

## Dirk Leemkuil

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**From:** Kevin Pylka <kpylka@polymetmining.com>  
**Sent:** Friday, May 11, 2012 9:23 AM  
**To:** Dirk Leemkuil  
**Subject:** RE: NorthMet Inquiry Regarding the Plant Site Wastewater Treatment Facility  
**Attachments:** Chemical Usage List for WW treatment facilities 05-11-12.docx

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Dirk,

Please find attached a sheet showing preliminary chemical use and storage estimates for the PolyMet NorthMet Mine Site and Plant Site Waste water treatment facilities as of May 11, 2012. We consider the numbers to be preliminary as the water modeling for the Supplemental Draft EIS has not yet been finalized and may or may not change the chemical usages and quantities at the two facilities. It would seem for now, these would serve as placeholders to be updated prior to publication of the preliminary SDEIS..



**Kevin Pylka**

**Manager of Environmental Permitting and Compliance**

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**From:** Dirk Leemkuil [mailto:Dirk.Leemkuil@erm.com]  
**Sent:** Wednesday, May 09, 2012 4:21 PM  
**To:** Kevin Pylka  
**Subject:** RE: NorthMet Inquiry Regarding the Plant Site Wastewater Treatment Facility

Sounds good. Thanks. I don't know how to access the Barr website, but Bec or Ryan should be able to, unless you can tell me how.  
Thanks

**Dirk W. Leemkuil, PG, CPG**  
**Environmental Resources Management**  
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**From:** Kevin Pylka [<mailto:kpylka@polymetminning.com>]  
**Sent:** Wednesday, May 09, 2012 4:17 PM  
**To:** Dirk Leemkuil  
**Subject:** RE: NorthMet Inquiry Regarding the Plant Site Wastewater Treatment Facility

Dirk,

I am still trying to confirm numbers for the Plant WWTP, the difficulty is that they will likely change as water modeling is complete. I am trying to get numbers that could be used with the appropriate caveats.

RS29T, Barr Engineering 2007 is available on the Barr Website on the "PolyMet Draft EIS – Material for Agency Review" folder. Do you have access to this?

Kevin

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**From:** Dirk Leemkuil [<mailto:Dirk.Leemkuil@erm.com>]  
**Sent:** Wednesday, May 09, 2012 3:27 PM  
**To:** Kevin Pylka  
**Subject:** NorthMet Inquiry Regarding the Plant Site Wastewater Treatment Facility

Hi Kevin,

Any leads on my inquiry from March 23 regarding the hazardous chemicals that may be used at the Plant WWTP?  
Do you know where I might find the referenced document? (RS29T, Barr Engineering 2007)

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**From:** Dirk Leemkuil  
**Sent:** Tuesday, April 24, 2012 2:29 PM  
**To:** 'Kevin Pylka'  
**Subject:** RE: NorthMet Question Regarding the Plant Site Wastewater Treatment Facility

Hi Kevin,

Don't mean to be a PIA but thought I'd send another reminder before fishing season opens. We all know what that can bring. Thanks for your assistance with this.

Dirk

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**From:** Kevin Pylka [<mailto:kpylka@polymetminning.com>]  
**Sent:** Wednesday, April 11, 2012 9:59 AM  
**To:** Dirk Leemkuil  
**Subject:** RE: NorthMet Question Regarding the Plant Site Wastewater Treatment Facility

Dirk,

Sorry.... Didn't forget and will try to get you an answer by end of this week. Thanks for the reminder though.

Kevin

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**From:** Dirk Leemkuil [<mailto:Dirk.Leemkuil@erm.com>]  
**Sent:** Tuesday, April 10, 2012 10:55 AM  
**To:** Kevin Pylka  
**Subject:** FW: NorthMet Question Regarding the Plant Site Wastewater Treatment Facility

Hi Kevin,

Any information for me regarding this request? Just a reminder.

Thanks,  
Dirk

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**From:** Dirk Leemkuil  
**Sent:** Friday, March 23, 2012 10:11 AM  
**To:** 'Kevin Pylka'  
**Cc:** Steven Koster; Andrea McGinnis  
**Subject:** NorthMet Question Regarding the Plant Site Wastewater Treatment Facility

Hi Kevin,

I hope you're doing well. I have a question about the NorthMet proposed Plant Site Wastewater Treatment Facility (WWTF). I'm hoping you'll be able to help me. If you're unable to provide me the information, I'd appreciate if you could forward this request to the proper person who would be able to provide the information.

I'm writing the Hazardous Materials section of the SDEIS. I've attached Table 5.2.13-1 Hazardous Materials to be used at the NorthMet Project from the section for you use. You provided information to update the table for me last fall. During internal review of the Hazardous Material section, it was suggested that I also add the hazardous materials to be used at the Plant Site WWTF. They may indeed already be on this table, but the quantities may need to be updated. If they already are on the table, please just update the quantities on the table. If they are not, could you provide a list of the materials and add them to the table. I also have a section prior to this table, where I have listed the various hazardous materials generally by their area of use. For instance for the Mine Site WWTF I have them listed as follows:

Mine Site WWTF chemicals – calcium hydroxide (or hydrated lime), aluminum hydroxide, sodium hydrosulfide, or iron salts used in chemical precipitation processes (RS29T, Barr Engineering 2007);

If you have questions, please call or let me know and we can discuss.  
Thanks for your help.

Dirk

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Material	Storage Capacity	Delivery Means	Average Monthly Use	Annual Use
<b><u>Proposed usage of chemicals at the Mine Site Waste Water Treatment Facility</u></b> <ul style="list-style-type: none"> <li><b><i>Estimates based on 2/14/2008 design basis</i></b></li> </ul>				
Sodium Metasilicate (5%)	2,000 gallons	Bulk	2,100 gallons/month	25,000 gallons /year
Ferric Chloride (35%)	6,000 gallons 1,000 gallons	Bulk	1,200 gallons/month	14,400 gallons/ year
Sodium Hydroxide (50%)	3,400 gallons	Bulk	3,400 gallons/month	41,000 gallons/year
Polymer Flocculent	400 gallons	Tote	50 gallons/month	600 gallons/year
Hydrated Lime	100 tons	Bulk (dry)	95 tons/month	1,100 tons/year
Carbon Dioxide Liquid	100 tons	Bulk (liquefied gas)	85 tons/month	1,000 ton/year
Citric Acid	400 gallons	Tote	10 gallons/month	120 gallons/year
Sodium Hypochlorite	400 gallons	Tote	10 gallons/month	120 gallons/year
<b><u>Proposed usage of chemicals at the Plant Site Waste Water Treatment Facility</u></b> <ul style="list-style-type: none"> <li><b><i>As of 05-11-12 the process and resulting rates for the Plant Site WWTF have not been finalized as these rates will be finalized upon completion of appropriate water models for flow and quality, vendor proposals and/or other appropriate off-site tests</i></b></li> <li><b><i>Influent water quality based on current tailings basin water quality and chemical usage rates based on vendor received information</i></b></li> </ul>				
Potassium Permanganate	1,300 lbs.	Bulk (dry)	1,300 lbs./month	16,000 lbs./year
Antiscalant	300 gallons	Tote	300 gallons/month	4,000 gallons/year
Carbon dioxide liquid	20 tons	Bulk (liquefied gas)	20 tons/month	250 tons/year
Hydrated Lime	18 tons	Bulk (dry)	18 tons/month	220 tons/year