis Method						Prep	Prep	Analysis	s
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
5310B/5310B (Aqueous) - TOC					Test was a	conducted b	y: Analytic	a - Anchor	age
Total Organic Carbon	2.1	mg/L		1.0		5310B	10/5/2005	10/5/200	5 SG

Lab#:

A0509324-01O

Analysis Method						Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
5310B/5310B (Aqueous) - DOC					Test was o	conducted b	y: Analytic	a - Anchora	ige
Dissolved Organic Carbon	1.7	mg/L		1.0		5310B	10/10/200	0510/10/200)5 SG

Lab#:

A0509324-01P

Analysis Method						Prep	Prep	Analysis
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date Analyst
524.2/5710 (Aqueous) - TTHM v	v/SDS Incubation				Test was	conducted	by: Analyti	ica - Thornton
Bromodichloromethane	3.56	ug/L		0.50		5710	10/20/200	510/21/2005 MBI
Bromoform	<mrl< td=""><td>ug/L</td><td></td><td>0.50</td><td></td><td>5710</td><td>10/20/200</td><td>510/21/2005 MBI</td></mrl<>	ug/L		0.50		5710	10/20/200	510/21/2005 MBI
Chloroform	239	ug/L		13		5710	10/20/200	510/21/2005 MB
Dibromochloromethane	<mrl< td=""><td>ug/L</td><td></td><td>0.50</td><td></td><td>5710</td><td>10/20/200</td><td>510/21/2005 MBI</td></mrl<>	ug/L		0.50		5710	10/20/200	510/21/2005 MBI
Total Trihalomethane	239	ug/L	Н	130	80	5710	10/20/200	510/21/2005 MB



CE₂

Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523

907-349-1010 Fax: 907-349-1015

Client Sample ID: Tuluksak 2005 North Well
Client Project: Tuluksak - Treatment Design F Tuluksak - Treatment Design Package

Tuluksak 05 North Well Location:

Sample Matrix: COC #:

Aqueous

PWS#: Comments: Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518 Phone: 907-258-2155

Fax: 907-258-6634

Report Date: Receipt Date:

10/27/2005 9/30/2005

Sample Date: 9/30/2005 9:05:00AM Sample Time:

Collected By: LP

Flag Definitions:

MRL = Method Reporting Limit MCL = Maximum Contaminant Limit B = Present also in Method Blank H = Exceeds Regulatory Limit M = Matrix Interference

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Sample Comment:

Lab#:

A0509324-01P

Analysis Method						Prep	Prep	Analysi	s
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
524.2/5710 (Aqueous) - TTHM v	w/SDS Incubation				Test was	conductea	l by: Analyt	ica - Thori	nton
Surrogate Recoveries									
1,2-Dichloroethane-d4	84.2	% Recov		1.0		5710	10/20/200	510/21/20	05 MBI
Dibromofluoromethane	85.1	% Recov		1.0		5710	10/20/200	510/21/20	05 MBI
p-Bromofluorobenzene	91.0	% Recov		0.1		5710	10/20/200	510/21/20	05 MBI
Toluene D-8	86.8	% Recov		1.0		5710	10/20/200	510/21/20	05 MBI
552.2 (Aqueous) - HLAA5 w/SD	S Incubation				Test was	conducted	by: Analyti	ca - Thori	iton
Dibromoacetic acid	<mrl< td=""><td>ug/L</td><td></td><td>1.0</td><td></td><td></td><td>10/24/200</td><td>510/24/20</td><td>05 LW</td></mrl<>	ug/L		1.0			10/24/200	510/24/20	05 LW
Dichloroacetic acid	49.8	ug/L		3.0			10/24/200	510/24/20	05 LW
Monobromoacetic acid	<mrl< td=""><td>ug/L</td><td></td><td>2.0</td><td></td><td></td><td>10/24/200</td><td>510/24/20</td><td>05 LW</td></mrl<>	ug/L		2.0			10/24/200	510/24/20	05 LW
Monochloroacetic acid	<mrl< td=""><td>ug/L</td><td></td><td>3.0</td><td></td><td></td><td>10/24/200</td><td>510/24/20</td><td>05 LW</td></mrl<>	ug/L		3.0			10/24/200	510/24/20	05 LW
Total Haloacetic Acids	61.0	ug/L	Н	3.0	60		10/24/200	510/24/20	05 LW
Trichloroacetic acid	8.30	ug/L		1.0			10/24/200	510/24/20	05 LW
Surrogate Recoveries									
2-Bromoproprionic Acid	105	% Recov		1.0			10/24/200	510/24/20	05 LW
4500-CIG/5710 (Aqueous) - SDS	Residual Chlorin	e			Test was	conducted	by: Analytic	ca - Thorn	ton
Chlorine, Residual	6.9	mg/L		0.0100		5710	10/12/200		



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CE2

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Fax: 907-349-1015

Client Sample ID:

Client Project:

Location:

Sample Matrix: COC #:

PWS#: Comments: Tuluksak 2005 North Well

Tuluksak - Treatment Design Package Tuluksak 05 North Well

Aqueous

10/27/2005 Report Date: Receipt Date: 9/30/2005 9/30/2005 Sample Date: Sample Time: 9:05:00AM

Collected By: LP

Flag Definitions:

MRL = Method Reporting Limit MCL = Maximum Contaminant Limit B = Present also in Method Blank H = Exceeds Regulatory Limit

M = Matrix Interference J = Estimated Value D = Lost to Dilution

** = RL higher than MCL; target not detected

Sample Comment:

Lab#:

A0509324-01Q

Analysis Method				***************************************			Prep	Prep	Analysis	5
Parameter	Result	Units	Flags	MRL		MCL	Method	Date	Date	Analyst
2350B/2350B (Aqueous) - Chl	orine Demand				7	est was a	conducted b	y: Analytica	a - Anchor	age
Chlorine, Free	27	mg/L		0.0100			2350B	10/12/200	510/19/20	05 LM

Lab#:

A0509324-01R

Analysis Method					Prep	Prep	Analysis	
Parameter	Result	Units	Flags MRL	MCL	Method	Date	Date	Analyst
9223B (Aqueous) - Coliforms in DW				Test was	conducted by	v: Analytica	ı - Anchoro	ige
E. Coli	PASS	PassFail				10/1/2005	10/1/2005	5 EK
Total Coliform	PASS	PassFail				10/1/2005	10/1/2005	EK.

Lab#:

A0509324-01S

Analysis Method				***************************************		Prep	Prep	Analysis
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date Analyst
200.8/200.8 (Aqueous) - Arsenic					Test was	conductea	by: Analyti	ica - Thornton
Arsenic	11.1	ug/L		0.15	50	200.8	10/10/200)510/10/2005 KSB



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Client Sample ID:

Tuluksak 2005 South Well

Client Project:

Tuluksak - Treatment Design Package

Result

Units

Location:

Tuluksak 05 North Well

Sample Matrix:

Aqueous

COC #: PWS#:

Comments:

Report Date: 10/27/2005 Receipt Date: 9/30/2005 Sample Date: 9/30/2005 Sample Time: 9:40:00AM

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Collected By:

Flag Definitions:

MRL = Method Reporting Limit MCL = Maximum Contaminant Limit B = Present also in Method Blank H = Exceeds Regulatory Limit M = Matrix Interference

LP

J = Estimated Value D = Lost to Dilution

Prep

MCL Method

** = RL higher than MCL; target not detected

Analysis

Date Analyst

Prep

Date

Test was conducted by: Analytica - Anchorage

Sample Comment:

Analysis Method

4500-NO3E (Aqueous) - Nitrate

Parameter

Lab#:

A0509324-02A

Laum.	A0007024-02A									+
Analysis Method							Prep	Prep	Analysis	3
Parameter		Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
4500-NO2-B (Aque	ous) - Nitrite			-		Test was o	conducted b	by: Analytica	ı - Anchor	age
Nitrite as N		<mrl< td=""><td>mg/L</td><td></td><td>0.020</td><td>1</td><td></td><td>10/2/2005</td><td>10/2/200</td><td>5 AJ</td></mrl<>	mg/L		0.020	1		10/2/2005	10/2/200	5 AJ
Lab#:	A0509324-02B									
Analysis Method							Prep	Prep	Analysis	
Parameter		Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
2120B/2120B (Aque	eous) - True Color					Test was a	conducted b	y: Analytica	ı - Anchor	age
Color		400	Color Unit	H	5.0	. 15	2120B	10/1/2005	10/1/200	5 EK
Lab#:	A0509324-02C									
Analysis Method							Prep	Prep	Analysis	
Parameter	a a	Result	Units	Flags	MRL	MCL	Method	Date		Analyst
2120B/2120B (Aque	eous) - Apparent C	olor				Test was c	conducted b	y: Analytica	- Anchor	age
Color		250	Color Unit	Н	5.0	15	2120B	10/1/2005	10/1/200	5 EK
Lab#:	A0509324-02D									

Flags MRL



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Client Sample ID: Client Project: Tuluksak 2005 South Well

Location:

Tuluksak - Treatment Design Package Tuluksak 05 North Well

Sample Matrix: COC #:

Aqueous

COC #: PWS#:

Comments:

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Receipt Date:

9/30/2005

Sample Date: Sample Time: 9/30/2005 9:40:00AM

Collected By:

LP

Flag Definitions:

MRL = Method Reporting Limit MCL = Maximum Contaminant Limit B = Present also in Method Blank

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Sample Comment:

Lab#:

A0509324-02D

Analysis Method					Prep	Prep	Analysis	
Parameter	Result	Units	Flags MRL	MCL	Method	Date	Date	Analyst
4500-NO3E (Aqueous) - Nitrate				Test was a	conducted by	v: Analytice	ı - Anchora	ige
Nitrate as N	<mrl< td=""><td>mg/L</td><td>0.10</td><td>10</td><td></td><td>10/6/2005</td><td>10/6/2005</td><td>ΑJ</td></mrl<>	mg/L	0.10	10		10/6/2005	10/6/2005	ΑJ

Lab#:

A0509324-02F

Analysis Method				Prep	Prep	Analysis
Parameter	Result	Units	Flags MRL	MCL Method	Date	Date Analyst
5540C (Aqueous) - Surfactants a	s MBAS			Test was conducted by	: Analytic	a - Anchorage
MBAS Foaming Agents	<mrl< td=""><td>mg/L</td><td>0.10</td><td></td><td>10/12/200</td><td>0510/2/2005 AJ</td></mrl<>	mg/L	0.10		10/12/200	0510/2/2005 AJ

Lab#:

A0509324-02G

Analysis Method				Prep	Prep	Analysis
Parameter	Result	Units	Flags MRL	MCL Method	Date	Date Analyst
2150B/2150B (Aqueous) - Odor				Test was conducted b	v: Analytic	a - Anchorage
Odor	NO ODO	T.O.N.	1.0	2150B	10/1/2005	10/1/2005 MA

Lab#:

A0509324-02H

Analysis Method						Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date An	alyst

4500-CNE/4500-CNB (Aqueous) - Total CN

Test was conducted by: Analytica - Thornton



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Client Project:

Tuluksak - Treatment Design Package

Location:

Tuluksak 05 North Well

Sample Matrix:

COC #: PWS#: Comments: Aqueous

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Report Date:

10/27/2005

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Sample Date: Sample Time: 9/30/2005 9:40:00AM

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Sample Comment:

Lab#:

A0509324-02H

Analysis Method				Prep	Prep	Analysis
Parameter	Result	Units	Flags MRL	MCL Method	Date	Date Analyst
4500-CNE/4500-CNB (Aqu	eous) - Total CN			Test was conducted	l by: Analy	tica - Thornton
Cyanide	<mrl< td=""><td>mg/L</td><td>0.0069</td><td>4500-CNB</td><td>10/10/20</td><td>0510/13/2005 STONE</td></mrl<>	mg/L	0.0069	4500-CNB	10/10/20	0510/13/2005 STONE

Lab#:

A0509324-02I

Analysis Method						Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
300.0/300.0 (Aqueous) - Anions				-	Test was	conducted	by: Analytic	a - Fairbai	nks
Bromide	<mrl< td=""><td>mg/L</td><td></td><td>0.10</td><td></td><td>300.0</td><td>10/5/2005</td><td>10/5/2005</td><td>KAH</td></mrl<>	mg/L		0.10		300.0	10/5/2005	10/5/2005	KAH
Chloride	2.28	mg/L		0.50	250	300.0	10/5/2005	10/5/2005	KAH
Fluoride	<mrl< td=""><td>mg/L</td><td></td><td>0.20</td><td>4.0</td><td>300.0</td><td>10/5/2005</td><td>10/5/2005</td><td>КАН</td></mrl<>	mg/L		0.20	4.0	300.0	10/5/2005	10/5/2005	КАН
Sulfate	<mrl< td=""><td>mg/L</td><td></td><td>0.75</td><td>250</td><td>300.0</td><td>10/5/2005</td><td>10/5/2005</td><td>KAH</td></mrl<>	mg/L		0.75	250	300.0	10/5/2005	10/5/2005	KAH

Lab#:

Analysis Method				Prep	Prep	Analysis
Parameter	Result	Units	Flags MRL	MCL Method	Date	Date Analyst
150.1/150.1 (Aqueous) - pH				Test was conducted b	y: Analytic	ca - Anchorage
pН	6.9	pН	0.0	150.1	10/1/200	5 10/1/2005 EK
2330B (Aqueous) - Langelier Index				Test was conducted by	y: Analytic	ra - Anchorage



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Client Project:

Location:

Sample Matrix: COC #:

PWS#: Comments:

Client Sample ID: Tuluksak 2005 South Well

Tuluksak - Treatment Design Package

Tuluksak 05 North Well

Aqueous

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Report Date: Receipt Date:

10/27/2005 9/30/2005

Sample Date: Sample Time: 9/30/2005 9:40:00AM

Collected By: LP

Flag Definitions:

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Sample Comment:

Lab#:

A0509324-02J

Analysis Method						Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL		Date		Analyst
2330B (Aqueous) - Langelier Index					Test was	conducted b	by: Analytica	a - Anchore	ige
Langelier Index/Corrosivity	-0.91	Lang units		-1.0			10/21/200	510/21/200)5 KN
2320B/2320B (Aqueous) - Total Al	kalinity				Test was	conducted E	y: Analytice	a - Anchore	ige
Alkalinity, Total	108	mg/L CaCO3		4.0		2320B	10/8/2005	10/8/2005	AJ
2540C/2540C (Aqueous) - TDS					Test was a	conducted b	y: Analytice	a - Anchora	ige
Total Dissolved Solids	133	mg/L		20	500	2540C	10/6/2005	10/6/2005	AJ
2130B/2130B (Aqueous) - Turbidit	у				Test was o	conducted b	y: Analytica	a - Anchora	ige
Turbidity	29.1	NTU	Н	0.20	1	2130B	10/2/2005	10/2/2005	AJ

Lab#:

Analysis Method						Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date		Analyst
245.1 (Aqueous) - Total Hg					Test was	conducted	by: Analyt	ica - Thornie	on .
Mercury	<mrl< td=""><td>mg/L</td><td></td><td>0.00020</td><td>0.002</td><td></td><td>10/10/200</td><td>510/11/200:</td><td>5KAW</td></mrl<>	mg/L		0.00020	0.002		10/10/200	510/11/200:	5KAW
2340B (Aqueous) - Total Hardness	3				Test was	conducted	by: Analyti	ica - Thornto	on -
Hardness, Total	98	mg/L		1.0			10/7/2005	10/7/2005	CJ
200.7/200.7 (Aqueous) - Treatmen	t Design				Test was	conducted	by: Analyti	ca - Thornto	on
Aluminum	<mrl< td=""><td>mg/L</td><td></td><td>0.050</td><td>0.2</td><td>200.7</td><td>10/6/2005</td><td>10/6/2005</td><td>CCJ</td></mrl<>	mg/L		0.050	0.2	200.7	10/6/2005	10/6/2005	CCJ
Calcium	31.4	mg/L		0.10		200.7	10/6/2005	10/6/2005	CCJ __



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Client Sample ID: Client Project:

Location:

Tuluksak 05 North Well

Sample Matrix: COC #:

Tuluksak 2005 South Well

Tuluksak - Treatment Design Package

Aqueous

PWS#: Comments: MCL = Maximum Contaminant Limit B = Present also in Method Blank

Flag Definitions:

Report Date:

Receipt Date:

Sample Date:

Sample Time:

Collected By:

H = Exceeds Regulatory Limit M = Matrix Interference

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J = Estimated Value D = Lost to Dilution

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10/27/2005

9:40:00AM

9/30/2005 9/30/2005

LP

MRL = Method Reporting Limit

Sample Comment:

Lab#:

Analysis Method		***************************************				Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	•	Analyst
200.7/200.7 (Aqueous) - Treatment I	Design	New Professional Control			Test was	conducted	by: Analytic	ca - Thornt	Oil
Iron	9.33	mg/L	Н	0.050	0.3	200.7	10/6/2005	10/6/2005	CCJ
Magnesium	4.64	mg/L		0.10		200.7	10/6/2005	10/6/2005	CCJ
Manganese	0.361	mg/L	Н	0.0100	0.05	200.7	10/6/2005	10/6/2005	CCJ
Sodium	<mrl< td=""><td>mg/L</td><td></td><td>3.0</td><td></td><td>200.7</td><td>10/6/2005</td><td>10/6/2005</td><td>CCJ</td></mrl<>	mg/L		3.0		200.7	10/6/2005	10/6/2005	CCJ
200.8/200.8 (Aqueous) - Primary and	l Secondary				Test was	conducted	by: Analytic	ca - Thornte	0n
Antimony	<mrl< td=""><td>ug/L</td><td></td><td>0.10</td><td>6.0</td><td>200.8</td><td>10/11/2005</td><td>510/12/200</td><td>5 KS</td></mrl<>	ug/L		0.10	6.0	200.8	10/11/2005	510/12/200	5 KS
Arsenic	49.9	ug/L		0.15	50	200.8	10/11/2005	510/11/200	5 KSB
Barium	169	ug/L		0.25	2000	200.8	10/11/2005	510/11/200:	5 KSB
Beryllium	<mrl< td=""><td>ug/L</td><td></td><td>0.15</td><td>4.0</td><td>200.8</td><td>10/11/2005</td><td>510/11/200:</td><td>5 KSB</td></mrl<>	ug/L		0.15	4.0	200.8	10/11/2005	510/11/200:	5 KSB
Cadmium	<mrl< td=""><td>ug/L</td><td></td><td>0.20</td><td>5.0</td><td>200.8</td><td>10/11/2005</td><td>510/11/2005</td><td>5 KSB</td></mrl<>	ug/L		0.20	5.0	200.8	10/11/2005	510/11/2005	5 KSB
Chromium	13.6	ug/L		0.15	100	200.8	10/11/2005	510/11/2005	5 KSB
Copper	0.542	ug/L		0.10	1300	200.8	10/11/2005	10/11/2005	KSB
Nickel	2.01	ug/L		0.15	100	200.8	10/11/2005	310/11/2005	KSB
Selenium	<mrl< td=""><td>ug/L</td><td></td><td>0.50</td><td>50</td><td>200.8</td><td>10/11/2005</td><td>310/11/2005</td><td>KSB</td></mrl<>	ug/L		0.50	50	200.8	10/11/2005	310/11/2005	KSB
Silver	0.131	ug/L		0.10	100	200.8	10/11/2005	10/11/2005	KSB
Thallium	<mrl< td=""><td>ug/L</td><td></td><td>0.050</td><td>2.0</td><td>200.8</td><td>10/11/2005</td><td>10/12/2005</td><td>KS</td></mrl<>	ug/L		0.050	2.0	200.8	10/11/2005	10/12/2005	KS



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Client Sample ID:

Tuluksak 2005 South Well

Client Project:

Tuluksak - Treatment Design Package

Location:

Tuluksak 05 North Well

Sample Matrix:

COC#: PWS#:

Aqueous

Comments:

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Report Date: Receipt Date: 10/27/2005 9/30/2005

Sample Date: Sample Time: 9/30/2005 9:40:00AM

Collected By: LP

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Sample Comment:

Lab#:

A0509324-02K

540.77	1100000000						
Analysis Method					Prep	Prep	Analysis
Parameter	Result	Units	Flags MRL	MCL	Method	Date	Date Analyst
200.8/200.8 (Aqueo	ous) - Primary and Secondary			Test was	conducted	by: Analyt	ica - Thornton
Zinc	6.01	ug/L	0.25	5000	200.8	10/11/200	0510/11/2005 KSB

Lab#:

Analysis Method					Prep	Prep	Analysis	}
Parameter	Result	Units	Flags MRL	MCL	Method	Date	Date	Analyst
524.2 (Aqueous) - VOA DW				Test was	s conducted	by: Analyt	ica - Thorr	iton
1,1,1,2-Tetrachloroethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>)510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50			10/12/200)510/12/20	05 MBI
1,1,1-Trichloroethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td>200</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	200		10/12/200	0510/12/20	05 MBI
1,1,2,2-Tetrachloroethane	<mrl< td=""><td>ug/L</td><td>1.0</td><td></td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	1.0			10/12/200	0510/12/20	05 MBI
1,1,2-Trichloroethane	<mrl< td=""><td>ug/L</td><td>1.0</td><td>5.0</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	1.0	5.0		10/12/200	510/12/20	05 MBI
1,1-Dichloroethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50			10/12/200	510/12/20	05 MBI
1,1-Dichloroethene	<mrl< td=""><td>ug/L</td><td>1.0</td><td>7.0</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	1.0	7.0		10/12/200	510/12/20	05 MBI
1,1-Dichloropropene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50			10/12/200	510/12/20	05 MBI
1,2,3-Trichlorobenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50			10/12/200	510/12/20	05 MBI
1,2,3-Trichloropropane	<mrl< td=""><td>ug/L</td><td>1.0</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	1.0			10/12/200	510/12/20	05 MBI
1,2,4-Trichlorobenzene	<mrl< td=""><td>ug/L</td><td>1.0</td><td>70</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	1.0	70		10/12/200	510/12/20	05 MBI
1,2,4-Trimethylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI -</td></mrl<>	ug/L	0.50			10/12/200	510/12/20	05 MBI -



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Client Project:

Client Sample ID: Tuluksak 2005 South Well Tuluksak - Treatment Design Package

Location:

Tuluksak 05 North Well

Sample Matrix: COC #:

Aqueous

PWS#: Comments: Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518 Phone: 907-258-2155

Fax: 907-258-6634

Report Date:

10/27/2005

Receipt Date:

9/30/2005

Sample Date: Sample Time: 9/30/2005 9:40:00AM

Collected By: LP

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Sample Comment:

Lab#:

Analysis Method				Pre	p Prep	Analysi	s
Parameter	Result	Units	Flags MRL	MCL Meth		•	Analyst
524.2 (Aqueous) - VOA DW				Test was condi	icted by: Analyi	ica - Thori	nton
1,2-Dibromoethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td>0.050</td><td>10/12/20</td><td>0510/12/20</td><td>005 MBI</td></mrl<>	ug/L	0.50	0.050	10/12/20	0510/12/20	005 MBI
1,2-Dichlorobenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>600</td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	600	10/12/20	0510/12/20	05 MBI
1,2-Dichloroethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	5.0	10/12/20	0510/12/20	05 MBI
1,2-Dichloropropane	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	5.0	10/12/200	0510/12/20	05 MBI
1,3,5-Trimethylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
1,3-Dichlorobenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
1,3-Dichloropropane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
1,4-Dichlorobenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>75</td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	75	10/12/200	0510/12/20	05 MBI
2,2-Dichloropropane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
2-Chlorotoluene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
4-Chlorotoluene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
4-Isopropyltoluene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
Benzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	5.0	10/12/200	0510/12/20	05 MBI
Bromobenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
Bromochloromethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
Bromodichloromethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010 Fax: 907-349-1015

Client Project:

Client Sample ID: Tuluksak 2005 South Well

Location: Sample Matrix: COC #:

PWS#: Comments:

Tuluksak - Treatment Design Package

Tuluksak 05 North Well

Aqueous

Anchorage, AK 99518 Phone: 907-258-2155 Fax: 907-258-6634

Analytica International, Inc. 5761 Silverado Way, Unit N

10/27/2005 Report Date: Receipt Date: 9/30/2005 Sample Date: 9/30/2005 Sample Time: 9:40:00AM

Collected By: LP

Flag Definitions:

MRL = Method Reporting Limit MCL = Maximum Contaminant Limit B = Present also in Method Blank H = Exceeds Regulatory Limit M = Matrix Interference

J = Estimated Value D = Lost to Dilution

** = RL higher than MCL; target not detected

Sample Comment:

Lab#:

Analysis Method						
Parameter	Result	Units	Flags MRL	Prep MCL Method	Prep I Date	Analysis Date Analyst
524.2 (Aqueous) - VOA DW				Test was conducted		
Bromoform	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>•</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		•	0510/12/2005 MBI
Bromomethane	<mrl< td=""><td>ug/L</td><td>2.0</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	2.0		10/12/20	0510/12/2005 MBI
Carbon Tetrachloride	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50	5.0	10/12/20	0510/12/2005 MBI
Chlorobenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>100</td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50	100	10/12/20	0510/12/2005 MBI
Chloroethane	<mrl< td=""><td>ug/L</td><td>2.0</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	2.0		10/12/20	0510/12/2005 MBI
Chloroform	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/2005 MBI
Chloromethane	<mrl< td=""><td>ug/L</td><td>2.5</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	2.5		10/12/20	0510/12/2005 MBI
Cis-1,2-Dichloroethene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>70</td><td>10/12/200</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50	70	10/12/200	0510/12/2005 MBI
Cis-1,3-Dichloropropene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/2005 MBI
Dibromochloromethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/2005 MBI
Dibromomethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/2005 MBI
Dichlorodifluoromethane	<mrl< td=""><td>ug/L</td><td>2.0</td><td></td><td></td><td>0510/12/2005 MBI</td></mrl<>	ug/L	2.0			0510/12/2005 MBI
Ethylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>700</td><td>10/12/200</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50	700	10/12/200	0510/12/2005 MBI
Hexachlorobutadiene	<mrl< td=""><td>ug/L</td><td>1.0</td><td></td><td></td><td>0510/12/2005 MBI</td></mrl<>	ug/L	1.0			0510/12/2005 MBI
Isopropylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50			0510/12/2005 MBI
m&p Xylenes	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/2005 MBI



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010

Fax: 907-349-1015

Client Project: Location:

Sample Matrix: COC #:

PWS#: Comments:

Client Sample ID: Tuluksak 2005 South Well

Tuluksak - Treatment Design Package

Tuluksak 05 North Well

Aqueous

Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518

Phone: 907-258-2155 Fax: 907-258-6634

Report Date:

10/27/2005

Receipt Date:

9/30/2005

Sample Date: Sample Time: 9/30/2005 9:40:00AM

Collected By:

LP

Flag Definitions:

MRL = Method Reporting Limit MCL = Maximum Contaminant Limit

B = Present also in Method Blank H = Exceeds Regulatory Limit

M = Matrix Interference J≈ Estimated Value D = Lost to Dilution

** = RL higher than MCL; target not detected

Sample Comment:

Lab#:

Analysis Method				F	Prep Prep	Analysi	s
Parameter	Result	Units	Flags MRL		ethod Date		Analyst
524.2 (Aqueous) - VOA DW				Test was co.	nducted by: Analy	tica - Thori	nton
Methylene Chloride	<mrl< td=""><td>ug/L</td><td>2.0</td><td>5.0</td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	2.0	5.0	10/12/20	0510/12/20	05 MBI
Naphthalene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/20	05 MBI
n-Butylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/20	05 MBI
n-Propylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/20	05 MBI
O-Xylene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/20	05 MBI
sec-Butylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/20	05 MBI
Styrene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>100</td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	100	10/12/20	0510/12/20	05 MBI
tert-Butyl Methyl Ether	<mrl< td=""><td>ug/L</td><td>1.0</td><td></td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	1.0		10/12/20	0510/12/20	05 MBI
tert-Butylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/20	05 MBI
Tetrachloroethene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	5.0	10/12/20	0510/12/20	05 MBI
Toluene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>1000</td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	1000	10/12/20	0510/12/20	05 MBI
trans-1,2-Dichloroethene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>100</td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	100	10/12/20	0510/12/20	05 MBI
trans-1,3-Dichloropropene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/20	05 MBI
Trichloroethene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	5.0	10/12/20	0510/12/20	05 MBI
Trichlorofluoromethane	<mrl< td=""><td>ug/L</td><td>2.0</td><td></td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	2.0		10/12/20	0510/12/20	05 MBI
Trichlorotrifluoroethane	<mrl< td=""><td>ug/L</td><td>1.0</td><td></td><td>10/12/20</td><td>0510/12/200</td><td>05 MBI</td></mrl<>	ug/L	1.0		10/12/20	0510/12/200	05 MBI



Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518 Phone: 907-258-2155

Fax: 907-258-6634

Report Date:

Receipt Date:

Sample Date:

Sample Time:

Collected By:

Flag Definitions:

CE2

Atm: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010

Fax: 907-349-1015

Tuluksak 2005 South Well

Client Sample ID: Client Project:

Tuluksak - Treatment Design Package

Location:

Sample Matrix: COC #:

Aqueous

PWS#: Comments:

Tuluksak 05 North Well

J = Estimated Value D = Lost to Dilution

M = Matrix Interference

** = RL higher than MCL; target not detected

10/27/2005

9/30/2005

9/30/2005

LP

MRL = Method Reporting Limit

H = Exceeds Regulatory Limit

MCL = Maximum Contaminant Limit B = Present also in Method Blank

9:40:00AM

Sample Comment:

Lab#:

A0509324-02L

Analysis Method						Prep	Prep	Analysis	5
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
524.2 (Aqueous) - VOA DW					Test was	conductea	by: Analyti	ica - Thorr	iton
Vinyl Chloride	<mrl< td=""><td>ug/L</td><td></td><td>0.50</td><td>2.0</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L		0.50	2.0		10/12/200	510/12/20	05 MBI
Xylenes, Total	<mrl< td=""><td>ug/L</td><td></td><td>1.0</td><td>10000</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L		1.0	10000		10/12/200	510/12/20	05 MBI
Surrogate Recoveries									
1,2-Dichloroethane-d4	83.6	% Recov		1.0			10/12/200	510/12/20	05 MBI
Dibromofluoromethane	120	% Recov		1.0			10/12/200	510/12/20	05 MBI
p-Bromofluorobenzene	91.4	% Recov		1.0			10/12/200	510/12/20	05 MBI
Toluene D-8	89.1	% Recov		1.0			10/12/200	510/12/20	05 MBI

Lab#:

Analysis Method							Prep	Prep	Analysis	
Parameter	* '	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
5910B/5910B (Aqu	eous) - UV254-I	JVA				Test was o	conducted b	y: Analytica	ı - Anchore	ıge
UV 254 Ultraviole	et Absorption	0.118	cm-1		0.020		5910B	10/2/2005	10/2/2005	5 AJ

Analysis Method Prep Prep Analysis Parameter Result Units Flags MRL MCL Method Date Date Analyst	Lab#:	A0509324-02N								
Parameter Result Units Flags MRL MCL Method Date Date Analyst	Analysis Method							Prep	Prep	Analysis
	Parameter		Result	Units	Flags	MRL	MCL	Method	Date	Date Analyst



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010 Fax: 907-349-1015

Client Sample ID: Tuluksak 2005 South Well

Client Project:

Tuluksak - Treatment Design Package

Location:

Tuluksak 05 North Well

Sample Matrix: COC #:

PWS#: Comments: Aqueous

Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518 Phone: 907-258-2155

Fax: 907-258-6634

Report Date:

10/27/2005 9/30/2005

Receipt Date: Sample Date: Sample Time:

9/30/2005 9:40:00AM

Collected By: LP

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Sample Comment:

Lab#:

A0509324-02N

Analysis Method						Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
5310B/5310B (Aqueous) - TOC					Test was a	conducted b	y: Analytica	a - Anchore	age
Total Organic Carbon	2.3	mg/L		1.0		5310B	10/5/2005	10/5/200	5 SG

Lab#:

A0509324-02O

Analysis Method						Prep	Prep	Analysis
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date Analyst
5310B/5310B (Aqueous) - DOC					Test was a	conducted b	y: Analytica	a - Anchorage
Dissolved Organic Carbon	2.0	mg/L		1.0		5310B	10/10/200	510/10/2005 SG

Lab#:

Analysis Method						Prep	Prep	Analysis
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date Analyst
524.2/5710 (Aqueous) - TTHM v	v/SDS Incubation				Test was	conductea	by: Analyti	ica - Thornton
Bromodichloromethane	4.17	ug/L		0.50		5710	10/20/200	510/21/2005 MBI
Bromoform	<mrl< td=""><td>ug/L</td><td></td><td>0.50</td><td></td><td>5710</td><td>10/20/200</td><td>0510/21/2005 MBI</td></mrl<>	ug/L		0.50		5710	10/20/200	0510/21/2005 MBI
Chloroform	329	ug/L		13		5710	10/20/200	0510/21/2005 MB
Dibromochloromethane	<mrl< td=""><td>ug/L</td><td></td><td>0.50</td><td></td><td>5710</td><td>10/20/200</td><td>510/21/2005 MBI</td></mrl<>	ug/L		0.50		5710	10/20/200	510/21/2005 MBI
Total Trihalomethane	333	ug/L	Н	130	80	5710	10/20/200	510/21/2005 MB



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010

Fax: 907-349-1015

Client Sample ID: Client Project:

Tuluksak 2005 South Well Tuluksak - Treatment Design Package

Location:

Tuluksak 05 North Well

Sample Matrix: COC #:

Aqueous

PWS#: Comments:

Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518 Phone: 907-258-2155

Fax: 907-258-6634

Report Date:

10/27/2005

Receipt Date:

9/30/2005 9/30/2005

Sample Date: Sample Time:

9:40:00AM

Collected By:

LP

Flag Definitions:

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Sample Comment:

Lab#:

Analysis Method						Prep	Prep	Analysi	5
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
524.2/5710 (Aqueous) - TTHM v	w/SDS Incubation				Test was	conductea	l by: Analyt	ica - Thori	iton
Surrogate Recoveries									
1,2-Dichloroethane-d4	83.6	% Recov		1.0		5710	10/20/200	0510/21/20	05 MBI
Dibromofluoromethane	86.1	% Recov		1.0		5710	10/20/200	0510/21/20	05 MBI
p-Bromofluorobenzene	93.7	% Recov		1.0		5710	10/20/200	0510/21/20	05 MBI
Toluene D-8	88.9	% Recov		1.0		5710	10/20/200	510/21/20	05 MBI
552.2 (Aqueous) - HLAA5 w/SD	S Incubation				Test was	conducted	by: Analyti	ica - Thori	nton
Dibromoacetic acid	<mrl< td=""><td>ug/L</td><td></td><td>1.0</td><td></td><td></td><td>10/24/200</td><td>510/24/20</td><td>05 LW</td></mrl<>	ug/L		1.0			10/24/200	510/24/20	05 LW
Dichloroacetic acid	86.0	ug/L		15			10/24/200	510/24/20	05 LW
Monobromoacetic acid	<mrl< td=""><td>ug/L</td><td></td><td>2.0</td><td></td><td></td><td>10/24/200</td><td>510/24/20</td><td>05 LW</td></mrl<>	ug/L		2.0			10/24/200	510/24/20	05 LW
Monochloroacetic acid	5.15	ug/L		3.0			10/24/200	510/24/20	05 LW
Total Haloacetic Acids	109	ug/L	Н	15	60		10/24/200	510/24/20	05 LW
Trichloroacetic acid	19.6	ug/L		5.0			10/24/200	510/24/20	05 LW
Surrogate Recoveries									
2-Bromoproprionic Acid	103	% Recov		1.0			10/24/200	510/24/20	05 LW
4500-ClG/5710 (Aqueous) - SDS	Residual Chlorin	e			Test was conducted by: Analytica - Thornton			ton	
Chlorine, Residual	8.6	mg/L		0.0100		5710	10/12/200	510/19/20	05 LM



CE₂

Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010 Fax: 907-349-1015

Client Sample ID:

Client Project: Location:

Tuluksak 05 North Well

Sample Matrix: COC #:

PWS#:

Comments:

Tuluksak 2005 South Well

Tuluksak - Treatment Design Package

Aqueous

Analytica International, Inc. 5761 Silverado Way, Unit N Anchorage, AK 99518

Phone: 907-258-2155 Fax: 907-258-6634

Report Date:

10/27/2005

Receipt Date:

9/30/2005

Sample Date: Sample Time: 9/30/2005 9:40:00AM

Collected By:

LP

Flag Definitions:

MRL = Method Reporting Limit MCL = Maximum Contaminant Limit B = Present also in Method Blank H = Exceeds Regulatory Limit

M = Matrix Interference J = Estimated Value D = Lost to Dilution

** = RL higher than MCL; target not detected

Sample Comment:

Lab#:

A0509324-02O

Analysis Method				Prep	Prep	Analysis
Parameter	Result	Units	Flags MRL	MCL Method	Date	Date Analyst
2350B/2350B (Aqueous) - Ch	lorine Demand			Test was conducted	by: Analytic	ra - Anchorage
Chlorine, Free	21	mg/L	0.0100	2350B	10/12/200	0510/19/2005 LM

Lab#:

A0509324-02R

Analysis Method				Prep	Prep	Analysis	
Parameter	Result	Units	Flags MRL	MCL Method	Date	Date	Analyst
9223B (Aqueous) - Coliforms in DW				Test was conducted by	v: Analytica	ı - Anchora	ge
E. Coli	PASS	PassFail			10/1/2005	10/1/2005	EK
Total Coliform	Fail	PassFail			10/1/2005	10/1/2005	EK

Lab#:

Analysis Method						Prep	Prep	Analysis
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date Analyst
200.8/200.8 (Aqueous) - Arsenic					Test was	conducted	by: Analyt	ica - Thornton
Arsenic	51.1	ug/L	Н	0.15	5θ	200.8	10/10/200	0510/10/2005 KSB



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010 Fax: 907-349-1015

Client Sample ID:

Trip Blank

Client Project:

Tuluksak - Treatment Design Package

Location:

Tuluksak 05 North Well

Sample Matrix: COC #: PWS#:

Comments:

Aqueous

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Sample Comment:

Lah#

A0509324-03A

Lab#: AUSU9324-	03A							
Analysis Method					Prep	Prep	Analysi	s
Parameter	Result	Units	Flags MRL	MCL	Method	Date	Date	Analyst
524.2 (Aqueous) - VOA DW				Test was	conducted	by: Analyt	ica - Thori	nton
1,1,1,2-Tetrachloroethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50			10/12/200	0510/12/20	05 MBI
1,1,1-Trichloroethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td>200</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	200		10/12/200	0510/12/20	05 MBI
1,1,2,2-Tetrachloroethane	<mrl< td=""><td>ug/L</td><td>1.0</td><td></td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	1.0			10/12/200	0510/12/20	05 MBI
.1,1,2-Trichloroethane	<mrl< td=""><td>ug/L</td><td>1.0</td><td>5.0</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	1.0	5.0		10/12/200	0510/12/20	05 MBI
1,1-Dichloroethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50			10/12/200	0510/12/20	05 MBI
1,1-Dichloroethene	<mrl< td=""><td>ug/L</td><td>1.0</td><td>7.0</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	1.0	7.0		10/12/200	0510/12/20	05 MBI
1,1-Dichloropropene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50			10/12/200	0510/12/20	05 MBI
1,2,3-Trichlorobenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50			10/12/200	510/12/20	05 MBI
1,2,3-Trichloropropane	<mrl< td=""><td>ug/L</td><td>1.0</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	1.0			10/12/200	510/12/20	05 MBI
1,2,4-Trichlorobenzene	<mrl< td=""><td>ug/L</td><td>1.0</td><td>70</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	1.0	70		10/12/200	510/12/20	05 MBI
1,2,4-Trimethylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50			10/12/200	510/12/20	05 MBI
1,2-Dibromoethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td>0.050</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	0.050		10/12/200	510/12/20	05 MBI
1,2-Dichlorobenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>600</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	600		10/12/200	510/12/20	05 MBI
1,2-Dichloroethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	5.0		10/12/200	510/12/20	05 MBI
1,2-Dichloropropane	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	5.0		10/12/200	510/12/20	05 MBI
1,3,5-Trimethylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50			10/12/200	510/12/20	05 MBI



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Trip Blank

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Tuluksak - Treatment Design Package Tuluksak 05 North Well

Location:

Sample Matrix:

Aqueous

COC #: PWS#: Comments:

J = Estimated Value D = Lost to Dilution

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9:40:00AM

Sample Comment:

I ah#∙

A0509324-03A

Lab#: A0509324-0	U3A			······································			
Analysis Method					rep Prep	Analysi	
Parameter	Result	Units	Flags MRL	MCL M	ethod Date	Date	Analys
524.2 (Aqueous) - VOA DW				Test was cor	nducted by: Analyi	ica - Thori	nton
1,3-Dichlorobenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/20</td><td>005 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/20	005 MBI
1,3-Dichloropropane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/20	05 MBI
1,4-Dichlorobenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>75</td><td>10/12/20</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	75	10/12/20	0510/12/20	05 MBI
2,2-Dichloropropane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
2-Chlorotoluene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
4-Chlorotoluene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
4-Isopropyltoluene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
Benzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	5.0	10/12/200	0510/12/20	05 MBI
Bromobenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
Bromochloromethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
Bromodichloromethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
Bromoform	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10/12/200	0510/12/20	05 MBI
Bromomethane	<mrl< td=""><td>ug/L</td><td>2.0</td><td></td><td>10/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	2.0		10/12/200	0510/12/20	05 MBI
Carbon Tetrachloride	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5,0</td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	5,0	10/12/200	510/12/20	05 MBI
Chlorobenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>100</td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	100	10/12/200	510/12/20	05 MBI
Chloroethane	<mrl< td=""><td>ug/L</td><td>2.0</td><td></td><td>10/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	2.0		10/12/200	510/12/20	05 MBI



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Trip Blank Tuluksak - Treatment Design Package Tuluksak 05 North Well

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Sample Comment:

Lab#:

A0509324-03A

Aqueous

Lab#: A0509324-0	U3A							
Analysis Method					Prep	Prep	Analysis	3
Parameter	Result	Units	Flags MRL	MCL N	Aethod	Date	Date	Analyst
524.2 (Aqueous) - VOA DW				Test was co	onducted by	: Analyt	ica - Thorn	11011
Chloroform	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>1</td><td>0/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		1	0/12/200	0510/12/20	05 MBI
Chloromethane	<mrl< td=""><td>ug/L</td><td>2.5</td><td></td><td>10</td><td>0/12/200</td><td>0510/12/20</td><td>05 MBI</td></mrl<>	ug/L	2.5		10	0/12/200	0510/12/20	05 MBI
Cis-1,2-Dichloroethene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>70</td><td>1</td><td>0/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50	70	1	0/12/200	510/12/20	05 MBI
Cis-1,3-Dichloropropene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10</td><td>0/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10	0/12/200	510/12/20	05 MBI
Dibromochloromethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10</td><td>0/12/200</td><td>510/12/20</td><td>05 MBI</td></mrl<>	ug/L	0.50		10	0/12/200	510/12/20	05 MBI
Dibromomethane	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10</td><td>0/12/200</td><td>510/12/200</td><td>05 MBI</td></mrl<>	ug/L	0.50		10	0/12/200	510/12/200	05 MBI
Dichlorodifluoromethane	<mrl< td=""><td>ug/L</td><td>2,0</td><td></td><td>10</td><td>0/12/200</td><td>510/12/200</td><td>)5 MBI</td></mrl<>	ug/L	2,0		10	0/12/200	510/12/200)5 MBI
Ethylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>700</td><td>1 (</td><td>)/12/200</td><td>510/12/200</td><td>)5 MBI</td></mrl<>	ug/L	0.50	700	1 ()/12/200	510/12/200)5 MBI
Hexachlorobutadiene	<mrl< td=""><td>ug/L</td><td>1.0</td><td></td><td>10</td><td>)/12/200</td><td>510/12/200</td><td>05 MBI</td></mrl<>	ug/L	1.0		10)/12/200	510/12/200	05 MBI
Isopropylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10</td><td>/12/200</td><td>510/12/200</td><td>)5 MBI</td></mrl<>	ug/L	0.50		10	/12/200	510/12/200)5 MBI
m&p Xylenes	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10</td><td>/12/200</td><td>510/12/200</td><td>)5 MBI</td></mrl<>	ug/L	0.50		10	/12/200	510/12/200)5 MBI
Methylene Chloride	<mrl< td=""><td>ug/L</td><td>2.0</td><td>5.0</td><td>10</td><td>/12/200</td><td>510/12/200</td><td>)5 MBI</td></mrl<>	ug/L	2.0	5.0	10	/12/200	510/12/200)5 MBI
Naphthalene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10</td><td>/12/200</td><td>510/12/200</td><td>)5 MBI</td></mrl<>	ug/L	0.50		10	/12/200	510/12/200)5 MBI
n-Butylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10</td><td>/12/200</td><td>510/12/200</td><td>5 MBI</td></mrl<>	ug/L	0.50		10	/12/200	510/12/200	5 MBI
n-Propylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10</td><td>/12/200</td><td>510/12/200</td><td>5 MBI</td></mrl<>	ug/L	0.50		10	/12/200	510/12/200	5 MBI
O-Xylene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10</td><td>/12/200</td><td>510/12/200</td><td>5 MBI</td></mrl<>	ug/L	0.50		10	/12/200	510/12/200	5 MBI



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Tuluksak 05 North Well

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Tuluksak - Treatment Design Package

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Analysis Method				Prep	Prep	Analysis
Parameter	Result	Units	Flags MRL	MCL Metho		Date Analyst
524.2 (Aqueous) - VOA DW				Test was conduc	eted by: Analy	tica - Thornton
sec-Butylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/2005 MBI
Styrene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>100</td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50	100	10/12/20	0510/12/2005 MBI
tert-Butyl Methyl Ether	<mrl< td=""><td>ug/L</td><td>1.0</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	1.0		10/12/20	0510/12/2005 MBI
tert-Butylbenzene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/20	0510/12/2005 MBI
Tetrachloroethene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50	5.0	10/12/20	0510/12/2005 MBI
Toluene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>1000</td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50	1000	10/12/20	0510/12/2005 MBI
trans-1,2-Dichloroethene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>100</td><td>10/12/20</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50	100	10/12/20	0510/12/2005 MBI
trans-1,3-Dichloropropene	<mrl< td=""><td>ug/L</td><td>0.50</td><td></td><td>10/12/200</td><td>)510/12/2005 MBI</td></mrl<>	ug/L	0.50		10/12/200)510/12/2005 MBI
Trichloroethene	<mrl< td=""><td>ug/L</td><td>0.50</td><td>5.0</td><td>10/12/200</td><td>)510/12/2005 MBI</td></mrl<>	ug/L	0.50	5.0	10/12/200)510/12/2005 MBI
Trichlorofluoromethane	<mrl< td=""><td>ug/L</td><td>2.0</td><td></td><td>10/12/200</td><td>)510/12/2005 MBI</td></mrl<>	ug/L	2.0		10/12/200)510/12/2005 MBI
Trichlorotrifluoroethane '	<mrl< td=""><td>ug/L</td><td>1.0</td><td></td><td>10/12/200</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	1.0		10/12/200	0510/12/2005 MBI
Vinyl Chloride	<mrl< td=""><td>ug/L</td><td>0.50</td><td>2.0</td><td>10/12/200</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	0.50	2.0	10/12/200	0510/12/2005 MBI
Xylenes, Total	<mrl< td=""><td>ug/L</td><td>1.0</td><td>10000</td><td>10/12/200</td><td>0510/12/2005 MBI</td></mrl<>	ug/L	1.0	10000	10/12/200	0510/12/2005 MBI
Surrogate Recoveries						
1,2-Dichloroethane-d4	84.0	% Recov	1.0		10/12/200)510/12/2005 MBI
Dibromofluoromethane	118	% Recov	1.0		10/12/200	0510/12/2005 MBI -



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Report Date:

10/27/2005

Receipt Date:

9/30/2005 9/30/2005

Sample Date: Sample Time:

9:40:00AM

Collected By: LP

Flag Definitions:

MRL = Method Reporting Limit MCL = Maximum Contaminant Limit B = Present also in Method Blank H = Exceeds Regulatory Limit

M = Matrix Interference J = Estimated Value

D = Lost to Dilution ** = RL higher than MCL; target not detected

Sample Comment:

Lab#:

A0509324-03A

Analysis Method						Prep	Prep	Analysis
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date Analyst
524.2 (Aqueous) - VOA DW					Test wa	s conducted t	by: Analyt	ica - Thornton
p-Bromofluorobenzene	91.7	% Recov		1.0			10/12/200)510/12/2005 MBI
Toluene D-8	88.3	% Recov		1.0			10/12/200)510/12/2005 MBI



DRINKING WATER ANALYSIS REPORT FOR COLIFORM BACTERIA

Attn: Lloyd Persson

CE2

P.O. Box 232946 Anchorage, AK 99523 Phone: 907-349-1010 Fax: 907-349-1015

Method Of Analysis:

SM9223B Enzyme Substrate Test

Comments:

Public Water System ID #:

Date Received: 9/30/05 Date Reported: 10/7/05 Time Received 15:20

Time Reporte 9

9:33

Comments:

S = Satisfactory U = Unsatifactory

POS = Positive Test Result

ND = None Detected

TNTC = Too Numerous to Count (>200 Colonies)

CG = Confluent Growth

HSM = Heavy Sediment Masking, Results May Not Be

Reliable

TLIT = Sample Age > 30 Hours, Too Long in Transit

R = Resample Required

NT = No Test

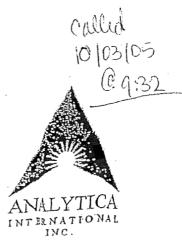
Sample Name	Sample Location	Sample By	d Sample Date	Sample Time	Lab #	Analysis Date		Total Coliform	E. Coli	Comments
AX 907	Tuluksak 05 North Well	LP	9/30/05	9:05	A0509324-01R	10/1/05	13:00	ИD	ND	Satisfactory
AX 932	Tuluksak 05 south Well	LP	9/30/05	9:45	A0509324-02R	10/1/05	13:00	POS	ND	Satisfactory



Please refer to the back portion of the sheet for instructions and information. A6509324

5761 Silverado Way, Unit N
Anchorage, AK 99518
(907) 258-2155
(907) 258-6634 FAX

Microbiological Water Analysis Workorder	_
Client Hame: F2 Fign Contact: Llayd Perssen Address: P.O. Box 232946 City, State, Zip: Anch AK	
Address: P.O Box 2.32946 City, State, Zip: Anch AK	
Phone: 349-1010 Fax: 349-1015 Email: /64d @Cezenghours. Date/Time Sampled: 9/16 9:05 Location Sampled: Tuluksick of Morta 1	· C
Date/Time Sampled: 1/36 9=05 Location Sampled: Tuluksuk 05 Movter	رسے مما
PWS ID# Sampler Initials: Relinquished by:	
Source Type: Drinking Water Treated Untreated Salt Water Salt Water Sample Type: Routine Special Purpose Real Estate Transaction	-
Pool/Spa Wastewater Residual Chlorine: Other:	
Analysis Requested: Drinking Water: Samples accepted Monday thru Thursday until 3:00 pm Total Coliform Bacteria SM 9223B Presence/Absence (common for drinking water & espresso stands) Total Coliform Bacteria SM 9222 Membrane Filtration	
Pool/Spa: Samples accepted Monday thru Wednesday HPC and Total Coliform	
Other: Samples accepted Monday thru Thursday until 3:00 pm Fecal SM9221 MF - Fecal Coliform by Membrane Filtration Fecal SM9221 MPN - Fecal Coliform by Most Probable Number Fecal Streptococcus SM 9230B Psuedomonas	
Quanti-tray MPN Iron Bacteria Iron/Sulphur Bacteria	
TO BE COMPLETED BY LAB	
Received by:	La proprieda de la compansión de la comp



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Please refer to the back portion of the sheet for instructions and information. A0509324-01

5761 Silverado Way, Unit N Anchorage, AK 99518 (907) 258-2155 (907) 258-6634 FAX

Microbio	ological Wate	r Analysis Work	order	
Client Name: OEC ENGR	O BE COMPLETE	D BY CLIENT Contact:	1.040 Feb	ssew
Address: P.O. Box 23274	2	City, State, Zip:	Ancit AL	
Phone: 344-1010 Fax: _	349-1015	Email:	ODE CEZEN	COLLEGES. COL
Date/Time Sampled: 4/30 9	9:45	_Location Sampled: _	TOWKSAK	105 South C
ows ID# Sample	er Initials:	// Relinquished by: _		AX 932
Drinking Waler Treated Untreated	Sample T	ype: / Routine Special Purpose Real Estate Trans		ab#
Pool/Spa Wastewater Other:	Residual	Chlorine:		
nalysis Requested: Drinking Water: Sample Total Coliform Bacteria SM 92 Total Coliform Bacteria SM 92	223B Presence/Abs	sence (common for drink		sso stands)
Pool/Spa: Sample HPC and Total Coliform	es accepted Mond	ay thru Wednesday		
Other: Sample Fecal SM9221 MF - Fecal Co Fecal SM9221 MPN - Fecal Co Fecal Streptococcus SM 9230 Psuedomonas Quanti-tray MPN Iron Bacteria Iron/Sulphur Bacteria	oliform by Membra Coliform by Most Pi		3:00 pm	
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750 Royal Oaks Drive, Suite 100 Monrova, California 91016-3829 Tel: 628 386 1100 Fax: 626 386 1101 1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

SGS Environmental Services Inc. 200 W. Potter Drive

Anchorage , AK 99518

Attention: Forest Taylor Fax: (907) 561-5301

DATE OF ISSUE

JUL 2 7 2006 WH LABORATORIES

YOM Yolanda Martin Project Manager nelac 114CA

Report#: 177353 DRINKING

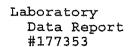
Laboratory certifies that the test results meet all NELAC requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 5 page[s].



750 Royal Caks Drive, Suite 100 Monrova, California 91016-0629 Tel: 626 386 1100 Fax: 626 386 1101 I 800 566 LABS (1 800 566 5227)

SGS Environmental Services Inc. Forest Taylor 200 W. Potter Drive Anchorage , AK 99518 Samples Received 24-jun-2006 09:18:43

Analyzed	Sample#	Sample ID	Result	Federal MCL	UNITS	MRL
	2606240164	W-05-1 RW 10633	346001			
07/19/06 07/08/06 06/26/06 07/03/06 07/08/06	D/DBP Haloace Dichloroacet Trichloroacet Bromodichloro Chlorine Dose Chlorine Resi Chloroform Dibromochloro	pacetic acid idual etic Acids (HAA5) lc acid cic acid omethane	2.97 4.24 10 2.2 60.1 27.5 32.6 5.03 10 2.1 64.0 0.637	60	ug/l ug/l mg/l ug/l ug/l ug/l ug/l ug/l mg/l mg/l ug/l	1.0 1.0 0.1 1.0 1.0 1.0 0.5 1.0 0.1 0.5 0.5





750 Royal Oaks Drive, Suite 100 Monrovia, California 91016-3629 Tel: 626 386 1100 Fax: 626 386 1101 1 800 566 LASS (1 800 566 5227)

SGS Environmental Services Inc. Forest Taylor 200 W. Potter Drive Anchorage , AK 99518 Samples Received 06/24/06

07/07/06 07/08/06 00:00 324842 (ML/EPA 551.1) Chloroform 64.0 up 07/07/06 06/26/06 00:00 324842 (SM2350) Chlorine Dose 10 mg 07/07/06 07/03/06 00:00 324842 (ML/S 4500CL-G) Chlorine Residual 2.1 mg 07/07/06 07/08/06 00:00 324842 (ML/EPA 551.1) Dibromochloromethane 0.637 up 07/07/06 07/08/06 00:00 324842 (ML/EPA 551.1) Bromodichloromethane 5.03 up 07/07/06 07/08/06 00:00 324842 (ML/EPA 551.1) Bromodichloromethane 69.7 up (ML/SM 5710) 1,2-Dibromopropane(70-130) 100 % Total Potential Haloacetic 07/18/06 07/07/06 00:00 326271 (ML/SM 5710B) Chlorine Dose 10 mg 07/18/06 07/19/06 00:00 326271 (ML/SM 6251B) Bromochloroacetic acid 4.24 up	.5 .5 .5 .5 .5 .5 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7	5 1) 1 L 2
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07/16/06 07/19/06 00:00 326271 (ML/SM 6251B) Chlorodibromomacetic acid ND us	g/l 2.0	1
07/18/06 07/14/06 00:00 326271 (ML/SM 5710B) Chlorine Residual 2.2 mg	g/l 0.1	. 1
07/18/06 07/19/06 00:00 326271 (ML/SM 6251B) Dibromoacetic acid ND ug	g/l 1.0	1
07/18/06 07/19/06 00:00 326271 (ML/SM 6251B) Dichloroacetic acid 27.5 ug	g/1 1.0	1
07/18/06 07/19/06 00:00 326271 (ML/SM 6251B) Monobromoacetic acid ND ug	g/l 1.0	1
07/18/06 07/19/06 00:00 326271 (ML/SM 6251B) Monochloroacetic acid ND us	g/l 2.0	1
07/18/06 07/19/06 00:00 326271 (ML/SM 6251B) Tribromoacetic acid NA us	g/l 4.0	1
07/18/06 07/19/06 00:00 326271 (ML/SM 6251B) Trichloroacetic acid 32.6 ug	g/l 1.0	1
07/18/06 07/19/06 00:00 326271 (ML/S6251B) D/DBP Haloacetic Acids (HAA5) 60.1 us	g/l 1.0	1
(SM5710 6251B) 1,2,3-TCP(80-120) 104 %	Rec	
(SM5710 6251B) 2,3-Dibrom Acid(70-130) 94 *	Rec	



CHAIN OF CUSTODY RECORD SGS Environmental Services Inc.

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CLIENT:	E2 Tuluksa	k V	SW.			SGS R	eference	:									P	\GE		ľ	OF	
CONTACT: CE	Z Engineers	PHONE N	10:(907) 3	49-101	0			Preservativ	es L	2rl 20	2 08	<u> </u>		<u> </u>	बा	1	9.	 	-	- I		
PROJECT:	luksakVSn	/ SITE/PWS	SID#: W-(55-1		No	SAMPLE TYPE	Used Analysis	Jav.	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	FZ, C, SQ, 13	 	15		He.l	1=1	<u>} </u>	} 			<u> </u>	***************************************
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V. Potti	Anch AK 995 (90	7) 3 Fa	o ⁶¹⁻⁵³⁽	random familia	□ 125	orler S	t narl	lest	25311)4) 34€	Fa	ax: (5	-07	61	nues venerating	garrone van Parcos	, a to a supplementation of	his/Op	*som storonise	White "	hd by L

SGS

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Voc. No. N	SAMPLE RECEIPT FORM	SGS WO#:
Yes No N	A Are samples RUSH, priority, or w/n 72 hrs. of hold time	? Due Date: 7-7-≎⊊
1	If yes have you done e-mail notification?	Received Date: 6-22-6
called_		
	Are samples within 24 hrs. of hold time or due date?	Received Time: 1306
	If yes, have you spoken with Supervisor?	Is date/time conversion necessary? N
	Archiving bottles – if req., are they properly marked?	# of hours to AK Local Time:
	Are there any problems ? PM Notified?	Thermometer ID:
	Were samples preserved correctly and pH verified?	Cooler ID Temp Blank Cooler Tem
	* Bubles in WAS ORAS / cm	1 2-G°C 20°C
	7	°C °C
		°C °C
フ	If this is for PWS, provide PWSID.	°C °C
		°C °C
	Will courier charges apply?	**************************************
	Method of payment?	*Temperature readings include thermometer correction fac
<u>·- </u>	Data package required? (Level: 1 / 2 / 3 / 4)	Delivery method (circle all that apply): Client /
	Notes:	Alert Courier/ UPS / FedEx / USPS /
	Notes: Is this a DoD project? (USACE, Navy, AFCEE)	AA Goldstreak / NAC / ERA / PenAir / Carlile
		Lynden / SGS / Other:
This section	on must be filled out for DoD projects (USACE, Navy, AFCEE)	Airbill # //38 /462
Yes No	in must be fined out for Dob projects (05,102)	Additional Sample Remarks: (\(\sigma\) if applicable)
105 100	Is received temperature 4 ± 2°C?	Extra Sample Volume?
	Exceptions: Samples/Analyses Affected:	Limited Sample Volume?
	Empress and	Field preserved for volatiles?
		Field-filtered for dissolved?
		Lab-filtered for dissolved?
	Rad Screen performed? Result:	
	Was there an airbill? (Note # above in the right hand column)	Ref Lab required AMA STUM HAAF
	Was cooler sealed with custody seals?	Foreign Soil?
	# / where:	Ti
	Were seal(s) intact upon arrival?	This section must be filled if problems are found.
•		Yes No
	Was there a COC with cooler?	Was client notified of problems?
	Was COC sealed in plastic bag & taped inside lid of cooler?	To that had a subset of the su
	Was the COC filled out properly?	Individual contacted: Luxo
	Did the COC indicate COE / AFCEE / Navy project?	Via: (Phone)/ Fax / Email (circle one)
	Did the COC and samples correspond?	Date/Time: 10/77/04 1325
	Were all sample packed to prevent breakage?	Reason for contact: TC 1CHIONINEE DEMAN
	Packing material:	ARE PAST HT. MOAS IS CLOSE AMO
	Were all samples unbroken and clearly labeled?	WILL BE 24 COST. CHELLY SIALS
	Were all samples sealed in separate plastic bags?	CANCEL MBAS, TC, & CHURINE
	Were all VOCs free of headspace and/or MeOH preserved?	DEMAND, CANCEL VOC.
	Were correct container / sample sizes submitted?	
	Is sample-condition good?	Change Order Required? No.
	Was copy of CoC, SRF, and custody seals given to PM to fax?	SGS Contact: FAT
Intas: CALL	CEL TC, CHLORINEE DEMANN, & MBAS	
.0100. <u>C11100</u>	LEE 1C, CHESCIAE DELLAR, THOUTS	
C4.10	EL VIC DUE TO AIR BURBLER	
CALLE	EL VICE TO MIK IOMEISTES	
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SAMPLE RECEIPT FORM (page 2)

1063346

SGS WO#:

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Bottle Totals	7	l	4	2	26			
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Completed by: _

Date: 6-22-06

1063346

SGS Environmental

CUSTODY SEAL

Signature: _

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CKI KNOLUMARS

Date/Time: 6/25/06 5\$20pm

SGS Environmental

CUSTODY SEAL

Signature: Johns H Lawy

ELZ

Pate/Time: 6/20/06 5:20pm

Alert Expeditors Inc. DBA/Petroleum Courier Service 173686 Citywide Delivery 272-0349 • 440-3351 8421 Flamingo Drive • Anchorage, Alaska 99502 Prepay 🗇 Advance Charges □ Collect 🗆 Account 🗇 Job# PO# Shipped Signature Total Charge Received By

S. Consignee Memo

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Laboratory Analysis Report

200 W. Potter Drive Anchorage, AK 99518-1605 Tel: (907) 562-2343 Fax: (907) 561-5301 Web: http://www.us.sgs.com

Paul Weisner Chuck Eggener Consulting Engr. P.O. Box 232946 Anchorage, AK 99523

Work Order:

1063345

Tuluksak VSW W-05-2

Client:

Chuck Eggener Consulting Engr.

Report Date:

August 02, 2006

Released by:

Forest Taylor 2006.08.03

13:44:40 -

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request.

The laboratory certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro) for ADEC and 001543 for NELAP.

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP, the National Environmental Laboratory Accreditation Program and, when applicable, other regulatory authorities.

If you have any questions regarding this report or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

PQL	Practical Quantitation Limit (reporting limit).
บ	Indicates the analyte was analyzed for but not detected.
F	Indicates value that is greater than or equal to the MDL.
J	The quantitation is an estimation.
ND	Indicates the analyte is not detected.
В	Indicates the analyte is found in a blank associated with the sample.
* :	The analyte has exceeded allowable regulatory or control limits.
GT	Greater Than
D	The analyte concentration is the result of a dilution.
LT	Less Than
!	Surrogate out of control limits.
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
JL	The analyte was positively identified, but the quantitation is a low estimation.
E	The analyte result is above the calibrated range.

Note: Soil samples are reported on a dry weight basis unless otherwise specified.



SGS Ref.#

1063345001

Client Name

Chuck Eggener Consulting Engr.

Project Name/# Client Sample ID Tuluksak VSW W-05-2

Matrix

W-05-2RW Drinking Water All Dates/Times are Alaska Standard Time

Printed Date/Time Collected Date/Time 08/02/2006 8:40 06/20/2006 16:05

Received Date/Time Technical Director

06/22/2006 13:06 Stephen C. Ede

PWSID

0

Sample Remarks:

SM 5910 - %T = 81.2

HAA Formation Potential was analyzed by Montgomery Watson Harza of Monrovia, CA.

TTHM Formation Potential was analyzed by Montgomery Watson Harza of Monrovia, CA.

Parameter	Results		PQL	Units	Method	Contair	ner ID	Allowable Limits	Prep Date	Analysis Date	Init
Calcium	34.3		0.100	mg/L	SM20 2340B]	ζ.		06/27/06	07/07/06	TK
Hardness as CaCO3	104		5.00	mg/L	SM20 2340B	I	ζ.		06/27/06	07/07/06	TK
Magnesium	4.54		0.100	mg/L	SM20 2340B	I	ζ.		06/27/06	07/07/06	TK
Metals by ICP/MS											
Aluminum	ND		20.0	ug/L	EP200.8	ŀ	(06/27/06	06/30/06	МН
Calcium	29900		500	ug/L	EP200.8	F	(06/27/06	06/30/06	МН
Magnesium	5080		50.0	ug/L	EP200.8	k			06/27/06	06/30/06	МН
Silver	ND		1.00	ug/L	EP200.8	k	(06/27/06	06/30/06	МН
Waters Department											
Nitrite-N	ND		0.100	mg/L	EPA 353.2	·	1			06/22/06	ALR
Nitrate-N	ND		0.100	mg/L	EPA 353.2	A				06/22/06	ALR
Bromide	ND		0.100	mg/L	EPA 300.0	A			06/23/06	06/23/06	DSH
Total Organic Carbon	48.0		0.500	mg/L	EPA 415.1	F	[06/29/06	TSN
Total Organic Carbon, Dissolved	45.7		0.500	mg/L	EPA 415.1	I				06/29/06	TSN
UV-254	0.0900		0.0200	cm-1	SM20 5910B	C	!			06/22/06	CAW
Inorganic Contaminants											
Antimony	ND		1.00	ug/L	EP200.8	K	. (<6)	06/27/06	06/30/06	МН
Arsenic	49.9	*	5.00	ug/L	EP200.8	K	. (•	<10)	06/27/06	06/30/06	МН
Barium	184		3.00	ug/L	EP200.8	K	. (•	<2000)	06/27/06	06/30/06	МН
Beryllium	ND		0.400	ug/L	EP200.8	K	. (•	<4)	06/27/06	06/30/06	МН
Cadmium	ND		0.500	ug/L	EP200.8	K	(•	<5)	06/27/06	06/30/06	МН
Chromium	ND		1.00	ug/L	EP200.8	K	(•	<100)	06/27/06	06/30/06	МН
Cyanide	ND		0.0050	mg/L	SM20 4500-CN	C,E J	(<	<0.2)	06/26/06	06/27/06	KP

SGS

SGS Ref.#

1063345001

Client Name Project Name/# Chuck Eggener Consulting Engr.

Project Name/# Tuluksak VSW W-05-2

Client Sample ID Matrix W-05-2RW Drinking Water All Dates/Times are Alaska Standard Time

Printed Date/Time
Collected Date/Time

08/02/2006 8:40 06/20/2006 16:05

Received Date/Time

06/20/2006 16:05 06/22/2006 13:06

Technical Director

Stephen C. Ede

PWSID

U

Parameter	Results		PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Inorganic Contaminants										
Fluoride	ND		0.100	mg/L	EPA 300.0	Α	(<2)	06/23/06	06/23/06	DSH
Mercury by Cold Vapor	ND		0.200	ug/L	EP245.1	K	(<0.2)	07/03/06	07/05/06	HKG
Nickel	ND		2.00	ug/L	EP200.8	K	(<100)	06/27/06	06/30/06	МН
Selenium	ND		5.00	ug/L	EP200.8	K	(<50)	06/27/06	06/30/06	МН
Thallium	ND		1.00	ug/L	EP200.8	K	(<2)	06/27/06	06/30/06	МН
Secondary Contaminants										
Calcium	34.3		0.200	mg/L	EP200.7	K		06/27/06	07/07/06	TK
Chloride	1.96		0.100	mg/L	EPA 300.0	Α	(<250)	06/23/06	06/23/06	DSH
Color	55.0	*	5.00	PCU	SM20 2120B	D	(<15)		06/22/06	CRY
Copper	ND		1.00	ug/L	EP200.8	K	(<1000)	06/27/06	06/30/06	МН
Fluoride	ND		0.100	mg/L	EPA 300.0	Α	(<2)	06/23/06	06/23/06	DSH
Langlier Index @ 40 degree F	-1.2797				SM2330B	A			07/10/06	PLW
Alkalinity	108	•	40.0	mg/L	SM20 2320B	D			06/27/06	PLW
Langlier Index @ 140 degree F	-0.1997				SM2330B	A			07/10/06	PLW
CO3 Alkalinity	ND		40.0	mg/L	SM20 2320B	D			06/27/06	PLW
Iron	8.41	*	0.0400	mg/L	EP200.7	K	(<0.3)	06/27/06	07/07/06	TK
HCO3 Alkalinity	108		40.0	mg/L	SM20 2320B	D			06/27/06	PLW
OH Alkalinity	ND		40.0	mg/L	SM20 2320B	D			06/27/06	PLW
Manganese	326	*	1.00	ug/L	EP200.8	K	(<50)	06/27/06	06/30/06	МН
Odor (TON)	2.00		1.00	T.O.N.	SM20 2150B	E	(<3)		06/22/06	CRY
pН	6.98		0.100	pH units	EPA 150.1	D	(6.5-8.5)		06/22/06	CRY
Magnesium	4.54		0.200	mg/L	EP200.7	K		06/27/06	07/07/06	TK
Sodium	2.47		2.00	mg/L	EP200.7	K	(<250)	06/27/06	07/07/06	TK
Sulfate	ND		0.100	mg/L	EPA 300.0		(<250)		06/23/06	DSH
Total Dissolved Solids	185		10.0	mg/L	SM20 2540C		(<500)		06/27/06	KР
Zinc	ND		5.00	ug/L	EP200.8		(<5000)	06/27/06	06/30/06	МН



750 Royat Daks Drive, Suife 100 Monrovia, California 91016-3629 Tel: 626 386 1100 Fax. 626 386 1101 1 600 566 LABS (1 800 566 5227)

Laboratory Report

for



SGS Environmental Services Inc. 200 W. Potter Drive

Anchorage , AK 99518

Attention: Forest Taylor Fax: (907) 561-5301

D/DBP Haloacetic acids (HAAS) changed from ND to 147 ug/L

DATE OF ISSUE

JUL 3 1 1997 WH LABORATORIES

YOM Yolanda Martin Project Manager pelac 1114CA

Report#: 177352 DRINKING

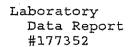
Laboratory certifies that the test results meet all NELAC requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 5 page[s].



750 Royal Oaks Orive, Suite 100 Monrovia, Cathornia 91016-3629 Tel: 626 386 1100 Fax: 626 366 1101 I: 800 566 LABS (1:800 566 5227)

SGS Environmental Services Inc. Forest Taylor 200 W. Potter Drive Anchorage , AK 99518 Samples Received 24-jun-2006 09:16:05

Analyzed	Sample#	Sample ID	Result	Federal MCL	UNITS	MRL
	2606240163	W-05-2 RW 10633	45001			
07/19/06 07/19/06 07/07/06 07/14/06 07/19/06 07/19/06 07/19/06 07/19/06 07/19/06 07/08/06 07/03/06 07/10/06 07/10/06	Dichloroacet: Tribromoacet: Trichloroacet Bromodichloro Chlorine Dose Chlorine Res: Chloroform	pacetic acid idual macetic acid etic Acids (HAA5) ic acid ic acid cic acid methane	3.55 5.19 20 4.6 2.13 147 65.3 147 82.1 4.57 20 5.0 135 140	60	ug/l ug/l mg/l mg/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l u	1.0 1.0 0.1 2.0 1.0 5.0 4.0 5.0 0.5 1.0





750 Royat Oaks Drive, Suite 100 Morrovia, Cafilomia 91016-3629 Tel: 826 386 1100 Fax: 826 385 1101 1 800 566 LARS (1 800 566 5227)

SGS Environmental Services Inc. Forest Taylor 200 W. Potter Drive Anchorage , AK 99518 Samples Received 06/24/06

Prepared	Analyzed	QC Ref#	Method	Analyte		Result	Units	MRL	Dilution
W-05-2	2 RW 10633	345001	(2606240)	.63)	Sampled on	06/20/06 1	6:05		
			Tot Pot 1	rihalom	ethanes 57101	3			
07/07/06	07/08/06 00:00	324842	(ML/EPA 551.1) Bromoform		ND	ug/l	Q.5	1
07/07/06	07/10/06 00:00	324842	(ML/EPA 551.1) Chlorofor	m	135	ug/l	2.5	5
07/07/06	06/26/06 00:00	324842	(SM2350) Chlorine	Dose	20	mg/1	1.0	1
07/07/06	07/03/06 00:00	324842	(ML/S 4500CL-0) Chlorine	Residual	5.0	mg/l	0.1	ı
07/07/06	07/08/06 00:00	324842	(ML/EPA 551.1) Dibromoch	loromethane	CM	ug/1	0.5	1
07/07/06	07/08/06 00:00	324842	(ML/EPA 551.1) Bromodich	loromethane	4.57	ug/1	0.5	1
07/07/06	07/10/06 00:00	324842	(ML/EPA 551.1) Total Pot	ential Trihalomethane	140	ug/l	0.5	1
			(ML/SM 5710) 1,2-Dibro	mopropane (70-130)	96	% Rec		
			Total Pot	ential H	Haloacetic				
07/18/06	07/07/06 00:00	326271	(ML/SM 5710B) Chlorine I	Dose	20	mg/l	1.0	1
07/18/06	07/19/06 00:00	326271	(ML/SM 6251B) Bromochlon	roacetic acid	3.55	ug/l	1.0	1
07/13/06	07/19/06 00:00	326271	(ML/SM 6251B) Bromodich	loroacetic acid	5.19	ug/l	1.0	1
07/18/06	07/19/06 00:00	326271	(ML/SM 6251B) Chlorodib	comomacetic acid	2.13	ug/l	2.0	1
07/18/06	07/14/06 00:00	326271	(ML/SM 5710B) Chlorine F	Residual	4.6	mg/l	0.1	1
07/18/06	07/19/06 00:00	326271	(ML/SM 6251B) Dibromoace	tic acid	ND	ug/l	1.0	1
07/18/06	07/19/06 00:00	326271	(ML/SM 62518) Dichloroad	etic acid	65.3	ug/I	5.0	S
07/18/06	07/19/06 00:00	326271	(ML/SM 6251B) Monobromoa	cetic acid	ND	ug/1	1.0	1
07/18/06	07/19/06 00:00	326271	(ML/SM 6251B) Monochloro	acetic acid	ND	ug/l	2.0	1
07/18/06	07/19/06 00:00	326271	(ML/SM 6251B) Tribromoac	etic acid	147	ug/l	4.0	1
07/18/06	07/19/06 00:00	326271	(ML/SM 6251B) Trichloroa	cetic acid	82.1	ug/l	5.0	5
77/18/06	07/19/06 00:00	326271	(ML/S6251B) D/DBP Halo	acetic Acids (HAAS)	147	ug/1	1.0	1
			(SM5710 6251B) 1,2,3-TCP(80-120)	107	1 Rec		
		2	(SM5710 6251B) 2,3-Dibrom	Acid(70-130)	99	1 Rec		



CHAIN OF CUSTODY RECORD SGS Environmental Services Inc.



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SAMPLE RECEIPT FORM

			SAMPLE RECEIPT FORM	SGS WO#:	
Yes	No	NA			
/			Are samples RUSH, priority, or w/n 72 hrs. of hold time?	Due Date: _	7-7-06
	calle	2	If yes have you done e-mail notification?	Received Date	e: 6.2206
			Are samples within 24 hrs. of hold time or due date?	Received Tim	e: 1306
			If yes, have you spoken with Supervisor?		nversion necessary?
	-		Archiving bottles – if req., are they properly marked?		AK Local Time:
* //			Are there any problems? PM Notified?	Thermometer	ID: 50
			Were samples preserved correctly and pH verified?		Temp Blank Cooler Tem
		*	Were samples preserved correctly and pH verified? Bubbles in VOAs (1) R=6nn S>lcm		2.5°C 3.3°
		^		, (°C°
2				4m	°C°
<u>.</u> :			If this is for PWS, provide PWSID.		°C°
		<u> </u>	Will courier charges apply?		°C°
			Method of payment?		ure readings include thermometer correction for
			Data package required? (Level: 1 / 2 / 3 / 4)		od (circle all that apply): Client /
			Notes:	(Alert Courier	UPS / FedEx / USPS /
<u>·</u>			Is this a DoD project? (USACE, Navy, AFCEE)		NAC / ERA / PenAir / Carli
			, and the second	Lynden / SGS	
37			must be filled out for DoD projects (USACE, Navy, AFCEE)	Airbill #	//38 /462 le Remarks: (√if applicable)
Yes	r	4o	Is received temperature 4 ± 2°C?		Sample Volume?
			Exceptions: Samples/Analyses Affected:		ed Sample Volume?
			Ziteepitotasi.		preserved for volatiles?
					filtered for dissolved?
-					iltered for dissolved?
			Rad Screen performed? Result:		ab required? MAS chlus
			Was there an airbill? (Note # above in the right hand column)	Foreig	gn Soil? THM HAAS F
	_		Was cooler sealed with custody seals?		
			# / where: Were seal(s) intact upon arrival?	Yes No	ust be filled if problems are found.
		· · ·	Was there a COC with cooler?		as client notified of problems?
		*****	Was COC sealed in plastic bag & taped inside lid of cooler?	 	as them homes of procions,
	_		Was the COC filled out properly?	Individual con	tacted: _
	_		Did the COC indicate COE / AFCEE / Navy project?	Via: Phone /	Fax / Email (circle one)
			Did the COC and samples correspond?	Date/Time:	e/22/01e 1325
			Were all sample packed to prevent breakage?		itact: MBAS 15
			Packing material: Were all samples unbroken and clearly labeled?		OLD AMBCLIEUT WERE
			Were all samples sealed in separate plastic bags?		DAY 2× PRICE. CHAKEL TC MMD CHLORIME
			Were all VOCs free of headspace and/or MeOH preserved?		MZE PAST HIT. CANKE
			Were correct container / sample sizes submitted?		THE ISSUED ON SE
			Is sample-condition good?	Change Order	Required? No
	_		Was copy of CoC, SRF, and custody seals given to PM to fax?	SGS Contact:	
Note	s:	Anci	EL TC, CHLORINE DEMAND, & MBAS, FAT	6/22/06	
			·		-
	<u>C</u>	MCE	L VOC DUE TO BUBBLES.		-
					
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SGS

SAMPLE RECEIPT FORM (page 2)

1063345



SGS WO#.

		STATES							Con	tain	er V	olur	ne				C	onta	ainer	Tvi	ne -				_	Pre	CATU	ativ		
#	Container ID	Matrix	Test	ÓC	TB	11	500 mL	250 mL	125 mL	60 mL	40 mL	8oz (250 mL)	4oz (125 mL)	Other	AG	90	HDPE	Nalgene	Cubie	Coli	Septa	Other	None	HCI	HNO ₃	H ₂ SO ₄	MeOH	Na ₂ S ₂ O ₃	NaOH	Other
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Completed by:

_ Date: 6-22-06



SP-Analytica, Inc.-Anchorage 4307 Arctic Blvd. Anchorage, AK 99503 907-258-2155

Fax: 907-258-6634

7/16/2008

CE2

P.O. Box 232946

Anchorage, AK 99523

Attn: Lloyd Persson

Work Order #: A0806189

Date: 7/16/2008

Work ID: Tuluksak Water and Sewer Project - 05 South

Well

Date Received: 6/16/2008

Sample Identification

Lab Sample Number

Client Description

Lab Sample Number

Client Description

A0806189-01

Tuluksak, AK

Enclosed are the analytical results for the submitted sample(s). Please review the CASE NARRATIVE for a discussion of any data and/or quality control issues. Listings of data qualifiers, analytical codes, key dates, and QC relationships are provided at the end of the report.

Sincerely

Project Manager

"The Science of Analysis, The Art of Service"

Case Narrative

Analytica Alaska Inc. Work Order: A0806189

Narrative Generated on 7/16/2008 7:17:43 PM

Samples were prepared and analyzed according to EPA or equivalent methods outlined in the following references:

SAMPLE RECEIPT:

There were 1 samples received on 6/16/2008 10:30:00 AM. Samples were received in cooler 1 at Analytica-Anchorage.

Comments: Samples were received in good condition and in order per chain of custody

REVIEW FOR COMPLIANCE WITH ANALYTICA QA PLAN A summary of our review is shown below.

All analytical results contained in this report have been reviewed under Analytica's internal quality assurance and quality control program. Any deviations in quality control parameters for specific analyses are noted in the following text. A complete quality assurance report, including laboratory control, matrix spike, and sample duplicate recoveries is kept on file in our office and is available upon request.

All method specifications were met for the following tests, unless otherwise noted:

The following are subcontracted tests and have been represented to us as having met criteria:

Test Method: SM5310B - DOC-SC - Aqueous Test Method: SM5310B - TOC (SC) - Aqueous



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523

907-349-1010 Fax: 907-349-1015

Client Sample ID: Tuluksak, AK Sampling Location: 05-1 South Well

Client Project: Sample Matrix:

Tuluksak Water and Sewer Project - 05 South Well

COC #:

Aqueous 63474

PWS#:

Residual Chlorine:

Comments:

SP-Analytica, Inc.-Anchorage

4307 Arctic Blvd. Anchorage, AK 99503

Phone: 907-258-2155 Fax: 907-258-6634

Report Date: 7/16/2008 Receipt Date: 6/16/2008

Sample Date: 6/10/2008 Sample Time: 9:30:00AM

Collected By: LAP

Flag Definitions:

MRL = Method Reporting Limit

MCL = Maximum Contaminant Limit B = Present also in Method Blank

H = Exceeds Regulatory Limit

M = Matrix Interference

J = Estimated Value

D = Lost to Dilution

** = RL higher than MCL; target not detected

TNC = Too Numerous to Count - result rejected

CF = Confluent Growth - result rejected

TCNG = Turbid Culture No Growth - rejected

Lab#: A0806189-01A

Analysis Method
Parameter Result Units Flags MRL * Method Date Date Analysis

5310B (Aqueous) - TOC and DOC

See Subcontractor Report

Test was conducted by: SGS Environmental Services Inc.

7/5/2008

ANAL TICA

Analytica Chain of Custody Form

12189 Pennsylvania St. Thornton, CO 80241 (303) 469-8868 4307 Arctic Boulevard Anchorage, AK 99503 (907) 258-2155 475 Hali St. Fairbanks, AK 99701 (907) 456 - 3116 (907) 456-3125 Fax

5438 Shaune Drive Juneau, AK 99801 (907) 780-6668 (907) 780-6670 fax

Chain of Custody No.

63474

Page _____ of ____

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Laboratory Analysis Report

200 W. Potter Drive Anchorage, AK 99518-1605 Tel: (907) 562-2343 Fax: (907) 561-5301 Web: http://www.us.sgs.com

Dan Compton Analytica Group 4307 Artic Blvd Anchorage, AK 99503

Work Order:

1082931

A0806189

Client:

Analytica Group

Report Date:

July 11, 2008

Released by:

Forest Taylor 2008.07.11 08:35:28 -08'00

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request.

The laboratory certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro) for ADEC and 001992 for NELAP (RCRA methods: 1020A, 1311, 6010B, 7470A, 7471A, 9040B, 9045C, 9056, 9060, 9065, 8015B, 8021B, 8081A/8082, 8260B, 8270C).

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP, the National Environmental Laboratory Accreditation Program and, when applicable, other regulatory authorities.

If you have any questions regarding this report or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

PQL	Practical Quantitation Limit (reporting limit).
U	Indicates the analyte was analyzed for but not detected.
F	Indicates value that is greater than or equal to the MDL.
J	The quantitation is an estimation.
ND	Indicates the analyte is not detected.
В	Indicates the analyte is found in a blank associated with the sample.
*	The analyte has exceeded allowable regulatory or control limits.
GT	Greater Than
D	The analyte concentration is the result of a dilution.
LT	Less Than
1	Surrogate out of control limits.
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
TL .	The analyte was positively identified, but the quantitation is a low estimation.
E	The analyte result is above the calibrated range.
Œ	Rejected

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content,



SGS Ref.# Client Name Project Name/# Client Sample ID

Matrix

1082931001 Analytica Group A0806189 A0806189-01A Drinking Water All Dates/Times are Alaska Standard Time

Printed Date/Time Collected Date/Time Received Date/Time 07/11/2008 8:27 06/10/2008 9:30 06/23/2008 16:25

Technical Director

Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL_	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Waters Department									
Total Organic Carbon	2.70	0.500	mg/L	SM 5310B	Α			07/05/08	JDH



SGS Ref.#

Client Name Project Name/# 1082931002 Analytica Group A0806189

Client Sample ID

Matrix

A0806189-01B Drinking Water All Dates/Times are Alaska Standard Time

Printed Date/Time Collected Date/Time 07/11/2008 8:27 06/10/2008 9:30

Received Date/Time Technical Director 06/23/2008 16:25 Stephen C. Ede

Sample Remarks:

										44,65
Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init	7
-										
Waters Department										40
Total Organic Carbon, Dissolved	3.10	0.500	mg/L	SM 5310B	A			07/05/08	JDH	100

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(303) 469-8868

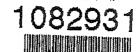
(907) 780-8868

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Analytica Chain of Custody Form

4307 Arctic Blvd. Anchorage, AK 99503 (907) 258-2155 5438 Shaune Drive Juneau, AK 99801 475 Hall Street Fairbanks, AK 99701

(907) 456-3116 (907) 456-3125 fax



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SGS



SAMPLE RECEIPT FORM

Yes	NO NA		TAT (circle one): Standard -or- Rush
Trialing/planning	<u></u>	Are samples RUSH, priority or w/in 72 hrs of hold time? If yes, have you done e-mail ALERT notification?	Received Date: 6/23/08
		Are samples within 24 hrs. of hold time or due date?	Received Time: 7625
22-Manhaphipura		If yes, have you also spoken with supervisor?	Is date/time conversion necessary? 100
20-10-10-10-10-10-10-10-10-10-10-10-10-10	,	Archiving bottles (if req'd): Are they properly marked?	# of hours to AK Local Time:
		Are there any problems? PM Notified?	Thermometer ID: 690 Cooler ID Temp Blank Cooler Temp
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		Method of payment?	Note: Temperature readings include thermometer correction factors
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	This section	must be filled out for DoD projects (USA GE-Navy, A FCEE)	Airbill#
Yes	No		Additional Sample Remarks: (√if applicable)
		Is received temperature 4 ± 2°C7 Exceptions Samples/Analyses Affected:	Extra Sample Volume?
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NO SERVICE			Lab-filtered for dissolved
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\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$		Was cooler scaled with custody scals? #/where	This section must be filled if problems are found.
		Were seal(s) infact upon arrival?	Yes No
		Was there a COC with cooler?	Was client notified of problems?
0000000 0000000		Was COC sealed in plastic bag & taped inside lid of cooler? Was the COC filled out properly?	Individual contacted:
222222		Did the COC indicate USACE / Navy / AFCEE project?	Via: Phone / Fax / Email (circle one)
222222 222222		Did the COC and samples correspond?	Date/Time: Reason for contact:
		Were all sample packed to prevent breakage?	Roason to contact.
		Packing material: Were all samples unbroken and clearly labeled?	
XXXXXXX XXXXXX		Were all samples sealed in separate plastic bags?	
		Were all VOCs free of headspace and/or MeOH preserved? Were correct container / sample sizes submitted?	
		Is sample condition good?	Change Order Required?
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SAMPLE RECEIPT FORM (page 2)

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SGS WO

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A A O DOC	#						11	500 mL	250 mE	125 mL	60 mL	40 mL	8oz (250 mL.)	4oz (125 mL)		AG	CG	HDPE	Nalgene	Cubie	Coli	Septa	Other		HCI	HNO,	H ₂ SO ₄	МеОН	Na ₂ S ₂ O ₃	NaOH	Other
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Completed by: _

Date:

6/23/08

Form # F004r16 revised 03/10/03



Date_6/23/08

CUSTODY SEAL

Signature

1082931



SP-Analytica, Inc.-Anchorage 4307 Arctic Blvd. Anchorage, AK 99503 907-258-2155 Fax: 907-258-6634

12/31/2008

CE2

P.O. Box 232946 Anchorage, AK 99523

Attn: Lloyd Persson

Work Order #: A0812101

Date: 12/31/2008

Work ID: Treatment Design Package-Tuluksak

Date Received: 12/11/2008

Sample Identification

Lab Sample Number

Client Description

Lab Sample Number

Client Description

A0812101-01

Well 05 - South

Enclosed are the analytical results for the submitted sample(s). Please review the CASE NARRATIVE for a discussion of any data and/or quality control issues. Listings of data qualifiers, analytical codes, key dates, and QC relationships are provided at the end of the report.

Sincerely,

Claire Toon

Project Manager

"The Science of Analysis, The Art of Service"

Analytica Alaska Inc. Work Order: A0812101

Samples were prepared and analyzed according to EPA or equivalent methods outlined in the following references:

Methods for the Determination of Metals in Environmental Samples, EPA/600/R-94/111, May 1994.

Pfaff, J. D., C. A. Brockhoff and J. W. O'Dell. 1994. The Determination of Inorganic Anions in Water by Ion Chromatography. Method 300.0A. U. S. Environmental Protection Agency. Environmental Monitoring Systems Lab.

Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998.

SAMPLE RECEIPT:

One (1) sample was received on 12/11/2008 10:35:00 AM, at a temperature of 7.0°C, at Analytica-Anchorage. The sample was received in good condition and in order per chain of custody.

Comments: The sample was received at a temperature greater than 6.0°C. The TTHM/HLAA Formation Potential analysis was subcontracted and will be reported separately.

The sample was transferred for various analyses to Analytica Environmental Laboratories (AEL), 12189 Pennsylvania St., Thornton, Colorado 80241, where they were received at a temperature of 2.0°C, in good condition and in order per chain of custody on 12/17/2008.

The sample was transferred for anions analysis to Analytica Alaska SE (AAI-SE); 5438 Shaune Drive, Juneau, AK 99801, where it was received at a temperature of 2.0°C, in good condition and in order per chain of custody on 12/17/2008.

REVIEW FOR COMPLIANCE WITH ANALYTICA QA PLAN A summary of our review is shown below.

All analytical results contained in this report have been reviewed under Analytica's internal quality assurance and quality control program. Any deviations in quality control parameters for specific analyses are noted in the following text. A complete quality assurance report, including laboratory control, matrix spike, and sample duplicate recoveries is kept on file in our office and is available upon request.

All method specifications were met for the following tests, unless otherwise noted:

Test Method: 200.8 - Metals by ICP/MS - Treatment Design - Aqueous

Test Method: Calcium Carbonate Saturation - Langelier Index - Aqueous

Test Method: Hardness, Hardness by Calculation - Total Hardness - Aqueous

Test Method: Inorganic Anions by Ion Chromatography - Anions by IC - Aqueous

Test Method: SM 2320B - Total Alkalinity - Aqueous

Test Method: SM2120B - Color, Visual Comparison Method - Apparent Color - Aqueous

Test Method: SM2120B - Color, Visual Comparison Method - True Color - Aqueous

Test Method: SM2130B - Turbidity, Nephelometric Method - Turbidity - Aqueous

Test Method: SM2540C - Total Dissolved Solids dried at 180°C - TDS - Aqueous

Test Method: SM4500-N02-B Colorimetric Method - Nitrite - Aqueous
Test Method: SM4500-N03E - Nitrogen (Nitrate), Cadmium Reduction Method - Nitrate+Nitrite

Analytica Alaska Inc. Work Order: A0812101 (continued)

pres - Aqueous

Test Method: SM5910B Ultraviolet Absorption Method - UV254-UVA - Aqueous

Test Method: 200.7 - Metals by ICP - Treatment Design - Aqueous

MS/MSD and DUP OUTLIERS:

Iron was recovered outside the acceptance limits in the MS/MSD, as shown below. The sample had an iron concentration greater than four times the spike amount. In these cases it is not appropriate to calculate recoveries, and the results should be used as replicates.

Recovery LCL UCL Parent Spike Analyte Type Client Sample LabSample A0812101-01K Iron 60.6 70 130 8.32 1.00 MS 130 8.32 1.00 62.5 70 A0812101-01K Iron MSD

Test Method: SM4500-H-B Electrometric pH Method - pH - Aqueous

HOLDING TIMES:

pH is a field test requiring immediate analysis. This analysis was performed as soon as possible upon laboratory receipt.

Test Method: SM5310B - DOC - Aqueous

ANALYTICAL OBSERVATIONS:

The laboratory noted that the DOC result for this sample far exceeded the TOC result. The sample containers were examined for possible mis-labeling. The laboratory labels matched the field labels. Fine sediment and a darker color were noted in the DOC container.

METHOD BLANK OUTLIERS:

The target was detected above the PQL in the method blank, as shown below. Any detections of this target in associated samples are flagged with a B to indicate that they are due to laboratory background, unless the sample result is 5X or more the method blank level.

MB Batch Analyte Result PQL MDL A081218024 Dissolved Organic Ca 1.14 1 0.3

Test Method: SM5310B - TOC - Aqueous

ANALYTICAL OBSERVATIONS:

The laboratory noted that the DOC result for this sample far exceeded the TOC result. The sample containers were examined for possible mis-labeling. The laboratory labels matched the field labels. Fine sediment and a darker color were noted in the DOC container.

METHOD BLANK OUTLIERS:

The target was detected above the PQL in the method blank, as shown below. Any detections of this target in associated samples are flagged with a B to indicate that they are due to

Analytica Alaska Inc. Work Order: A0812101 (continued)

of this target in associated samples are flagged with a B to indicate that they are due to laboratory background, unless the sample result is 5X or more the method blank level.

MB Batch	Analyte	Result	PQL	MDL
A081218025	Total Organic Carbon	1.07	1	0.3



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523

907-349-1010 Fax: 907-349-1015

Client Sample ID: Well 05 - South Sampling Location: Well 05 - South

Client Project:

Treatment Design Package-Tuluksak

Sample Matrix: COC #:

Aqueous 66474

PWS#:

Residual Chlorine:

Comments:

SP-Analytica, Inc.-Anchorage

4307 Arctic Blvd. Anchorage, AK 99503

Phone: 907-258-2155 Fax: 907-258-6634

Report Date: 12/31/2008 Receipt Date: 12/11/2008 Sample Date: 12/10/2008 Sample Time: 2:15:00PM

Collected By: LP

Flag Definitions:

MRL = Method Reporting Limit MCL = Maximum Contaminant Limit B = Present also in Method Blank H = Exceeds Regulatory Limit

M = Matrix Interference J = Estimated Value D = Lost to Dilution

** = RL higher than MCL; target not detected TNC = Too Numerous to Count - result rejected

CF = Confluent Growth - result rejected

TCNG = Turbid Culture No Growth - rejected

Lab#:

A0812101-01C

Sample Comment: Tuluksak

Analysis Method						Prep	Prep	Analysi	S
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
300.0/300.0 (Aqueous) -	Anions by IC				Test w	as conduct	ed by: An	alytica - Ju	пеан
Bromide	<mrl< td=""><td>mg/L</td><td></td><td>0.20</td><td></td><td>300.0</td><td>12/16/20</td><td>0812/16/20</td><td>008BD</td></mrl<>	mg/L		0.20		300.0	12/16/20	0812/16/20	008BD
Chloride	3.87	mg/L		0.50	250	300.0	12/16/20	0812/16/20	008D
Fluoride	0.217	mg/L		0.050	4.0	300.0	12/16/20	0812/16/20	00&D
Sulfate	2.01	mg/L		0.10	250	300.0	12/16/20	0812/16/20	008BD

Lab#:

A0812101-01D

Sample Comment: Tuluksak

Analysis Method						Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
4500-NO2-B (Aqueous) - Nitr	ite				 Test was	conducted b	y: Analyt	ica - Ancho	rage
Nitrite as N	<mrl< td=""><td>mg/L</td><td></td><td>0.020</td><td>1</td><td colspan="4">12/11/200812/11/2008Q</td></mrl<>	mg/L		0.020	1	12/11/200812/11/2008Q			
2330B (Aqueous) - Langelier	Index				Test was	conducted b	y: Analyt	ica - Ancho	rage -
Langelier Index/Corrosivity	-0.99	C Units		-1.0			12/22/20	00812/22/20	08Q
2320B/2320B (Aqueous) - To	tal Alkalini	ty			Test was	conducted b	y: Analyt	ica - Ancho	rage



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523

907-349-1010 Fax: 907-349-1015

Client Sample ID: Well 05 - South Sampling Location: Well 05 - South

Client Project:

Treatment Design Package-Tuluksak

Sample Matrix: COĈ#:

Aqueous 66474

PWS#:

Residual Chlorine:

Comments:

SP-Analytica, Inc.-Anchorage

4307 Arctic Blvd.

Anchorage, AK 99503

Phone: 907-258-2155 Fax: 907-258-6634

Report Date:

12/31/2008

Receipt Date:

12/11/2008

Sample Date:

12/10/2008

Sample Time:

2:15:00PM

Collected By: LP

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M = Matrix Interference

J = Estimated Value

D = Lost to Dilution

** = RL higher than MCL; target not detected

TNC = Too Numerous to Count - result rejected

CF = Confluent Growth - result rejected

TCNG = Turbid Culture No Growth - rejected

Analysis Method					Prep Prep Analysis
Parameter	Result	Units	Flags	MRL	MCL Method Date Date Analyst
2320B/2320B (Aqueous) - '	Total Alkalin	ity			Test was conducted by: Analytica - Anchorage
Alkalinity, Total	105	mg/L CaCO3		4.0	2320B 12/17/200812/17/200\(\vartheta\)Q
4500-H-B/4500-H-B (Aque	ous) - pH				Test was conducted by: Analytica - Anchorage
pН	7.0	pН		0.0	4500-H-B12/11/200812/11/2008Q
2540C/2540C (Aqueous) - 7	ГDS				Test was conducted by: Analytica - Anchorage
Total Dissolved Solids	126	mg/L		20	500 2540C 12/11/200812/11/200\dagge
2130B/2130B (Aqueous) - 7	Furbidity				Test was conducted by: Analytica - Anchorage
Turbidity	28.0	NTU	Н	0.20	1 2130B 12/12/200812/12/2008/Q

Lab#:

A0812101-01E

Sample Comment: Tüluksak

Analysis Method				***************************************		Prep	Prep	Analysi	is
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
5310B/5310B (Aqueous) - '	Test was	conducted b	y: Analyt	ica - Anche	orage				
Total Organic Carbon	3.2	mg/L	В	1.0		5310B	12/18/20	00812/18/20	00 8 Q

Lab#:

A0812101-01F



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523

907-349-1010 Fax: 907-349-1015

Client Sample ID: Well 05 - South

Sampling Location: Well 05 - South

Client Project:

Treatment Design Package-Tuluksak

Sample Matrix: COC#:

Aqueous 66474

PWS#:

Residual Chlorine:

Comments:

SP-Analytica, Inc.-Anchorage

4307 Arctic Blvd.

Anchorage, AK 99503

Phone: 907-258-2155 Fax: 907-258-6634

Report Date:

12/31/2008

Receipt Date:

12/11/2008

Sample Date:

12/10/2008

Sample Time:

2:15:00PM

Collected By:

LP

Flag Definitions:

MRL = Method Reporting Limit

MCL = Maximum Contaminant Limit

B = Present also in Method Blank H = Exceeds Regulatory Limit

M = Matrix Interference

J = Estimated Value

D = Lost to Dilution

** = RL higher than MCL; target not detected

TNC = Too Numerous to Count - result rejected

CF = Confluent Growth - result rejected

TCNG = Turbid Culture No Growth - rejected

Sample Comment: Tuluksak

Analysis Method					7,11,011	Prep	Prep	Analysi	S
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
2120B/2120B (Aqueous)	2120B/2120B (Aqueous) - True Color						y: Analyt	ica - Anche	orage
Color, true	45	Color Unit	Н	5.0	15	2120B	12/11/20	00812/11/20	J080L

Lab#:

A0812101-01G

Sample Comment: Tuluksak

Analysis Method						Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
2120B/2120B (Aqueous)	2120B/2120B (Aqueous) - Apparent Color						y: Analyt	ica - Ancho	rage
Color, apparent	55	Color Unit		5.0		2120B	12/11/20	00812/11/20	J080L

Lab#:

A0812101-01H

Sample Comment: Tuluksak

Analysis Method				LOCKWITCH TO THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE S	700.00	Prep	Prep	Analysi	s
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
5310B/5310B (Aqueous) - Do	Test was	conducted b	y: Analyt	ica - Anche	orage				
Dissolved Organic Carbon	28	mg/L		1.0		5310B	12/18/20	00812/18/20	008Q



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523

907-349-1010 Fax: 907-349-1015

Client Sample ID: Well 05 - South

Sampling Location: Well 05 - South

Client Project:

Treatment Design Package-Tuluksak

Sample Matrix: COC #:

Aqueous 66474

PWS#:

Residual Chlorine:

Comments:

SP-Analytica, Inc.-Anchorage

4307 Arctic Blvd.

Anchorage, AK 99503

Phone: 907-258-2155 Fax: 907-258-6634

Report Date:

12/31/2008

Receipt Date:

12/11/2008

12/10/2008

Sample Date: Sample Time:

2:15:00PM

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CF = Confluent Growth - result rejected

TCNG = Turbid Culture No Growth - rejected

Lab#:

A0812101-011

Sample Comment: Tuluksak

Analysis Method					Prep	Prep	Analysi	s	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
5910B/5910B (Aqueous)	- UV254-UVA				Test was	conducted b	y: Analyt	ica - Anche	orage
UV 254 Ultraviolet Absorption	0.263	cm-1		0.020		5910B	12/11/20	00812/11/20	O08/Q

Lab#:

A0812101-01J

Sample Comment: Tuluksak

Analysis Method						Prep	Prep	Analysis	3
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
4500-NO3E (Aqueous) - Nitr	ate+Nitrite	pres			Test was	conducted b	y: Analyt	ica - Ancho	rage
Nitrate-Nitrite as Nitrogen	<mrl< td=""><td>mg/L</td><td></td><td>0.10</td><td>10</td><td></td><td>12/15/20</td><td>0812/15/20</td><td>Q80</td></mrl<>	mg/L		0.10	10		12/15/20	0812/15/20	Q80
Lab#: A0812101-01K									

Sample Comment: Tuluksak

Analysis Method						Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523 907-349-1010

Fax: 907-349-1015

Client Sample ID: Well 05 - South Sampling Location: Well 05 - South

Client Project:

Treatment Design Package-Tuluksak

Sample Matrix: COC #:

Aqueous 66474

PWS#:

Residual Chlorine:

Comments:

SP-Analytica, Inc.-Anchorage

4307 Arctic Blvd. Anchorage, AK 99503

Phone: 907-258-2155 Fax: 907-258-6634

Report Date:

12/31/2008

Receipt Date: Sample Date: 12/11/2008 12/10/2008

Sample Time:

2:15:00PM

Collected By:

LP

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CF = Confluent Growth - result rejected

TCNG = Turbid Culture No Growth - rejected

Analysis Method						Prep	Prep	Analysis	
Parameter	Result	Units	Flags	MRL	MCL	Method	Date	Date	Analyst
2340B/2340B (Aqueous) - To	otal Hardnes	SS	,	1/1/20/20/4/11/20-1/20/20	Test was	conductea	by: Anal	ytica - Thor	nton
Hardness, Total	100	mg/L		1.0		2340B	12/19/20	0812/22/20	08RM
200.7/200.7 (Aqueous) - Trea	ıtment Desig	gn			Test was	conductea	by: Anal	ytica - Thor	nton
Aluminum	<mrl< td=""><td>mg/L</td><td></td><td>0.050</td><td>0.2</td><td>200.7</td><td>12/18/20</td><td>0812/20/20</td><td>08RM</td></mrl<>	mg/L		0.050	0.2	200.7	12/18/20	0812/20/20	08RM
Calcium	32.2	mg/L		0.10		200.7	12/18/20	0812/20/20	08RM
Iron	8.32	mg/L	Н	0.050	0.3	200.7	12/18/20	0812/20/20	M.RBO
Magnesium	5.23	mg/L		0.10		200.7	12/18/20	0812/20/200	M 7BO
Manganese	0.343	mg/L	Н	0.0100	0.05	200.7	12/18/20	0812/20/200	08RM
Sodium	<mrl< td=""><td>mg/L</td><td></td><td>3.0</td><td></td><td>200.7</td><td>12/18/20</td><td>0812/20/200</td><td>ORM</td></mrl<>	mg/L		3.0		200.7	12/18/20	0812/20/200	ORM
Zinc	<mrl< td=""><td>mg/L</td><td></td><td>0.0050</td><td>5</td><td>200.7</td><td>12/18/20</td><td>0812/20/200</td><td>08RM</td></mrl<>	mg/L		0.0050	5	200.7	12/18/20	0812/20/200	08RM
200.8/200.8 (Aqueous) - Trea	itment Desig	gn			Test was	conducted	by: Analy	ytica - Thori	nton
Arsenic	55.7	ug/L	Н	0.15	10	200.8	12/22/20	0812/22/200	08GY
Lead	<mrl< td=""><td>ug/L</td><td></td><td>0.10</td><td>15</td><td>200.8</td><td>12/22/20</td><td>0812/23/200</td><td>08G Y</td></mrl<>	ug/L		0.10	15	200.8	12/22/20	0812/23/200	08G Y

ANALYTICA GROUP &

Analytica Chain of Custody Form

12189 Pennsylvania St. Thomton, CO 80241 (303) 469-8868 (303) 469-5254 fax 4307 Arctic Boulevard Anchorage, AK 99503 (907) 258-2155 (907) 258-6634 (ax 475 Hall St. Fairbanks, AK 99701 (907) 456 - 3115 (907) 456-3125 Fax 5436 Shaune Drive Juneau, AK 99801 (907) 780-6668 (907) 780-6670 fax

Chain of Custody No:

66474

Client Name & Address:	Public Water Sys	stem (PWS)	ID#:				Section To be Completed by Analytica									
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SP-Analytica, Inc.-Anchorage 4307 Arctic Blvd. Anchorage, AK 99503 Phone: 907-258-2155 Fax: 907-258-6634

1/23/2009

CE2

P.O. Box 232946 Anchorage, AK 99523

Attn: Lloyd Persson

Work Order #: A0812102

Date: 1/23/2009

Work ID: Treatment Design Package-Tuluksak

Date Received: 12/11/2008

Proj#: none

Sample Identification

Lab Sample Number

Client Description

Lab Sample Number

Client Description

A0812102-01

Enclosed are the analytical results for the submitted sample(s). Please review the CASE NARRATIVE for a discussion of any data and/or quality control issues. Listings of data qualifiers, analytical codes, key dates, and QC relationships are provided at the end of the report.

Sincerely,

Claux Town
Claire Toon

Project Manager

"The Science of Analysis, The Art of Service"

Analytica Alaska Inc. Work Order: A0812102

Samples were prepared and analyzed according to EPA or equivalent methods outlined in the following references:

Methods for the Determination of Organic Compounds in Drinking Water, EPA-600/4-88/039, December 1988, Revised July 1991.

SAMPLE RECEIPT:

One (1) sample was received on $12/11/2008\ 10:35:00\ AM$, at a temperature of $7.0^{\circ}C$, at Analytica-Anchorage. The sample was received in good condition and in order per chain of custody.

Comments: The sample was received at a temperature greater than 6.0° C. This report contains Formation Potential results only. The balance of the data was reported previously as Analytica Work Order A0812101.

SUBBED ANALYSIS

The following are subcontracted tests. Please refer to the attached subcontractor's report for results and discussion:

Test Method: 524.2 - TTHM Form Potential - Aqueous

Test Method: 552.2 Haloacetic Acids in Drinking Water - HAA5 Form Potential - Aqueous

ANALYTICA

Analytica Chain of Custody Form

12189 Pennsylvania St. Thornton, CO 80241 (303) 469-8868 (303) 469-5254 fax 4307 Arctic Bouleyard Anchorage, AK 99503 (907) 258-2155

475 Hall St. Fairbanks, AK 99701 (907) 456 - 3116 (907) 456-3125 Fax 5438 Shaune Drive Juneau, AK 99801 (907) 780-6668 (907) 780-6670 fax

Chain of Custody No: 66474

Client Name & Address:			Public Water System (PWS) ID#:				(907) 70	Section To be Completed by Analytica											
Jan. Englise	C.>		Project Nam	e: Tucore	SAK	! ll	145								40	XIX	+++		
				Well a		_													
Report to:	10			Turnaround	Time f	315	esults (T	XD)		Invoice to Name & Address:									
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	-1015						presse seecity due			1 4	52	EN.	シャレモビ	525 1011	,				
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Version 2.0										,		1 3	> 1.1 ~		1		1		

in Gel Tacks Thomas completely



750 Foyat Oaks Drive, Suite 100 Momerce, California 91018-0529 1et 826 385 1160 Fac: C26 386 1161 1 800 586 1285 (1 800 566 5227)

Laboratory Report

for

Analytica International, Inc. 4307 Arctic Blvd.

Anchorage , AK 99503

Attention: Dan Compton Fax: 907 258-3364

DATE OF ISSUE Jan 20 2009 MWH LABORATORIES

TOM Yolanda Martin Project Manager nelac 1

Report#: 261460 Project: SUBCONTRACT

PO#: ANC 1035

This report shall not be reproduced except in full, without the written approval of the laboratory.

Laboratory certifies that the test results meet all NELAC requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 6 page[s].



Analytica Chain of Custody Form

6° onice 261460

12189 Pennsylvania St Thomson CO 80241 (303) 469-8568

5438 Shauna Onve Juneau, AK 99901 (907) 780-9568 (907) 760-5670 fax

4307 Arctic Blvd. Anchorage, AK 99503

475 Hall Street Fairbanks, AK 99701 (907) 456-3115

Chain of Custody No: (907) 255-2155 (303) 469-5254 fax (907) 256-6634 fax (907) 455-3125 fax LGN: A0812102 Client Name & Address: To be Completed by Analytica Analytica International Quote ID No: LGN: A0812102 PWS I.D.# N/A 4307 Arctic Blvd Results to STATE: YES NO x Anchorage, AK 99503 Level II Contact Person: Data Deliverables: Level I Level III Level IV Report to: Dan Compton Dan Compton Phone No: EDD: YES NO Type of EDD: 907-258-2155 x231 Fax No: Requested TAT: Standard 907-258-3364 Rush (authorization required) Analytica International Invoice to: E-mail: Results Due Date: dcompton@analyticagrou Special Instructions: PO: ANC 1035 Requested Analysis/Method 2350B Chlorine Demand Lab Bottle Order No: Matrix (S-DW-WW-Other) 552,2/5710B HAA5-FP Date Time 524.215710B Sampled Sampled Sample Location Well 05 - South A0812102-01A 12/10/2003 2:15 PM Aqueous Well 05 - South A0812102-01B 12/10/2008 2:15 PM Aqueous Collected/Relinquished by: Date Time Received, by: Date To be Completed by Analytica () Dam Chain-of-Custody Seal: Broken Absent Joe Byra. 12/15/2008 13:00 Relinquished by: Date Time Received by: Date Location Rcvd/Temp on Arrival: THO ____C JUN ___C ANC ___C FAI _C PB Relinquished by: Date Time Received by: Date Time Thermometer ID # _____ Measurement Method; Temp. Blank Other Shipping Method/Tracking Number: Name of Sampler: (printed)

MWH Laboratories

750 Royal Oaks Drive, Monrovia, CA 91016 PHONE: 626-386-1100/FAX: 626-386-1101

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Analytica International, Inc.

4307 Arctic Blvd.

Anchorage, AK 99503 Attn: Dan Compton

Phone: 907 258-2155

Customer Code: ANALYTICA

PO#: ANC 1035

Group#: 261460
Project#: SUBCONTRACT
Proj Mgr: Yolanda Martin
Phone: (626) 386-1104

The following samples were received from you on 12/16/08. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

	Sample#	Sample Id		Matrix	Sample Date
1			Tests Scheduled		
		WELL 05-SOUTH		Water	10-dec-2008 14:15:00
1	2812170165	WELL 05-SOUTH	A0812102-01B	Water	10-dec-2008 14:15:00
1			TPHAA		

Test Acronym Description

Test Acronym	Description	
@CLDEMAN TPHAA TPTHM	Chlorine Demand TPHAA Dose Date TPTHM dose date	



Laboratory
Hits Report
#261460

750 Royal Oaks Drive, Subs. 100 Microwis, Obligana. 91016-3829 Nr. 826 306 1100 Fac 626 286 1101 1 800 506 LARS (1 800 566 5227)

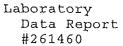
Analytica International, Inc. Dan Compton 4307 Arctic Blvd. Anchorage , AK 99503 Samples Received 16-dec-2008 10:00:00

Analyzed	Sample# S	ample ID	Result	Federal MCL	UNITS	MRL
	2812170164 W	ELL 05-SOUTH	A0812102-0	1A		
12/30/08	Chlorine Demand		11		mg/l	0.50
12/30/08	Chlorine Demand	Incubation Ti			Days	1.0
12/23/08	Chlorine Dose	3 Con Gr D	15		mg/l	0.5
12/30/08	Chlorine Residua				mg/l	1.0
12/30/08 12/30/08	Sample Temperatu	t.e	22 7		Degrees C Units	0.1
01/07/09	Bromodichloromet	hane	3.75		ug/l	0.5
12/23/08			15		mg/1	1.0
01/14/09	Chloroform		101		ug/l	1.0
12/30/08	Free Chlorine Re	sidual	3.8		mg/l	0.2
01/07/09	Total Potential	Trihalomethan	e 105		ug/l	0.5
	2812170165 W	ELL 05-SOUTH 2	A0812102-0	18		
01/09/09	Bromochloroacetic	c acid	3,05		ug/l	1.0
01/09/09	Bromodichloroacet	cic acid	4.38		ug/l	1.0
12/23/08	Chlorine Dose		15		mg/1	1.0
01/09/09	D/DBP Haloacetic		139	60	ug/l	1.0
01/09/09	Dichloroacetic ac		62.0		ug/l	5.0
12/30/08	Free Chlorine Res	3.8		mg/1	0.2	
01/09/09	Monochloroacetic	3.28		ug/l	2.0	
01/09/09	Trichloroacetic a	HULU	73.8		ug/l	5.0

750 Royal Oaks Drive, Suite 100 Monrovie, California 91018-3629 fel: 626 386 1100 Fax. 626 386 1101 1 800 566 CASS (1 800 566 5227)

Analytica International, Inc. Dan Compton 4307 Arctic Blvd. Anchorage , AK 99503 Samples Received 12/16/08

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
WELL	05-SOUTH A	A08121	02-01A (2812170164) Sam	pled on 12/	10/08 14	1:15	*
			Chlorin	e Demand				
	12/30/08 00:00		(SM 2350) Chlorine Demand	11	mg/l	0.50	1
	12/23/08 00:00		(SM 2350) Chlorine Dose	15	mg/1	0.5	1
	12/30/08 00:00		(SM 2350) Chlorine Demand Incubatio	n Tim · 7	Days	1.0	1
	12/30/08 00:00		(SM 2350) Chlorine Residual for CLD	emand 3.8	mg/l	1.0	2
	12/30/08 00:00		(SM 2350) pR	7	Units	0.1	1
	12/30/08 00:00		(SM 2350) Sample Temperature	22	DEGC	Ġ	1
			Tot Pot	Trihalomethanes 57	10B			
1/07/09	01/07/09 00:00	467737	(SM 5710) Bromoform	ND	ug/l	0.5	1
1/07/09	01/14/09 00:00	457737	(SM 5710) Chloroform	101	ug/l	1.0	2
2/23/08	12/23/08 00:00	467737	(SM 5710) Chlorine Dose	15	mg/l	1.0	1
2/30/08	12/30/08 00:00	467737	(SM 5710) Free Chlorine Residual	3.8	mg/1	0.2	2
1/07/09	01/07/09 00:00	467737	(SM 5710) Dibromochloromethane	ND	ug/l	0.5	1
1/07/09	01/07/09 00:00	467737	(SM 5710) Bromodichloromethane	3.75	ug/l	0.5	1
1/07/09	01/07/09 00:00	467737	(SM 5710) Total Potential Tribalomet	hane 105	ug/1	0.5	3
			(SM 5710) 1,2-Dibromopropane(70-130)	85	% Rec		
VELL	05-SOUTH A	.081210)2-01B (2	812170165) Sam	oled on 12/1	.0/08 14	:15	
			•			,		
2/22/04	10/01/00 00 00		.,	tential Haloacetic		4-		
	12/23/08 00:00	467358		N) Chlorine Dose	15	mg/l	1.6	1
2/30/08	01/09/09 00:00	467359		B) Bromochloroacetic acid	3.05	ug/1	1.0	1
2/30/08	01/09/09 00:00	467358	(SM5710 6251		4.38	ug/l	1.0	<u>)</u>
/30/08	01/09/89 00:00	467358	(SM5710 6251		MD	ug/1	2.0	1
1/30/08	12/30/08 00:00	467358	(SMS710 6251		3.8	mg/1	0.2	2
/30/08	01/09/09 00:00	467358	(SM5710 6251		ND	ug/3	1.0	<u>1</u>
/30/08	01/09/09 00:00	467358		B) Dichloroacetic acid	67.0	ug/1	5.0	S
/30/08	01/09/09 00:00		(SM9710 6251		MD	ug/1	1.0	Ţ
/30/08	03/09/09 00:00		(SM5710 6251		3.28	ug/l	2.0	1
730/08	63/09/09 20:00	467358	(SMS710 6251	R Tribromoacetic acid	ND	ug/l	4.0	1.

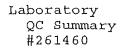




750 Poyat Oaks Dáva, Suite 100 Montrea, California 91016-0529 Tel-626-396-1100 Fax: 628-395-1101 1-800-566 LABS (1-800-566-5227)

Analytica International, Inc. (continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
12/30/08	01/09/09 00:00	467358	(SM5710 6251B) Trichloroacetic acid	73.8	ug/1	5.0	5
12/30/08	01/09/09 00:00	467358	(SM5710 6251B) D/DBP Haloacetic Acids (HAA5)	139	ug/1	1.0	1
			(SM5710 6251B) 1,2,3-TCP(80-120)	99	% Rec		
			(SM5710 6251B) 2,3-Dibrom Acid(70-130)	116	₹ Rec		





750 Boyal Oaks Drive, Suite 100 Monosea, California, 91016-3829 Tel 626 385 1100 Fac 626 386 1101 1 800 566 LA9S (1 800 566 5227)

Analytica International, Inc.

	QC	Ref	#467358	-	Total	Potential	Haloacetic	Analysis	Date:	12/23/2008
--	----	-----	---------	---	-------	-----------	------------	----------	-------	------------

2812170165	WELL	05-SOUTH	A0812102-01Analyzed	by:	dym
2812170165	WELL	05-SOUTH	A0812102-01Analyzed	by:	dym
2812170165	WELL	05-SOUTH	A0812102-01Analyzed	by:	dym

QC Ref #467737 - Tot Pot Trihalomethanes 5710B Analysis Date: 12/23/2008

2812170164	WELL 05-SOUTH A0812102-01Analyzed by: j	zd
2812170164	WELL 05-SOUTH A0812102-01Analyzed by: j	zd
2812170164	WELL 05-SOUTH A0812102-01Analyzed by: j	zd
2812170164	WELL 05-SOUTH A0812102-01Analyzed by: j	zd



759 Royal Oaks Davis, Bulle 100 Macroson, California 91016-3029 Tel. 626 986 1100 Fax. 626 386 1101 1 500 566 1 A9S (1 800 566 5227)

Analytica International, Inc.

QC Ref #467358 Total Potential Haloacetic

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%) RPD (%)	
LCS1	Bromochloroacetic acid	1.0	1.30	UGL	130.0	(50-150)	
LCS2	Bromochloroacetic acid	20	20.4	UGL	102.0	(85-115)	
LCS3	Bromochloroacetic acid	32	32.2	UGL	100.6	(85-115)	
MBLK	Bromochloroacetic acid	nd	<1.0	UGL			
LCS1	Bromodichloroacetic acid	1.0	0.787	UGL	78.7	(50-150)	
LCS2	Bromodichloroacetic acid	20	19.7	UGL	98.5	(85~115)	
LCS3	Bromodichloroacetic acid	32	31.7	UGL	99.1	(85-115)	
MBLK	Bromodichloroacetic acid	ND	<1.0	UGL			
rcsı	Chlorodibromoacetic acid	2.0	1.37	UGL	68.5	(50-150)	
LCS2	Chlorodibromoacetic acid	20	19.5	UGL	97.5	(85-115)	
PG23	Chlorodibromoacetic acid	32	31.6	UGL	98.8	(85-115)	
MBLK	Chlorodibromoacetic acid	ND	<2.0	UGL			
LCS1	Dibromoacetic acid	1.0	1.23	ugu	123.0	(50-150)	
LCS2	Dibromoacetic acid	20	19.9	UGL	99.5	(85-115)	
LCS3	Dibromoacetic acid	32	32.1	UGL	100.3	(85-115)	
MBLK	Dibromoacetic acid	ND	<1.0	UGL			
LCS1	Dichloroacetic acid	1.0	1.38	UGL	138.0	(50-150)	
LCS2	Dichloroacetic acid	20	20.6	UGL	103.0	(85-115)	
LCS3	Dichloroacetic acid	32	32.2	UGL	100.6	(85-115)	
MBLK	Dichloroacetic acid	ND	<1.0	UGL			
LCS1	Monobromoacetic acid	1.0	1.29	UGL	129.0	(50-150)	
PC83	Monobromoacetic acid	20	20.3	UGL	101.5	(85-115)	
LCS3	Monobromoacetic acid	32	32.1	UGL	100.3	(85-115)	
MBLK	Monobromoacetic acid	RD	<1.0	UGL			
LCS1	Monochloroacetic acid	2.0	1.82	AGT	91.0	(50-150)	
LCS2	Monochloroacetic acid	20	20.3	UGL	101.5	(85-115)	
LCS3	Monochleroacetic acid	32	31.2	บตน	97.5	(85-115)	
MBLK	Monochloroacetic acid	HD	<2.0	UCL			
LCS1	Tribromoacetic acid	4.0	4,21	UCL	105.2	(50-150)	
LCS2	Tribromoacetic acid	30	20.2	nor	101.0	(85-115)	
LCS3	Tribromoscetic acid	32	30.9	UGL	36.6	(85-115)	
MBLK	Tribromoacetic acid	ND	<4.0	ugti			
LC91	Trichloroscetic acid	1.0	0.970	ngr	97.0	(50-150)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining</u>. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.



750 Poyat Oaks Odva Sulis 100 Monoves, California 91016-9829 166 626 386 1100 Fax, 626 386 1101 1 800 566 LABS (1 800 566 5227)

Analytica International, Inc. (continued)

LCS2	Trichloroacetic acid	20	20.5	UGL	102.5	(85-115)
LCS3	Trichloroacetic acid	32	32.3	UGL	100.9	(85-115)
MBLK	Trichloroacetic acid	ИD	<1.0	UGL		
LCS1	2,3-Dibremopropionic acid	100	100	S P	100.0	(70-130)
LCS2	2,1-Dibromopropionic acid	100	106	tr	106.0	(70-130)
rcs3	2.3-Dibromopropionic acid	100	108	\$R	108.0	(70-130)
MBLK	2,3-Dibromopropionic acid	100	101	₹R	101.0	

	QC	Ref	#467737	Tot	Pot	Trihal	omethan	es 57	10B		
QC			Analyte			Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1			Bromoform			20.0	21.5	UGL	107.5	(80-120)	
LCS2			Bromoform			40.0	41.0	UGL	102.5	(80-120)	
MBLK			Bromoform			ND	<0.5	UGL			
LCS1			Chloroform			20.0	18.3	UGL	91.5	(80-120)	
LCS2			Chloroform			40.0	38.4	UGL	96.0	(80-120)	
мвьк			Chloroform			ND	<0.5	UGL			
LCS1			Dibromochloromethane			20.0	19.2	UGL	96.0	(80-120)	
LCS2			Dibromochloromethane			40.0	38.9	UGL	97.2	(80-120)	
MBLK			Dibromochloromethane			ир	<0.5	UGL			
LCS1			Browodichloromethane			20.0	19.1	UGL	95.5	(80-120)	
LCS2			Bromodichloromethane			40.0	38.9	UGL	97.2	(80-120)	
MBLK			Bromodichloromethane			ND	<0.5	UGL			
LCS1			1,2-Dibromopropane (su	err)		100	101	%R	101.0	(80-120)	
LCS2			1,2-Dibromopropane (su	irr)		100	89.1	ъR	89.1	(80-120)	
MBLK			1,2-Dibromopropane (su	irr)		100	100	%R	100.0		
мвгк			Total Potential Tribal	omethan	ė	ND	<0.5	UGL			

Spikas which exceed himits and Method Slanks with positive results are highlighted by Underlining. Criteria for MS and DOP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

SGS

SGS Ref.#

1063346001

Client Name

Chuck Eggener Consulting Engr.

Project Name/#

Tuluksak VSW W-05-1

Client Sample ID Matrix W-05-1RW Drinking Water All Dates/Times are Alaska Standard Time

Printed Date/Time

07/31/2006 13:48

Collected Date/Time
Received Date/Time

06/20/2006 16:15 06/22/2006 13:06

Technical Director

Stephen C. Ede

Sample Remarks:

SM 5910 - %T = 88.0

HAA Formation Potential was analyzed by Montgomery Watson Harza of Monrovia, CA.

TTHM Formation Potential was analyzed by Montgomery Watson Harza of Monrovia, CA.

Parameter	Results		PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Calcium	36.1		0.100	mg/L	SM20 2340B	K		06/28/06	07/12/06	TI
Hardness as CaCO3	106		5.00	mg/L	SM20 2340B	K		06/28/06	07/12/06	T
Magnesium	3.84		0.100	mg/L	SM20 2340B	K		06/28/06	07/12/06	TI
Metals by ICP/MS										
Aluminum	ND		20.0	ug/L	EP200.8	K		06/28/06	06/30/06	MI
Calcium	32400		500	ug/L	EP200.8	K		06/28/06	06/30/06	MI
Magnesium	3850		50.0	ug/L	EP200.8	K		06/28/06	06/30/06	M
Silver	ND		1.00	ug/L	EP200.8	K		06/28/06	06/30/06	MI
Waters Department										
Nitrite-N	ND		0.100	mg/L	EPA 353.2	Α			06/22/06	AL
Nitrate-N	ND		0.100	mg/L	EPA 353.2	Α			06/22/06	AL
Bromide	ND		0.100	mg/L	EPA 300.0	Α		06/26/06	06/26/06	DS
Total Organic Carbon	47.1		0.500	mg/L	EPA 415.1	Н			06/29/06	TS
Total Organic Carbon, Dissolved	44.8		0.500	mg/L	EPA 415.1	I			06/30/06	TS
UV-254	0.0540		0.0200	cm-l	SM20 5910B	С			06/22/06	CAV
Inorganic Contaminants										
Antimony	ND		1.00	ug/L	EP200.8	K	(<6)	06/28/06	06/30/06	MI
Arsenic	36.3	*	5.00	ug/L	EP200.8	K	(<10)	06/28/06	06/30/06	MI
Barium	146		3.00	ug/L	EP200.8	K	(<2000)	06/28/06	06/30/06	MI
Beryllium	ND		0.400	ug/L	EP200.8	K	(<4)	06/28/06	06/30/06	M
Cadmium	ND		0.500	ug/L	EP200.8	K	(<5)	06/28/06	06/30/06	M
Chromium	ND		1.00	ug/L	EP200.8	K	(<100)	06/28/06	06/30/06	M
Cyanide	ND		0.0050	mg/L	SM20 4500-CN	C,E J	(<0.2)	06/26/06	06/27/06	K



SGS Ref.#

1063346001

Client Name Project Name/# Chuck Eggener Consulting Engr.

Tuluksak VSW W-05-1

Client Sample ID Matrix

W-05-1RW Drinking Water All Dates/Times are Alaska Standard Time

Printed Date/Time Collected Date/Time 07/31/2006 13:48 06/20/2006 16:15

Received Date/Time

06/22/2006 13:06

Technical Director

Stephen C. Ede

Parameter	Results		PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Inorganic Contaminants										
Fluoride	ND		0.100	mg/L	EPA 300.0	Α	(<2)	06/26/06	06/26/06	DSH
Mercury by Cold Vapor	ND		0.200	ug/L	EP245.1	K	(<0.2)	07/03/06	07/05/06	HKG
Nickel	ND		2.00	ug/L	EP200.8	K	(<100)	06/28/06	06/30/06	МН
Selenium	ND		5.00	ug/L	EP200.8	K	(<50)	06/28/06	06/30/06	МН
Thallium	ND		1.00	ug/L	EP200.8	K	(<2)	06/28/06	06/30/06	МН
Secondary Contaminants										
Calcium	36.1		2.00	mg/L	EP200.7	K		06/28/06	07/12/06	TK
Chloride	3.09		0.100	mg/L	EPA 300.0	A	(<250)		06/26/06	DSH
Color	65.0	*	5.00	PCU	SM20 2120B	D	(<15)		06/22/06	CRY
Copper	ND		1.00	ug/L	EP200.8	K	(<1000)	06/28/06	06/30/06	MH
Fluoride	ND		0.100	mg/L	EPA 300.0	A	(<2)	06/26/06	06/26/06	DSH
Langlier Index @ 40 degree F	-1.15			-	SM2330B	Α			07/13/06	PLW
Alkalinity	108		40.0	mg/L	SM20 2320B	D			06/27/06	PLW
Langlier Index @ 140 degree F	-0.07			_	SM2330B	Α			07/13/06	PLW
CO3 Alkalinity	ND		40.0	mg/L	SM20 2320B	D			06/27/06	PLW
Iron	6.99	*	0.0400	mg/L	EP200.7	K	(<0.3)	06/28/06	07/12/06	TK
HCO3 Alkalinity	108		40.0	mg/L	SM20 2320B	D			06/27/06	PLW
OH Alkalinity	ND		40.0	mg/L	SM20 2320B	D			06/27/06	PLW
Manganese	331	*	1.00	ug/L	EP200.8	K	(<50)	06/28/06	06/30/06	МН
Odor (TON)	ND		1.00	T.O.N.	SM20 2150B	E	(<3)		06/22/06	CRY
pH	7.06		0.100	pH units	EPA 150.1	D	(6.5-8.5)		06/22/06	CRY
Magnesium	3.84		0.200	mg/L	EP200.7	K		06/28/06	07/12/06	TK
Sodium	2.65		2.00	mg/L	EP200.7	K	(<250)	06/28/06	07/12/06	TK
Sulfate	2.18		0.100	mg/L	EPA 300.0	Α	(<250)	06/26/06	06/26/06	DSH
Total Dissolved Solids	176		10.0	mg/L	SM20 2540C	D	(<500)		06/27/06	KР
Zinc	ND		5.00	ug/L	EP200.8		(<5000)	06/28/06	06/30/06	МН



SP-Analytica, Inc.-Anchorage 4307 Arctic Blvd. Anchorage, AK 99503 907-258-2155 Fax: 907-258-6634

7/16/2008

CE2

P.O. Box 232946

Anchorage, AK 99523 Attn: Lloyd Persson Work Order #: A0806189

Date: 7/16/2008

Work ID: Tuluksak Water and Sewer Project - 05 South

Well

Date Received: 6/16/2008

Sample Identification

Lab Sample Number

Client Description

Lab Sample Number

Client Description

A0806189-01

Tuluksak, AK

Enclosed are the analytical results for the submitted sample(s). Please review the CASE NARRATIVE for a discussion of any data and/or quality control issues. Listings of data qualifiers, analytical codes, key dates, and QC relationships are provided at the end of the report.

Sincerely,

Marty Waters

Project Manager

"The Science of Analysis, The Art of Service"

Analytica Alaska Inc. Work Order: A0806189

Narrative Generated on 7/16/2008 7:17:43 PM Samples were prepared and analyzed according to EPA or equivalent methods outlined in the following references:

SAMPLE RECEIPT:

There were 1 samples received on 6/16/2008 10:30:00 AM. Samples were received n cooler 1 at Analytica-Anchorage.

Comments: Samples were received in good condition and in order per chain of custody

REVIEW FOR COMPLIANCE WITH ANALYTICA QA PLAN A summary of our review is shown below.

All analytical results contained in this report have been reviewed under Analytica's internal quality assurance and quality control program. Any deviations in quality control parameters for specific analyses are noted in the following text. A complete quality assurance report, including laboratory control, matrix spike, and sample duplicate recoveries is kept on file in our office and is available upon request.

All method specifications were met for the following tests, unless otherwise noted:

The following are subcontracted tests and have been represented to us as having met criteria:

Test Method: SM5310B - DOC-SC - Aqueous Test Method: SM5310B - TOC (SC) - Aqueous



Attn: Lloyd Persson P.O. Box 232946 Anchorage, AK 99523

907-349-1010 Fax: 907-349-1015

Client Sample ID: Tuluksak, AK Sampling Location: 05-1 South Well

Client Project: Tuluksak Water and Sewer Project - 05 South Well

Sample Matrix: COC#:

Aqueous 63474

PWS#:

Residual Chlorine:

Comments:

SP-Analytica, Inc.-Anchorage

4307 Arctic Blvd. Anchorage, AK 99503

Phone: 907-258-2155 Fax: 907-258-6634

Report Date:

7/16/2008 6/16/2008

Receipt Date: Sample Date:

6/10/2008 9:30:00AM

Sample Time: Collected By:

LAP

Flag Definitions:

MRL = Method Reporting Limit

MCL = Maximum Contaminant Limit B = Present also in Method Blank

H = Exceeds Regulatory Limit

M = Matrix Interference

J = Estimated Value

D = Lost to Dilution

** = RL higher than MCL; target not detected

TNC = Too Numerous to Count - result rejected CF = Confluent Growth - result rejected

TCNG = Turbid Culture No Growth - rejected

Lab#:

A0806189-01A

Analysis Method Parameter

Units Result

Flags

MRL

Prep Method

Prep Date Analysis

Date

Analyst

5310B (Aqueous) - TOC and DOC

See Subcontractor Report

Test was conducted by: SGS Environmental Services Inc.

7/5/2008

ANAL TICA

Analytica Chain of Custody Form

12189 Pennsylvania St. Thornton, CO 80241 (303) 469-8868 4307 Arctic Boulevard Anchorage, AK 99503 (907) 258-2155 475 Hail St. Fairbanks, AK 99701 (907) 456 - 3116 (907) 456-3125 Fax

5438 Shaune Drive Juneau, AK 99801 (907) 780-6668 (907) 780-6670 fax

Chain of Custody No:

63474

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Laboratory Analysis Report

200 W. Potter Drive Anchorage, AK 99518-1605 Tel: (907) 562-2343 Fax: (907) 561-5301 Web: http://www.us.sgs.com

Dan Compton Analytica Group 4307 Artic Blvd Anchorage, AK 99503

Work Order:

1082931

A0806189

Client:

Analytica Group

Report Date:

July 11, 2008

Released by:

Forest Taylor 2008.07.11

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request.

The laboratory certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro) for ADEC and 001992 for NELAP (RCRA methods: 1020A, 1311, 6010B, 7470A, 7471A, 9040B, 9045C, 9056, 9060, 9065, 8015B, 8021B, 8081A/8082, 8260B, 8270C).

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP, the National Environmental Laboratory Accreditation Program and, when applicable, other regulatory authorities.

If you have any questions regarding this report or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343.

The following descriptors may be found on your report which will serve to further qualify the data.

PQL	Practical Quantitation Limit (reporting limit).
U	Indicates the analyte was analyzed for but not detected.
F	Indicates value that is greater than or equal to the MDL.
J	The quantitation is an estimation.
ND	Indicates the analyte is not detected.
В	Indicates the analyte is found in a blank associated with the sample.
*	The analyte has exceeded allowable regulatory or control limits.
GT	Greater Than
D	The analyte concentration is the result of a dilution.
LT	Less Than
1	Surrogate out of control limits.
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
л.	The analyte was positively identified, but the quantitation is a low estimation.
E	The analyte result is above the calibrated range.
R	Rejected

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content.



SGS Ref.#

Matrix

Client Name

Project Name/# Client Sample ID 1082931001 Analytica Group

A0806189 A0806189-01A

Drinking Water

All Dates/Times are Alaska Standard Time

Printed Date/Time

07/11/2008 8:27

Collected Date/Time Received Date/Time

06/10/2008 9:30 06/23/2008 16:25

Technical Director

Stephen C. Ede

Sample Remarks:

•						Allowable	Prep	Analysis	
Parameter	Results	PQL	Units	Method	Container ID	Limits	Date	Date	Init

Waters Department

Total Organic Carbon '

2.70

0.500

mg/L

SM 5310B

A

07/05/08 JDH



SGS Ref.# **Client Name** Project Name/#

Matrix

1082931002 Analytica Group A0806189 Client Sample ID A0806189-01B

Drinking Water

All Dates/Times are Alaska Standard Time

Printed Date/Time Collected Date/Time Received Date/Time

07/11/2008 8:27 06/10/2008 9:30 06/23/2008 16:25

Technical Director

Stephen C. Ede

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Waters Department									
Total Organic Carbon, Dissolved	3.10	0.500	mg/L	SM 5310B	Α			07/05/08	JDH

ANALYTICA GROUP

Analytica Chain of Custody Form

1082931

Page 1 of 1

63474

12189 Pennsylvania St. Thomton, CO 80241 (303) 469-8868 (303) 469-5254 fax

5438 Shaune Drive Juneau, AK 99801 (907) 780-6658 (907) 780-6670 fax 4307 Arctic Blvd, Anchorage, AK 99503 (907) 258-2155 (907) 258-6634 fax 475 Hall Street Fairbanks, AK 99701 (907) 456-3116 (907) 456-3125 fax

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Relinquished by: Date Time Received by: Date Time Location Rcvd/Temp on Arrival:	
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Relinquished by: Date Time Received by: Date Time Thermometer ID # Measurement Method: Temp 6/23/88 1625	. Blank Other
Name of Sampler: (printed) Shipping Method/Tracking Number: C= 7.7	

SGS

1082931

SAMPLE	RECEIPT	FORM	SGS WO#:

Yes	NO NA	Annual DIMI white and 70 has the life days	TAT (sizala angle di
entomospania	<u></u>	Are samples RUSH, priority or w/in 72 hrs of hold time? If yes, have you done e-mail ALERT notification?	TAT (circle one): Standard -or- Rush Received Date: 6/23/08
*********	V	Are samples within 24 hrs. of hold time or due date?	Received Time: 7625
territoria de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de la constanta de		If yes, have you also spoken with supervisor?	Is date/time conversion necessary? No
100022004-004		Archiving bottles (if req'd): Are they properly marked?	# of hours to AK Local Time:
		Are there any problems? PM Notified?	Thermometer ID: 690
		Were samples preserved correctly and pH verified?	Cooler ID Temp Blank Cooler Temp
	£,	If this is for PWS, provide PWSID.	°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°
		Will courier charges apply?	°C °C
		Method of payment?	Note: Temperature readings include thermometer correction factors
	<u></u>	Data package required? (Level: 1 / 2 / 3 / 4)	Delivery method (circle all that apply): Client /
	1	Notes: Is this a DoD project? (USACE, Navy, AFCEE)	Alert Courier / UPS / FedEx / USPS / DHL /
		is this a bob project? (USACE, Navy, APCEE)	AA Goldstreak / NAC / ERA / PenAir / Carlile/ Lynden / SGS / Other:
	This section	must be filled out for DoD projects (USAGE, Navy, AEGEE)	Airbill #
	No		Additional Sample Remarks: (\(\sqrt{if applicable}\))
		. Is received temperature 4 ± 2°C?	Extra Sample Volume?
		Exceptions: Samples/Analyses Affected	Limited Sample Volume?
			MeOH field preserved for volatiles?
			Field-filtered for dissolved
		If temperature(s):≤0°C; were containers ice;free? N/A	Lab-filtered for dissolved Ref Lab required?
		Noiffy PM immediately of any ice in samples; :- Was there an airbill?: ::: Дуозе # above in the vight hard column): :::	Foreign Soil?
		Was cooler sealed with custody seals?	
		#//where:	This section must be filled if problems are found.
		Were seal(s) intact upon/arrival?	Yes No Was client notified of problems?
222222 28222		Was there a COC with cooler? Was COC sealed in plastic bag & taped inside hid of cooler?	
		Was the COC filled out properly?	Individual contacted:
X 2000		Did the COC indicate USACE / Navy / AFCEE project?	Via: Phone / Fax / Email (circle one)
<u> </u>	*************** **********************	Did the COC and samples correspond?	Date/Time: Reason for contact:
000000 200000		Were all sample packed to prevent breakage? Packing material	Acouson for Contact.
		Were all samples unbroken and clearly labeled?	
**************************************	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Were all samples sealed in separate plastic bags?	
		Were all VOCs free of headspace and/or MeOH preserved?	
		Were correct container / sample sizes submitted?	Change Order Required?
*****		Is sample condition good? Was copy of CoC, SRF, and custody seals given to PM to fax?:	SGS Contact:
		THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CO	
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SGS

SAMPLE RECEIPT FORM (page 2)

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#	Container ID	Matrix	Test	OC	TB	11.	500 mL	250 mL	125 mL	60 mL	40 mL			Other	AG	ຄວ	HDPE	Nalgene	Cubie	Coli	Septa	Other	\ None	HCI	HNO3	H ₂ SO ₄	МеОН	Na ₂ S ₂ O ₃	NaOH	Other							
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Bottle Totals 2 | -

Completed by: _

Date:

6/23/08

Form # F004r16 revised 03/10/08

ANALYTICA

Date 6/23/08

CUSTODY SEAL

Signature .

1082931

Lloyd Persson

From:

Claire Toon [ctoon@analyticagroup.com] Tuesday, January 13, 2009 9:40 AM

Sent: To:

lloyd@ce2engineers.com

Subject:

Tuluksak TOC Re-analysis - A0812101

Attachments:

A0812101TOCRerun.xls

Hi Lloyd,

I was not happy with the TOC results for your Tuluksak project. There appeared to be contamination of some sort in the Method Blank. I asked the analyst to re-analyze the samples with a passing blank. The results confirmed the original data, so it appears the contamination was in the blank and not in the samples themselves. I have attached a spreadsheet comparing the data. Since the re-analysis was performed outside the method specified holding time, I will not be re-issuing the report. I just wanted to confirm that the reported results were accurate.

Please feel free to contact me if you should have any questions or concerns. Thank you!

Claire Toon
Project Manager
ctoon@analyticagroup.com
303-469-8868 Ext. 137
303-642-0753 Home Office

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100/60	OO Nesuits	Date Sampled	Initial Result 12/12/2008 & 12/18/2008	Rerun Result 1/9/2009	RPD %	
TOC	A0812101-01E	12/10/2008	3.205	3.102	3%	Well 05 S
DOC	A0812101-01H	12/10/2008	27.521	29.694	8%	Well 05 S

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DEC Home

find >

Divison of Environmental Health

Drinking Water Program

State of Alaska > DEC > EH > Drinking Water > Public Source Water Assessment Results

Public Source Water Executive Summary

Derived Executive Summary Information

Source Water Assessment Report Executive Summary Data

The public water system for Tuluksak Water System is a Class A water system consisting of 1 source intake(s). The water system is located in Tuluksak and the intake for this PWSID is a groundwater well. The wellhead received a susceptibility of "very high" and the aquifer received received a susceptibility rating of "medium". Combining these scores produces a natural susceptibility of "high" for the source. In addition, this water system has received a vulnerability rating of "very high" for bacteria/viruses, "very high" for nitrates/nitrites, "very high" for volatile organic chemicals, "very high" for heavy metals, "very high" for other organic chemicals, and "very high" for synthetic organic chemicals.

DISCLAIMER: Information provided on this page is automatically generated from a database of Source Water Assessment information. For additional details, please view the actual Executive Summary contained in the Source Water Assessment Report.

Raw Database Information

		Informa	tion from "Sourc	eTable"			
PWSID	Name	Location	Class	ISOURCE LVDE	Number of Sources		
ロンフロンブス ロロキー	Tuluksak Water System	Vater Tuluksak		groundwater well	1		
		Inform	ation from "VA T	'otals"			
Wellhead	Aquifer	Bacteria/Viruses	Nitrates/Nitrites	VOC	Inorganic	soc	00C
20	14	75	75	85	85	55	85
		Information	r from "Ground V	Vater Rule"			
Aquifer Type	Formation	Hydrogeologic Barrier	Barrier Desc. 1	Static Water · Level	Well Depth	Grouted	Screened
Unconfined	sand and gravel	N/A	NA	10.5	49		Yes, 34- 49

L State of Alaska myAlaska DEC Staff Directory Webmaster DEC Home EH Home Division Info EH Contacts





Chuck Eggener Chuck Eggener Consulting Engr. PO Box 232946 Anchorage, AK 99523

Work Order:

1106250

Tuluksak Water Source Study

Client:

Chuck Eggener Consulting Engr.

Report Date:

December 14, 2010

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (http://www.sgs.com/terms_and_conditions.htm), unless other written agreements have been accepted by both parties.

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 & Microbiology) & UST-005 (CS) for ADEC and AK100001 for NELAP (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6010B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 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, the National Environmental Laboratory Accreditation Program and 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 Continuing Calibration Verification

CL Control Limit

D The analyte concentration is the result of a dilution.

DF Dilution Factor

DL Detection Limit (i.e., maximum method detection limit)

E The analyte result is above the calibrated range.

F Indicates value that is greater than or equal to the DL

GT Greater Than

ICV Initial Calibration Verification

J The quantitation is an estimation.

JL The analyte was positively identified, but the quantitation is a low estimation.

LCS(D) Laboratory Control Spike (Duplicate)

LOD Limit of Detection (i.e., 2xDL)

LOQ Limit of Quantitation (i.e., reporting or practical quantitation limit)

LT Less Than

M A matrix effect was present.

MB Method Blank

MS(D) Matrix Spike (Duplicate)

ND Indicates the analyte is not detected.O QC parameter out of acceptance range.

R Rejected

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 Ref.#

Client Name

Project Name/# Client Sample ID Matrix

1106250002

Chuck Eggener Consulting Engr.

Tuluksak Water Source Study

Tuluksak River

Drinking Water

Printed Date/Time

Collected Date/Time

Received Date/Time

Technical Director

12/14/2010 15:35

11/17/2010 16:05 11/18/2010 15:51

Stephen C. Ede

Sample Remarks:

5440C - MBAS (Surfactants) was analyzed by Analytica International of Anchorage, AK.

SM 5910B - UV254 was analyzed at Analytica International of Anchorage, AK.

2130B - Turbidity - Sample result may be biased low due to debris and/or coarse sediment.

2120B - Color - Sample analyzed past hold time due to lab error.

Parameter	Results	LOQ	Units	Method C	ontainer ID	Allowable Limits	Prep Date	Analysis Date	Init _f
									3
Metals by ICP/MS									
Hardness as CaCO3	43.0	5.00	mg/L	SM20 2340B	D		11/23/10	11/24/10	NR
Waters Department									Meccumodia
Cyanide	ND	0.0050	mg/L	SM20 4500-CN (C,E C	(<0.2)	11/22/10	11/22/10	ACF
Total Nitrate/Nitrite-N	0.194	0.100	mg/L	SM20 4500NO3-	F B	(<10)		11/23/10	AY
Total Organic Carbon	16.4	0.500	mg/L	SM 5310B	K			11/22/10	CD
Turbidity	13.1	0.100	NTU	SM20 2130B	F			11/19/10	LP
									No.
Microbiology Laboratory	<u> </u>								ĺ
E. Coli	Negative	1	100mL	SM20 9223B	A			11/18/10	DL.
Total Coliform	Positive	1 .	100mL	SM20 9223B	A			11/18/10	DLC
									2. 2. 1.
Volatile Gas Chromatogr	raphy/Mass Spec	ctroscopy							r
1,1,1,2-Tetrachloroethane	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JD
1,1,1-Trichloroethane	ND	0.500	ug/L	EPA 524.2	Н	(<200)	11/23/10	11/23/10	JD B
1,1,2,2-Tetrachloroethane	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JD
1,1,2-Trichloroethane	ND	0.500	ug/L	EPA 524.2	Н	(<5)	11/23/10	11/23/10	JD
1,1-Dichloroethane	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB
1,1-Dichloroethene	ND	0.500	ug/L	EPA 524.2	Н	(<7)	11/23/10	11/23/10	JD
1,1-Dichloropropene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDр
1,2,3-Trichlorobenzene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB
1,2,3-Trichloropropane	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JD



SGS Ref.#

1106250002

Client Name

Chuck Eggener Consulting Engr.

Project Name/# Client Sample ID Tuluksak Water Source Study

Matrix

Tuluksak River Drinking Water Printed Date/Time

12/14/2010 15:35

Collected Date/Time

11/17/2010 16:05

Received Date/Time

11/18/2010 15:51

Stephen C. Ede **Technical Director**

Parameter	Results	LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatogra	aphy/Mass Spe	ectroscopy							
1,2,4-Trichlorobenzene	ND	0.500	ug/L	EPA 524.2	Н	(<70)	11/23/10	11/23/10	JDB
1,2,4-Trimethylbenzene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB
1,2-Dibromo-3-chloropropane	ND	2.00	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB
1,2-Dibromoethane	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDE
1,2-Dichlorobenzene	ND	0.500	ug/L	EPA 524.2	Н	(<600)	11/23/10	11/23/10	JDB
1,2-Dichloroethane	ND	0.500	ug/L	EPA 524.2	Н	(<5)	11/23/10	11/23/10	JDB
1,2-Dichloropropane	ND	0.500	ug/L	EPA 524.2	Н	(<5)	11/23/10	11/23/10	JDB
1,3,5-Trimethylbenzene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB
1,3-Dichlorobenzene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB
1,3-Dichloropropane	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	ЉВ
1,4-Dichlorobenzene	ND	0.500	ug/L	EPA 524.2	Н	(<75)	11/23/10	11/23/10	JDE
2,2-Dichloropropane	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB
2-Chlorotoluene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB
4-Chlorotoluene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB
4-Isopropyltoluene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDE
Benzene	ND	0.500	ug/L	EPA 524.2	Н	(<5)	11/23/10	11/23/10	JDE
Bromobenzene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDE
Bromochloromethane	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDE
Bromodichloromethane	ND	0.500	ug/L	EPA 524.2	, * H		11/23/10	11/23/10	JDB
Bromoform	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB
Bromomethane	ND	2.00	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDE
Carbon tetrachloride	ND	0.500	ug/L	EPA 524.2	H	(<5)	11/23/10	11/23/10	JDB
Chlorobenzene	ND	0.500	ug/L	EPA 524.2	Н	(<100)	11/23/10	11/23/10	JDB
Chloroethane	ND	1.00	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JD B
Chloroform	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDE
Chloromethane	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB
cis-1,2-Dichloroethene	ND	0.500	ug/L	EPA 524.2	Н	(<70)	11/23/10	11/23/10	JDB
cis-1,3-Dichloropropene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB
Dibromochloromethane	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB
Dibromomethane	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JDB



SGS Ref.#

1106250002

Client Name Project Name/# Chuck Eggener Consulting Engr. Tuluksak Water Source Study

Client Sample ID

Tuluksak River

Matrix

Drinking Water

Printed Date/Time

Collected Date/Time

12/14/2010 15:35

Received Date/Time

11/17/2010 16:05 11/18/2010 15:51

Technical Director

Stephen C. Ede

'arameter	Results	LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Ini
olatile Gas Chromatogr	aphy/Mass Sp	actroscopy							\$
Dichlorodifluoromethane	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JΓ
Ethylbenzene	ND	0.500	ug/L	EPA 524.2	Н	(<700)	11/23/10	11/23/10	JD
Hexachlorobutadiene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JI
Isopropylbenzene (Cumene)	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JI
Methylene chloride	ND	0.500	ug/L	EPA 524.2	Н	(<5)	11/23/10	11/23/10	JI
Methyl-t-butyl ether	ND	1.00	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JI
Naphthalene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JI
n-Butylbenzene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	JI
n-Propylbenzene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	Л
o-Xylene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	J
P & M -Xylene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	J
sec-Butylbenzene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	J
Styrene	ND	0.500	ug/L	EPA 524.2	Н	(<100)	11/23/10	11/23/10	J
tert-Butylbenzene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	J
Tetrachloroethene	ND	0.500	ug/L	EPA 524.2	Н	(<5)	11/23/10	11/23/10	J
Toluene	ND	0.500	ug/L	EPA 524.2	Н	(<1000)	11/23/10	11/23/10	J
Total Trihalomethanes	ND	2.00	ug/L	EPA 524.2	Н	(<80)	11/23/10	11/23/10	J
trans-1,2-Dichloroethene	ND	0.500	ug/L	EPA 524.2	Н	(<100)	11/23/10	11/23/10	J
trans-1,3-Dichloropropene	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	J
Trichloroethene	ND	0.500	ug/L	EPA 524.2	Н	(<5)	11/23/10	11/23/10	J
Trichlorofluoromethane	ND	0.500	ug/L	EPA 524.2	Н		11/23/10	11/23/10	J
Vinyl chloride	ND	0.400	ug/L	EPA 524.2	Н	(<2)	11/23/10	11/23/10	J
Xylenes (total)	ND	1.00	ug/L	EPA 524.2	Н	(<10000)	11/23/10	11/23/10	J
Gurrogates									
1,2-Dichloroethane-D4 <surr></surr>	103		%	EPA 524.2	Н	70-130	11/23/10	11/23/10	J
4-Bromofluorobenzene <surr></surr>	102		%	EPA 524.2	Н	70-130	11/23/10	11/23/10	j
Toluene-d8 <surr></surr>	98.3		%	EPA 524.2	Н	70-130	11/23/10	11/23/10	

Inorganic Contaminants



SGS Ref.#

Matrix

Client Name

1106250002

Chuck Eggener Consulting Engr. Tuluksak Water Source Study

Project Name/# Client Sample ID

Drinking Water

Tuluksak River

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Technical Director

12/14/2010 15:35

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Parameter	Results		LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Inorganic Contaminants										
Antimony	ND		1.00	ug/L	EP200.8	D	(<6)	11/23/10	11/24/10	NRE
Arsenic	ND		5.00	ug/L	EP200.8	D	(<10)	11/23/10	11/24/10	NRE
Barium	29.7		3.00	ug/L	EP200.8	D	(<2000)	11/23/10	11/24/10	NRE
Beryllium	ND		0.400	ug/L	EP200.8	D	(<4)	11/23/10	11/24/10	NRE
Cadmium	ND		0.500	ug/L	EP200.8	D	(<5)	11/23/10	11/24/10	NRE
Chromium	ND		2.00	ug/L	EP200.8	D	(<100)	11/23/10	11/24/10	NRE
Fluoride	ND		0.100	mg/L	EPA 300.0	F	(<2)	11/30/10	11/30/10	SDI
Mercury	ND		0.200	ug/L	EP245.1	D	(<2)	11/30/10	11/30/10	CDI
Nickel	ND		2.00	ug/L	EP200.8	D	(<100)	11/23/10	11/24/10	NRI
Selenium	ND		5.00	ug/L	EP200.8	D	(<50)	11/23/10	11/24/10	NRF
Thallium	ND		1.00	ug/L	EP200.8	D	(<2)	11/23/10	11/24/10	NRI
Alkalinity	45.2		10.0	mg/L	SM20 2320B	F			11/10/10	
Secondary Contaminants										
Aluminum									11/19/10	LF
	ND		20.0	ug/L	EP200.8		(<200)	11/23/10	11/19/10	
Calcium	ND 11200		20.0 500	ug/L ug/L			(<200)			NRI
Calcium Chloride				ug/L	EP200.8	D D	(<200) (<250)	11/23/10	11/24/10	NRI NRI
	11200		500	-	EP200.8 EP200.8	D D		11/23/10	11/24/10 11/24/10	NRI NRI SDI
Chloride	11200 1.66	*	500 0.100	ug/L mg/L	EP200.8 EP200.8 EPA 300.0	D D F F		11/23/10	11/24/10 11/24/10 11/30/10	NRI NRI SDI LI
Chloride CO3 Alkalinity	11200 1.66 ND	*	500 0.100 10.0	ug/L mg/L mg/L	EP200.8 EP200.8 EPA 300.0 SM20 2320B	D D F F F	(<250)	11/23/10 11/30/10	11/24/10 11/24/10 11/30/10 11/19/10	NRI NRI SDI LI
Chloride CO3 Alkalinity Color, True	11200 1.66 ND 20.0	*	500 0.100 10.0 5.00	ug/L mg/L mg/L PCU	EP200.8 EP200.8 EPA 300.0 SM20 2320B SM20 2120B	D D F F F D	(<250) (<15)	11/23/10 11/30/10 11/23/10	11/24/10 11/24/10 11/30/10 11/19/10 11/23/10	NRE NRE SDI LI LI NRI
Chloride CO3 Alkalinity Color, True Copper	11200 1.66 ND 20.0 ND	*	500 0.100 10.0 5.00 1.00	ug/L mg/L mg/L PCU ug/L	EP200.8 EP200.8 EPA 300.0 SM20 2320B SM20 2120B EP200.8	D D F F F D	(<250) (<15) (<1000)	11/23/10 11/30/10 11/23/10	11/24/10 11/24/10 11/30/10 11/19/10 11/23/10 11/24/10	NRE SDI LI LI NRI SDI
Chloride CO3 Alkalinity Color, True Copper Fluoride	11200 1.66 ND 20.0 ND	*	500 0.100 10.0 5.00 1.00 0.100	ug/L mg/L mg/L PCU ug/L mg/L	EP200.8 EP200.8 EPA 300.0 SM20 2320B SM20 2120B EP200.8 EPA 300.0	D D F F F D F	(<250) (<15) (<1000)	11/23/10 11/30/10 11/23/10 11/30/10	11/24/10 11/24/10 11/30/10 11/19/10 11/23/10 11/24/10 11/30/10	NRE SDI LI LI NRI SDF
Chloride CO3 Alkalinity Color, True Copper Fluoride HCO3 Alkalinity	11200 1.66 ND 20.0 ND ND ND 45.2		500 0.100 10.0 5.00 1.00 0.100 10.0	ug/L mg/L mg/L PCU ug/L mg/L mg/L	EP200.8 EPA 300.0 SM20 2320B SM20 2120B EP200.8 EPA 300.0 SM20 2320B	D D F F D F	(<250) (<15) (<1000) (<2)	11/23/10 11/30/10 11/23/10 11/30/10	11/24/10 11/24/10 11/30/10 11/19/10 11/23/10 11/24/10 11/30/10 11/19/10	NRE SDI LI NRE SDF LI NRE SDF SDF
Chloride CO3 Alkalinity Color, True Copper Fluoride HCO3 Alkalinity Iron	11200 1.66 ND 20.0 ND ND ND 45.2 2280		500 0.100 10.0 5.00 1.00 0.100 10.0	ug/L mg/L mg/L PCU ug/L mg/L mg/L	EP200.8 EP200.8 EPA 300.0 SM20 2320B SM20 2120B EP200.8 EPA 300.0 SM20 2320B EP200.8	D D F F F D F F	(<250) (<15) (<1000) (<2)	11/23/10 11/30/10 11/23/10 11/30/10	11/24/10 11/24/10 11/30/10 11/19/10 11/23/10 11/24/10 11/30/10 11/19/10 11/24/10	NRE SDI LI NRI SDI NRE SDI
Chloride CO3 Alkalinity Color, True Copper Fluoride HCO3 Alkalinity Iron Langlier Index @ 140 degree F	11200 1.66 ND 20.0 ND ND 45.2 2280 -1.100042		500 0.100 10.0 5.00 1.00 0.100 10.0	ug/L mg/L mg/L PCU ug/L mg/L mg/L	EP200.8 EP200.8 EPA 300.0 SM20 2320B SM20 2120B EP200.8 EPA 300.0 SM20 2320B EP200.8 SM20 330B	D D F F D F D F	(<250) (<15) (<1000) (<2)	11/23/10 11/30/10 11/23/10 11/30/10 11/23/10	11/24/10 11/24/10 11/30/10 11/19/10 11/23/10 11/24/10 11/30/10 11/19/10 11/24/10 12/02/10	NRI NRI SDI LI NRI SDI NRI SDI SDI
Chloride CO3 Alkalinity Color, True Copper Fluoride HCO3 Alkalinity Iron Langlier Index @ 140 degree F Langlier Index @ 40 degree F	11200 1.66 ND 20.0 ND ND 45.2 2280 -1.100042 -2.180042		500 0.100 10.0 5.00 1.00 0.100 10.0 250	ug/L mg/L mg/L PCU ug/L mg/L mg/L	EP200.8 EP200.8 EPA 300.0 SM20 2320B SM20 2120B EP200.8 EPA 300.0 SM20 2320B EP200.8 SM2330B SM2330B	D D F F D F D F D	(<250) (<15) (<1000) (<2)	11/23/10 11/30/10 11/23/10 11/23/10 11/23/10	11/24/10 11/24/10 11/30/10 11/19/10 11/23/10 11/24/10 11/30/10 11/19/10 11/24/10 12/02/10 12/02/10	NRIE SDI LI NRIE SDI NRIE SDI NRIE NRIE
Chloride CO3 Alkalinity Color, True Copper Fluoride HCO3 Alkalinity Iron Langlier Index @ 140 degree F Langlier Index @ 40 degree F Magnesium	11200 1.66 ND 20.0 ND ND 45.2 2280 -1.100042 -2.180042 3670	*	500 0.100 10.0 5.00 1.00 0.100 10.0 250	ug/L mg/L mg/L PCU ug/L mg/L mg/L ug/L	EP200.8 EP200.8 EPA 300.0 SM20 2320B SM20 2120B EP200.8 EPA 300.0 SM20 2320B EP200.8 SM2330B SM2330B SM2330B EP200.8	D D F F D F D F D D	(<250) (<15) (<1000) (<2) (<300)	11/23/10 11/30/10 11/23/10 11/23/10 11/23/10	11/24/10 11/24/10 11/30/10 11/19/10 11/23/10 11/24/10 11/30/10 11/19/10 11/24/10 12/02/10 12/02/10 11/24/10	NRI SDI LI NRI SDF LI NRI SDF NRI NRI
Chloride CO3 Alkalinity Color, True Copper Fluoride HCO3 Alkalinity Iron Langlier Index @ 140 degree F Langlier Index @ 40 degree F Magnesium Manganese	11200 1.66 ND 20.0 ND ND 45.2 2280 -1.100042 -2.180042 3670 300	*	500 0.100 10.0 5.00 1.00 0.100 10.0 250	ug/L mg/L mg/L PCU ug/L mg/L mg/L ug/L ug/L	EP200.8 EP200.8 EPA 300.0 SM20 2320B SM20 2120B EP200.8 EPA 300.0 SM20 2320B EP200.8 SM2330B SM2330B EP200.8 EP200.8 EP200.8	D D F F D F D F D D	(<250) (<15) (<1000) (<2) (<300)	11/23/10 11/30/10 11/23/10 11/23/10 11/23/10	11/24/10 11/24/10 11/30/10 11/19/10 11/23/10 11/24/10 11/30/10 11/19/10 11/24/10 12/02/10 12/02/10 11/24/10 11/24/10	NRE SDI LI LI NRE SDF LI NRE SDF NRE



SGS Ref.#

Matrix

Client Name

Project Name/# Client Sample ID 1106250002

Chuck Eggener Consulting Engr.

Tuluksak Water Source Study

Tuluksak River Drinking Water Printed Date/Time

Collected Date/Time

Received Date/Time Technical Director 12/14/2010 15:35

11/17/2010 16:05 11/18/2010 15:51

Parameter	Results	LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Ini
Secondary Contaminants									
Silver	ND	1.00	ug/L	EP200.8	D	(<100)	11/23/10	11/24/10	NI
Sodium	3770	500	ug/L	EP200.8	D	(<250000)	11/23/10	11/24/10	NRB
Sulfate	6.37	0.100	mg/L	EPA 300.0	F	(<250)	11/30/10	11/30/10	SI
Total Dissolved Solids	77.0	10.0	mg/L	SM20 2540C	F	(<500)		11/22/10	J
Zinc	ND	5.00	ug/L	EP200.8	D	(<5000)	11/23/10	11/24/10	NRB



SGS Ref.#

1106250003

Client Name

Chuck Eggener Consulting Engr.

Project Name/#

Tuluksak Water Source Study

Client Sample ID Matrix

Tuluksak River Drinking Water Printed Date/Time

12/14/2010 15:35 11/17/2010 16:05

Collected Date/Time Received Date/Time

11/18/2010 15:51

Technical Director

Stephen C. Ede

Sample Remarks:

Parameter	Results	LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Waters Department									
Total Organic Carbon, Dissolved	2.51	0.500	mg/L	SM 5310B	В.			11/22/10	CDE



SGS Ref.#

1106250004

Client Name

Chuck Eggener Consulting Engr. Tuluksak Water Source Study

Project Name/# Client Sample ID

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Matrix

Drinking Water

Printed Date/Time

12/14/2010 15:35

Collected Date/Time Received Date/Time

11/17/2010 16:05 11/18/2010 15:51

Technical Director

Stephen C. Ede

Sample Remarks:

Parameter	Results	LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatogra	nphy/Mass Spe	ectroscopy							
1,1,1,2-Tetrachloroethane	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JE
1,1,1-Trichloroethane	ND	0.500	ug/L	EPA 524.2	A	(<200)	11/23/10	11/23/10	JDI
1,1,2,2-Tetrachloroethane	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JD
1,1,2-Trichloroethane	ND	0.500	ug/L	EPA 524.2	Α	(<5)	11/23/10	11/23/10	JΓ
1,1-Dichloroethane	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDI
1,1-Dichloroethene	ND	0.500	ug/L	EPA 524.2	Α	(<7)	11/23/10	11/23/10	JΓ
1,1-Dichloropropene	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JD.
1,2,3-Trichlorobenzene	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JD]
1,2,3-Trichloropropane	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JĽ
1,2,4-Trichlorobenzene	ND	0.500	ug/L	EPA 524.2	A	(<70)	11/23/10	11/23/10	JD
1,2,4-Trimethylbenzene	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JD
1,2-Dibromo-3-chloropropane	ND	2.00	ug/L	EPA 524.2	A		11/23/10	11/23/10	JΓ
1,2-Dibromoethane	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JD
1,2-Dichlorobenzene	ND	0.500	ug/L	EPA 524.2	A	(<600)	11/23/10	11/23/10	JĽ
1,2-Dichloroethane	ND	0.500	ug/L	EPA 524.2	Α	(<5)	11/23/10	11/23/10	JĽ
1,2-Dichloropropane	ND	0.500	ug/L	EPA 524.2	A	(<5)	11/23/10	11/23/10	JDI
1,3,5-Trimethylbenzene	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JΓ
1,3-Dichlorobenzene	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JDi
1,3-Dichloropropane	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDI
1,4-Dichlorobenzene	ND	0.500	ug/L	EPA 524.2	A	(<75)	11/23/10	11/23/10	JΓ
2,2-Dichloropropane	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDI
2-Chlorotoluene	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JD:
4-Chlorotoluene	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JΕ
4-Isopropyltoluene	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JDI
Benzene	ND	0.500	ug/L	EPA 524.2	Α	(<5)	11/23/10	11/23/10	几
Bromobenzene	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JD.
Bromochloromethane	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDI
Bromodichloromethane	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JE



SGS Ref.# Client Name Project Name/# 1106250004

Chuck Eggener Consulting Engr.

roject Name/# Tuluksak Water Source Study

Client Sample ID TRIP BLANK
Matrix Drinking Water

Printed Date/Time Collected Date/Time Received Date/Time 12/14/2010 15:35 11/17/2010 16:05 11/18/2010 15:51

Technical Director

Parameter	Results	LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Gas Chromatogr	aphy/Mass Spe	ectroscopy							
Bromoform	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JDE
Bromomethane	ND	2.00	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDE
Carbon tetrachloride	ND	0.500	ug/L	EPA 524.2	Α	(<5)	11/23/10	11/23/10	JDE
Chlorobenzene	ND	0.500	ug/L	EPA 524.2	A	(<100)	11/23/10	11/23/10	JDE
Chloroethane	ND	1.00	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDE
Chloroform	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	ЉЕ
Chloromethane	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDE
cis-1,2-Dichloroethene	ND	0.500	ug/L	EPA 524.2	A	(<70)	11/23/10	11/23/10	JDE
cis-1,3-Dichloropropene	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDE
Dibromochloromethane	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDE
Dibromomethane	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDE
Dichlorodifluoromethane	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDE
Ethylbenzene	ND	0.500	ug/L	EPA 524.2	A	(<700)	11/23/10	11/23/10	JDE
Hexachlorobutadiene	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JDE
Isopropylbenzene (Cumene)	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDE
Methylene chloride	ND	0.500	ug/L	EPA 524.2	A	(<5)	11/23/10	11/23/10	JDE
Methyl-t-butyl ether	ND	1.00	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDE
Naphthalene	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JDE
n-Butylbenzene	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JDE
n-Propylbenzene	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JDE
o-Xylene	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDE
P & M -Xylene	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDE
sec-Butylbenzene	ND	0.500	ug/L	EPA 524.2	Α		11/23/10	11/23/10	JDE
Styrene	ND	0.500	ug/L	EPA 524.2	Α	(<100)	11/23/10	11/23/10	JDE
tert-Butylbenzene	ND	0.500	ug/L	EPA 524.2	A		11/23/10	11/23/10	JDE
Tetrachloroethene	ND	0.500	ug/L	EPA 524.2	A	(<5)	11/23/10	11/23/10	JDE
Toluene	ND	0.500	ug/L	EPA 524.2		(<1000)	11/23/10	11/23/10	JDE
Total Trihalomethanes	ND	2.00	ug/L	EPA 524.2	Α	(<80)	11/23/10	11/23/10	JDE
trans-1,2-Dichloroethene	ND	0.500	ug/L	EPA 524.2		(<100)		11/23/10	JDE
trans-1,3-Dichloropropene	ND	0.500	ug/L	EPA 524.2	A	•		11/23/10	



SGS Ref.#

Client Name

Project Name/# Client Sample ID

Matrix

1106250004

Chuck Eggener Consulting Engr.

Tuluksak Water Source Study

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Received Date/Time **Technical Director**

12/14/2010 15:35

11/17/2010 16:05 11/18/2010 15:51

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Parameter	Results	LOQ	Units	Method	Container ID	Allowable Limits	Prep Analysis Date Date	Init
								and the second
Volatile Gas Chromatogra	aphy/Mass Spe	ectroscopy						£
Trichloroethene	ND	0.500	ug/L	EPA 524.2	A	(<5)	11/23/10 11/23/10	JE
Trichlorofluoromethane	ND	0.500	ug/L	EPA 524.2	Α		11/23/10 11/23/10	JD
Vinyl chloride	ND	0.400	ug/L	EPA 524.2	A	(<2)	11/23/10 11/23/10	JĽ
Xylenes (total)	ND	1.00	ug/L	EPA 524.2	A	(<10000)	11/23/10 11/23/10	JD.
Surrogates								Milder of the second
1,2-Dichloroethane-D4 <surr></surr>	106		%	EPA 524.2	Α	70-130	11/23/10 11/23/10	JD
4-Bromofluorobenzene <surr></surr>	103		%	EPA 524.2	A	70-130	11/23/10 11/23/10	JD
Toluene-d8 <surr></surr>	98.2		%	EPA 524.2	A	70-130	11/23/10 11/23/10	JD



SGS North America Inc. CHAIN OF CUSTODY RECORD

1106250



nwide

- Maryland
- New York
- IndianaKentucky

gs.com

OLIENT: CE	CLIENT: CEZ ENGINEERS							SGS Reference #:										
CONTACT: M	IVE ERDMAN	PHONE N	0: 349	- 1010			T								page_	<u> </u>	ofl	
PROJECT NAME:	NUKSAK	PROJECT PWSID/ PERMIT#				# C	SAMPLE TYPE C=	Preservative Used Analysis		 	 	 	 	 			 	
REPORTS TO:	PHONE NO: 349-1010 PROJECT TUWKSAK PROJECT/ NAME: WATER SOURCE STUDY PERMIT#: REPORTS TO: EMAIL:							Required 3	\ \z\	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	/ /	' /	/	/ ~/	/ /	/ /	′ /	
INVOICE TO:	INVOICE TO: QUOTE #:							/ ") /	, /	/;	\ \	27		2/1	5	
2		P.O. #:				ZE	Multi Incremental	/\{\right\}	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	./L	/	1 3	`/ ‹	1/1		1/ <		
RESERVED for lab use	SAMPLE IDENTIFI	CATION	DATE	TIME	MATRIX/ MATRIX CODE	R S	Samples	NA KA	Sept.	16			78	/ t	1/8	1 2 2 X	REMARKS/ LOC ID	
DA-D	TULLER R	いむこ	11/17/10	1605	HzO		G		X	×	×	X	X	×	乂	X		
2 A-M																		
3) A-B																		
(A) A-C (TB)																		
														والمنطور والمراجع	3000	~		
													ų		S Course			
													tk.	4	·	* -kom-		
5										i.								
	nquished By:(1)	Date	Time	Received B	Ву:			DOD P	roject?	YES	NO		Data	Deliver	able Red	uiremer	its:	
	M	11/18/10	1551					Cooler	ID		·							
Relinquished E	By: (2)	Date	Time	Received 8	Зу:			Reque	sted Tur	naround	l Time ar	nd-or Sp	ecial In	structio	ns:	1		
Relinquished By: (3) Date Time Received By:															:			
								Tempe	erature B	llank °C	: 3.0	7#	201	<u> </u>	hain of C	netody (Seal: (Circle)	
Relinquished E	3y: (4)	Date	Time	Received F	or Laborat	ory By:							- !			Ì		
	11 1/0					AH	Γ	or Ambient [] INTACT BROKEN ABSENT (See attached Sample Receipt Form) (See attached Sample Receipt Form))					



SGS North America Inc. 200 W. POTTER DRIVE ANCHORAGE, ALASKA 99518 Tel: 907-562-2343; Fax: 907-561-5301

Chain of Custody for Total Coliform Bacteria Samples

	READ INSTRUCTIONS ON REVERSE SIDE BEFORE COLLECTING SAMPLE							
	MUST BE COMPLETED BY WATER SUPPLIER							
PUBLIC WATER SY	STEM ID#				<u> </u>	1241 (161) E411F 6)(16 1166) \$((5) &	111) 1551	
PRIVATE WATER S		d Invoice		☐ Send Re	esults 🔲 Se	end Invoice		
Water System Name/Com		Contact Name MIKE Erdme	Water Syst	em Name/Company I	Name	Contact Name		
CF2 Engine	_	Fax Number	Phone Nun	nber		Fax Number		
349-101 Mailing Address	0	<u> </u>	Mailing Add	Iress		L		
City	State	Zip Code	City		State	Zip Code	• .	
SAMPLE COLLECT	ION:		NOTE	Unless other	wise requested	l, all samples wi	ll be	
* NOTE: For valid results, a	nalysis must begin with	nin 30 hrs of sampl	e collection.	analyzed by	Presence/Abse	nce method SMS)223B.	
·	,			METHOD RE		/C##0222	D)	
Date:	117/12010	o				ce (SM9223	•	
Month	J L			☐ Memb		ion (SM9222	.B)	
Time:		PM (circle one)		Routine		Treated Water		
11110.	KSUK KIVET			Repeat S	ample 🗆	Untreated Wat	er	
Collector:	<u> </u>			(refer to l	•		ر	
Signature				Special P	urpose			
Transported to Lab By: ☐ Same	as collector	Other:						
		Signature						
Note: SGS a	nalyzes bacteria sam					ave been made	l .	
Business hours are	Surcnarges wiii Monday–Friday, 8 an	be applied for sa n–5 pm. Please				343 with any que	estions.	
,				**************************************	-			
TO BE COMPLETED BY L	.ABORATORY							
Sample Receiving:	1 . 1		Sample ove	er 30 hours old	l. Results ma	y be unreliable	€.	
Date	:_ <i>1] 18 10</i>							
Time	: 15.51		48 Hour W	aiver for Remo	te Locations			
Temp	: Ambient 🗌 or	3.0						
Delivery Method	: Client 🗌 Commerc	ial 🔲	Sample Re	ceiving notifi	ed Analyst o	f Short Hold	Time	
Received by		Jr.	SmH	11/18/10 15:5	1			
Comments:	Signature	V	And the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control of the Annual Control					
Clie	nt did no	t fu o	ut coi	iform	COC,	>0 this		
Was		by lab		eceiving.	SMH	+ 11/18/it	>	
This section us	ed by analyst for ir	nmediate notif	ication of U	NSATISFACT	ORY results	s only:		
Bacteriological Wa	ter Analysis Record:				Analytical Met	hod:		
Analysis Began:					J	UG (P/A) SM922:	3B	
Analyst:						ane Filter SM922		
·	T-1-1 O-15							
Result:	Total Coliform:							
	E. coli/Fecal Colife	orm	····					
	Other Bacteria:							
Reported to:			By:	☐ Fax	☐ Phone	□ E-mail		
Reported to:			By:	☐ Fax	□ Phone	_ E-mail		
Analyst's			Date/Tin	Date/Time:				



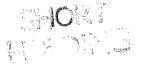
1106250



SAMPLE RECEIPT FORM

Review Criteria:	Condition	n;	Comments/Action Taken:
Were custody seals intact? Note # & location, if applicable.	Yes No	(N/A)	
COC accompanied samples?	(Yes) No	N/A	
Temperature blank compliant* (i.e., 0-6°C after correction factor)?	(Yes) No	N/A	
* Note: Exemption permitted for chilled samples collected less than 8 hours ago.			
Cooler ID: @ 3.0 _ w/ Therm.ID: 20\			
Cooler ID: @w/ Therm.ID:			
Cooler ID: @w/ Therm.ID:			
Cooler ID: @ w/ Therm.ID:			
Cooler ID: @ w/ Therm.ID:			
Note: If non-compliant, use form FS-0029 to document affected samples/analyses.			
If samples are 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."		~	,
If temperature(s) <0°C, were all sample containers ice free?	Yes No	(N/A)	
Delivery method (specify all that apply): Client	Note airbill/tra	icking#	
USPS Alert Courier Road Runner AK Air			
Lynden Carlile ERA PenAir	See Attac	hed	
FedEx UPS NAC Other:	or N/A)	ĺ
→ For samples received with payment, note amount (\$) and ca	ash / check / CC (). WA
→ For samples received with payment, note amount () and set → For samples received in FBKS, ANCH staff will verify all criteria		•	SRF Initiated by: N/A
Do samples match COC* (i.e., sample IDs, dates/times collected)?	Yes No	N/A	trip blanks not written
* Note: Exemption permitted if collection times differ by less than an hour;	163 140	14/74	on coc by client. Added
in which case, the times on the COC will be used.			as @A-C.
Are analyses requested unambiguous?	Yes No	N/A	as G Fi
Were samples in good condition (no leaks/cracks/breakage)?	(Ýes) No	N/A	
Packing material used (specify all that apply): Bubble Wrap			
Separate plastic bags Vermiculite Other:			
Were all VOA vials free of headspace (i.e., bubbles <6 mm)?	(Yes No	N/A	
Were all soil VOAs field extracted with MeOH+BFB?		N/A)	
Were the bottles provided by SGS? (Note apparent exceptions.)	8110.3		
Were proper containers (type/mass/volume/preservative*) used?	Yes (No)	N/A	Sample for NO3 analysis pource off from (2) L per pm Forest Taylor
* Note: Exemption permitted for waters to be analyzed for metals.		- "	poured of from (2) L
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	(Yes) No	N/A	per por forest lagror
For preserved waters (other than VOA vials, LL-Mercury or	(Yes No	N/A	
microbiological analyses), was pH verified and compliant?	198 110	1077	
If pH was adjusted, were bottles flagged (i.e., stickers)?	Yes No	(N/A)	
Refer to attached bottle sheet (form F066) for documentation.	165 140	IVA	and the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of th
For RUSH or SHORT HOLD TIME samples, were the COC &	Yes No	N/A	
this SRF flagged, bottles flagged (e.g., stickers) and lab notified?	1.00		4 2 2 4 4 4
For client requested, site-specific QC (e.g., MS/MSD/DUP), were	Yes No	(N/A)	8 1
bottles flagged (e.g., stickers) and numbered accordingly?	103 110		**igvee*
For special handling (e.g., "MI" or foreign soils, lab filter, limited	Yes No	(N/A)	
volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?	168 110	(IV/A)	
	(V.) No	NI/A	CDP Constant I have
Was the WO# recorded in Front Counter/Sample Receiving log?	(Yes) No	N/A	SRF Completed by:
For any question answered "No," has the PM been notified and	(V) N	DT/A	Bottle Sheet by:
the problem resolved (or paperwork put in their bin)?	Yes No	N/A	PM = N/A
Was PEER REVIEW of sample numbering completed	(Yes) No	N/A	Peer Reviewed by:
(i.e., compare WO# on containers to COC, container ID on		Ì	
containers to COC, unique lab ID on each container?)			Metrics:
Additional notes (if applicable):			

WO# (7 digits)	Sample #	Sample #	Container ID	Container ID	Matrix	QC	Preservative (CHECKED)	TEST GROUP	BELS Notes: ANOMALIES - e.g., preservative added or SPECIAL HANDLING - e.g., Multi-Incremental (MI), Field Filter (FF), Lab Filter (LF), use "same jar as" (SJA) for QC, 2xMeOH, bubbles, etc.
	SAM	PLE I	D		ī	TYPE CONTAINERS ANA			Type comments below:
1106250	001	001	Α	В	1 Water		. N/A	W_REF_LAB	
1106250	001	001	С	D	1 Water		N/A	W_REF_LAB	HAA FP
1106250	002	002	Α	Α	1 Water		Na2S2O3 *	W_Micro	
1106250	002	002	В	В	1 Water		H2SO4 (pH <2)	W_Waters_Dept	
1106250	002	002	C	С	1 Water		NaOH (pH >12)	W_Waters_Dept	
1106250	002	002	D	D	1 Water		HNO3 (pH <2)	W_Metals_Total/Diss.	
1106250	002	002	E	E	1 Water		N/A	W_REF_LAB	
1106250	002	002	F	F	1 Water		N/A	W_Waters_Dept	
1106250	002	002	G	G	1 Water		N/A	W_Waters_Dept	Odor
1106250	002	002	Н	J	1 Water		HCI * VOA or LL-Hg *	W_GRO/VOA	
1106250	002	002	κ	κ	1 Water		HCI (pH <2)	W_TOC/DOC	
1106250	002	002	Ĺ	L	1 Water		N/A	W_Waters_Dept	
1106250	005	005	M	M	1 Water		N/A	W_REF_LAB	UV 254
1106250	003	003	Α	A	1 Water		N/A	W_TOC/DOC	
1106250	003	003	В	В	1 Water		HCI (pH <2)	W_TOC/DOC	Filtered from 3A
1106250	004	004	Α	С	1 Water	Trip Blank	HCI * VOA or LL-Hg *	W_GRO/VOA	



1106250



Phone/Fax: Project Name:

Ouote #

Client Name: CE2 Engineers
Ordered By: Mike Erdman

SGS North America Inc.

200 W. Potter Dr., Anchorage, AK 99518 3180 Peger Rd., Fairbanks, AK 99701

P: 907-562-2343,	F: 907-561-5301
P: 907-474-8656,	F: 907-474-9685

	O TO EMP JO T T		
Client pickup Date:	10/29/2010	Time:	1200
☐ Deliver to client:			
☐ Shipment Method:			
Airline Carrier:			
Airbill Number:			
Date to ship by:			
Notes:			
Kit request taken by:	FAT	Date:	10/28/2010
Kit prepared by:		- Date:	
Kit checked by:		Date:	
Kit shipped by:		Date:	
Estimated date for samples returning to the lab:			

Sample Kit Request

Quote #:	·	
Delivery:		
,		
M Reminders:		
□ DOD project	□ SOW/QAPP	

☐ Project Notice (

Total # Containers includes bottles for % Solids
☐ Regulatory/Special Requirements

	DQOs	
\Box	Problem	Matrices

Notes:

No. Samples	Matrix	Analysis	Container	Size & Type	Pres.	Bottle Lot#	Pres. Hol Lot# Tim	A CONTRACTOR AND A SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECOND SECO	# QC Bottles	Total Bottles
2	Water	Primary & Secondary Inorg								
		Metals + Ca, Mg	1 x 250mL	HDPE	HNO3		6 N	1		2
		Waters + Br	1 x IL	HDPE	None		48	H		2
		CN	1 x 250mL	HDPE	NaOH		14	D ·	İ	2
		Odor	l x lL	Amber	None		48	н -		2
		`MBAS	1 x 500mL	Amber	None		48	Η `		2
		Turb, TDS, Alk	- IxIL	HDPE	None		48	H -		2
		TOC	1 x 125mL	Amber	HC1		14	D		2
		DOC	1 x 125mL	Amber	None		48	н ~		2
		UV254	1 x 125mL	Amber	None		48	н 🔪		2

l			, C C		1 X 125IIIE	7111003
		ľ	JV254		1 x 125mL	Amber
	Pack for Shipp	oing			Other Notes/Remino	ders:
1	125mL Tempe	rature Bl	ank			
	500mL Tempe	rature Bl	ank			
	Soil VOA Trip	Blank (ID:)		
	Water VOA T	rip Blank	(ID:)	1	
\Box	524 VOA Trip		D:)			
₹.	Gel Ice	4	SGS COCs			
4	Labels	$\overline{\checkmark}$	Custody Seals			
V	Bubble Wrap	$\overline{\mathcal{L}}$	Coolers			
	Send Instructi	ons				
	Foreign Soil P	ermit				

Attention Client/Sampler:

Please remember the following sampling guidelines:

- 1. Do not rinse container before filling and be aware of any acid preservative in container.
- 2. Fill container to top, but do not overfill (except volatiles which should be headspace free).
- 3. Label the container with your sample/site ID, as well as the date & time of collection.
- 4. Fill in the Chain of Custody.
- 5. Add frozen gel packs or ice to your cooler & pack to prevent breakage.

Note: Charges may be invoiced for bottles which are unused or improperly used.

If you have any questions concerning this sample kit,
please contact your Project Manager for assistance. Thank you.



SGS North America Inc.

200 W. Potter Dr., Anchorage, AK 99518 3180 Peger Rd., Fairbanks, AK 99701

P: 907-562-2343,	F: 907-561-5301
1-8656,	F: 907-474-9685

☑ Client pic	kup Date:	10/29/2010	Time:	1200
☐ Deliver	to client:			
☐ Shipmen	t Method:			
Airline	e Carrier:]			
Airbill	Number:			
Date t	o ship by:			
	Notes:			
	_			
Kit request	taken by:	ĘAT	Date:	10/28/201
Kit pre	pared by:		Date:	
Kit ch	ecked by:		Date:	
Kit sh	ipped by:		Date:	
	-			<u>~~~</u>
Estimated date for samples returning	to the lab:			

Client Name: C	E2 Engineers			
Ordered By: N	Лike Erdman			
Phone/Fax:				
Project Name:				
Quote #:			v	
Delivery:				
-				
_				
PM Reminders:				<u></u>
□ DOD pr	oject	□ SOW/QAPP		
□ Quote #		☐ Project Notice ()	

V/QAPP		☐ Total # Containers includes bottles for % Solids
ject Notice ()	☐ Regulatory/Special Requirements

	DQOs	
П	Problem	Matrices

Sample Kit Request

Notes:

No. Samples	Matrix	Analysis	Containe	r Size & Type	Pres.	Bottle Lot#	Pres, Lot#	Hold	# QC Bottles	Total Bottles
2		VOC 524.2	3 x 40 mL	VOA vials	HCI			14 D		6
		TC	120mL sterile	Plastic	Na2S2O3			30 H		2
		THM Formation Potential	2 x 1L	VOA vials	None			9 D	Ì	4
		HAA Formation Potential	2 x 1L	VOA vials	None			9 D		4
				1						

	Pack for Ship	ping			Other Notes/Remin	nders:
\Box	125mL Temp	oerature .	Blank			
	500mL Temp	perature	Blank			
	Soil VOA Tr	ip Blank	(ID:)		
	Water VOA	Trip Bla	nk (ID:)		
V	524 VOA Tr	ip Blank	(ID:)			
$\overline{\mathbf{A}}$	Gel Ice	~	SGS COCs			
V	Labels	V	Custody Seals			
$\overline{\mathcal{A}}$	Bubble Wrap	· 🗹	Coolers			
	Send Instruc	tions				
	Foreign Soil	Permit				

Attention Client/Sampler:

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Note: Charges may be invoiced for bottles which are unused or improperly used. If you have any questions concerning this sample kit, please contact your Project Manager for assistance. Thank you.