From:	Benjamin Johnson
To:	THOMAS Wesley * DEQ; DAUGHERTY Katie * DEQ
Cc:	LACEY David J * DEQ; LUTEY Amber * DEQ
Subject:	RE: Arkema Portland - May 2023 MPR
Date:	Thursday, July 27, 2023 5:01:30 PM
Attachments:	image001.png image002.png image003.png

Hi Katie –

Just a couple comments on the May 2023 MPR:

- There are still a lot of transducers that are not fully functional.
- Downward gradients persist at GCC1 and GCC2 inside and outside the GWBW. This may be problematic for the containment of DNAPLs around GCC2.
- As Wes pointed out the gradients near the GWBW are showing signs of reversal. I would just qualify that this observation could be in part related to the rapid rise in river elevations which create favorable conditions for the control of upland groundwater gradients and during period of rapidly dropping water the system may not look as strong.

Thanks –

Benjamin Johnson, RG, LHG
Supervising Hydrogeologist
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GSI Water Solutions, Inc. | www.gsiws.com

GSI has moved! Please note our new address above.

Privileged and Confidential Communication/Attorney Work Product/Joint Defense Communication

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From: THOMAS Wesley * DEQ <Wesley.THOMAS@deq.oregon.gov>
Sent: Thursday, July 20, 2023 3:31 PM
To: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>
Cc: LACEY David J * DEQ <David.J.LACEY@deq.oregon.gov>; LUTEY Amber * DEQ <Amber.Lutey@deq.oregon.gov>; Benjamin Johnson <bjohnson@gsiws.com>
Subject: FW: Arkema Portland - May 2023 MPR

Katie,

The May progress report is promising. Between the rising river levels and increased pumping rates, we're getting closer to inward hydraulic gradients.

One observation – as the trenches begin to achieve inward hydraulic gradients, the hydrographs in Attachment B-1 will become more important. Looks like those plots have a lot of gaps (potentially a result of transducer failures). Hopefully those plots improve over the coming months.

Wes

Wesley Thomas, P.E.
Project Manager/Environmental Engineer
O: 503-229-6932
M: 971-263-8822
Wesley.Thomas@deq.oregon.gov

From: Andrew Gardner <Andrew.Gardner@erm.com>
Sent: Friday, July 14, 2023 2:21 PM
To: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>; Todd SLATER <todd.slater@totalenergies.com>
Cc: Josh Hancock <Josh.Hancock@erm.com>; Brendan Robinson <Brendan.Robinson@erm.com>; Morgan Farmer <Morgan.Farmer@erm.com>; Chase McLaughlin <chase.mclaughlin@erm.com>; THOMAS Wesley * DEQ <Wesley.THOMAS@deq.oregon.gov>; LACEY David J * DEQ <David.J.LACEY@deq.oregon.gov>; Benjamin Johnson <bjohnson@gsiws.com>
Subject: RE: Arkema Portland - May 2023 MPR

> Some people who received this message don't often get email from andrew.gardner@erm.com. Learn why this is important

Hi Katie,

The May MPR is attached.

Please let me know if you have any questions.

Thanks,
Andrew Gardner, EIT (OR)
Managing Consultant, Engineering
he/him/his

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E andrew.gardner@erm.com | **W** www.erm.com

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From: Andrew Gardner
Sent: Friday, June 16, 2023 13:58
To: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>; Todd SLATER <todd.slater@totalenergies.com>
Cc: Sarah Seekins <Sarah.Seekins@erm.com>; Josh Hancock <Josh.Hancock@erm.com>; Brendan Robinson <Brendan.Robinson@erm.com>; Morgan Farmer <Morgan.Farmer@erm.com>; THOMAS Wesley * DEQ <Wesley.THOMAS@deq.oregon.gov>; LACEY David J * DEQ

<David.J.LACEY@deq.oregon.gov>; Benjamin Johnson <bjohnson@gsiws.com>
Subject: RE: Arkema Portland - April 2023 MPR

Hi Katie,

The April MPR is attached. This MPR has corrected vertical gradients in both the text and the figures.

Please let me know if you have any questions.

Thanks,
Andrew Gardner, EIT (OR)
Managing Consultant, Engineering
he/him/his

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From: Andrew Gardner <Andrew.Gardner@erm.com>
Sent: Friday, June 9, 2023 12:16
To: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>; Todd SLATER <todd.slater@totalenergies.com>
Cc: Sarah Seekins <Sarah.Seekins@erm.com>; Josh Hancock <Josh.Hancock@erm.com>; Brendan Robinson <Brendan.Robinson@erm.com>; Morgan Farmer <Morgan.Farmer@erm.com>; THOMAS Wesley * DEQ <Wesley.THOMAS@deq.oregon.gov>; LACEY David J * DEQ <David.J.LACEY@deq.oregon.gov>; Benjamin Johnson <bjohnson@gsiws.com>
Subject: RE: Arkema Portland - March 2023 MPR

Hi Katie,

I have reviewed the reports with the team and the source of the error in our workflow was discovered and has since been corrected. We will be re-issuing the January – March MPRs with those edits next week following the submittal of the April MPR on 6/15.

Thank you for your patience and feedback.

Best,
Andrew Gardner, EIT (OR)
Managing Consultant, Engineering

he/him/his

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From: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>
Sent: Monday, June 5, 2023 09:19
To: Todd SLATER <todd.slater@totalenergies.com>
Cc: Sarah Seekins <Sarah.Seekins@erm.com>; Josh Hancock <Josh.Hancock@erm.com>; Brendan Robinson <Brendan.Robinson@erm.com>; Morgan Farmer <Morgan.Farmer@erm.com>; THOMAS Wesley * DEQ <Wesley.THOMAS@deq.oregon.gov>; LACEY David J * DEQ <David.J.LACEY@deq.oregon.gov>; Benjamin Johnson <bjohnson@gsiws.com>; Andrew Gardner <Andrew.Gardner@erm.com>
Subject: RE: Arkema Portland - March 2023 MPR
Importance: High

EXTERNAL MESSAGE

Hello Todd,

There continues to be issues related to the vertical gradient calculations in Table 1-2 in the MPRs. They are still incorrect. This has now resulted in the figures being incorrect which then means the conclusions related to vertical gradients in the text of the report are based on incorrect values.

DEQ has made the request prior for these to be corrected. Do we need to meet to discuss this to make sure everyone is on the same page on what needs to be fixed?

Thanks
Katie

Katie Daugherty, R.G | she/her
Project Manager
Oregon DEQ | NWR Cleanup and Leaking UST Section
700 NE Multnomah Street, Suite 600
Portland, OR 97232
503-860-3943
Katie.Daugherty@deq.oregon.gov

From: Andrew Gardner <Andrew.Gardner@erm.com>
Sent: Wednesday, May 17, 2023 10:49 AM
To: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>
Cc: Todd SLATER <todd.slater@totalenergies.com>; Sarah Seekins <Sarah.Seekins@erm.com>; Josh Hancock <Josh.Hancock@erm.com>; Brendan Robinson <Brendan.Robinson@erm.com>; Morgan Farmer <Morgan.Farmer@erm.com>
Subject: RE: Arkema Portland - March 2023 MPR

Hi Katie,

The March 2023 MPR is attached. Please let me know if you have any questions.

Thanks,
Andrew Gardner, EIT (OR)
Senior Consultant, Engineering
he/him/his

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From: Andrew Gardner <Andrew.Gardner@erm.com>
Sent: Friday, April 14, 2023 13:47
To: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>
Cc: Todd SLATER <todd.slater@totalenergies.com>; Sarah Seekins <Sarah.Seekins@erm.com>; Josh Hancock <Josh.Hancock@erm.com>; Brendan Robinson <Brendan.Robinson@erm.com>; Morgan Farmer <Morgan.Farmer@erm.com>
Subject: RE: Arkema Portland - February 2023 MPR

Hi Katie,

The February 2023 MPR is attached. Please let me know if you have any questions.

Additionally, the January 2023 MPR was submitted with an incorrect heading on table 1-2. A revised version is attached showing the correct header. These number match the figures.

Thanks,
Andrew Gardner, EIT (OR)
Senior Consultant, Engineering

he/him/his

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From: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>
Sent: Monday, March 27, 2023 07:58
To: Josh Hancock <Josh.Hancock@erm.com>; Andrew Gardner <Andrew.Gardner@erm.com>
Cc: Todd SLATER <todd.slater@totalenergies.com>; Sarah Seekins <Sarah.Seekins@erm.com>; Brendan Robinson <Brendan.Robinson@erm.com>; Morgan Farmer <Morgan.Farmer@erm.com>
Subject: RE: Arkema Portland - December 2022 MPR & January 2023

EXTERNAL MESSAGE

Hi Josh, It does not look like these comments were addressed in the January MPR. It would be nice to at least get the vertical gradients corrected in the table. Thanks, Katie

---

From: Josh Hancock <Josh.Hancock@erm.com>
Sent: Friday, March 3, 2023 4:17 PM
To: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>; Andrew Gardner <Andrew.Gardner@erm.com>
Cc: Todd SLATER <todd.slater@totalenergies.com>; Sarah Seekins <Sarah.Seekins@erm.com>; Brendan Robinson <Brendan.Robinson@erm.com>; Morgan Farmer <Morgan.Farmer@erm.com>
Subject: RE: Arkema Portland - December 2022 MPR

Thank you for these comments Katie. We will make sure they are addressed in the January 2023 MPR and reports going forward.

Josh

From: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>
Sent: Tuesday, February 28, 2023 8:02 AM
To: Andrew Gardner <Andrew.Gardner@erm.com>
Cc: Todd SLATER <todd.slater@totalenergies.com>; Josh Hancock <Josh.Hancock@erm.com>; Sarah Seekins <Sarah.Seekins@erm.com>; Brendan Robinson <Brendan.Robinson@erm.com>; Morgan Farmer <Morgan.Farmer@erm.com>
Subject: RE: Arkema Portland - December 2022 MPR

EXTERNAL MESSAGE

Hi Andrew,

A couple of comments on the MPR

1. **Section 2, Groundwater Source Control Implementation.** The first sentence of the fifth paragraph states "The distribution of COPCs at the site is predominantly within the Shallow Zone, with decreasing impacts observed in the Intermediate and Deep Zones." It appears that this statement was also made in previous monthly performance monitoring reports. This statement is overly broad and does not reflect the distribution of chlorinated VOCs, chloride, and perchlorate that have been the focus of groundwater sampling since 2019. DEQ recommends removing this statement from future monthly performance monitoring reports.
2. **Table 1-2, December Vertical Gradients.** There appears to be an error in the vertical gradient calculations presented in the table. DEQ assumes that the vertical gradients presented in Figures 5 and 6 are correct. Please correct the vertical gradients presented in Table 1-2 in future monthly performance monitoring reports.

Thanks,
Katie

Katie Daugherty, R.G | she/her
Project Manager
Oregon DEQ | NWR Cleanup and Leaking UST Section
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Katie.Daugherty@deq.oregon.gov

From: Andrew Gardner <Andrew.Gardner@erm.com>
Sent: Wednesday, February 15, 2023 2:37 PM
To: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>
Cc: Todd SLATER <todd.slater@totalenergies.com>; Josh Hancock <Josh.Hancock@erm.com>; Sarah Seekins <Sarah.Seekins@erm.com>; Brendan Robinson <Brendan.Robinson@erm.com>; Morgan Farmer <Morgan.Farmer@erm.com>
Subject: Arkema Portland - December 2022 MPR

Katie,

The December 2022 MPR is attached. Please let us know if you have any questions or comments.

Thanks,
Andrew Gardner, EIT (OR)
Consultant II, Engineering
he/him/his

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