

DESK PACKET

(MATERIALS SUBMITTED AFTER MEETING PACKET PUBLICATION)

E. NEW BUSINESS

4. Conditional Land Use Permit Modification; MS2015-005

Applicant: Sean Cude

Request: Modification to PC Resolution 2014-20 to allow excavation into the water table and for temporary localized dewatering.

**Location: 36498 Virginia Drive
Kalifornsky Area**

SBC 2012 IRREVOCABLE TRUST
Ciechanski - Virginia Drive Conditional Land Use Permit
Excavation Dewatering Plan

SBC has proposed to utilize dewatering during the lower limits of excavation within the groundwater table. Excavation dewatering will be utilized on an as-needed basis during material extraction within the groundwater table. This plan is to provide information and parameters for that process. Dewatering parameters are as follows:

- Pump Intake: 6" diameter maximum
- Rate of Pump: 2200 GPM (4.901620 cfs)
- Length of Dewatering: 10 day maximum

Excavation dewatering temporarily depresses shallow groundwater within the immediate area of the dewatering, but the groundwater level will recover to pre-dewatering elevations upon termination of dewatering. If dewatering was removed from the site, the aquifer would experience the well drawdown shown in Table A.

TABLE A. Well Drawdown without Immediate Adjacent Discharge
 (if dewatering was removed from site)

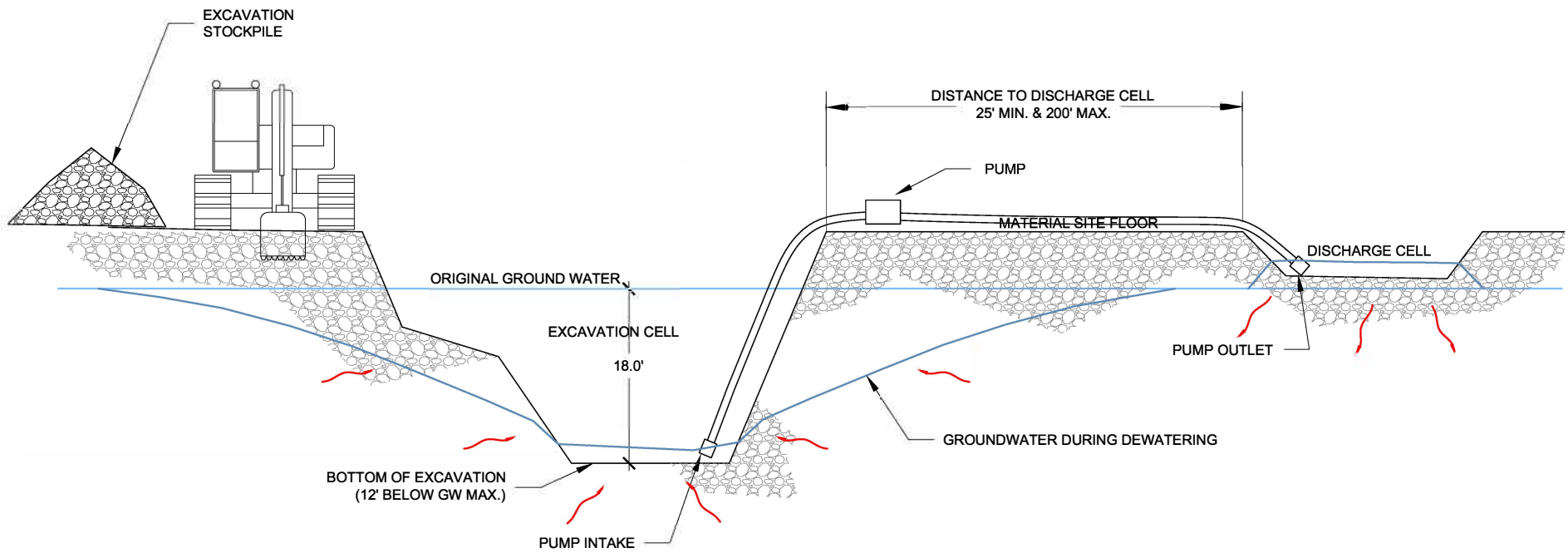
Distance from Dewatering Point	Length of Dewatering		
	1-day	7-day	10-day
300 feet	1.22 ft	1.98 ft	2.12 ft
0.25 mile	0.22 ft	0.84 ft	0.97 ft
0.50 mile	0.02 ft	0.40 ft	0.51 ft
1.0 mile	0.0 ft	0.07 ft	0.12 ft

Dewatering will not be removed from the subject property. Waters from the dewatering process will be discharged within the permit property to re-enter the groundwater table, therefore providing rapid recharge to the aquifer which negates the effects on surrounding groundwater elevations. Therefore, the aquifer would experience the well drawdown shown in Table B.

TABLE B. Well Drawdown with Immediate Adjacent Discharge
 (dewatering is discharged adjacent to removal dewatering location)

Distance from Dewatering Point	Length of Dewatering		
	1-day	7-day	10-day
300 feet	0.0 ft	0.04 ft	0.10 ft
0.25 mile	0.0 ft	0.0 ft	0.0 ft
0.50 mile	0.0 ft	0.0 ft	0.0 ft
1.0 mile	0.0 ft	0.0 ft	0.0 ft

An exhibit of the proposed pumping layout is included on Sheet 1.



MCLANE CONSULTING INC.

ENGINEERING - TESTING
 SURVEYING - MAPPING
 P.O. BOX 468
 SOLDOTNA, AK 99669
 VOICE: (907) 283-4218
 FAX: (907) 283-3265
 WWW.MCLANECG.COM

PROJECT	DEWATERING PLAN EXHIBIT	REVISION: 2
		DATE: 8/16/2024
LOCATION	CIECHANSKI - VIRGINIA DRIVE	DRAWN BY: GMD
		SCALE: NTS
CLIENTS	SBC, LLC SOLDOTNA, ALASKA 99669	PROJECT NO. 204014
		BOOK NO. 19-11
		SHEET 1



144 North Binkley Street, Soldotna, AK 99669 | (P) 907-714-2200 | (F) 907-714-2378 | www.kpb.us

To: Betty Glick: - This is contradictory. She does
no go in to the water table to dewater.
Discribe the whole process and side of recovering
More gravel to fill. Exposing the water table

MORSE AARON H MORSE LIVING TRUST
154 E REDOUBT AVE
SOLDOTNA, AK 99669

August 21, 2024

opens up for contamination to well water
supplies of

KENAI PENINSULA BOROUGH PLANNING COMMISSION

NOTICE OF PUBLIC HEARING

home owners.
Smiley Aaron Morse

Public notice is hereby given that a Conditional Land Use Permit application has been received to develop a material site (gravel pit) on a property located in the Kalifornsky area. These applications are reviewed by the Kenai Peninsula Borough Planning Commission in accordance with KPB 21.25 and KPB 21.29. You are receiving this notice because you are a landowner within a half-mile radius of the subject property, and are invited to provide comment at the below public hearing.

- Applicant:** SEAN CUDE
- Landowner:** SBC 2012 IRREVOCABLE TRUST
- Parcel Number(s):** 05527001
- Legal Description:** DIAMOND WILLOW ESTATES SUB PART 13 TRACT 13
- Address:** 36498 Virginia Drive
- Project Description:** This application is requesting a modification to PC2014-20 to allow excavation in the water table and for temporary, localized dewatering.
- Public Hearing:**
- Date and Time:** Monday, September 9, 2024 at 7:30 p.m.
- Location:** Kenai Peninsula Borough
Betty Glick Assembly Chambers
144 N. Binkley, Soldotna, AK 99669
- Zoom Meeting ID:** Meeting ID 907 714 2200
- Zoom Link:** <https://us06web.zoom.us/j/9077142200>
- Telephonic:** 1-888-788-0099 or 1-877-853-5247

- Types:
1. Leachate Drainage
 2. Filtration
 3. Centrifugation
 4. Drying Beds
 5. Thermal Drying

Public Comment: You can provide verbal comment at the hearing (see information above). You may also submit written comments by emailing them to rraidmae@kpb.us. **Written comments must be received by 1:00 pm Friday, September 6, 2024.** Note that persons who participate in the public hearing, either by written or verbal comment, may appeal the Planning Commission's decision within 15 days of the date of notice of the decision.

The meeting packet will be posted the week prior to the meeting. Once it has been posted, you can view the application and additional maps at kpb.legistar.com/Calendar. For additional information, contact Ryan Raidmae at rraidmae@kpb.us or 907-714-2462.

Please see the attached vicinity map of the proposed activities.

From: [Lisa Cannon](#)
To: [Raidmae, Ryan](#)
Subject: <EXTERNAL-SENDER>public hearing 9/9/24 comment
Date: Friday, August 30, 2024 7:41:46 AM
Attachments: [image001.png](#)
[image002.png](#)

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How temporary will this be? Will the water table be significantly impacted? We already have continual well problems in our 4plexes on Damon and Clarence and do not need more problems.

CALLAHAN CARTER LIVING TRUST AMENDED AND
RESTATED
CARTER R CALLAHAN & LISA M CANNON, CO-TT
849 JACKSON ST STE 2C
NAPA, CA94559

August 21, 2024

**KENAI PENINSULA BOROUGH PLANNING COMMISSION
NOTICE OF PUBLIC HEARING**

Public notice is hereby given that a Conditional Land Use Permit application has been received to develop a material site (gravel pit) on a property located in the Kalifornsky area. These applications are reviewed by the Kenai Peninsula Borough Planning Commission in accordance with KPB 21.25 and KPB 21.29. You are receiving this notice because you are a landowner within a half-mile radius of the subject property, and are invited to provide comment at the below public hearing.

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Thank you,
Lisa
Co-Trustee Carter Callahan Living Trust



LISA M. CANNON

President & CEO

849 Jackson Street, Suite 2C

Napa, CA 94559

Phone: (707) 944-0220 x3

Text: (916) 826-6385

E-mail: Lisa@rajadevelopment.com

From: [Colleen Sonnevil](#)
To: [Raidmae, Ryan](#)
Subject: <EXTERNAL-SENDER>Public Comment Conditional Land Use Permit
Date: Thursday, September 5, 2024 10:01:08 PM

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Kenai Peninsula Borough Planning Commission;

We request the Conditional Land Use Permit be denied.

We and all our neighbors within the half-mile radius boundaries of the map provided us two weeks ago are on drinking water and bathing wells. For our safety and peace of mind it is necessary that if application is approved the proposed gravel pit should be required to install monitoring wells and a groundwater monitoring program to identify in advance any potential impacts to surrounding private drinking water wells. Previously private professional testing of well water in the area has been found pure of natural and foreign contamination.

As a good neighbor, it is also reasonable to require gravel pit operator and owner to out source an annual test of wells in the mapped radius. If contamination or lower water level is found; Sean Cude: owner(s) should be required to provide the homeowner/owners with potable drinking water until a successful pure water drilling of a new well on homeowners property is accomplished with Sean Cude covering the cost.

If permit is approved we request the above requirements be put in writing, notarized and filed with the courts.

In conclusion if the gravel pit is approved impacts must require mitigation.

Sincerely,
Colleen and Gary Sonnevil
36646 River Hills Dr
Kenai, Alaska 99611

907-398-9151

September 5, 2024

**TO: Kenai Peninsula Borough
Planning Department**

RE: Proposal by applicant Sean Cude

Parcel: 05527001

Legal Description: DIAMOND WILLOW ESTATES SUB PART 13 TRACT 13

Address: 36498 Virginia Drive

Project Description: This application is requesting a modification to PC2014-20 to allow excavation in the water table and for temporary, localized dewatering.

To Whom It May Concern,

I am writing in opposition to proposal by applicant Sean Cude, Parcel 05527001, regarding for the above project description. This application is requesting a modification to PC2014-20 to allow excavation in the water table and for temporary, localized dewatering. Please see stated reasons below as well as included documentation/map.

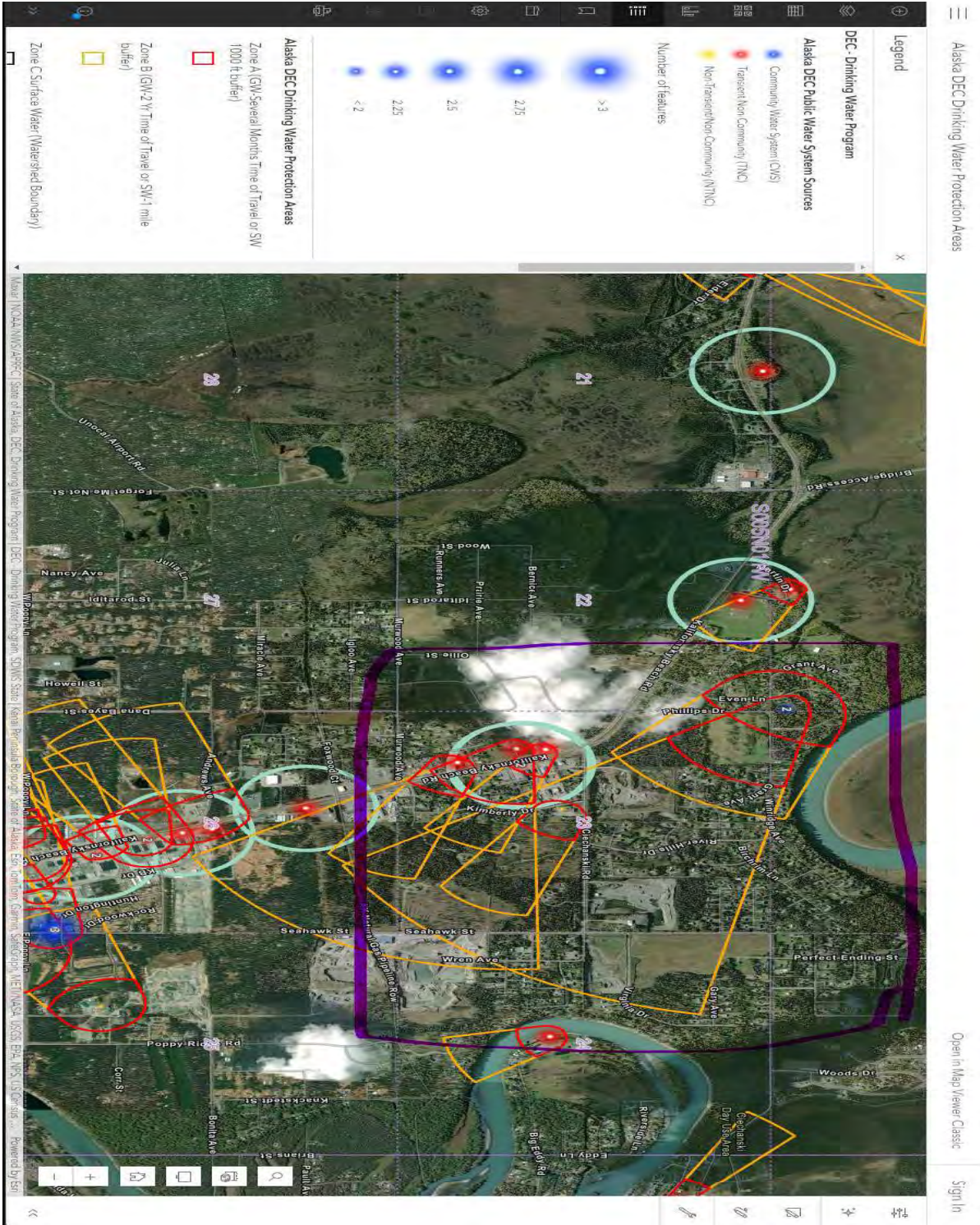
1. The Department of Environmental Services for the State of Alaska has documented drinking water protection areas. The proposed site of excavation into the water table is in a 1-mile buffer zone outlined by the State of Alaska, Department of Environmental Conservation. Please see the attached map to show this area. Also note, there are many surrounding drinking water protection areas as well as buffer zones in the vicinity of the documented address of 36498 Virginia Drive. I have included a map for a visual from the ADEC website, as well as a link to the website for your convenience. Due to this, special consideration should be taken when granting permission to disturb the water table. A quote from the website **“The Drinking Water Protection Areas were created to meet the requirements of the 1996 Safe Drinking Water Act. It is hoped that this data will be used at the local level to initiate and/or prioritize proactive protection strategies for the public water systems in their jurisdiction.”**¹

While the history of gravel pit operations within the Kenai Peninsula Borough have been challenged many times, I sincerely hope that this commission considers the community needs of individual homeowners and not just the special interests of business owners. When will the welfare of the **many** of a community be valued as highly as the few. Please consider the recommendations made by ADEC when deciding to disrupt the water table.

2. Dewatering can affect the up-gradient and down-gradient effects of well within the vicinity of the gravel pit, which can affect well pressure of nearby residential homes and well pressure. The gravel pit owner should have in place a plan exceeding the \$10,000 limit and 8 wells listed to include the surrounding residential wells within at least a half mile to 1 mile radius. Please see attached Environmental Protection Agency article I have included for your review if desired.

- The provided proposal does not address the consideration for testing the water before and after to ensure that contamination has not occurred related to the gravel pit operation if approved, a plan in place for any ramifications for nearby residential areas.

2



I appreciate your time in reviewing my letter. I am a concerned resident of this area, and I have great concern for maintaining safe drinking water for our community. Balance is key, when business interests outweigh community interests and health, I feel it my duty not only as a property owner near this proposal, but as a community member. It is a vital resource for sustaining life and health.

This proposal if approved could grant permission for this gravel pit operation for up to 20 years. The decision you make today can have long-lasting indefinite effects to this community.

Thank you for your consideration.

Julie Bunch

46781 Mooseberry Avenue

Kenai, Alaska 99611

¹State of Alaska, Division of Environmental Health, Drinking Water Program, Alaska DEC Drinking Water Protection Areas,

<https://www.arcgis.com/home/item.html?id=13ed2116e4094f9994775af9a62a1e85> , accessed 9/5/2024

²State of Alaska, Division of Environmental Health, Drinking Water Program, Alaska DEC Drinking Water Protection Areas,

<https://www.arcgis.com/apps/mapviewer/index.html?webmap=13ed2116e4094f9994775af9a62a1e85> , accessed 9/5/2024.

³“Getting Up to Speed” for section C, “Ground Water Contamination” is adapted from US EPA Seminar Publication. Wellhead Protection: A Guide for Small Communities. Chapter 3. EPA/625/R-93/002.

<https://dnr.alaska.gov/mlw/cdn/pdf/factsheets/water-rights-in-alaska.pdf?v=1> , accessed 9/5/2024.

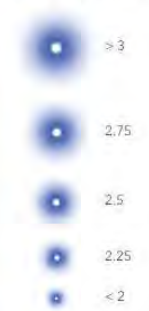
Legend

DEC - Drinking Water Program

Alaska DEC Public Water System Sources

- Community Water System (CWS)
- Transient Non-Community (TNC)
- Non-Transient/Non-Community (NTNC)

Number of features



Alaska DEC Drinking Water Protection Areas

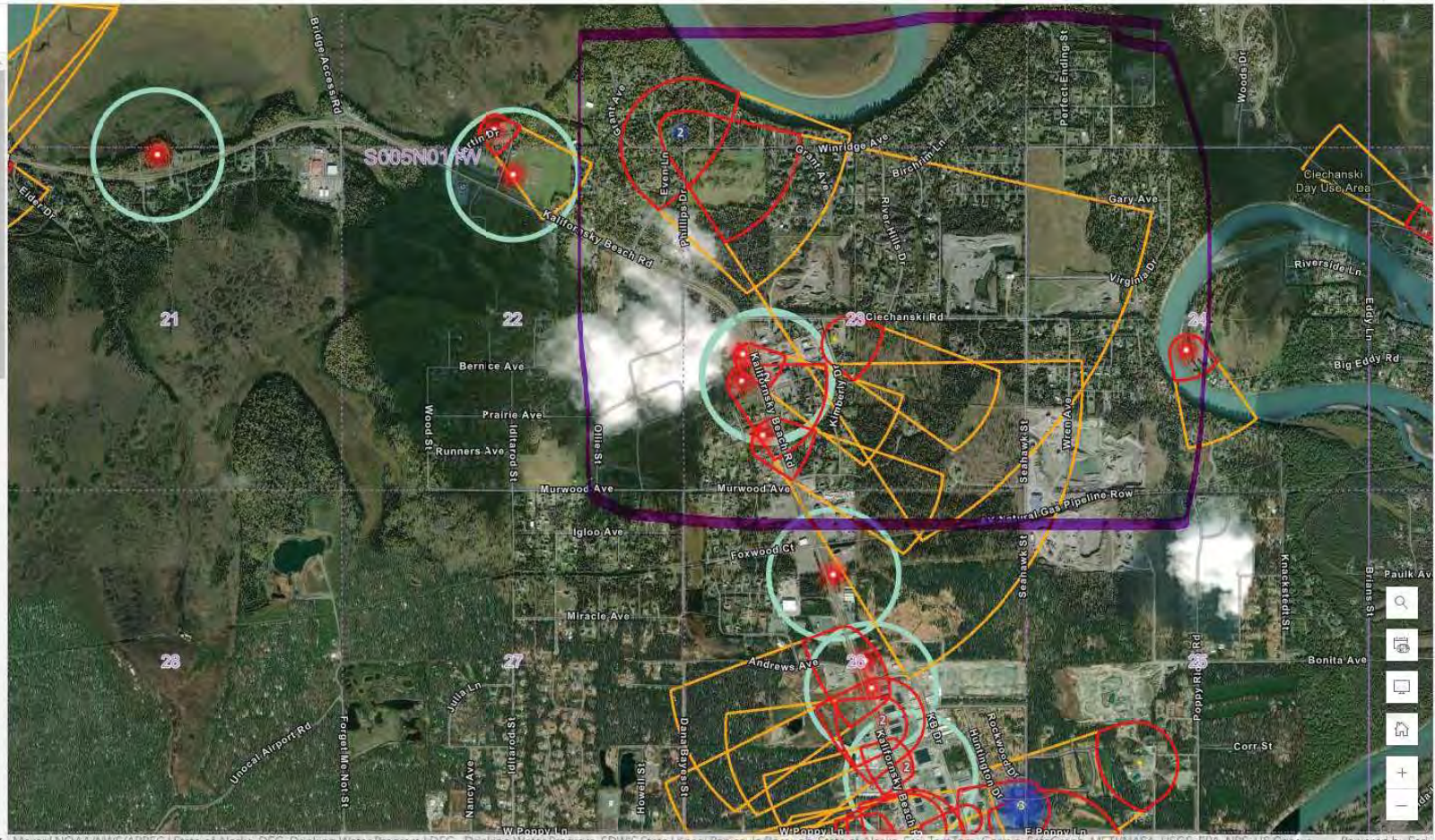
Zone A (GW-Several Months Time of Travel or SW 1000 ft buffer)



Zone B (GW-2 Yr Time of Travel or SW-1 mile buffer)



Zone C Surface Water (Watershed Boundary)



Getting Up to Speed

GROUND WATER CONTAMINATION



Ground water contamination is nearly always the result of human activity. In areas where population density is high and human use of the land is intensive, ground water is especially vulnerable. Virtually any activity whereby chemicals or wastes may be released to the environment, either intentionally or accidentally, has the potential to pollute ground water. When ground water becomes contaminated, it is difficult and expensive to clean up.

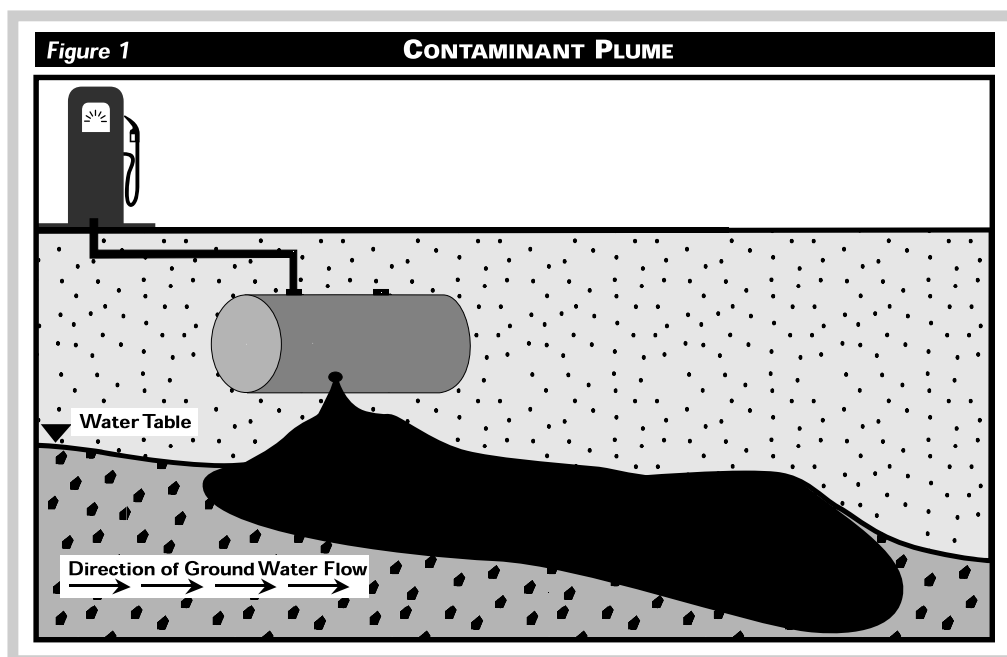
To begin to address pollution prevention or remediation, we must understand how surface waters and ground waters interrelate. Ground water and surface water are interconnected and can be fully understood and intelligently managed only when that fact is acknowledged. If there is a water supply well near a source of contamination, that well runs the risk of becoming contaminated. If there is a nearby river or stream, that water body may also become polluted by the ground water.

HOW DOES GROUND WATER BECOME CONTAMINATED?

Depending on its physical, chemical, and biological properties, a contaminant that has been released into the environment may move within an aquifer in the same manner that ground water moves. (Some contaminants, because of their phys-

ical or chemical properties, do not always follow ground water flow.) It is possible to predict, to some degree, the transport within an aquifer of those substances that move along with ground water flow. For example, both water and certain contaminants flow in the direction of the topography from recharge areas to discharge areas. Soils that are porous and permeable tend to transmit water and certain types of contaminants with relative ease to an aquifer below.

Just as ground water generally moves slowly, so do contaminants in ground water. Because of this slow movement, contaminants tend to remain concentrated in the form of a **plume** (see Figure 1) that flows along the same path as the ground water. The size and speed of the plume depend on the amount and type of contaminant, its solubility and density, and the velocity of the surrounding ground water.



Getting Up to Speed: GROUND WATER CONTAMINATION

Ground water and contaminants can move rapidly through fractures in rocks. Fractured rock presents a unique problem in locating and controlling contaminants because the fractures are generally randomly spaced and do not follow the contours of the land surface or the hydraulic gradient. Contaminants can also move into the ground water system through macropores—root systems, animal burrows, abandoned wells, and other systems of holes and cracks that supply pathways for contaminants.

In areas surrounding pumping wells, the potential for contamination increases because water from the **zone of contribution**, a land area larger than the original recharge area, is drawn into the well and the surrounding aquifer. Some drinking water wells actually draw water from nearby streams, lakes, or rivers. Contaminants present in these surface waters can contribute contamination to the ground water system. Some wells rely on artificial recharge to increase the amount of water infiltrating an aquifer, often using water from storm runoff, irrigation, industrial processes, or treated sewage. In several cases, this practice has resulted in increased concentrations of nitrates, metals, microbes, or synthetic chemicals in the water.

Under certain conditions, pumping can also cause the ground water (and associated contaminants) from another aquifer to enter the one being pumped. This phenomenon is called **interaquifer leakage**. Thus, properly identifying and protecting the areas affected by well pumping is important to maintain ground water quality.

Generally, the greater the distance between a source of contamination and a ground water source, the more likely that natural processes will reduce the impacts of contamination. Processes such as oxidation, biological degradation (which sometimes renders contaminants less toxic), and adsorption (binding of materials to soil particles) may take place in the soil layers of the unsaturated zone and reduce the concentration of a contaminant before it reaches ground water. Even

contaminants that reach ground water directly, without passing through the unsaturated zone, can become less concentrated by dilution (mixing) with the ground water. However, because ground water usually moves slowly, contaminants generally undergo less dilution than when in surface water.

SOURCES OF GROUND WATER CONTAMINATION

Ground water can become contaminated from natural sources or numerous types of human activities. (See Tables 1 and 2 and Figure 1.) Residential, municipal, commercial, industrial, and agricultural activities can all affect ground water quality. Contaminants may reach ground water from activities on the land surface, such as releases or spills from stored industrial wastes; from sources below the land surface but above the water table, such as septic systems or leaking underground petroleum storage systems; from structures beneath the water table, such as wells; or from contaminated recharge water.

■ Natural Sources

Some substances found naturally in rocks or soils, such as iron, manganese, arsenic, chlorides, fluorides, sulfates, or radionuclides, can become dissolved in ground water. Other naturally occurring substances, such as decaying organic matter, can move in ground water as particles. Whether any of these substances appears in ground water depends on local conditions. Some substances may pose a health threat if consumed in excessive quantities; others may produce an undesirable odor, taste, or color. Ground water that contains unacceptable concentrations of these substances is not used for drinking water or other domestic water uses unless it is treated to remove these contaminants.

■ Septic Systems

One of the main causes of ground water contamination in the United States is the effluent (out-flow) from septic tanks, cesspools, and privies.

Getting Up to Speed: GROUND WATER CONTAMINATION

Table 1 TYPICAL SOURCES OF POTENTIAL GROUND WATER CONTAMINATION BY LAND USE CATEGORY

Category	Contaminant Source	
Agriculture	Animal burial areas	Irrigation sites
	Animal feedlots	Manure spreading areas/pits
	Fertilizer storage/use	Pesticide storage/use
Commercial	Airports	Jewelry/metal plating
	Auto repair shops	Laundromats
	Boat yards	Medical institutions
	Construction areas	Paint shops
	Car washes	Photography establishments
	Cemeteries	Railroad tracks and yards
	Dry cleaners	Research laboratories
	Gas stations	Scrap and junkyards
	Golf courses	Storage tanks
	Industrial	Asphalt plants
Chemical manufacture/storage		Pipelines
Electronics manufacture		Septage lagoons and sludge sites
Electroplaters		Storage tanks
Foundries/metal fabricators		Toxic and hazardous spills
Machine/metalworking shops		Wells (operating/abandoned)
Mining and mine drainage		Wood preserving facilities
Residential	Fuel oil	Septic systems, cesspools
	Furniture stripping/refinishing	Sewer lines
	Household hazardous products	Swimming pools (chemical storage)
	Household lawns	
Other	Hazardous waste landfills	Recycling/reduction facilities
	Municipal incinerators	Road deicing operations
	Municipal landfills	Road maintenance depots
	Municipal sewer lines	Storm water drains/basins
	Open burning sites	Transfer stations

Source: U.S. EPA, 1991a.

Approximately one-fourth of all homes in the United States rely on septic systems to dispose of their human wastes. Although each individual system releases a relatively small amount of waste into the ground, the large number and widespread use of these systems makes them a serious contamination source. Septic systems that are improperly sited, designed, constructed, or maintained can contaminate ground water with bacteria, viruses, nitrates, detergents, oils, and chemicals. Along with these contaminants are the commercially available septic system cleaners containing syn-

thetic organic chemicals (such as 1,1,1-trichloroethane or methylene chloride). These cleaners can contaminate water supply wells and interfere with natural decomposition processes in septic systems.

Most, if not all, state and local regulations require specific separation distances between septic systems and drinking water wells. In addition, computer models have been developed to calculate suitable distances and densities.



Getting Up to Speed: GROUND WATER CONTAMINATION



■ Improper Disposal of Hazardous Waste

Hazardous waste should always be disposed of properly, that is to say, by a licensed hazardous waste handler or through municipal hazardous waste collection days. Many chemicals should not be disposed of in household septic systems, including oils (e.g., cooking, motor), lawn and garden chemicals, paints and paint thinners, disinfectants, medicines, photographic chemicals, and swimming pool chemicals. Similarly, many substances used in industrial processes should not be disposed of in drains at the workplace because they could contaminate a drinking water source. Companies should train employees in the proper use and disposal of all chemicals used on site. The many different types and the large quantities of chemicals used at industrial locations make proper disposal of wastes especially important for ground water protection.

■ Releases and Spills from Stored Chemicals and Petroleum Products

Underground and aboveground storage tanks are commonly used to store petroleum products and other chemical substances. For example, many homes have underground heating oil tanks. Many businesses and municipal highway departments also store gasoline, diesel fuel, fuel oil, or chemicals in on-site tanks. Industries use storage tanks to hold chemicals used in industrial processes or to store hazardous wastes for pickup by a licensed hauler. Approximately 4 million underground storage tanks exist in the United States and, over the years, the contents of many of these tanks have leaked and spilled into the environment.

If an underground storage tank develops a leak, which commonly occurs as the tank ages and corrodes, its contents can migrate through the soil and reach the ground water. Tanks that meet federal/state standards for new and upgraded systems are less likely to fail, but they are not foolproof. Abandoned underground tanks pose another problem because their location is often unknown. Aboveground storage tanks can also pose a threat to ground water if a spill or leak occurs and adequate barriers are not in place.

Improper chemical storage, sloppy materials handling, and poor-quality containers can be major threats to ground water. Tanker trucks and train cars pose another chemical storage hazard. Each year, approximately 16,000 chemical spills occur from trucks, trains, and storage tanks, often when materials are being transferred. At the site of an accidental spill, the chemicals are often diluted with water and then washed into the soil, increasing the possibility of ground water contamination.

■ Landfills

Solid waste is disposed of in thousands of municipal and industrial landfills throughout the country. Chemicals that should be disposed of in hazardous waste landfills sometimes end up in municipal landfills. In addition, the disposal of many household wastes is not regulated.

Once in the landfill, chemicals can leach into the ground water by means of precipitation and surface runoff. New landfills are required to have clay or synthetic liners and leachate (liquid from a landfill containing contaminants) collection systems to protect ground water. Most older landfills, however, do not have these safeguards. Older landfills were often sited over aquifers or close to surface waters and in permeable soils with shallow water tables, enhancing the potential for leachate to contaminate ground water. Closed landfills can continue to pose a ground water contamination threat if they are not capped with an impermeable material (such as clay) before closure to prevent the leaching of contaminants by precipitation.

■ Surface Impoundments

Surface impoundments are relatively shallow ponds or lagoons used by industries and municipalities to store, treat, and dispose of liquid wastes. As many as 180,000 surface impoundments exist in the United States. Like landfills, new surface impoundment facilities are required to have liners, but even these liners sometimes leak.

Getting Up to Speed: GROUND WATER CONTAMINATION

Table 2 POTENTIAL HARMFUL COMPONENTS OF COMMON HOUSEHOLD PRODUCTS

Product	Toxic or Hazardous Components
Antifreeze (gasoline or coolants systems)	Methanol, ethylene glycol
Automatic transmission fluid	Petroleum distillates, xylene
Battery acid (electrolyte)	Sulfuric acid
Degreasers for driveways and garages	Petroleum solvents, alcohols, glycol ether
Degreasers for engines and metal	Chlorinated hydrocarbons, toluene, phenols, dichloroperchloroethylene
Engine and radiator flushes	Petroleum solvents, ketones, butanol, glycol ether
Hydraulic fluid (brake fluid)	Hydrocarbons, fluorocarbons
Motor oils and waste oils	Hydrocarbons
Gasoline and jet fuel	Hydrocarbons
Diesel fuel, kerosene, #2 heating oil	Hydrocarbons
Grease, lubes	Hydrocarbons
Rustproofers	Phenols, heavy metals
Car wash detergents	Alkyl benzene sulfonates
Car waxes and polishes	Petroleum distillates, hydrocarbons
Asphalt and roofing tar	Hydrocarbons
Paints, varnishes, stains, dyes	Heavy metals, toluene
Paint and lacquer thinner	Acetone, benzene, toluene, butyl acetate, methyl ketones
Paint and varnish removers, deglossers	Methylene chloride, toluene, acetone, xylene, ethanol, benzene, methanol
Paint brush cleaners	Hydrocarbons, toluene, acetone, methanol, glycol ethers, methyl ethyl ketones
Floor and furniture strippers	Xylene
Metal polishes	Petroleum distillates, isopropanol, petroleum naphtha
Laundry soil and stain removers	Hydrocarbons, benzene, trichloroethylene, 1,1,1-trichloroethane
Other solvents	Acetone, benzene
Rock salt	Sodium concentration
Refrigerants	1,1,2-trichloro-1,2,2-trifluoroethane
Bug and tar removers	Xylene, petroleum distillates
Household cleansers, oven cleaners	Xylenols, glycol ethers, isopropanol
Drain cleaners	1,1,1-trichloroethane
Toilet cleaners	Xylene, sulfonates, chlorinated phenols
Cesspool cleaners	Tetrachloroethylene, dichlorobenzene, methylene chloride
Disinfectants	Cresol, xylenols
Pesticides (all types)	Naphthalene, phosphorus, xylene, chloroform, heavy metals, chlorinated hydrocarbons
Photochemicals	Phenols, sodium sulfite, cyanide, silver halide, potassium bromide
Printing ink	Heavy metals, phenol-formaldehyde
Wood preservatives (creosote)	Pentachlorophenols
Swimming pool chlorine	Sodium hypochlorite
Lye or caustic soda	Sodium hydroxide
Jewelry cleaners	Sodium cyanide

Source: "Natural Resources Facts: Household Hazardous Wastes," Fact Sheet No. 88-3, Department of Natural Science, University of Rhode Island, August 1988.



Getting Up to Speed: GROUND WATER CONTAMINATION



■ Sewers and Other Pipelines

Sewer pipes carrying wastes sometimes leak fluids into the surrounding soil and ground water. Sewage consists of organic matter, inorganic salts, heavy metals, bacteria, viruses, and nitrogen. Other pipelines carrying industrial chemicals and oil brine have also been known to leak, especially when the materials transported through the pipes are corrosive.

■ Pesticide and Fertilizer Use

Millions of tons of fertilizers and pesticides (e.g., herbicides, insecticides, rodenticides, fungicides, avicides) are used annually in the United States for crop production. In addition to farmers, homeowners, businesses (e.g., golf courses), utilities, and municipalities use these chemicals. A number of these pesticides and fertilizers (some highly toxic) have entered and contaminated ground water following normal, registered use. Some pesticides remain in soil and water for many months to many years. Another potential source of ground water contamination is animal wastes that percolate into the ground from farm feedlots. Feedlots should be properly sited and wastes should be removed at regular intervals.

Between 1985 and 1992, EPA's Office of Pesticides and Toxic Substances and Office of Water conducted a National Pesticide Survey to determine the number of drinking water wells nationwide that contain pesticides and nitrates and the concentration of these substances. The survey also analyzed the factors associated with contamination of drinking water wells by pesticides and nitrates. The survey, which included samples from more than 1,300 public community and rural domestic water supply wells, found that approximately 3.6 percent of the wells contained concentrations of nitrates above the federal maximum contaminant level, and that over half of the wells contained nitrates above the survey's minimum reporting limit for nitrate (0.15 mg/L).

The survey also reported that approximately 0.8 percent of the wells tested contained pesticides at

levels higher than federal maximum contaminant levels or health advisory levels. Only 10 percent of the wells classified as rural were actually located on farms. There is a higher incidence of contamination by agricultural chemicals in farm wells used for drinking water.

After further analysis, EPA estimated that for the wells that contain pesticides, a significant percentage probably contain chemical concentrations that exceed the federal health-based limits (e.g., maximum contaminant levels or health advisory levels). Approximately 14.6 percent of the wells tested contained levels of one or more pesticides above the minimum reporting limit set in the survey. The most common pesticides found were atrazine and metabolites (breakdown products) of dimethyl tetrachloroterephthalate (DCPA, commonly known as Dacthal), which is used in many utility easement weed-control programs and for lawn care.

■ Drainage Wells

Drainage wells are used in wet areas to help drain water and transport it to deeper soils. These wells may contain agricultural chemicals and bacteria.

■ Injection Wells/Floor Drains

Injection wells are used to collect storm water runoff, collect spilled liquids, dispose of wastewater, and dispose of industrial, commercial, and utility wastes. These wells are regulated by the U.S. EPA's Underground Injection Control Program. In New England, these wells may not be used to inject hazardous wastes from industrial, commercial, and utility operations. The injection wells used in this region are typically shallow and include sumps and dry wells used to handle storm water.

Floor drains were historically used by businesses to handle spills. Today, if a business operates or handles waste fluids that drain to a septic system, dry well, or floor drain, it is required to submit information regarding its operation to the U.S. EPA or its state environmental protection agency. Disposal wells that pose threats to drinking water supplies are prohibited and must be closed, con-



Getting Up to Speed: GROUND WATER CONTAMINATION

nected to a public sewage system, or connected to a storage tank.

■ Improperly Constructed Wells

Problems associated with improperly constructed wells can result in ground water contamination when contaminated surface or ground water is introduced into the well.

■ Improperly Abandoned Wells

These wells can act as a conduit through which contaminants can reach an aquifer if the well casing has been removed, as is often done, or if the casing is corroded. In addition, some people use abandoned wells to dispose of wastes such as used motor oil. These wells may reach into an aquifer that serves drinking supply wells. Abandoned exploratory wells (e.g., for gas, oil, or coal) or test hole wells are usually uncovered and are also a potential conduit for contaminants.

■ Active Drinking Water Supply Wells

Poorly constructed wells can result in ground water contamination. Construction problems, such as faulty casings, inadequate covers, or lack of concrete pads, allow outside water and any accompanying contaminants to flow into the well. Sources of such contaminants can be surface runoff or wastes from farm animals or septic systems. Contaminated fill packed around a well can also degrade well water quality. Well construction problems are more likely to occur in older wells that were in place prior to the establishment of well construction standards and in domestic and livestock wells.

■ Poorly Constructed Irrigation Wells

These wells can allow contaminants to enter ground water. Often pesticides and fertilizers are applied in the immediate vicinity of wells on agricultural land.

■ Mining Activities

Active and abandoned mines can contribute to ground water contamination. Precipitation can leach soluble minerals from the mine wastes

(known as spoils or tailings) into the ground water below. These wastes often contain metals, acid, minerals, and sulfides. Abandoned mines are often used as wells and waste pits, sometimes simultaneously. In addition, mines are sometimes pumped to keep them dry; the pumping can cause an upward migration of contaminated ground water, which may be intercepted by a well.

EFFECTS OF GROUND WATER CONTAMINATION

Contamination of ground water can result in poor drinking water quality, loss of water supply, degraded surface water systems, high cleanup costs, high costs for alternative water supplies, and/or potential health problems.

The consequences of contaminated ground water or degraded surface water are often serious. For example, estuaries that have been impacted by high nitrogen from ground water sources have lost critical shellfish habitats. In terms of water supply, in some instances, ground water contamination is so severe that the water supply must be abandoned as a source of drinking water. In other cases, the ground water can be cleaned up and used again, if the contamination is not too severe and if the municipality is willing to spend a good deal of money. Follow-up water quality monitoring is often required for many years.

Because ground water generally moves slowly, contamination often remains undetected for long periods of time. This makes cleanup of a contaminated water supply difficult, if not impossible. If a cleanup is undertaken, it can cost thousands to millions of dollars.

Once the contaminant source has been controlled or removed, the contaminated ground water can be treated in one of several ways:

- Containing the contaminant to prevent migration.
- Pumping the water, treating it, and returning it to the aquifer.



Getting Up to Speed: GROUND WATER CONTAMINATION



- Leaving the ground water in place and treating either the water or the contaminant.
- Allowing the contaminant to attenuate (reduce) naturally (with monitoring), following the implementation of an appropriate source control.

Selection of the appropriate remedial technology is based on site-specific factors and often takes into account cleanup goals based on potential risk that are protective of human health and the environment. The technology selected is one that will achieve those cleanup goals. Different technologies are effective for different types of contaminants, and several technologies are often combined to achieve effective treatment. The effectiveness of treatment depends in part on local hydrogeological conditions, which must be evaluated prior to selecting a treatment option.

Given the difficulty and high costs of cleaning up a contaminated aquifer, some communities choose to abandon existing wells and use other water sources, if available. Using alternative supplies is probably more expensive than obtaining drinking water from the original source. A temporary and expensive solution is to purchase bottled water, but it is not a realistic long-term solution for a community's drinking water supply problem. A community might decide to install new wells in a different area of the aquifer. In this case, appropriate siting and monitoring of the new wells are critical to ensure that contaminants do not move into the new water supplies.

Potential Health Problems

A number of microorganisms and thousands of synthetic chemicals have the potential to contaminate ground water. Drinking water containing bacteria and viruses can result in illnesses such as hepatitis, cholera, or giardiasis. Methemoglobinemia or "blue baby syndrome," an illness affecting infants, can be caused by drinking water that is high in nitrates. Benzene, a component of

gasoline, is a known human carcinogen. The serious health effects of lead are well known—learning disabilities in children; nerve, kidney, and liver problems; and pregnancy risks. Concentrations in drinking water of these and other substances are regulated by federal and state laws. Hundreds of other chemicals, however, are not yet regulated, and many of their health effects are unknown or not well understood. Preventing contaminants from reaching the ground water is the best way to reduce the health risks associated with poor drinking water quality.

REGULATIONS TO PROTECT GROUND WATER

Several federal laws help protect ground water quality. The **Safe Drinking Water Act (SDWA)** established three drinking water source protection programs: the Wellhead Protection Program, Sole Source Aquifer Program, and the Source Water Assessment Program. It also called for regulation of the use of underground injection wells for waste disposal and provided EPA and the states with the authority to ensure that drinking water supplied by public water systems meets minimum health standards. The **Clean Water Act** regulates ground water that is shown to have a connection with surface water. It sets standards for allowable pollutant discharges to surface water. The **Resource Conservation and Recovery Act (RCRA)** regulates treatment, storage, and disposal of hazardous and nonhazardous wastes. The **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or Superfund)** authorizes the government to clean up contamination or sources of potential contamination from hazardous waste sites or chemical spills, including those that threaten drinking water supplies. CERCLA includes a "community right-to-know" provision. The **Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)** regulates pesticide use. The **Toxic Substances Control Act (TSCA)** regulates manufactured chemicals.



Getting Up to Speed: GROUND WATER CONTAMINATION



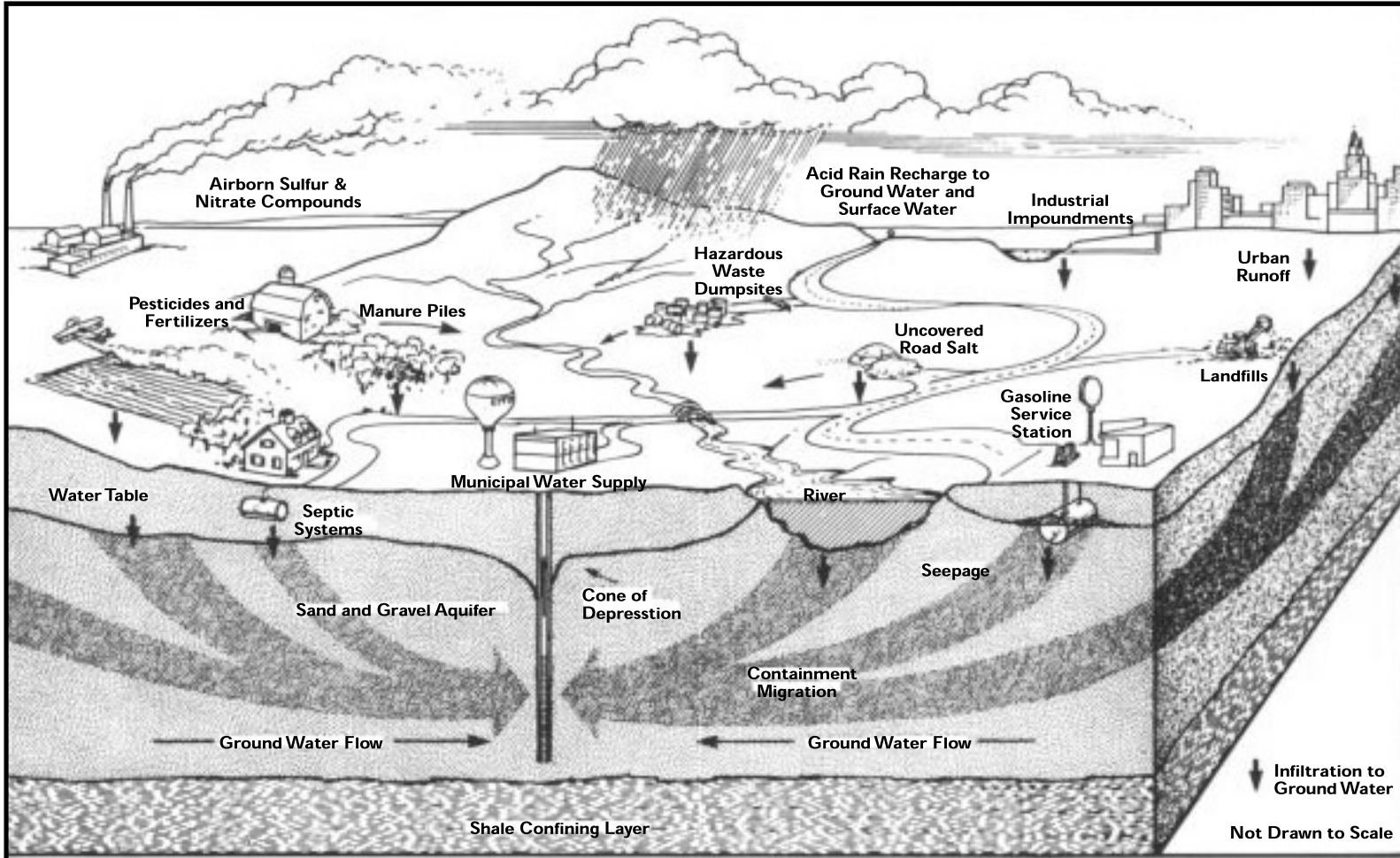
KEY TERMS

- Clean Water Act
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or Superfund)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
- Interaquifer Leakage
- Plume
- Resource Conservation and Recovery Act (RCRA)
- Safe Drinking Water Act
- Toxic Substances Control Act (TSCA)
- Zone of Contribution

"Getting Up to Speed" for section C, "Ground Water Contamination" is adapted from US EPA Seminar Publication. *Wellhead Protection: A Guide for Small Communities*. Chapter 3. EPA/625/R-93/002.

Figure 2

SOME POTENTIAL SOURCES OF GROUND WATER CONTAMINATION



Source: Paly, Melissa and Lee Steppacher. *The Power to Protect: Three Stories about Ground Water*. U.S.E.P.A. Massachusetts Audubon Society and NEIWPCC.

Ryan Raidame, KPB Planner, is submitting a comment on behalf of Travis Penrod. Travis has submitted evidence, attached, that an existing well was missed on the site plan provided by McLane Consulting Ince. The well is located on KPB PID: 055-580-18, legally described as T 5N R 11W SEC 24 SEWARD MERIDIAN KN 0840234 RAVENWOOD SUB NO 4 LOT 10 BLK 5.

PENROD TRAVIS & CRYSTAL
36860 VIRGINIA DR.
Kenai, Alaska 99661

055-580008 | 9

Well Drilling Log --- Kraxberger Drilling Inc. ---- (907) 262 - 4720

48230 Gas Well Road
Soldotna, Alaska 99669

Owner:	LIUSKA, BRUCE/DARLENE	Road / Area:	GADWELL	Well log #	5503
Legal description	LOT 10 BLK 5				
	RAVENWOOD # 4	Builder:		Latitude:	N 60 30.555
City:	SOLDOTNA			Longitude:	W 151 08.430

Depth:	38	Date completed	1/16/2015	Driller	RRK
Yield (gpm)	8	Static level:	32	Casing length:	40
Well completion:	OPEN END			Diameter(in)	6
				Rig type	AR

0-2 TOPSOIL & CLAY

2-5 SAND

5-34 SAND & GRAVEL

34-36 WET SAND & GRAVEL

36-38 WET CEMENTED SAND & GRAVEL

Well Drilling Log ---- Kraxberger Drilling Inc. ----- (907) 262-4720

35055 Gas Well Road

Soldotna, AK 99669

CLIENTNAME: LIUSKA,BRUCE/DARLENE

LOGID: 5503

LEGAL1: LOT 10 BLK 5

PUMPINFO:

LEGAL2: RAVENWOOD # 4

PARCEL#:

DIAMETER: 6

ROADAREA: GADWELL

RIGTYPE: AR

CITY: SOLDOTNA

CASINGTYPE:

BUILDERNAME:

GROUT:

DEPTH: 38

WELLCOMPLETION: OPEN END

DATE: 1/16/2015

DRILLER: RRK

IRON PPM:

YIELDGPM: 8

SCREEN:

STATICLEVEL: 32

CLASS:

CASINGLENGTH: 40

LATITUDE:

CASINGSTICKUP: 2

LONGITUDE: 0

DRILLING REPORT:

0-2 TOPSOI & CLAY

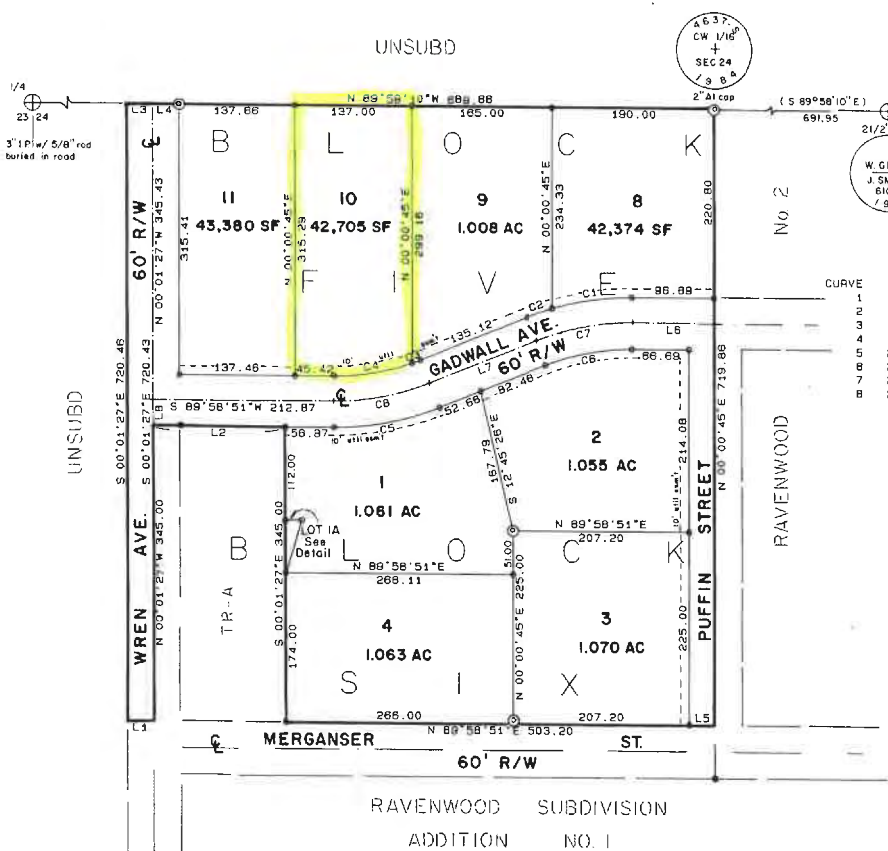
2-5 SAND

5-34 SAND & GRAVEL

34-36 WET SAND & GRAVEL

36-38 WET CEMENTED SAND & GRAVEL

CPB NOTE: THIS SUBDIVISION IS ZONED R-1 SINGLE-FAMILY RESIDENTIAL (CPB 21.44.160).

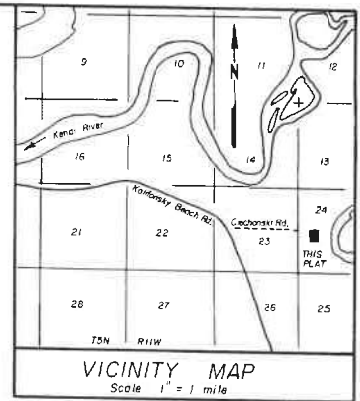


LINE DATA

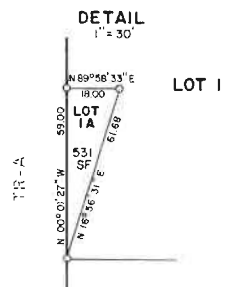
LINE	BEARING	DISTANCE
1	N 89°58'51"E	30.00
2	N 89°58'51"E	158.00
3	S 89°58'10"E	30.00
4	S 89°58'10"E	30.00
5	S 89°58'51"W	30.00
6	N 89°58'15"W	86.68
7	S 89°00'45"W	135.12
8	N 00°01'28"W	30.00

CURVE DATA

CURVE	DELTA	RADIUS	ARC	TANGENT	CHORD	CHORD BRG
1	16°25'32"	330.00	94.80	47.83	94.28	S 81°47'59"W
2	5°34'28"	330.00	32.11	16.07	32.09	S 70°47'59"W
3	2°08'19"	270.00	10.08	5.04	10.08	S 89°04'54"W
4	19°49'47"	270.00	93.45	47.19	92.98	S 80°03'57"W
5	21°58'08"	330.00	126.53	64.05	125.75	N 78°59'48"E
6	22°00'00"	270.00	103.67	52.48	103.04	N 79°00'45"E
7	23°00'00"	300.00	115.19	58.31	114.49	S 79°00'45"W
8	21°58'08"	300.00	115.03	58.23	114.32	S 78°59'48"W



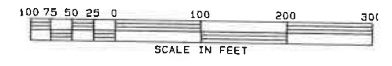
- LEGEND AND NOTES**
- ⊕ Found official survey monument
 - Found 1/2" steel rebar
 - ⊙ Set 2" aluminum cap on 5/8" x 30" steel rebar
 - Set 1/2" x 24" steel rebar
- Basis of Bearing is the record datum of S 89°58'10"E for the north boundary of Ravenwood Subdivision Addition No. 2, KR0 81-40
- All wastewater treatment and disposal systems shall comply with existing law at time of construction.
- Building set back—A building set back of 20 ft is required from all street rights of ways unless a higher standard is approved by resolution of the appropriate planning commission.
- Lot 1A will be conveyed to the owners of Tract A Ravenwood Subdivision Addition No. Two and will not be conveyed separately thereafter.



CERTIFICATE OF APPROVAL BY THE ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

This subdivision has been reviewed in accordance with 16AAC70.044 and is approved subject to any noted restrictions.

SIGNATURE: [Signature] TITLE: EPO DATE: 8-28-84



STATE OF ALASKA
NOTARY PUBLIC
M. SCOTT McLANE
My Commission Expires 12/29/87

84-234

RECORDED FILED 10- Kenai

8/30 1984

2:29 P.M.

M. McLane: ASAC

NOTARY'S ACKNOWLEDGEMENT

FOR: John S. and Betty Smith

Subscribed and sworn before me this 20th day of July, 1984.

My commission expires Nov 7, 1987.

M. Scott McLane
Notary Public for the State of Alaska

CERTIFICATE OF OWNERSHIP AND DEDICATION

We hereby certify that we are the owners of the property shown and described hereon and that we hereby adopt this plan of subdivision and dedicate all right-of-ways to public use and grant all easements to the use shown.

[Signature] John S. Smith

[Signature] Betty Smith AIF [Signature] Betty Smith

PLAT APPROVAL

This plat was approved by the Kenai Peninsula Borough Planning Commission at the meeting of MAY 7, 1984.

Kenai Peninsula Borough
By: [Signature] Authorized Official

RAVENWOOD SUBDIVISION NO. 4

J.S. and Betty Smith owners
Box 213 Soldotna, Alaska 99669

LOCATION

10.163 AC M/L SITUATED IN THE NW1/4 SW1/4 SEC. 24 T5N, R11W S.M., AK. AND THE KENAI PENINSULA BOROUGH.

Prepared by: McLane and Associates, Inc.
Soldotna, Alaska

DATE 4/16-21/1984	SCALE 1" = 100'	BK. NO. 84-16
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KW 84-234

September 6, 2024

To the Kenai Peninsula Borough Planning Commission.

Regarding the application to modify PC2014-20 to allow excavation in the water table and for temporary, localized dewatering.

I have lived on River Hills Drive approximately a third of a mile west of this location since 1993. I own two parcels including my home and an undeveloped adjacent parcel. I am opposed to this modification to allow operations in the water table. This area has increased in population significantly during the time I have lived here and continues to grow as the area is in close proximity to services and the communities of both Kenai and Soldotna. Gravel operations are deleterious to the quality of life in residential areas including noise, potential for fuel spills and increased traffic not to mention impacts on property values.

In recent years residents in this growing community have taken steps to protect their neighborhoods and property values with local option zoning, however, they are powerless to protect themselves from outside their immediate boundaries and rely on the Planning Commission to do so.

Operation in the water table not only has the potential to impact quantity of drinking water but pollution from fuel spills has the potential to contaminate that water. While water wells to assess the water table have been put in place on the property no mention has been made of monitoring for a potential pollution plume nor to maintain this monitoring beyond the life of the project. Any permitted project should include not only such monitoring but a financial bond that would mitigate any damage caused to not only the handful of wells in close proximity but property owners in the entire area. The \$80,000 bond suggested is far short of the millions of dollars of potential impacts to nearby residents and does not address property values nor clean-up in the case of potential spills.

Ponding and lake front property is often used as an excuse to leave deep steep sided borrow pits instead of reclamation from mining. These pits do not provide the natural vegetation and associated wildlife of natural lakes. Such pits are a hazard to children and wildlife who enter such water with steep drop offs (I lived near such pits as a child and remember the hazards). I am opposed to this proposed end plan.

The application refers to limiting crushing of materials during the middle of the night yet allows for excavation around the clock. From this same location a number of years ago operations continued into early morning hours (not from crushing but from heavy equipment use). This noise impacted my location approximately a third of a mile away. Other long term residents can attest to this disturbance that made sleeping near impossible. They can also attest to working with the operator of a new gravel pit in our area over 20 years ago who agreed to limiting hours of operation to protect the neighborhood. There should be no extraction or heavy equipment operations prior to 07:00 AM nor after 07:00 PM in a residential neighborhood. No operations on Sundays were even agreed to by this operator and written into the permit.

Last, I would like to address the short notice given to residents to respond to this application. Less than three weeks from date of notification (approximately 2 weeks from date of letter being received to written comment closure) is inadequate for residents to assess and comment on the many potential issues this application presents.

Sincerely,

David Athons



36655 River Hills Drive, Kenai AK



David Donald <ddonald4488@gmail.com>

modification to PC2014-20 36498 Virginia Street,Sean Code...Attention Betty Click

1 message

David Donald <ddonald4488@gmail.com>

Thu, Sep 5, 2024 at 5:48 PM

To: rraidmae@kbp.us

I live at 47425 Augusta National Road therefore live within half a mile radius of the above mentioned gravel pit.
I have a well and have owned this property since 1987.

I am against anyone digging in the ground water.

If this is passed there should be safe guards put in place and a montering system put in place to protect all wells in the area.

IN the event of a disaster how much insurance will the operator be required to have? Will the borough have any responsibility in relief for the homeowners?

David N Donald
9-5-24

From: mgrtotravel@aol.com
To: [Raidmae, Ryan](#)
Subject: <EXTERNAL-SENDER>Notice of Public Hearing, dated August 21, 2024. Meeting ID 907 714 2200
Date: Thursday, September 5, 2024 10:29:48 PM
Attachments: [Borough's notice of hearing - gravel pit.pdf](#)

CAUTION: This email originated from outside of the KPB system. Please use caution when responding or providing information. Do not click on links or open attachments unless you recognize the sender, know the content is safe and were expecting the communication.

(Sent

9/5/24).

August 27, 2024.

Mr. Ryan Raidmae
(Via Email Correspondence).
Kenai Peninsula Borough,
Planning Department

Subject: Notice of Public Hearing; Monday Sept 9, 2024. Re: SBC 2012 Parcel Number 05527001.
Modification of operation to PC2014-20.

Dear Mr. Raidmae;

I am in receipt of notice dated August 21, 2024 for hearing scheduled September 9, 2024.

As an affected landowner, the sooner the application is posted (and possibly along with C21.29) so that one might learn more as well as make informed decision on the subjects at hand, namely:

1. Excavation in the water table and temporary localized dewatering.
2. Current similar operation(s) in this region, with inspection or incident reports (if any).
3. Safety protocols, including discharge of waste while **maintaining integrity from ground water contamination.**
4. Would future wells now have to be deeper out of necessity? At what cost to landowner and future homeowners?
5. Lack of financial responsibility. Who really owns this particular operation in the event of any fall outs?
6. What monitoring system would suffice, and at whose expense?
7. What amount of bond would be sufficient toward indemnifying and enabling the Borough in the event of a fall out? While one may not readily have available the statutes and regulations differentiating State mining and dredging on private land,

it stands to reason that **unreasonable and unknown risk** (especially where there were apparent concerns in the past) calls

for bonding. How much bonding would have to be commensurate with the exposure as in this case. A **\$50mil bond** might be in order or enough to provide a water system (or systems) to the affected community (or communities) in the event of a fall out.

8. Application, (Mandatory) Procedure and Requirements for consideration of applicant entity:

The application is forth coming, hence making it difficult to comment or make an informed decision.

until then.

9. Meeting set back requirements, or maintaining a justifiable buffer does not appear evidenced or feasible, given the apparent width of the pit. It might be helpful to the operator as well as the public for this to be clarified.

10. Basis for consideration of application as related to the **wells in operation**, and the mandated distance.

a) It is important to call out that the pit is embedded in a residential zoned district,

b) Approved new subdivisions (Kenai Wellness and Sunville Acres Addition) predate this application by the gravel pit.

c) Creating a lot (especially a residential one) is not exclusive of the creation of a well. A residential lot needs its well. Hence these wells (as many as ten) are visibly in breach by the proposed gravel pit.

These lots have all the apparatus of on-going development such as gas and electric (applied for, and in progress before the application in question). I have payment receipts.

Consideration should be given to above fact. Further, the subdivisions bordering Virginia Drive have been openly advertised in the media and person to person under the representation of two real estate agencies - Real Brokers of Alaska and Keller Williams, AK.

To supplement these concerted efforts, giant banners have stood in place identifying the landmark of **residential development;**

"Ciechanski Residences". This action predates the application by the gravel pit operation. The lots were approved for residential dwelling, meaning water wells in tow. Consequently the lots in such situation must be counted or regarded as wells "in existence".

In conclusion, objectivity and fair play would enable and compel us to reevaluate our discounting of active (and in-progress) lots and development sites. We owe this duty toward supporting the very community that we strive to strengthen and promote in our highly celebrated and published "Strategic Development Goals".

This submission is not relegating gravel pits or superseding development sites (especially active and in-progress ones).

We need gravel to build the houses we live in. This may sound like a case of the

"Chicken and the egg", but it is hardly so!

We should consider sparing the Chicken in this case! THE LOTS SUPERSEED THE NEW PROCEDURE BEING ADVOCATED. BY THE GRAVEL PIT.

In conclusion, it is important to note that this comment is not an act of "jumping on a bandwagon of complainers".

We all have a lot at stake. In this scenario Consolidated Development has the most to lose in any event of a failed integrity

in or of operations. Hence; where and what are the safety and safeguards? Clarifying this might help prevent any unjustifiable

negative perception by homeowners or anxiety as may be related to this important subject at hand.

It is important to me! Thank you for your consideration and the opportunity for an input.

Respectfully,

Ray Oyemi

Consolidated Development & Mgmt., LLC.