From: RANTEN, STEVE (DNR) <STEVEN.RANTEN@dnr.wa.gov>

**Sent:** Tuesday, January 31, 2017 10:59 AM

**To:** John Cooper

**Subject:** RE: Notice of Development Application

Review of the parcels and aerial photography shows a Class IV G Forest Practices application will be needed for the conversion of forest land.

From: John Cooper [mailto:johnc@co.skagit.wa.us]

Sent: Tuesday, January 31, 2017 10:48 AM

To: Gresham, Doug (ECY) < DGRE461@ECY.WA.GOV >; Fritzen, Bob (ECY) < BFRI461@ECY.WA.GOV >; Thompson, Doug S (DFW) < Doug.Thompson@dfw.wa.gov >; Cole, Wendy D (DFW) < Wendy.Cole@dfw.wa.gov >; Warinner, Robert J (DFW) < Robert.Warinner@dfw.wa.gov >; RANTEN, STEVE (DNR) < STEVEN.RANTEN@dnr.wa.gov >; Agata McIntyre (AgataM@nwcleanairwa.gov >; Shane W. Whitney < shaneww@co.skagit.wa.us >; Dan Berentson < danb@co.skagit.wa.us >; Forrest Jones < forrestj@co.skagit.wa.us >; Bonnie LaCount < bonniel@co.skagit.wa.us >; don@cityofanacortes.org; libbyb@cityofanacortes.org; Kaehler, Gretchen (DAHP) < Gretchen.Kaehler@DAHP.wa.gov >; 'Tim Hyatt' < THyatt@skagitcoop.org >; 'bcladoosby@swinomish.com' < bcladoosby@swinomish.com >; Wooten, Tom < tomwooten@samishtribe.nsn.us >; mclucastaylor@qwestoffice.net Subject: Notice of Development Application

Attached is a notice of development application for expansion of the Lake Erie gravel mining operation. Please review and comment as appropriate.

Sincerely,

John Cooper, LG. LHg
Senior Natural Resource Planner/Geologist
Skagit County Planning and Development Services
1800 Continental Place
Mount Vernon, WA 98273
www.skagitcounty.net/planning
Ph 360-416-1334
johnc@co.skagit.wa.us

From:

Grage, Libby < LibbyB@cityofanacortes.org >

Sent:

Tuesday, January 31, 2017 10:51 AM

To: Cc: John Cooper Measamer, Don

Subject:

RE: Notice of Development Application

Hi John,

Could I please have a copy of the site plan, SEPA checklist, any environmental studies, and traffic report for this

proposal?

Mayps

Thanks!

**Libby Grage** | Planning, Community & Economic Development Department P.O. Box 547 | 904 6<sup>th</sup> Street | Anacortes, WA 98221 360.299.1986 (work) | libbyb@cityofanacortes.org | www.cityofanacortes.org

My incoming and outgoing email messages are subject to public disclosure requirements per RCW 42.56.

From: John Cooper [mailto:johnc@co.skagit.wa.us]

Sent: Tuesday, January 31, 2017 10:48 AM

To: doug.gresham@ecy.wa.gov; Fritzen, Bob (ECY) (BFRI461@ECY.WA.GOV) <BFRI461@ECY.WA.GOV>;

'doug.thompson@DFW.wa.gov' <doug.thompson@DFW.wa.gov>; Cole, Wendy (DFW) (Wendy.Cole@dfw.wa.gov)

<Wendy.Cole@dfw.wa.gov>; 'Robert.warinner@dfw.wa.gov' <<u>Robert.warinner@dfw.wa.gov</u>>; RANTEN, STEVE (DNR)

(STEVEN.RANTEN@dnr.wa.gov) <STEVEN.RANTEN@dnr.wa.gov>; Agata McIntyre (AgataM@nwcleanairwa.gov)

<AgataM@nwcleanairwa.gov>; Shane W. Whitney <shaneww@co.skagit.wa.us>; Dan Berentson

<danb@co.skagit.wa.us>; Forrest Jones <forrestj@co.skagit.wa.us>; Bonnie LaCount <bonniel@co.skagit.wa.us>;

Measamer, Don <don@cityofanacortes.org>; Grage, Libby <LibbyB@cityofanacortes.org>;

'gretchen.kaehler@dahp.wa.gov' <gretchen.kaehler@dahp.wa.gov>; 'Tim Hyatt' <THyatt@skagitcoop.org>;

'bcladoosby@swinomish.com' < bcladoosby@swinomish.com >; 'tomwooten@samishtribe.nsn.us'

<tomwooten@samishtribe.nsn.us>; mclucastaylor@gwestoffice.net

Subject: Notice of Development Application

Attached is a notice of development application for expansion of the Lake Erie gravel mining operation. Please review and comment as appropriate.

Sincerely,

John Cooper, LG. LHg
Senior Natural Resource Planner/Geologist
Skagit County Planning and Development Services
1800 Continental Place
Mount Vernon, WA 98273
www.skagitcounty.net/planning
Ph 360-416-1334
johnc@co.skagit.wa.us

February 6, 2017

John Cooper, Planning/Geologist Skagit County Planning and Development Services 1800 Continental Place Mount Vernon, Wash. 98273

Dear Mr. Cooper,

I have lived at 13664 Rosario Rd. since 1981. My address is at the junction of Marine Drive and Rosario Rd.

Mr. Wooding has been a good neighbor all of those years, and he has been a supportive member of the community since I first met him in 1977 when I moved my family to Anacortes.

I support his application for a special use permit to expand his mining operation from the current 17.78 acres to the requested 53.5 acre operation.

If you have any questions please contact me at 360 201-9236.

Singerely,

Frank Jeretzky 13664 Rosario Rd.

Anacortes, Washington 98221

13666

February 6, 2017

Paul and Janice Flinn 4929 Sharpe Rd. Anacortes, WA 98221

Dear Mr. Cooper,

We are very concerned about the expansion of the mining operation from 17.8 acres to 53.5 acres on the site located near the intersection of Rosario Road and Marine Drive (permit PL16-0556) for the following reasons:

- 1. We are concerned about the adverse effects of increased gravel mining operations will have on property values located near the operation. Gravel mines create very ugly scars on the land that will be there long after mining operations have ceased. Anacortes is a beautiful island that attracts many visitors and potential homebuyers. The expansion of the mine would certainly detract from the beauty of the island.
- 2. We are concerned about the effects the expansion of the gravel pit will have on ground water contamination. There are several small nearby lakes that would be affected by expansion of this mine. This would lead to increased nutrients in the pond water system that will lead to large algal blooms. This could lead to local extinction of sensitive wildlife species.
- 3. We oppose the expansion of the gravel mine because it would increase noise levels for residents located near the mine. It would also increase truck traffic. It is not hard to Imagine the impact of 26 truckloads per day would have on these small island roads that are very busy with tourists during the summer. This could result in increased road fatalities and certainly detract from the beauty of the island.
- 4. Finally, there is no need for another gravel pit mine in Anacortes. There is already a large mine located near Heart Lake. Fidalgo island is a beautiful location to live and vacation on. There is no reason to destroy its beauty permanently with an ugly and noisy gravel pit that will remain a permanent scar virtually forever.

Sincerely.

Paul W. Flinn

Paul W. Flinn

lanice A. Flinn

From:

Lori Anderson on behalf of Planning & Development Services

Sent:

Thursday, February 09, 2017 8:19 AM

To:

John Cooper

Subject:

FW: PDS Comments

#### From Dept Email

Lori Anderson, Permit Technician Skagit County Planning & Development Services 1800 Continental Place Mount Vernon, WA 98273 360-416-1320 loria@co.skagit.wa.us

#### www.skagitcounty.net/planning

From: website@co.skagit.wa.us [mailto:website@co.skagit.wa.us]

Sent: Wednesday, February 08, 2017 10:35 PM

To: Planning & Development Services

**Subject:** PDS Comments

Name: Jessie Brown

Address: 13060 South Wildwood Lane

City: Anacortes

State: wa Zip: 98221

email: jessb901@yahoo.com

Phone: 360-708-6482 PermitProposal: PL16-0556

Comments: I fully support this application.

I have lived near the proposed location since 2009 and have had no issues with noise or any other disturbances

or annoyances. they have always been thoughtful and courtious with thier activities. The use planned is already a permitted activity and should be allowed to continue

From Host Address: 67.168.59.5

Date and time received: 2/8/2017 10:32:16 PM

From:

website

Sent:

Friday, February 10, 2017 3:45 PM

To:

Planning & Development Services

**Subject:** 

**PDS Comments** 

Name: Doug Gresham

Address: 3190 160th Avenue SE

City: Bellevue State: WA Zip: 98008

email: doug.gresham@ecy.wa.gov

Phone: (425) 649-7199 PermitProposal: PL16-0556 Comments: February 10, 2017

John Cooper, Planner/Geologist

Skagit County Planning and Development Services Department

1800 Continental Place Mt. Vernon, WA 98273

RE: Ecology Comments on the Lake Erie Gravel Mine Expansion Project File # PL16-0556

#### Dear Mr. Cooper:

Thank you for sending information on the Lake Erie gravel mine expansion project to the Washington State Department of Ecology (Ecology) for our review and comment. As the Ecology Wetland Specialist responsible for Skagit County, I wish to have the following comments entered into the record. The project submittal provided to us included a notice of development application.

The Lake Erie gravel mine is located southwest of Lake Erie near the intersection of Rosario Road and Marine Way Drive. This 53.5- acre property consists of eight lots (Parcel # P90028, P19108, P19155, P19158, P19161, P19162, P19164, and P19165). There is an existing gravel mine occupying approximately 17.78 acres in the northwest corner of the property that would be expanded to the east and south. The proposed action involves removing approximately 60,000 tons of gravel per year over the next 50 years, which amounts to 13 truckloads per day.

This gravel mine is located southwest of Lake Erie, east of Burrows Bay, and north of a large wetland depression. Because the gravel mine, as well as the roads that the trucks would export gravel on, are uphill of these water bodies, there is the potential for turbid storm water to runoff into them. There is also the potential that hydrology in the large wetland south of the gravel mine may be negatively influenced by lowering the groundwater table.

The wetlands that occur near this property are waters of the state subject to the applicable requirements of state law (see RCW 90.48 and WAC 173.201A) and Section 401 of the Clean Water Act (33 USC §1341) and 40 CFR Section 121.2. If any wetland impacts do occur, the applicant shall obtain all necessary state and federal authorizations prior to beginning any ground-disturbing activities or vegetation removal. To obtain state and federal authorization, the following items are required:

- A delineation of all wetlands near the property by a qualified wetland biologist, and survey of the delineated wetland boundaries.
- A jurisdictional determination from the U.S. Army Corps of Engineers stating whether the delineated wetlands near the property are under federal jurisdiction.
- Ratings of all wetlands near this property using the current Washington State Wetland Rating System for Western Washington.
- A critical area report describing wetland conditions near the property, wetland data sheets, wetland rating forms, and photographs.
- A Joint Aquatic Resources Permit Application form for impacts to jurisdictional wetlands.
- A mitigation plan for unavoidable wetland and buffer impacts following the standards in Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance (Ecology Publication #06-06-011a).

If you have any questions or would like to discuss my comments, please give me a call at (425) 649 7199 or send an email to Doug. Gresham@ecy.wa.gov.

Sincerely,

Doug Gresham, PWS Wetland Specialist Shorelands and Environmental Assistance Program DG:awp

E-cc: Paul Anderson, Ecology

From Host Address: 198.239.77.118

Date and time received: 2/10/2017 3:44:17 PM



## STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

Northwest Regional Office 3190 160th SE Bellevue, Washington 98008-5452 (425) 649-7000

February 10, 2017

John Cooper, Planner/Geologist Skagit County Planning and Development Services Department 1800 Continental Place Mt. Vernon, WA 98273

RE: Ecology Comments on the Lake Erie Gravel Mine Expansion Project File # PL16-0556

Dear Mr. Cooper:

Thank you for sending information on the Lake Erie gravel mine expansion project to the Washington State Department of Ecology (Ecology) for our review and comment. As the Ecology Wetland Specialist responsible for Skagit County, I wish to have the following comments entered into the record. The project submittal provided to us included a notice of development application.

The Lake Erie gravel mine is located southwest of Lake Erie near the intersection of Rosario Road and Marine Way Drive. This 53.5- acre property consists of eight lots (Parcel # P90028, P19108, P19155, P19158, P19161, P19162, P19164, and P19165). There is an existing gravel mine occupying approximately 17.78 acres in the northwest corner of the property that would be expanded to the east and south. The proposed action involves removing approximately 60,000 tons of gravel per year over the next 50 years, which amounts to 13 truckloads per day.

This gravel mine is located southwest of Lake Erie, east of Burrows Bay, and north of a large wetland depression. Because the gravel mine, as well as the roads that the trucks would export gravel on, are uphill of these water bodies, there is the potential for turbid storm water to runoff into them. There is also the potential that hydrology in the large wetland south of the gravel mine may be negatively influenced by lowering the groundwater table.

The wetlands that occur near this property are waters of the state subject to the applicable requirements of state law (see RCW 90.48 and WAC 173.201A) and Section 401 of the Clean Water Act (33 USC §1341) and 40 CFR Section 121.2. If any wetland impacts do occur, the applicant shall obtain all necessary state and federal authorizations prior to beginning any ground-disturbing activities or vegetation removal. To obtain state and federal authorization, the following items are required:

John Cooper February 10, 2017 Page 2

- A delineation of all wetlands near the property by a qualified wetland biologist, and survey of the delineated wetland boundaries.
- A jurisdictional determination from the U.S. Army Corps of Engineers stating whether the delineated wetlands near the property are under federal jurisdiction.
- Ratings of all wetlands near this property using the current *Washington State Wetland Rating System for Western Washington*.
- A critical area report describing wetland conditions near the property, wetland data sheets, wetland rating forms, and photographs.
- A Joint Aquatic Resources Permit Application form for impacts to jurisdictional wetlands.
- A mitigation plan for unavoidable wetland and buffer impacts following the standards in *Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance* (Ecology Publication #06-06-011a).

If you have any questions or would like to discuss my comments, please give me a call at (425) 649-7199 or send an email to <u>Doug.Gresham@ecv.wa.gov</u>.

Sincerely,

Doug Gresham, PWS Wetland Specialist

Shorelands and Environmental Assistance Program

DG:awp

E-cc: Paul Anderson, Ecology

Doug Hesham

From:

website

Sent:

Sunday, February 12, 2017 9:05 AM Planning & Development Services

To: Subject:

**PDS Comments** 

Name: Abby Jacobs

Address: 13159 Deane Drive

City: Anacortes State: WA Zip: 98221

email: <a href="mailto:abbyjacobs@live.com">abbyjacobs@live.com</a>
Phone: 360-293-5052

PermitProposal: PL16-0556

Comments: As a resident of South Fidalgo Island, I am deeply concerned about the proposal to increase the Lake Erie Pit mining operation. The Island is a sensitive environment and I fear this dramatic increase in mining will have extensive negative environmental impact on the following:

land stability

forested area destruction wildlife habitat destruction water runoff and water pollution

environmental contaminations from trucking operations (oil, diesel,gas, etc).

quality of life for residents (noise, air pollution, allergen pollution, water contamination, a dangerous increase in heavy truck traffic on narrow county roads in residential areas, potential landslides)

destruction of county roads due to multiple heavy trucks in and out of the quarry area

rock debris and dust

These potential issues merit a careful environmental impact review.

I am also extremely concerned that the notice I received does not outline any requirements of Lake Erie Pit 1 LLC to restore the land if they indeed do gain approval of this permit to dramatically increase their mining operation. If the permit is ever approved, it must require an extensive topographical, tree, and wildlife habitat restoration.

Fidalgo Island is a sensitive environment. It is a rare and beautiful, highly valued natural destination for residents and visitors alike.

This mining operation increase plan is not in the best interests of South Fidalgo Island and I strongly urge the county to seriously consider the environmental impacts and decline the permit. Thank you.

From Host Address: 66.235.13.75

Date and time received: 2/12/2017 9:03:33 AM

From: website

Sent: Sunday, February 12, 2017 1:35 PM
To: Planning & Development Services

**Subject:** PDS Comments

Name: Sherry Hill

Address: 13159 Deane Dr

City: Anacortes State: WA Zip: 98221

email: sherryhill@live.com Phone: 360-540-5900

PermitProposal: File # PL16-0556

Comments: I am writing in reference to the Lake Erie Pit 1 LLC application to expand from ~17 acre operation

to a  $\sim$ 53 acre operation.

Prior to approval, I believe a full environmental impact study should be required. The request (if approved) would triple the current operation. My concerns are regarding the ability of the current roads to handle the significant increase in heavy duty equipment traffic, the disturbance to the wildlife and natural habitat areas of the island, the runoff/pollution into the local waters (e.g. Lake Erie, Puget Sound), the noise pollution for those such as myself that live in the area, and the destabilization of the surrounding land.

Please require a full environmental study and make that study public prior to considering this for approval.

if this is approved, please include a restoration clause that requires immediate restoration of any part of the mined land that is inactive for 90 days. Or other such requirement to ensure those of us that live on the island are not living with an abandoned mine that leaves an unsafe and unusable eye sore.

Thank you.

From Host Address: 66.235.13.75

Date and time received: 2/12/2017 1:33:43 PM

Sent:

From:

Friday, February 17, 2017 4:05 PM

website

To: Planning & Development Services

Subject: PDS Comments

Name: Brinkley Meyers Address: 13650 Rosario Road

City: Anacortes State: WA Zip: 98221

email: brinkley.m.meyers@gmail.com

Phone: 4438344293

PermitProposal: File # PL16-0556 Comments: To Whom It May Concern -

My name is Brinkley Meyers. My husband and I own 13650 Rosario Road, Anacortes, WA - a parcel directly next to the quarry in question.

We are vehemently opposed to expansion of the current mining operations. One of the primary reasons we are not supportive of this application is that expanding the operations will increase the noise to a point where it will make being outside unpleasant. Given the geography of this area, loud sounds carry. This is particularly true for the quarry, given that the high gravel walls amplify noises created. We already contend with truck noise during the week, as well as the racket from weekend activities in the quarry. I'm not sure you are aware, but the owners of this parcel have condoned usage of their land for weapon target practice. Regularly, we hear extremely loud and unnerving gunfire from various weapons (primarily rifles). These sounds already make life more unpleasant than we'd like and affect my sense of safety. We believe that adding to the existing din will do additional and continued damage to our ability to make use of our property.

Additionally, we are concerned about what the added truck traffic and noise will do to our property value. Should we decide to sell our property, we believe that these things will drive away potential buyers. This will cause financial damage.

Yet another concern is safety - there have already been several landslides on the hill, and rocks continue to tumble constantly on this side (western side) of the hill. We are concerned that, should operations increase, the hill may not be able to sustain vibrations and continued soil/gravel removal from the operations, and will slide onto the road, onto our property, and potentially into our house. This could cause loss of life to us, motorists, and/or the numerous cyclists that use this stretch of road on a daily basis.

I wish I could cite legal statues or cases to support our opinion, but we returned from several weeks away vesterday and have not had the time to do the proper research.

Please let me know if you have any questions or concerns, and I would be happy to address them. I will also be appearing at the hearing to speak against approval.

Best -Brinkley Meyers

From: Lori Anderson on behalf of Planning & Development Services

Sent: Friday, February 24, 2017 2:43 PM

**To:** John Cooper **Subject:** FW: PDS Comments

#### From Dept email

Lori Anderson, Permit Technician Skagit County Planning & Development Services 1800 Continental Place Mount Vernon, WA 98273 360-416-1320 loria@co.skagit.wa.us

#### www.skagitcounty.net/planning

From: website@co.skagit.wa.us [mailto:website@co.skagit.wa.us]

**Sent:** Friday, February 17, 2017 2:20 PM **To:** Planning & Development Services

**Subject:** PDS Comments

Name: C. Thomas Moser

Address: 1204 Cleveland Avenue

City: MOUNT VERNON

State: WA Zip: 98274

email: tmoser@advocateslg.com

Phone: 360-428-7900

PermitProposal: PL16-0556

Comments: I represent Bill and Pam Doddridge, owners of adjacent property, P19166, 19139, 109020 and 109021. They received your 1-31-2017 Notice of Development Application at their California address last week because they were away from home when the Notice arrived. Mrs. Doddridge went to the Planning Department on February 10 to get a copy of the file so that I could help them understand the proposal and make meaningful comments by the deadline of February 17. She did not get the file until today, February 17. In addition the Notice says John Cooper is the assigned planner, so I called to talk with him about the project last week and his voice mail said he was out of the office until February 17.

The late notice and the delayed release of the application file by the Department on the last day allowed for comments makes it impossible to submit reasoned comments about a proposed project that my clients know nothing about. We request an extension of time to comment on this proposed project.

Please add me to the list of people to be advised of all hearings on this project and any distribution lists so that I inform my clients about the progress of this application.

Tom Moser

From Host Address: 24.113.138.134

From: website

**Sent:** Friday, February 17, 2017 4:00 PM **To:** Planning & Development Services

Subject: PDS Comments

Name: C. Thomas Moser

Address: 1204 Cleveland Avenue

City: MOUNT VERNON

State: WA Zip: 98274

email: tmoser@advocateslg.com

Phone: 360-428-7900

PermitProposal: PL16-0556

Comments: This is my second submittal on behalf of Bill and Pam Doddridge, owners of residential property adjacent to this project. They own Devils Elbow Lake which is a recreational and residential use private lake. The applicant says the excavation will be within 100 foot of property lines. In looking at Exhibit 6 of the Maul Foster Alongi submittal it appears the permit boundary will be within 50 foot. One of our concerns is that the "bottom of mining surface" is substantially lower than Devils Elbow Lake, but above the "Inferred Water Table" as shown on that drawing. What is not show is the depth of the Lake. The Lake is shown at about 360 foot elevation and the bottom of the surface mining is 250 foot. There is no analysis of what the loss of 60,000 tons of material per year will do to the Lake and whether there is any hydrological connection between the Lake and adjacent property and the water table. The water table is show from 250 foot elevation on my clients' property and 175 foot elevation on the applicant's property. I should mention that the PDF file I got late this afternoon shows the same drawing as Figure 8, but the copy given to my client is Figure 6.

The applicant admits this project will create noise, heat, vibration and potential water pollution. My clients own residential property and are concerned about all those factors, plus the increased truck traffic generated by the project.

Thank you for considering these comments.

Tom Moser

From Host Address: 24.113.138.134

Date and time received: 2/17/2017 3:59:03 PM

From: PDS comments

Sent: Tuesday, February 21, 2017 6:53 AM

To: John Cooper

**Subject:** FW: Regarding File# PL16-0556

From: Brinkley Meyers [mailto:brinkley.m.meyers@gmail.com]

Sent: Friday, February 17, 2017 4:00 PM

To: PDS comments; Planning & Development Services

Subject: Re: Regarding File# PL16-0556

Apologies for the previous email!

To Whom It May Concern -

My name is Brinkley Meyers. My husband and I own 13650 Rosario Road, Anacortes, WA - a parcel directly next to the quarry in question.

We are vehemently opposed to expansion of the current mining operations. One of the primary reasons we are not supportive of this application is that expanding the operations will increase the noise to a point where it will make being outside unpleasant. Given the geography of this area, loud sounds carry. This is particularly true for the quarry, given that the high gravel walls amplify noises created. We already contend with truck noise during the week, as well as the racket from weekend activities in the quarry. I'm not sure you are aware, but the owners of this parcel have condoned usage of their land for weapon target practice. Regularly, we hear extremely loud and unnerving gunfire from various weapons (primarily rifles). These sounds already make life more unpleasant than we'd like and affect my sense of safety. We believe that adding to the existing din will do additional and continued damage to our ability to make use of our property.

Additionally, we are concerned about what the added truck traffic and noise will do to our property value. Should we decide to sell our property, we believe that these things will drive away potential buyers. This will cause financial damage.

Yet another concern is safety - there have already been several landslides on the hill, and rocks continue to tumble constantly on this side (western side) of the hill. We are concerned that, should operations increase, the hill may not be able to sustain vibrations and continued soil/gravel removal from the operations, and will slide onto the road, onto our property, and potentially into our house. This could cause loss of life to us, motorists, and/or the numerous cyclists that use this stretch of road on a daily basis.

I wish I could cite legal statues or cases to support our opinion, but we returned from several weeks away vesterday and have not had the time to do the proper research.

Please let me know if you have any questions or concerns, and I would be happy to address them. I will also be appearing at the hearing to speak against approval.

Best -Brinkley Meyers

From: Lori Anderson on behalf of Planning & Development Services

Sent: Friday, February 24, 2017 2:40 PM

**To:** John Cooper **Subject:** FW: PDS Comments

#### From Dept Email

Lori Anderson, Permit Technician Skagit County Planning & Development Services 1800 Continental Place Mount Vernon, WA 98273 360-416-1320 loria@co.skagit.wa.us

#### www.skagitcounty.net/planning

From: website@co.skagit.wa.us [mailto:website@co.skagit.wa.us]

**Sent:** Friday, February 17, 2017 4:30 PM **To:** Planning & Development Services

Subject: PDS Comments

Name: Velma V McKelvey Address: 1175 Baughman Dr

City: Claremont

State: CA Zip: 91711

email: vvmckelvev@gmail.com,

Phone: 9096241786

PermitProposal: PL16-0556

Comments: As a property owner very close to the above intersection (13240 Burrows View Lane, Anacortes,

WA) I ask you, to please not open a new gravel pit at now busy roads.

Thank you for your consideration of our concerns.

Sincerely,

Velma V, and George S McKelvey

From Host Address: 47.138.137.17

Date and time received: 2/17/2017 4:25:11 PM

# State gets OK for night street work

BY JOAN PRINGLE American staff writer

The nights may become a little noisy starting in May when the Washington State Department of Transportation begins repaving the Highway 20 Spur through Anacortes.

The City Council approved a noise variance for the state at its Monday meeting for up to 30 non-consecutive nights between May and November.

Due to the work's impact on traffic, the state asked for the variance to do the work after 10 p.m. and before 7 a.m. for up to the 30 nights. The council previously approved a request for up to 11 nights.

The state will be repaying the roadway and installing Americans with Disabilities Act compliant features from Sharpes Corner to the Commercial Avenue roundabout and along 12th Street and Oakes Avenue to the ferry terminal. Commercial Avenual Avenual Commercial Commercial Avenual Commercial Commerci

nue maintenance is the city's responsibility.

The work will also include reconfigurating the R Avenue intersection, a regrade at O Avenue, pedestrian and bicycle detours, and reconstruction of sidewalks, curbs and gutters.

The work will require single-lane closures on the first leg at various times throughout the day and on the second leg primarily at night.

The state is requiring that the contractor abide by noise reduction measures, such as using mitigation shields or noise blankets around construction and equipment, notifying residents within 500 feet of the work zone of the night time work, and providing a number to call in case of complaints.

Moise follow state moise guidelines - I mo noise hotore 7 a.m.

The RI Zoned, built land should also be given property vights. We are taxed as highly as ec can justify,

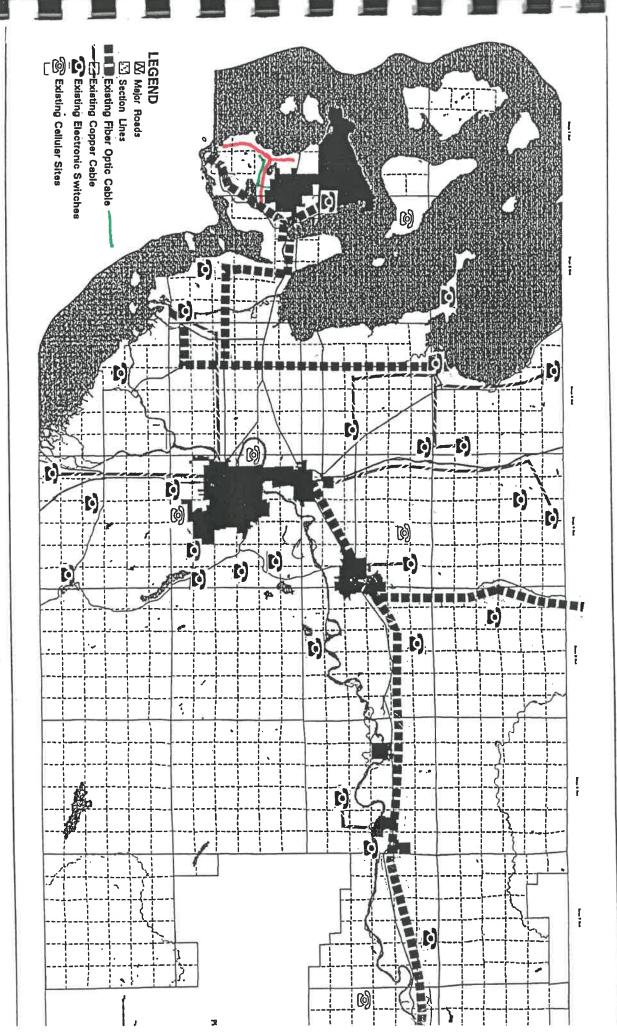
13:() wooding has always been a good naighbor, but he meet owner needs limits.

ef 2 heen

Carol Elhers dropped this off for you.

0 --- 1

E hiers



1026 ĮŠ. 20500 E 42 Ew) A A 25) スたない 40

Remote 8 : ta.

Skagit County Planning and Development Services.

RE: Special Use Permit application # PL16-0056

Mr. Wooding is requesting continued use of his gravel pit that has been in operation since the late 1960s. This is one of the few pits on Fidalgo Island and has been a source of employment for many individuals through the years. Other companies have utilized this pit through Lake Erie Trucking and all have kept the road clean, junk cars and garbage removed (that has been illegally dumped there) consequently being good neighbors.

I live off of Rosario Road about a quarter mile away and have not been inconvenienced in any way or subjected to additional truck or equipment noise.

Taking these comments in regard I believe this Permit should be GRANTED.

Thank You for taking these comments in consideration

Sincerely,

Kaaren Malson

13337 Deane Drive

Anacortes, WA. 98221

War JOHN COOPERS Please DO NOT ALLOW THIS APPLICATION to BE APPROVED. SINCE THE ORIGINAL MINING OPERATION BEENN MANY YEARS DEO, MUCH HOS CHANGED IN THIS NEIGHBOR HOOD. THERE IS RECREATIONAL, RESIDENTIALIAND MANY NATURAL AND BENIFICIAL ATTRIBUTES WHICH WILL BE IMPACTED BY THE NOISE, DUST AND POLLUTANTS WHICH WILL BE ATTRIBUTED, TO THIS OPERATION. PLEASE STUDY THIS APPLICATION AND THE SURROUNDING AREA FOR ENVIORNMENTAL IMPACTS WHICH WILL DEFINITLY NOT BE OF BENEFIT TO THOSE, INCLUDING SPECIES WHICH LIVE IN THE DREAS AROUND AND ADJALENT TO THIS PROPOSED OPERATION.
THERE ARE OTHER OPTIONS AVAILABLE FOR THE MATERIALS WHICH WILL BE EXTRACTED FROM THIS OPERATION. THANK-YOY

THANK-YOU SINCERELY THOMAS F. HAYKO

MAR 1 6 2020

LAND OWNER RESIDENT

13616 Anyloneck Las Anacontes, 98221

RECEIVED

SKAGIT COUNTY

DEC 2 0 XUIS 1:05pm

December 19, 2018

ŝ

John Cooper, LG, LHg Geologist/Hydrogeologist/Natural Resource Planner Skagit County Planning and Development Service 1800 Continental Place Mount Vernon, WA 98273

RE: Reference Document: PL16-0556

Dear Mr. Cooper,

The Del Mar Board recently became aware of the proposed expansion of a sand and gravel pit currently owned and operated by Lake Erie Pit LLC. Mr. James C. Bolton requested and received three documents from your office related to the expansion. These documents have been forwarded to Del Mar Community Service (DMCS) for our review and documentation. The documents received are listed below:

- 1. PL16-0556 Environmental Review Staff Report.
- 2. Hydrogeologic Site Assessment Report, Lake Erie Pit Expansion (Maul Foster Alongi, 9-28-2016).
- 3. Observation Well Installation, Lake Erie Pit Expansion (Maul Foster Alongi, 9-28-2017).

DMCS is a small corporation owned by our property owners. We currently purchase our potable water (also used for fire flow) from the City of Anacortes. We deliver that water to our membership under a contractual basis with each member through a distribution system of piping, valves, and pumps (owned and maintained by DMCS). Other than the management of several other minor community amenities, which is detailed in our bylaws, the distribution of this water is our primary responsibility.

Our service area extends (by a Memorandum of Agreement with the City of Anacortes and PUD, 2002) along the west side of Fidalgo Island and includes areas at The Point, Alexander Beach (N. Del Mar), properties along Marine Drive, Salty Lane, Windward, Rosario Road, Orca Lane, Biz Point Road and the Seaview subdivision (Figure 1).

We have a six-inch water main that is installed approximately 6-10 ft from the west side of Rosario Road (near Dodson Canyon) and it may be impacted by the proposed expansion. We do not feel that the SEPA evaluation (completed by your office), the information provided in the Hydrogeologic Site Assessment Report (2016) and the subsequent installation of the observation well (9-17-2017) by Maul Foster Alongi are sufficient to mitigate our concerns about the long term effect of the proposed expansion.



Figure 1. Service area of DMCS

Our concerns are based on basic hydrogeological modeling, incomplete data collection and the quality of data obtained during the installation of the observation well. We would like to summarize each concern respectively.

A. Maul Foster Alongi constructed a ground water map that uses basic hydrogeological principals, and predicts groundwater flow will migrate from the pit in a northerly direction (their Figure 6, 2016). It appears, however, that in their construction of the potentiometric surface, they used incompatible data and omitted additional information that they would have gathered if they had completed a more thorough reconnaissance of the area. For example, they appear to use DOE information obtained from registered water wells (in addition to other information) without knowing the following 1) the actual lithological and stratigraphic characteristics of the material that the water wells penetrated during their installation, 2) the climatological history of the area during the installation, 3) pumping histories of existing wells as each new well was installed nor, 4) the homogeneity of the stratigraphy between the pit and these wells. Finally, in addition to all of the geologic factors listed above, there is also the possibility of considerable anthropogenic interference caused by road runoff and construction since the time of the installation of the various wells.

Del Mar suspects that the area of the sand and gravel pit is a point of recharge. It is topographically higher than the surrounding terrain. In addition, based on grain size descriptions that were collected during the installation of the observation well it appears that most of the uppermost layers are composed of medium-to coarse sand and gravels (Hydraulic conductivities (K) in similar materials are reported to greater than  $10^{-5}$  to  $10^{-4}$ ). We believe, however, that we can unequivocally demonstrate that a substantial amount of ground water flows directly from the area near the proposed expansion directly under Rosario Road and to various points west and southwest. We tentatively propose that there is a layer, reported in the driller's log, that indicates the possibility of groundwater at 209 ft depth. When the depth on the log is converted to elevation (236 ft) this layer approximately corresponds with the elevation of a significant spring on our property at Dodson Canyon.

B. Dodson Canyon is one of several crescent-shaped topographic depressions immediately west of Rosario Rd and the proposed expansion. It has formed from historical slides due to ground water seepage and normal surface erosion. A series of springs occur along Dodson Canyon approximately about 50-60 ft below the level of Rosario Road. DMCS historically (30 years) used the spring as a water source under a registered water right with the State of Washington. In 2007, Dodson Canyon experienced a slide that significantly damaged our collection system at the spring. Upon inspection, DMCS decided that the

embankment above and below our collection system could not be stabilized and as such would be subject to additional slides.

On December 18, 2018 several members of the DMCS Board of Directors revisited Dodson Canyon. We brought a drone to collect photographs and obtain GPS elevations of the remnants of the collector system, the embankment, and Rosario Road. We have included some of those photos and elevations for your review.

It is our recommendation that precise elevation measurements and additional investigation should be completed in this area before the permit to expand vertically is authorized.

Our recommendation is based on several points of concern:

- 1) The flow of rainwater to any specific water table is "buffered" by the permeability of the overlying strata and the vertical thickness of this strata. If the pit is allowed to expand vertically, there will obviously less media to "capture" some percentage of the total amount of surface water migrating though the body as well as the time between the rainfall event and the time in which the vertical migration of the rainwater reaches the aquifer. As such, if the rate of additional downward-moving water is greater than the aquifer is capable of dispersing ( $K_{horizontal}$ ), the height of the water table will naturally rise (or mound) thereby increasing the hydrogeologic head between the pit and the surrounding discharge points.
- 2) This phenomenon could become more problematic if extreme rainfall events, as predicted in climate change models, occur in the future.

The consequence of a decreased stratigraphic buffer from a single rainfall event with more precipitation (or a greater frequency of events) could cause a blowout at Dodson Canyon (as well as elsewhere in the vicinity). Because of the current slope of the embankment (we estimate 50-60 degrees) between the spring and Rosario Road, any blowout could undermine both our water main as well as the roadbed itself.

giade: [122739'30.23'W		NAME OF REAL PROPERTY.	A MINISTRAN, MYSSS	UNIONOMY - GN
19 3 W. F.	A Medi	DIVIN		10 20 11
<b>"是"</b>				1 1 1
100				
1-3			11 1	<b>用性的</b>
	St. Mark			<b>月</b> 月日 6月
	3 A .	4 4 12	To the	<b>第一篇</b>
			2	
	V 11		LA CA	1
			1	
1				
16	4			

Figure 2. Drone photograph at collection point in Dodson Canyon.

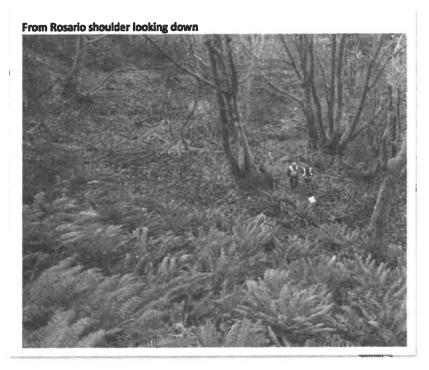


Figure 3. Drone photograph. Note spring location near drone case.

C. Finally, we have reviewed the drilling log and well construction diagram submitted by Maul Foster Alongi (2017). Maul Foster Alongi contracted Aquatech Well Drilling to install the boring and, according to the well log, Aquatech used as Pumps/Star 30 K to complete the borehole using air rotary.

We reviewed manufacturers' specifications for drill rigs similar to the Pumps/Star 30 K. Most of the rigs employ an on-board air compressor that is capable of producing 1000 CFM at 350 PSI. The flow and pressure are necessary to engage the rotary hammer, to break up the material through which the bit is penetrating, and to blow the debris that has been created by the hammer out of the boring.

We find it difficult to accept the degree of specificity described in the well log submitted by the onsite geologist without a more thorough description of the method of his sample collection, a physical review of the cores, or photos of the cores.

In addition, we also believe that the airflow and pressure required to lift the sand and gravel out of the borehole could push interstitial water away from the borehole. As a consequence without substantial standby time at points in which air loss is identified by the driller, the rate of penetration has changed (also identified by the driller), or changes in the sound of the air hammer is identified (again by the driller), the presence of water-bearing strata would be missed. There is no indication on the boring log that the geologist requested standby time at any point/time during the installation of the boring.

Finally, based on well-known hydrogeological characteristic of sediments (hydraulic conductivity, etc.) and the change of grain size and silt/clay content (as documented in the actual boring log) that intervals of perched water did occur but were either not reported or missed due to the method of drilling.

We respectfully submit three additional figures to support this observation. Figures 4a and 4b illustrate the range of Hydraulic Conductivities (K) measured and expected in granular material. Figure 5 is a section of the actual drilling log constructed as part of the subsequent study by Maul Foster Alongi (2017).

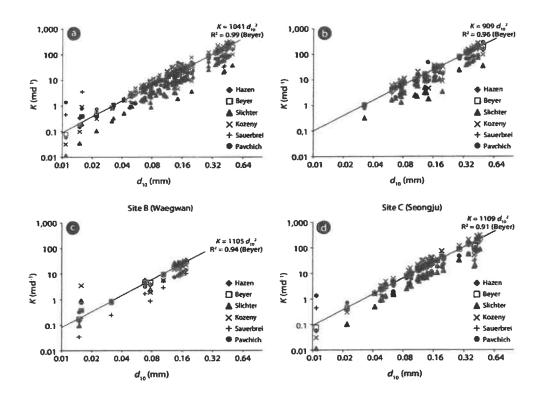


Figure 4a. Hydraulic Conductivity (K) compared to effective grain size. Source (https://www.researchgate.net/figure/Hydraulic-conductivity-K-versus-effective-grain-size-d10-determined-by-using-the-six fig5\_264019554)

The following tables show representative values of hydraulic conductivity for various unconsolidated sedimentary materials, sedimentary rocks and crystalline rocks (from <u>Domenico and Schwartz 1990</u>):

Unconsolidated Sed	limentary Materials
Material	Hydraulic Conductivity (m/sec)
Gravel	3×10 <sup>-4</sup> to 3×10 <sup>-2</sup>
Coarse sand	9×10 <sup>-7</sup> to 6×10 <sup>-3</sup>
Medium sand	9×10 <sup>-7</sup> to 5×10 <sup>-4</sup>
Fine sand	2×10 <sup>-7</sup> to 2×10 <sup>-4</sup>
Silt, loess	1×10 <sup>-9</sup> to 2×10 <sup>-5</sup>
Till	1×10 <sup>-12</sup> to 2×10 <sup>-6</sup>
Clay	1×10 <sup>-11</sup> to 4.7×10 <sup>-9</sup>
Unweathered marine clay	8×10 <sup>-13</sup> to.2×10 <sup>-9</sup>

Figure 4b. Range of Hydraulic Conductivities in granular material. Source: http://www.aqtesolv.com/aquifer-tests/aquifer\_properties.htm

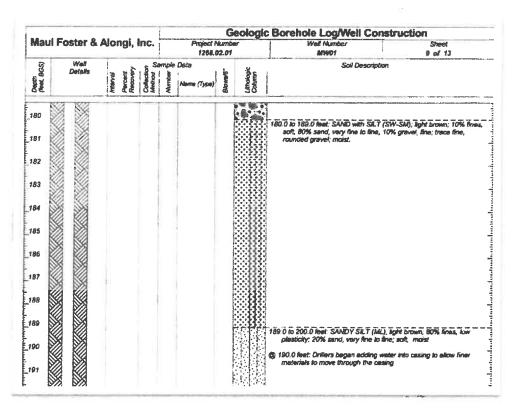


Figure 5. Section of boring log submitted by Maul Foster Alongi (2017).

In summary, we are concerned that the current environmental investigation used to support the additional expansion is incomplete and could become demonstrably problematic in the event that the project is approved (in its current form) without consideration of the potential hydrogeological consequences or slide damage to our water main in the area of Dodson Canyon as well as slope instability issues in the area of Edith Point and Sunset Lane.

Furthermore, it should be emphasized that any geological failure in this area not only would prohibit Del Mar Service from supplying potable water to a significant number of its members, it could also have a significant impact to the structural integrity of Rosario Road, a major traffic artery along the southwest side of Fidalgo Island.

Thank you for your consideration in this matter.

Margaret Catzen-Brown, President of Del Mar Community Service, Inc.
360.399.7089

meg@delwarcommunity.com

C. Finally, we have reviewed the drilling log and well construction diagram submitted by Maul Foster Alongi (2017). Maul Foster Alongi contracted Aquatech Well Drilling to install the boring and, according to the well log, Aquatech used as Pumps/Star 30 K to complete the borehole using air rotary.

We reviewed manufacturers' specifications for drill rigs similar to the Pumps/Star 30 K. Most of the rigs employ an on-board air compressor that is capable of producing 1000 CFM at 350 PSI. The flow and pressure are necessary to engage the rotary hammer, to break up the material through which the bit is penetrating, and to blow the debris that has been created by the hammer out of the boring.

We find it difficult to accept the degree of specificity described in the well log submitted by the onsite geologist without a more thorough description of the method of his sample collection, a physical review of the cores, or photos of the cores.

In addition, we also believe that the airflow and pressure required to lift the sand and gravel out of the borehole could push interstitial water away from the borehole. As a consequence without substantial standby time at points in which air loss is identified by the driller, the rate of penetration has changed (also identified by the driller), or changes in the sound of the air hammer is identified (again by the driller), the presence of water-bearing strata would be missed. There is no indication on the boring log that the geologist requested standby time at any point/time during the installation of the boring.

Finally, based on well-known hydrogeological characteristic of sediments (hydraulic conductivity, etc.) and the change of grain size and silt/clay content (as documented in the actual boring log) that intervals of perched water did occur but were either not reported or missed due to the method of drilling.

We respectfully submit three additional figures to support this observation. Figures 4a and 4b illustrate the range of Hydraulic Conductivities (K) measured and expected in granular material. Figure 5 is a section of the actual drilling log constructed as part of the subsequent study by Maul Foster Alongi (2017).

Sent: Wedi To: blidesig	nesday, December 19, 201 n1@comcast.net idson Canyon 01	8 6:48 AM			
Take-of	f elevation 268' fro	om top of yellow case	: (Location of main o	pening of water collection	site)
	48°25'53.547k 122°39'30.23'W	PARAMETER PROPERTY.			

Figure 2. Drone photograph at collection point in Dodson Canyon.

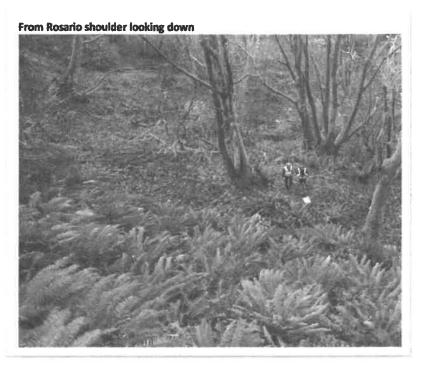


Figure 3. Drone photograph. Note spring location near drone case.

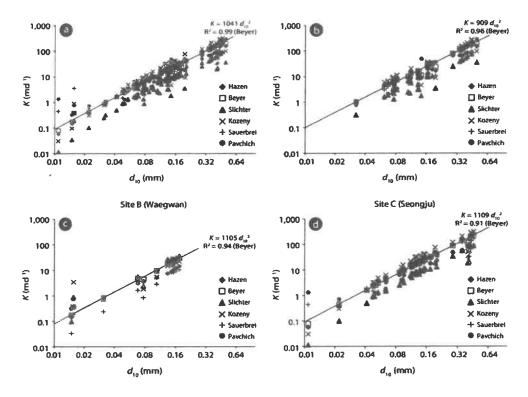


Figure 4a. Hydraulic Conductivity (K) compared to effective grain size. Source (<a href="https://www.researchgate.net/figure/Hydraulic-conductivity-K-versus-effective-grain-size-d10-determined-by-using-the-six\_fig5\_264019554">https://www.researchgate.net/figure/Hydraulic-conductivity-K-versus-effective-grain-size-d10-determined-by-using-the-six\_fig5\_264019554</a>)

The following tables show representative values of hydraulic conductivity for various unconsolidated sedimentary materials, sedimentary rocks and crystalline rocks (from <a href="Domenico and Schwartz 1990">Domenico and Schwartz 1990</a>):

Unconsolidated Se	edimentary Materials		
Material	Hydraulic Conductivity (m/sec)		
Gravel	3×10 <sup>-4</sup> to 3×10 <sup>-2</sup>		
Coarse sand	9×10 <sup>-7</sup> to 6×10 <sup>-3</sup>		
Medium sand	9×10 <sup>-7</sup> to 5×10 <sup>-4</sup>		
Fine sand	2×10 <sup>-7</sup> to 2×10 <sup>-4</sup>		
Silt, loess	1×10 <sup>-9</sup> to 2×10 <sup>-5</sup>		
Till	1×10 <sup>-12</sup> to 2×10 <sup>-6</sup>		
Clay	1×10 <sup>-11</sup> to 4.7×10 <sup>-9</sup>		
Unweathered marine clay	8×10 <sup>-13</sup> to 2×10 <sup>-9</sup>		

Figure 4b. Range of Hydraulic Conductivities in granular material. Source: http://www.aqtesolv.com/aquifer-tests/aquifer\_properties.htm

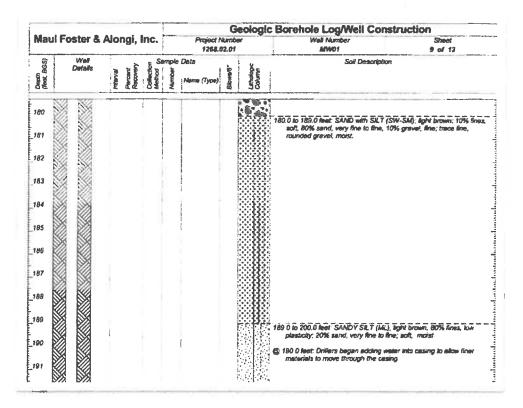


Figure 5. Section of boring log submitted by Maul Foster Alongi (2017).

In summary, we are concerned that the current environmental investigation used to support the additional expansion is incomplete and could become demonstrably problematic in the event that the project is approved (in its current form) without consideration of the potential hydrogeological consequences or slide damage to our water main in the area of Dodson Canyon as well as slope instability issues in the area of Edith Point and Sunset Lane.

Furthermore, it should be emphasized that any geological failure in this area not only would prohibit Del Mar Service from supplying potable water to a significant number of its members, it could also have a significant impact to the structural integrity of Rosario Road, a major traffic artery along the southwest side of Fidalgo Island.

Thank you for your consideration in this matter.

Margaret Catzen-Brown, President of Del Mar Community Service, Inc.
360.399.7089

meg@delwarcommunity.com

December 19, 2018

John Cooper, LG, LHg Geologist/Hydrogeologist/Natural Resource Planner Skagit County Planning and Development Service 1800 Continental Place Mount Vernon, WA 98273 DEC 2 0 2018 105pm skagit county

RE: Reference Document: PL16-0556

Dear Mr. Cooper,

The Del Mar Board recently became aware of the proposed expansion of a sand and gravel pit currently owned and operated by Lake Erie Pit LLC. Mr. James C. Bolton requested and received three documents from your office related to the expansion. These documents have been forwarded to Del Mar Community Service (DMCS) for our review and documentation. The documents received are listed below:

- 1. PL16-0556 Environmental Review Staff Report.
- 2. Hydrogeologic Site Assessment Report, Lake Erie Pit Expansion (Maul Foster Alongi, 9-28-2016).
- 3. Observation Well Installation, Lake Erie Pit Expansion (Maul Foster Alongi, 9-28-2017).

DMCS is a small corporation owned by our property owners. We currently purchase our potable water (also used for fire flow) from the City of Anacortes. We deliver that water to our membership under a contractual basis with each member through a distribution system of piping, valves, and pumps (owned and maintained by DMCS). Other than the management of several other minor community amenities, which is detailed in our bylaws, the distribution of this water is our primary responsibility.

Our service area extends (by a Memorandum of Agreement with the City of Anacortes and PUD, 2002) along the west side of Fidalgo Island and includes areas at The Point, Alexander Beach (N. Del Mar), properties along Marine Drive, Salty Lane, Windward, Rosario Road, Orca Lane, Biz Point Road and the Seaview subdivision (Figure 1).

We have a six-inch water main that is installed approximately 6-10 ft from the west side of Rosario Road (near Dodson Canyon) and it may be impacted by the proposed expansion. We do not feel that the SEPA evaluation (completed by your office), the information provided in the Hydrogeologic Site Assessment Report (2016) and the subsequent installation of the observation well (9-17-2017) by Maul Foster Alongi are sufficient to mitigate our concerns about the long term effect of the proposed expansion.

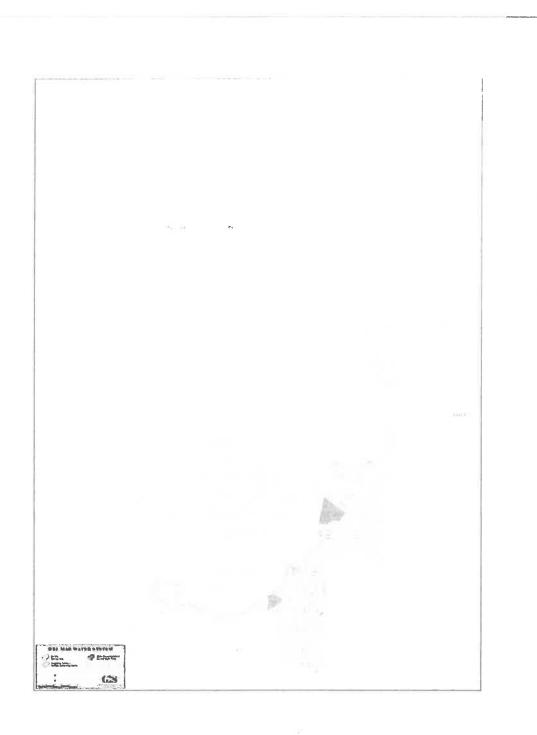


Figure 1. Service area of DMCS

Our concerns are based on basic hydrogeological modeling, incomplete data collection and the quality of data obtained during the installation of the observation well. We would like to summarize each concern respectively.

A. Maul Foster Alongi constructed a ground water map that uses basic hydrogeological principals, and predicts groundwater flow will migrate from the pit in a northerly direction (their Figure 6, 2016). It appears, however, that in their construction of the potentiometric surface, they used incompatible data and omitted additional information that they would have gathered if they had completed a more thorough reconnaissance of the area. For example, they appear to use DOE information obtained from registered water wells (in addition to other information) without knowing the following 1) the actual lithological and stratigraphic characteristics of the material that the water wells penetrated during their installation, 2) the climatological history of the area during the installation, 3) pumping histories of existing wells as each new well was installed nor, 4) the homogeneity of the stratigraphy between the pit and these wells. Finally, in addition to all of the geologic factors listed above, there is also the possibility of considerable anthropogenic interference caused by road runoff and construction since the time of the installation of the various wells.

Del Mar suspects that the area of the sand and gravel pit is a point of recharge. It is topographically higher than the surrounding terrain. In addition, based on grain size descriptions that were collected during the installation of the observation well it appears that most of the uppermost layers are composed of medium-to coarse sand and gravels (Hydraulic conductivities (K) in similar materials are reported to greater than  $10^{-5}$  to  $10^{-4}$ ). We believe, however, that we can unequivocally demonstrate that a substantial amount of ground water flows directly from the area near the proposed expansion directly under Rosario Road and to various points west and southwest. We tentatively propose that there is a layer, reported in the driller's log, that indicates the possibility of groundwater at 209 ft depth. When the depth on the log is converted to elevation (236 ft) this layer approximately corresponds with the elevation of a significant spring on our property at Dodson Canyon.

B. Dodson Canyon is one of several crescent-shaped topographic depressions immediately west of Rosario Rd and the proposed expansion. It has formed from historical slides due to ground water seepage and normal surface erosion. A series of springs occur along Dodson Canyon approximately about 50-60 ft below the level of Rosario Road. DMCS historically (30 years) used the spring as a water source under a registered water right with the State of Washington. In 2007, Dodson Canyon experienced a slide that significantly damaged our collection system at the spring. Upon inspection, DMCS decided that the

embankment above and below our collection system could not be stabilized and as such would be subject to additional slides.

On December 18, 2018 several members of the DMCS Board of Directors revisited Dodson Canyon. We brought a drone to collect photographs and obtain GPS elevations of the remnants of the collector system, the embankment, and Rosario Road. We have included some of those photos and elevations for your review.

It is our recommendation that precise elevation measurements and additional investigation should be completed in this area before the permit to expand vertically is authorized.

Our recommendation is based on several points of concern:

- 1) The flow of rainwater to any specific water table is "buffered" by the permeability of the overlying strata and the vertical thickness of this strata. If the pit is allowed to expand vertically, there will obviously less media to "capture" some percentage of the total amount of surface water migrating though the body as well as the time between the rainfall event and the time in which the vertical migration of the rainwater reaches the aquifer. As such, if the rate of additional downward-moving water is greater than the aquifer is capable of dispersing ( $K_{horizontal}$ ), the height of the water table will naturally rise (or mound) thereby increasing the hydrogeologic head between the pit and the surrounding discharge points.
- 2) This phenomenon could become more problematic if extreme rainfall events, as predicted in climate change models, occur in the future.

The consequence of a decreased stratigraphic buffer from a single rainfall event with more precipitation (or a greater frequency of events) could cause a blowout at Dodson Canyon (as well as elsewhere in the vicinity). Because of the current slope of the embankment (we estimate 50-60 degrees) between the spring and Rosario Road, any blowout could undermine both our water main as well as the roadbed itself.

From:

Andy Dunn <adunn@rh2.com>

Sent: To: Monday, June 12, 2017 4:22 PM John Cooper

Cc:

Pam Doddridge; Bill Doddridge; Tom Moser

Subject:

PL16-0556 Lake Erie Pit Expansion questions

Hi John,

RH2 has been hired by Bill and Pam Doddridge to review the proposed Lake Erie Gravel Pit Expansion (PL16-0556), which is adjacent to their property. I am currently trying to gather all information available and come up to speed on the project.

I recently got a copy of the County's file from Keith Luna, which was originally shared with Pam in February 17, 2017, and am following up with Tawnee Clearbrook to see if there was anything new that has been produced/filed since then.

I have a couple questions for you:

- 1. Has the public hearing before the Skagit County Hearing Examiner been held yet?
  - a. If not, is it scheduled?
- 2. Has the County made a final decision on the application for the mining special use permit?
  - a. If not, do you have a rough timeframe for when you would expect a decision to be made?

Thanks and feel free to give me a call if you would like to discuss,

Andrew B. Dunn, LG, LHG, CWRE (WA) | RH2 Engineering
Project Hydrogeologist/Water Rights
22722 29<sup>th</sup> Drive SE, Suite 210
Bothell, WA 98021
P: 425.951.5448
C: 425.780.8619
F: 425.951.5401
adunn@rh2.com
www.rh2.com

From: Andy Dunn <adunn@rh2.com>

**Sent:** Thursday, June 15, 2017 3:57 PM

To: John Cooper

Cc: Bill Doddridge; Pam Doddridge

**Subject:** Comments on PL16-0556

John,

RH2 Engineering, Inc. (RH2) has been hired by the Doddridge Family (Skagit County Parcel Numbers P19166, P109021, P109020, and P19139) to review the proposed expansion of the Lake Erie Pit (Skagit County Application Number PL16-0556), which is on property located immediately north of their property. The Doddridge Family holds water rights S1-24656C, R1-24623C, and R1-00078C associated with Devil's Elbow Lake. These water rights allow for the storage of water in the lake and for the water in the lake to be used for recreation, wildlife refuge, stock watering, irrigation, and fire protection.

RH2 has reviewed the September 28, 2016, Maul Foster Alongi, Inc. (MFA) report titled "Hydrogeologic Site Assessment Report, Lake Erie Pit Expansion, Skagit County, Washington." Based on review of this report, RH2 would like to offer the following points for your consideration.

No geotechnical borings, resource protection, or observation wells appear to have been drilled on the Lake Erie Pit property by the project proponent. This raises concerns in the following areas:

## Confirmation of the Mining Plan:

It has been my experience that for most sand and gravel mines, the project proponent usually drills the deposit in order to accurately quantify the extent of the reserves and to confirm that there are no subsurface features (shallow bedrock, discontinuity of sand and gravel, interbeds of undesirable material, perched aquifers, etc.) that might reduce the potential volume to be mined and could change the economics of the project. However, in this case this step does not appear to have been performed. Instead, the project appears to rely on neighboring water well logs and past mining experience in the northern part of the deposit for plan development.

For an example of a situation where sand and gravel mining into a hillside caused a change in the hydrogeology of an area, see the High Rock Aquifer Break of October 1993

(https://fortress.wa.gov/ecy/publications/documents/oftr9521.pdf). In this document I would encourage you to pay special attention to the recommendations of that study on Page 18, which indicate that, "Mine operators should install and periodically monitor observation wells sited between mining areas and local water supply sources." In this case Devil's Elbow Lake would be considered the water supply source since the Doddridge Family has water rights for that lake.

## Lack of Consideration Given to Shallow Groundwater Identified on Some Well Logs:

The groundwater contours shown in MFA Figure No. 6 is for the regional aquifer that is tapped by the potable water supply wells. MFA Figure No. 6 shows that the maximum groundwater elevation in the regional aquifer occurs in the vicinity of Devil's Elbow Lake and groundwater flow radiates away from that location primarily to the east, north, and west. However, these contours are for the regional aquifer that is being used for potable supply. There were a few shallower wells located near Devil's Elbow Lake that tap a perched aquifer at a much higher elevation than the groundwater elevation shown in MFA Figure No. 6. Even though these two shallow wells are located on the same property as deep wells, the shallow wells are not depicted on the B-B' cross section (MFA Figure No. 8). The shallow and deep wells on those two properties are documented in **Table 1**.

Table 1. Comparison of Shallow and Deep Wells Completed on Same Properties Near Devil's Elbow Lake

Name	Parcel	Well Completed Depth (ft)	Depth to Static Water Level (ft)	Depth to Water-bearing Zone (ft)	Shown on MFA Cross Section B-B'?
Stark	P19138	25	9	20-25	No
Kopkowski	P19138	141	97	136-147	Yes
Mayer	P109020	45	25	33-35	No
Mayer	P109020	260	180	182-210	Yes

Assuming that the ground surface elevation of each well on the same property is approximately the same, the water-bearing zones tapped by the two shallow wells would vertically be within the area to be excavated.

The ground surface at all but two of the wells used to identify the groundwater elevation is lower than the proposed bottom of the mining surface (elevation 250 feet). The exception are the two wells located to the south and east of Devil's Elbow Lake on parcel Nos. P19138 and P109020. However, as mentioned above, the occurrence of the shallow perched aquifer on those parcels was ignored in the cross section (MFA Figure No. 8). The lower ground surface elevation of the wells utilized in making the cross section creates a bias in the results since a higher perched aquifer, that could occur within the proposed mineral extraction area, cannot physically be identified in those wells.

The existence of Devil's Elbow Lake, and the occurrence of shallow groundwater near the lake on parcel Nos. P109020 and P19138 supports that there could be a perched aquifer associated with the lake. The proposed mine will excavate to a depth that is 113 feet below the surface of Devil's Elbow Lake and no subsurface data exists for the area between the lake and proposed excavation to understand how mining might impact the lake.

### Vertical Buffer Compliance Enforcement:

In the MFA report, and other application documents, it is referenced that the mining will stay either 10, or 50 feet above the water table (for instance see the last paragraph on page 1 of the MFA report [10 feet], and the 4/18/2017 letter from McLucas & Associates, Inc. to Thomas Moser [50 feet]). However, how will the miners know where the water table is beneath the site if they don't have any on-site monitor wells that they can measure? Relying on interpolation from off-site wells, not owned by the project proponent, will not allow regulatory agencies to double-check the water level as mining progresses and mining too close to the water table wouldn't be identified until the water table is breached.

#### Possible remedy

In the 4/18/2017 letter from McLucas & Associates, Inc. to Thomas Moser, the project proponent offered to drill a single monitoring well in Phase 2, once they have reached 200 feet from the south property boundary. While I agree that drilling monitoring wells is a good way to make sure that mining does not impact Devil's Elbow Lake or the regional aquifer, I feel that it should occur now, as opposed to at some time in the distant future, and that at least one well should be drilled into the deeper regional aquifer to ensure compliance with the vertical buffer, while at least one well should be drilled along the southern property line adjacent to Devil's Elbow Lake to specifically look for the existence of the shallow perched aquifer associated with Devil's Elbow Lake to see if it extends into the area proposed to be mined. If it does, then that should necessitate additional restrictions on mining in that area, or require additional study to determine if/how that area can be mined safely without threatening the lake and associated perched aquifer.

Thanks and feel free to contact me if you have any questions or would like to discuss,

Andrew B. Dunn, LG, LHG, CWRE (WA) | **RH2 Engineering**Project Hydrogeologist/Water Rights
22722 29<sup>th</sup> Drive SE, Suite 210
Bothell, WA 98021
P: 425.951.5448

P: 425.951.5448 C: 425.780.8619 F: 425.951.5401

From: Sent: Andy Dunn <adunn@rh2.com> Tuesday, June 20, 2017 4:33 PM

To:

John Cooper

Subject:

Wetland questions on PL16-0556

Hey John,

A wetland specialist in the office just took a look at the Skagit Wetlands & Critical Areas, LLC report dated February 24, 2017, and titled "Critical Areas Reconnaissance PL16-0555" (typo in the number). We had received an electronic copy of most of this report from the Doddridge's attorney.

The wetland specialist was tasked with reviewing this document to see if the wetlands occurring on the Doddridge property have been properly characterized and have the correct setbacks identified.

She had the following questions based on her review of this report:

- 1. In the version of the report that we were provided, we only have Appendices A-C, but are missing Appendix D Wetland and Fish & Wildlife Assessment, Edison Engineering 2014. Do you have a copy of that appendix that you could share?
- 2. On the Appendix C Wetland Rating Form, she noticed that no figures were included (far right column). It has been her recent experience that the Department of Ecology requires figures to be included with the wetland rating. Without the figures, it is difficult for her, or anyone else, to review the answers and determine if the Wetland Category III rating is correct.
- 3. Is the February 24, 2017, version of this report the most recent, or has the report been updated/amended to include additional information, possibly including figures?

#### Thanks,

Andy Dunn, LG, LHG, CWRE (WA)

P: 425.951.5448 C: 425.780.8619

From: John Cooper [mailto:johnc@co.skagit.wa.us]

Sent: Monday, June 19, 2017 3:29 PM To: Andy Dunn <adunn@rh2.com> Subject: RE: Comments on PL16-0556

Thank you Andy. Yes I did receive your email and have forwarded the document to the applicants hydrogeologist for review and comment.

John Cooper, LG. LHg
Senior Natural Resource Planner/Geologist
Skagit County Planning and Development Services
1800 Continental Place
Mount Vernon, WA 98273
www.skagitcounty.net/planning
Ph 360-416-1334

### johnc@co.skagit.wa.us

From: Andy Dunn [mailto:adunn@rh2.com]
Sent: Monday, June 19, 2017 3:09 PM

To: John Cooper

Subject: RE: Comments on PL16-0556

Hey John,

Can you confirm that you received the comments that I sent last week (email below)?

Thanks,

Andy Dunn, LG, LHG, CWRE (WA) P: 425.951.5448 C: 425.780.8619

From: Andy Dunn

Sent: Thursday, June 15, 2017 3:57 PM

To: 'johnc@co.skagit.wa.us' <johnc@co.skagit.wa.us>

Cc: 'Bill Doddridge' <bill@jewelryexchange.com'>; Pam Doddridge <pam.doddridge@gmail.com'>

Subject: Comments on PL16-0556

John,

RH2 Engineering, Inc. (RH2) has been hired by the Doddridge Family (Skagit County Parcel Numbers P19166, P109021, P109020, and P19139) to review the proposed expansion of the Lake Erie Pit (Skagit County Application Number PL16-0556), which is on property located immediately north of their property. The Doddridge Family holds water rights S1-24656C, R1-24623C, and R1-00078C associated with Devil's Elbow Lake. These water rights allow for the storage of water in the lake and for the water in the lake to be used for recreation, wildlife refuge, stock watering, irrigation, and fire protection.

RH2 has reviewed the September 28, 2016, Maul Foster Alongi, Inc. (MFA) report titled "Hydrogeologic Site Assessment Report, Lake Erie Pit Expansion, Skagit County, Washington." Based on review of this report, RH2 would like to offer the following points for your consideration.

No geotechnical borings, resource protection, or observation wells appear to have been drilled on the Lake Erie Pit property by the project proponent. This raises concerns in the following areas:

### Confirmation of the Mining Plan:

It has been my experience that for most sand and gravel mines, the project proponent usually drills the deposit in order to accurately quantify the extent of the reserves and to confirm that there are no subsurface features (shallow bedrock, discontinuity of sand and gravel, interbeds of undesirable material, perched aquifers, etc.) that might reduce the potential volume to be mined and could change the economics of the project. However, in this case this step does not appear to have been performed. Instead, the project appears to rely on neighboring water well logs and past mining experience in the northern part of the deposit for plan development.

For an example of a situation where sand and gravel mining into a hillside caused a change in the hydrogeology of an area, see the High Rock Aquifer Break of October 1993 (https://fortress.wa.gov/ecy/publications/documents/oftr9521.pdf). In this document I would encourage you to pay

special attention to the recommendations of that study on Page 18, which indicate that, "Mine operators should install and periodically monitor observation wells sited between mining areas and local water supply sources." In this case Devil's Elbow Lake would be considered the water supply source since the Doddridge Family has water rights for that lake.

## Lack of Consideration Given to Shallow Groundwater Identified on Some Well Logs:

The groundwater contours shown in MFA Figure No. 6 is for the regional aquifer that is tapped by the potable water supply wells. MFA Figure No. 6 shows that the maximum groundwater elevation in the regional aquifer occurs in the vicinity of Devil's Elbow Lake and groundwater flow radiates away from that location primarily to the east, north, and west. However, these contours are for the regional aquifer that is being used for potable supply. There were a few shallower wells located near Devil's Elbow Lake that tap a perched aquifer at a much higher elevation than the groundwater elevation shown in MFA Figure No. 6. Even though these two shallow wells are located on the same property as deep wells, the shallow wells are not depicted on the B-B' cross section (MFA Figure No. 8). The shallow and deep wells on those two properties are documented in **Table 1**.

Table 1. Comparison of Shallow and Deep Wells Completed on Same Properties Near Devil's Elbow Lake

Name	Parcel	Well Completed Depth (ft)	Depth to Static Water Level (ft)	Depth to Water-bearing Zone (ft)	Shown on MFA Cross Section B-B'?
Stark	P19138	25	9	20-25	No
Kopkowski	P19138	141	97	136-147	Yes
Mayer	P109020	45	25	33-35	No
Mayer	P109020	260	180	182-210	Yes

Assuming that the ground surface elevation of each well on the same property is approximately the same, the water-bearing zones tapped by the two shallow wells would vertically be within the area to be excavated.

The ground surface at all but two of the wells used to identify the groundwater elevation is lower than the proposed bottom of the mining surface (elevation 250 feet). The exception are the two wells located to the south and east of Devil's Elbow Lake on parcel Nos. P19138 and P109020. However, as mentioned above, the occurrence of the shallow perched aquifer on those parcels was ignored in the cross section (MFA Figure No. 8). The lower ground surface elevation of the wells utilized in making the cross section creates a bias in the results since a higher perched aquifer, that could occur within the proposed mineral extraction area, cannot physically be identified in those wells.

The existence of Devil's Elbow Lake, and the occurrence of shallow groundwater near the lake on parcel Nos. P109020 and P19138 supports that there could be a perched aquifer associated with the lake. The proposed mine will excavate to a depth that is 113 feet below the surface of Devil's Elbow Lake and no subsurface data exists for the area between the lake and proposed excavation to understand how mining might impact the lake.

#### Vertical Buffer Compliance Enforcement:

In the MFA report, and other application documents, it is referenced that the mining will stay either 10, or 50 feet above the water table (for instance see the last paragraph on page 1 of the MFA report [10 feet], and the 4/18/2017 letter from McLucas & Associates, Inc. to Thomas Moser [50 feet]). However, how will the miners know where the water table is beneath the site if they don't have any on-site monitor wells that they can measure? Relying on interpolation from off-site wells, not owned by the project proponent, will not allow regulatory agencies to double-check the water level as mining progresses and mining too close to the water table wouldn't be identified until the water table is breached.

## Possible remedy

In the 4/18/2017 letter from McLucas & Associates, Inc. to Thomas Moser, the project proponent offered to drill a single monitoring well in Phase 2, once they have reached 200 feet from the south property boundary. While I agree that drilling monitoring wells is a good way to make sure that mining does not impact Devil's Elbow Lake or the regional

. . .

aquifer, I feel that it should occur now, as opposed to at some time in the distant future, and that at least one well should be drilled into the deeper regional aquifer to ensure compliance with the vertical buffer, while at least one well should be drilled along the southern property line adjacent to Devil's Elbow Lake to specifically look for the existence of the shallow perched aquifer associated with Devil's Elbow Lake to see if it extends into the area proposed to be mined. If it does, then that should necessitate additional restrictions on mining in that area, or require additional study to determine if/how that area can be mined safely without threatening the lake and associated perched aquifer.

Thanks and feel free to contact me if you have any questions or would like to discuss,

Andrew B. Dunn, LG, LHG, CWRE (WA) | RH2 Engineering
Project Hydrogeologist/Water Rights
22722 29<sup>th</sup> Drive SE, Suite 210
Bothell, WA 98021
P: 425.951.5448
C: 425.780.8619
F: 425.951.5401
adunn@rh2.com
www.rh2.com

From:

Andy Dunn <adunn@rh2.com> Friday, June 30, 2017 11:56 AM

Sent:

John Cooper

To: Cc:

Bill Doddridge; Pam Doddridge; Tom Moser

Subject:

RE: Wetland questions on PL16-0556

Hey John,

I had a chance to speak with Bill Doddridge today and he indicated that he and Pam would be satisfied if Lake Erie LLC removed Parcel P19164 from the mining special use application.

Thanks and let me know if you have any questions,

Andy Dunn, LG, LHG, CWRE (WA)

P: 425.951.5448 C: 425.780.8619

From: John Cooper [mailto:johnc@co.skagit.wa.us]

Sent: Wednesday, June 28, 2017 4:19 PM

To: Andy Dunn <adunn@rh2.com>

Subject: RE: Wetland questions on PL16-0556

Good Afternoon Andy, In light of your comments, Lake Erie LLC is considering removing parcel P19164 from the mining special use application. Would the removal of this parcel change any of your comments on the proposal?

Sincerely,

John Cooper, LG. LHg
Senior Natural Resource Planner/Geologist
Skagit County Planning and Development Services
1800 Continental Place
Mount Vernon, WA 98273
www.skagitcounty.net/planning
Ph 360-416-1334
johnc@co.skagit.wa.us

From: Andy Dunn [mailto:adunn@rh2.com]
Sent: Tuesday, June 20, 2017 4:33 PM

To: John Cooper

Subject: Wetland questions on PL16-0556

Hey John,

A wetland specialist in the office just took a look at the Skagit Wetlands & Critical Areas, LLC report dated February 24, 2017, and titled "Critical Areas Reconnaissance PL16-0555" (typo in the number). We had received an electronic copy of most of this report from the Doddridge's attorney.

The wetland specialist was tasked with reviewing this document to see if the wetlands occurring on the Doddridge property have been properly characterized and have the correct setbacks identified.

She had the following questions based on her review of this report:

- 1. In the version of the report that we were provided, we only have Appendices A-C, but are missing Appendix D -Wetland and Fish & Wildlife Assessment, Edison Engineering 2014. Do you have a copy of that appendix that you could share?
- 2. On the Appendix C Wetland Rating Form, she noticed that no figures were included (far right column). It has been her recent experience that the Department of Ecology requires figures to be included with the wetland rating. Without the figures, it is difficult for her, or anyone else, to review the answers and determine if the Wetland Category III rating is correct.
- 3. Is the February 24, 2017, version of this report the most recent, or has the report been updated/amended to include additional information, possibly including figures?

### Thanks,

Andy Dunn, LG, LHG, CWRE (WA) P: 425.951.5448 C: 425.780.8619

From: John Cooper [mailto:johnc@co.skagit.wa.us]

Sent: Monday, June 19, 2017 3:29 PM To: Andy Dunn <adunn@rh2.com> Subject: RE: Comments on PL16-0556

Thank you Andy. Yes I did receive your email and have forwarded the document to the applicants hydrogeologist for review and comment.

John Cooper, LG. LHg Senior Natural Resource Planner/Geologist Skagit County Planning and Development Services 1800 Continental Place Mount Vernon, WA 98273 www.skagitcounty.net/planning Ph 360-416-1334 johnc@co.skagit.wa.us

From: Andy Dunn [mailto:adunn@rh2.com] **Sent:** Monday, June 19, 2017 3:09 PM

Subject: RE: Comments on PL16-0556

To: John Cooper

Hey John,

Can you confirm that you received the comments that I sent last week (email below)?

#### Thanks,

Andy Dunn, LG, LHG, CWRE (WA) P: 425.951.5448 C: 425.780.8619

From: Andy Dunn

Sent: Thursday, June 15, 2017 3:57 PM

To: 'johnc@co.skagit.wa.us' <johnc@co.skagit.wa.us>

Cc: 'Bill Doddridge' < bill@jewelryexchange.com >; Pam Doddridge < pam.doddridge@gmail.com >

Subject: Comments on PL16-0556

John,

RH2 Engineering, Inc. (RH2) has been hired by the Doddridge Family (Skagit County Parcel Numbers P19166, P109021, P109020, and P19139) to review the proposed expansion of the Lake Erie Pit (Skagit County Application Number PL16-0556), which is on property located immediately north of their property. The Doddridge Family holds water rights S1-24656C, R1-24623C, and R1-00078C associated with Devil's Elbow Lake. These water rights allow for the storage of water in the lake and for the water in the lake to be used for recreation, wildlife refuge, stock watering, irrigation, and fire protection.

RH2 has reviewed the September 28, 2016, Maul Foster Alongi, Inc. (MFA) report titled "Hydrogeologic Site Assessment Report, Lake Erie Pit Expansion, Skagit County, Washington." Based on review of this report, RH2 would like to offer the following points for your consideration.

No geotechnical borings, resource protection, or observation wells appear to have been drilled on the Lake Erie Pit property by the project proponent. This raises concerns in the following areas:

## Confirmation of the Mining Plan:

It has been my experience that for most sand and gravel mines, the project proponent usually drills the deposit in order to accurately quantify the extent of the reserves and to confirm that there are no subsurface features (shallow bedrock, discontinuity of sand and gravel, interbeds of undesirable material, perched aquifers, etc.) that might reduce the potential volume to be mined and could change the economics of the project. However, in this case this step does not appear to have been performed. Instead, the project appears to rely on neighboring water well logs and past mining experience in the northern part of the deposit for plan development.

For an example of a situation where sand and gravel mining into a hillside caused a change in the hydrogeology of an area, see the High Rock Aquifer Break of October 1993

(https://fortress.wa.gov/ecy/publications/documents/oftr9521.pdf). In this document I would encourage you to pay special attention to the recommendations of that study on Page 18, which indicate that, "Mine operators should install and periodically monitor observation wells sited between mining areas and local water supply sources." In this case Devil's Elbow Lake would be considered the water supply source since the Doddridge Family has water rights for that lake.

## Lack of Consideration Given to Shallow Groundwater Identified on Some Well Logs:

The groundwater contours shown in MFA Figure No. 6 is for the regional aquifer that is tapped by the potable water supply wells. MFA Figure No. 6 shows that the maximum groundwater elevation in the regional aquifer occurs in the vicinity of Devil's Elbow Lake and groundwater flow radiates away from that location primarily to the east, north, and west. However, these contours are for the regional aquifer that is being used for potable supply. There were a few shallower wells located near Devil's Elbow Lake that tap a perched aquifer at a much higher elevation than the

groundwater elevation shown in MFA Figure No. 6. Even though these two shallow wells are located on the same property as deep wells, the shallow wells are not depicted on the B-B' cross section (MFA Figure No. 8). The shallow and deep wells on those two properties are documented in **Table 1**.

Table 1. Comparison of Shallow and Deep Wells Completed on Same Properties Near Devil's Elbow Lake

Name	Parcel	Well Completed Depth (ft)	Depth to Static Water Level (ft)	Depth to Water-bearing Zone (ft)	Shown on MFA Cross Section B-B'?
Stark	P19138	25	9	20-25	No
Kopkowski	P19138	141	97	136-147	Yes
Mayer	P109020	45	25	33-35	No
Mayer	P109020	260	180	182-210	Yes

Assuming that the ground surface elevation of each well on the same property is approximately the same, the water-bearing zones tapped by the two shallow wells would vertically be within the area to be excavated.

The ground surface at all but two of the wells used to identify the groundwater elevation is lower than the proposed bottom of the mining surface (elevation 250 feet). The exception are the two wells located to the south and east of Devil's Elbow Lake on parcel Nos. P19138 and P109020. However, as mentioned above, the occurrence of the shallow perched aquifer on those parcels was ignored in the cross section (MFA Figure No. 8). The lower ground surface elevation of the wells utilized in making the cross section creates a bias in the results since a higher perched aquifer, that could occur within the proposed mineral extraction area, cannot physically be identified in those wells.

The existence of Devil's Elbow Lake, and the occurrence of shallow groundwater near the lake on parcel Nos. P109020 and P19138 supports that there could be a perched aquifer associated with the lake. The proposed mine will excavate to a depth that is 113 feet below the surface of Devil's Elbow Lake and no subsurface data exists for the area between the lake and proposed excavation to understand how mining might impact the lake.

#### Vertical Buffer Compliance Enforcement:

In the MFA report, and other application documents, it is referenced that the mining will stay either 10, or 50 feet above the water table (for instance see the last paragraph on page 1 of the MFA report [10 feet], and the 4/18/2017 letter from McLucas & Associates, Inc. to Thomas Moser [50 feet]). However, how will the miners know where the water table is beneath the site if they don't have any on-site monitor wells that they can measure? Relying on interpolation from offsite wells, not owned by the project proponent, will not allow regulatory agencies to double-check the water level as mining progresses and mining too close to the water table wouldn't be identified until the water table is breached.

## Possible remedy

In the 4/18/2017 letter from McLucas & Associates, Inc. to Thomas Moser, the project proponent offered to drill a single monitoring well in Phase 2, once they have reached 200 feet from the south property boundary. While I agree that drilling monitoring wells is a good way to make sure that mining does not impact Devil's Elbow Lake or the regional aquifer, I feel that it should occur now, as opposed to at some time in the distant future, and that at least one well should be drilled into the deeper regional aquifer to ensure compliance with the vertical buffer, while at least one well should be drilled along the southern property line adjacent to Devil's Elbow Lake to specifically look for the existence of the shallow perched aquifer associated with Devil's Elbow Lake to see if it extends into the area proposed to be mined. If it does, then that should necessitate additional restrictions on mining in that area, or require additional study to determine if/how that area can be mined safely without threatening the lake and associated perched aquifer.

Thanks and feel free to contact me if you have any questions or would like to discuss,

Andrew B. Dunn, LG, LHG, CWRE (WA) | RH2 Engineering Project Hydrogeologist/Water Rights

n 4 i 1

22722 29<sup>th</sup> Drive SE, Suite 210 Bothell, WA 98021 P: 425.951.5448 C: 425.780.8619 F: 425.951.5401 adunn@rh2.com www.rh2.com

Andy Dunn <adunn@rh2.com> From:

Sent: Thursday, July 06, 2017 12:33 PM mclucastaylor@qwestoffice.net To:

John Cooper Cc:

RE: Lake Erie Pit Well Installation Proposal **Subject:** 

lake erie drill site aerial view from Steve 7-6-2017 w RH2 markup.pdf **Attachments:** 

Hey Steve,

I don't think the proposed well location will provide the best subsurface information with respect to determining the lateral extent of a perched aquifer associated with Devil's Elbow Lake. I have marked the location that I would prefer on the attached figure. Basically, I would like the well to be drilled due north of the northern extent of the lake between 50 to 180 feet from the property line. The 50-foot distance would allow the well to be used as a monitor well for the life of the mine since it is on the edge of the reclamation setback. The 180-foot distance from the property boundary would be approximately where the working face of the mine would extend to a depth that is the same elevation as the lake (with a 1:1 slope, the mining starting at 100 feet from the boundary, and the ground surface of approximately 430 feet), but would need to be removed during mining in that area. Anywhere in between those two end-points would be satisfactory for the initial well. Also, depending on the findings of the first well, it might be necessary to drill an additional well or wells to adequately characterize the subsurface and make sure that the likelihood of impacts is reduced to a satisfactory level.

I understand that access to this area might be tougher than being able to drive in, but there are options with respect to tracked rigs.

I have cc'd John Cooper on this email so he can be aware of this correspondence and since he will likely be interested in the resource protection well location(s), too.

Thanks,

Andy Dunn, LG, LHG, CWRE (WA) P: 425.951.5448

C: 425.780.8619

----Original Message-----

From: Stephen Taylor [mailto:mclucastaylor@qwestoffice.net]

Sent: Thursday, July 6, 2017 9:45 AM To: Andy Dunn <adunn@rh2.com>

Subject: Fwd: Lake Erie Pit Well Installation Proposal

Andy,

Thanks for the discussion. I have attached an aerial phot showing where we propose to drill the well for current lithology of the sand, gravel and locate the static ground water table. This will give us current data for our Hydrologist to characterize this area. I will keep you updated as I commission this work. In the meantime I am sending you the Wetland Report which has all of the attachments.

Thanks for your patience,

## Steve

Stephen Taylor
McLucas & Associates, Inc.
V.P. Marketing/Mineral Valuations
P.O. Box 5352
Lacey, WA 98509
360-456-8248 T
360-438-1881 F