FREE PRODUCT RECOVERY REPORT
FIRST QUARTER 2022

HNI MACHINE PIT

301 OAK STREET

MUSCATINE, MUSCATINE COUNTY, IOWA

Terracon Project No. 07177125

March 28, 2022

Prepared for:
HNI Corporation
Muscatine, Iowa

Prepared by:
Terracon Consultants, Inc.
Bettendorf, Iowa

March 28, 2022

Ms. Lisa Brunie-McDermott
HNI Corporation
600 East 2nd Street
Muscatine, Iowa 52761

Re: Free Product Summary Report – First Quarter 2022
HON Oak Street Plant
301 Oak Street
Muscatine, Muscatine County, Iowa
Terracon Project No. 07177125

Dear Ms. Brunie-McDermott:

Terracon Consultants, Inc. (Terracon) is pleased to provide this Free Product Summary Report for HON Oak Street Plant located at 301 Oak Street, Muscatine, Muscatine County, Iowa. This report summarizes free-product recovery and groundwater monitoring activities conducted during the first quarter of 2022. These activities were conducted in response to impacted groundwater associated with a historical onsite release of Aromatic 100 solvent from a former underground storage tank (UST). This report was prepared in general accordance with Iowa Administrative Code (IAC) Chapter 567-135, the Iowa Department of Natural Resources (IDNR) Free Product Recovery Report Guidance, and Terracon's Free Product Recovery Work Plan (dated December 22, 2010).

The findings presented in this report are based upon data collected from onsite monitoring wells and do not reflect variations of stratigraphy, geohydrology, or contaminant distribution that may occur between the monitoring wells or other site areas. Subsurface conditions may vary, which may not become evident without further exploration.

This report was prepared on behalf of HNI Corporation and in accordance with generally accepted environmental engineering practices and protocols. No warranties, either express or implied, are intended or made.

Terracon appreciates this opportunity to continue to provide environmental engineering services to HNI Corporation. Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,
Terracon Consultants, Inc.

Brandon J. Sindt
Environmental Scientist

Dennis R. Sensenbrenner, CGP, PG
Senior Associate

Attachments: Free Product Recovery Report

cc: Shelly Nellesen, IDNR

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HON OAK STREET PLANT
301 OAK STREET
MUSCATINE, MUSCATINE COUNTY, IOWA

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INTRODUCTION

This Free Product Summary Report summarizes free product recovery and groundwater monitoring activities conducted at the HON Oak Street Plant (HON Oak Street) in Muscatine, Iowa during the first quarter of 2022, and associated findings.

FREE PRODUCT RECOVERY

During the first quarter of 2022, Terracon mobilized to the site during three field events (once every 4-weeks) to measure/recover free-product and measure static groundwater levels from monitoring wells MW-11 and MW-13. During each event, free-product thickness and static water levels were measured using an oil/water interface probe and recorded in field logs. Fluctuating quantities of free product observed in MW-11 and MW-13 during the first quarter 2022 field events which were consistent with historical free-product fluctuations noted since 2015. After recording field measurements, free-product and impacted groundwater were extracted from each well using dedicated disposable polyethylene sample bailers and the quantities were measured using a graduated cylinder and recorded on field logs. Extracted free product and impacted groundwater were staged within a steel 55-gallon drum for proper offsite disposal.

On March 10, 2022, Terracon also measured static water levels (potentiometric surface) from monitoring wells MW-6, MW-7, MW-8, MW-10, MW-12, and MW-14. Static water levels from MW-6, MW-7, MW-8, MW-10, MW-12, and MW-14 are recorded semi-annually.

Free-product measurements, static groundwater levels, and volume of free-product and impacted groundwater extracted during each event are provided in **Appendix B** of this report.

Note: Free-product was not observed in monitoring well MW-8 since it was installed in July 2010, nor in MW-12 since it was installed in 2011. Monitoring well MW-9 was abandoned during resurfacing operations inside the plant during the third quarter of 2014. Free product has not been observed in monitoring well MW-10 since the December 2016 monitoring event. The absorbent socks were removed from MW-11 & MW-13 in June 2020 because the socks were interrupting consistent data collection for product thickness. The absorbent sock for MW-10 was removed in

September of 2020 due to an absence of free product in the well for more than 12 consecutive months.

RECOMMENDATIONS

Terracon recommends that free product monitoring and recovery from MW-11 and MW-13 continue per the IDNR approved Free Product Recovery Work Plan, dated December 22, 2010. Additional recovery action may be warranted in the event that dramatic or continuous increases in free product are observed. Potentiometric surface data from MW-6 through MW-8, MW-10, MW-12 and MW-14 should continue semi-annually to monitor site groundwater gradient. Recovered free product will continue to be placed into a 55-gallon drum upon collection and stored onsite in the HON Oak Steel Plant (301 Oak Street) secure containment area.

Free product recovery and monitoring data were recorded on the IDNR form 542-1424 and will continue to be submitted as a Free Product Recovery Report on a quarterly basis. Two years of data will be presented in each quarterly report. Additional data will be available upon request. Free product activities will continue to be supervised by an Iowa Certified Groundwater Professional (CGP).

Free product recovery activities will continue until less than 0.1-gallons of free product have been recovered for 12 consecutive months. Potentiometric measurements will continue for a minimum of six months following the termination of recovery activities. If the measured thickness of LNAPL exceeds 0.02-feet during the six-month monitoring period, then Terracon will contact HNI Corporation, and free product recovery activities will be reinitiated.

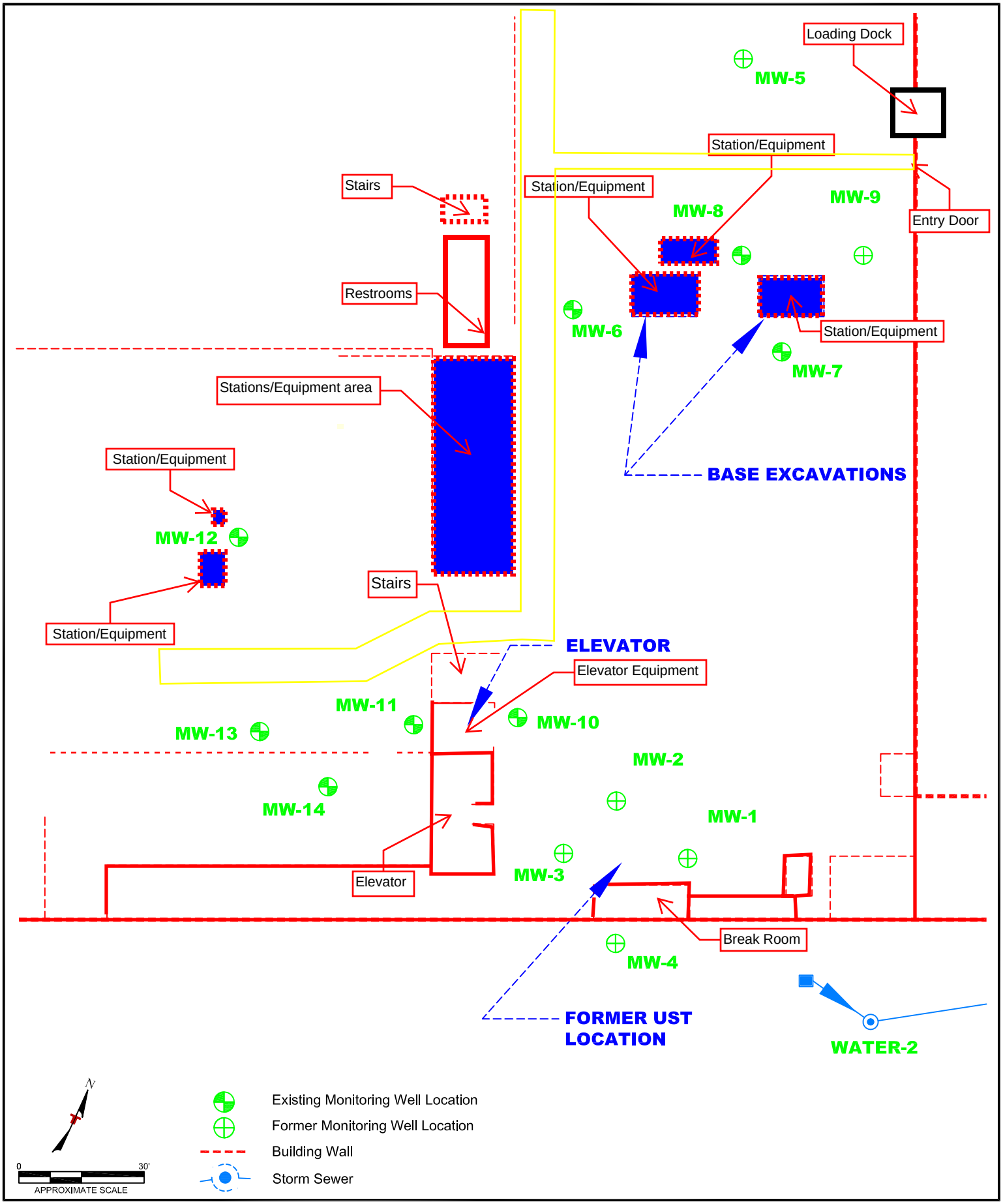
GENERAL COMMENTS

The analyses and opinions expressed in this report are based upon data obtained from existing onsite groundwater monitoring and/or from other information discussed in this report. This report does not reflect potential variations in subsurface stratigraphy, geohydrology, or contaminant concentrations. Subsurface conditions may vary across the site, which may not become evident without further exploration.

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other Fourth parties supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed with you, our client, as reflected in our proposal.

APPENDIX A – EXHIBITS

Exhibit 1 – Site Plan Map



Project Mngr:	KAB
Drawn By:	JRT
Checked By:	KAB
Approved By:	KAB
Project No.	07177125
Scale:	AS-SHOWN
Revised By:	
Date:	July 2019

Terracon
Consulting Engineers and Scientists
870 40TH AVENUE BETTENDORF, IOWA 52722
PH. (563) 355-0702 FAX. (563) 355-4789

SITE PLAN MAP

FREE PRODUCT SUMMARY REPORT
HNI - OAK STREET PLANT
301 OAK STREET
MUSCATINE, IOWA

Fig. No. 1

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES.

APPENDIX B – FREE PRODUCT RECOVERY REPORT

Free Product Recovery Report
Leaking Underground Storage Tank Site Assessment
for the Iowa Department of Natural Resources

SITE IDENTIFICATION

LUST No.	NA	**UST Registration No.**	NA

Site Name: HNI Machine Pit
Site Address: 301 Oak Street
City: Muscatine

RESPONSIBLE PARTY IDENTIFICATION

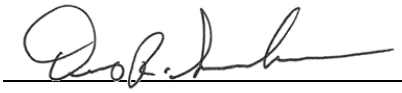
Name: HNI Corporation		
Street: 600 East 2nd Street		
City: Muscatine	State: Iowa	Zip Code: 52761

Submittal Date:

STATEMENT OF CERTIFICATION

I, Dennis R. Sensenbrenner , Groundwater Professional Certification No. 1066 , am familiar with all Applicable requirements of Iowa Code § 455B.474 and all rules and procedures adopted thereunder including, but not limited to, Chapter 567-135 and the Department of Natural Resources' Free Product Recovery Report guidance. Based on my knowledge of those documents and information I have prepared and reviewed regarding this site, UST Registration No. NA , LUST No. NA , I certify that this document is complete and accurate as provided in 567 IAC 135.9(11)"c) and meets the applicable requirements of the Free Product Recovery Report.

Print: Name/Address of Certified Groundwater Professional

Dennis R. Sensenbrenner, CGP — Signature: 

Terracon Consultants, Inc.

600 SW 7th Street, Suite M — Phone: (515) 244-3184

Des Moines, Iowa 50309 — Date: March 28, 2022

I certify that I have reviewed this document and attachments for submittal to the Iowa Department of Natural Resources.

HNI Corporation
Print Name of Responsible Party

Signature- Responsible Party

Official IDNR Use Only

Date Received:		Comment Letter Date:	
Reviewer:		Approved:	Y / N

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet of paper should be used for each recovery well.

Well Number: MW-6	Ground Surface Elevation: 100.00	Top of Casing Elevation: 99.77

Date Sampled	Static Groundwater Level (Feet ASL)	Free Product Thickness (Feet)	Volume of Free Product Removed (Gallons)	Volume of Groundwater Removed (Gallons)
06/24/2019	93.99	0.00	0.00	0.00
03/30/2020	92.63	0.00	0.00	0.00
09/22/2020	92.82	0.00	0.00	0.00
3/11/2021	92.07	0.00	0.00	0.00
9/23/2021	92.06	0.00	0.00	0.00
3/10/2022	90.13	0.00	0.00	0.00

Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet of paper should be used for each recovery well.

Well Number: MW-7	Ground Surface Elevation: 100.03	Top of Casing Elevation: 99.64

Date Sampled	Static Groundwater Level (Feet ASL)	Free Product Thickness (Feet)	Volume of Free Product Removed (Gallons)	Volume of Groundwater Removed (Gallons)
06/24/2019	94.41	0.00	0.00	0.00
03/30/2020	92.91	0.00	0.00	0.00
9/22/2020	93.39	0.00	0.00	0.00
3/11/2021	92.49	0.00	0.00	0.00
9/23/2021	92.54	0.00	0.00	0.00
3/10/2022	91.51	0.00	0.00	0.00

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet of paper should be used for each recovery well.

Well Number: MW-8	Ground Surface Elevation: 99.61	Top of Casing Elevation: 99.19

Date Sampled	Static Groundwater Level (Feet ASL)	Free Product Thickness (Feet)	Volume of Free Product Removed (Gallons)	Volume of Groundwater Removed (Gallons)
06/24/2019	94.10	0.00	0.00	0.00
03/30/2020	92.72	0.00	0.00	0.00
9/22/2020	93.34	0.00	0.00	0.00
3/11/2021	--	MW was covered by several stacks of sheet metal		
9/23/2021	92.38	0.00	0.00	0.00
3/10/2022	91.29	0.00	0.00	0.00

-- = Monitoring well not measured due to inaccessibility

Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet of paper should be used for each recovery well.

Well Number: MW-10	Ground Surface Elevation: 99.94	Top of Casing Elevation: 99.71

Date Sampled	Static Groundwater Level (Feet ASL)	Free Product Thickness (Feet)	Volume of Free Product Removed (Gallons)	Volume of Groundwater Removed (Gallons)
06/24/2019	94.41	0.00*	0.00	0.00
03/30/2020	92.86	0.00*	0.00	0.00
9/22/2020	93.16	0.00	0.00	0.00
3/11/2021	92.36	0.00	0.00	0.00
9/23/2021	92.33	0.00	0.00	0.00
3/10/2022	91.46	0.00	0.00	0.00

* = Absorbent sock in well

Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet of paper should be used for each recovery well.

Well Number: MW-11	Ground Surface Elevation: 97.35	Top of Casing Elevation: 97.14

Date Sampled	Static Groundwater Level (Feet ASL)	Free Product Thickness (Feet)	Volume of Free Product Removed (Gallons)	Volume of Groundwater Removed (Gallons)
02/28/2020	90.64	*--	0.16	0.32
03/30/2020	90.96	*--	0.21	0.26
04/29/2020	91.25	*0.76	0.11	0.42
06/01/2020	90.80	*0.51	0.03	0.37
07/02/2020	91.20	0.89	0.21	0.32
7/30/2020	89.82	1.87	0.37	0.16
8/26/2020	89.70	1.04	0.16	0.37
9/22/2020	90.39	--	0.10	0.24
10/23/2020	89.94	0.06	0.08	0.38
11/19/2020	89.69	0.05	0.15	0.23
12/17/2020	89.09	0.45	0.09	0.41
1/14/2021	89.19	0.05	0.01	0.26
2/11/2021	87.99	0.15**	0.03	0.26
3/11/2021	88.89	0.22	0.03	0.36
4/8/2021	89.97	0.27	0.04	0.31
5/6/2021	90.09	0.72	0.01	0.11
6/2/2021	89.49	0.36	0.02	0.19
6/29/2021	88.99	0.27	0.06	0.32
7/29/2021	88.75	0.15	0.06	0.46
8/26/2021	88.64	0.25	0.13	0.37
9/23/2021	88.95	0.01	0.13	0.34
10/21/2021	88.58	0.01	0.11	0.32
11/18/2021	88.81	0.19	0.08	0.32
12/16/2021	88.53	0.12	0.05	0.29
1/12/2022	88.52	0.01	0.04	0.42
2/10/2022	88.27	0.00	0.08	0.44
3/10/2022	88.14	0.17	0.04	0.42

- = Depth of Free Product was not detected by instrument
* = Absorbent sock in well
**= Free product thickness measured with first bailer volume during free product recovery

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet of paper should be used for each recovery well.

Well Number: MW-12	Ground Surface Elevation: 97.41	Top of Casing Elevation: 97.01

Date Sampled	Static Groundwater Level (Feet ASL)	Free Product Thickness (Feet)	Volume of Free Product Removed (Gallons)	Volume of Groundwater Removed (Gallons)
06/24/2019	94.51	0.00	0.00	0.00
03/30/2020	92.69	0.00	0.00	0.00
9/22/2020	92.56	0.00	0.00	0.00
3/11/2021	91.31	0.00	0.00	0.00
9/23/2021	91.20	0.00	0.00	0.00
3/10/2022	90.34	0.00	0.00	0.00

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Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet of paper should be used for each recovery well.

Well Number: MW-13	Ground Surface Elevation: 97.62	Top of Casing Elevation: 97.34

Date Sampled	Static Groundwater Level (Feet ASL)	Free Product Thickness (Feet)	Volume of Free Product Removed (Gallons)	Volume of Groundwater Removed (Gallons)
02/28/2020	NA	*NA	NA	NA
03/30/2020	91.40	*--	0.11	0.32
04/29/2020	91.85	*0.47	0.08	0.45
06/01/2020	91.45	*0.18	0.02	0.26
07/02/2020	90.80	0.06	0.03	0.37
7/30/2020	88.44	0.10	0.02	0.33
8/26/2020	89.90	0.94	0.03	0.34
9/22/2020	89.87	0.02	0.03	0.18
10/23/2020	88.04	0.05	0.01	0.05
11/19/2020	88.94	0.05	0.03	0.39
12/17/2020	90.24	0.25	0.03	0.36
1/14/2021	89.09	0.05**	0.01	0.26
2/11/2021	87.99	0.15	0.03	0.26
3/11/2021	88.89	0.22	0.03	0.36
4/8/2021	88.31	0.03**	0.02	0.29
5/6/2021	89.50	1.42	0.01	0.13
6/2/2021	89.83	0.23	0.02	0.31
6/29/2021	89.75	0.21	0.03	0.26
7/29/2021	89.90	0.01	0.02	0.30
8/26/2021	89.83	0.01	0.01	0.31
9/23/2021	89.64	0.09	0.02	0.31
10/21/2021	89.38	0.02	0.02	0.37
11/18/2021	89.20	0.02	0.02	0.23
12/16/2021	89.12	0.01	0.01	0.23
1/12/2022	88.62	0.02	0.01	0.25
2/10/2022	87.66	0.01	0.01	0.17
3/10/2022	88.25	0.01	0.02	0.25

- = Depth of Free Product was not detected by instrument

* = Absorbent sock in well

**= Free product thickness measured with first bailer volume during free product recovery

Free Product Recovery Information

Tabulate the free product and groundwater volumes removed from each well. List each extraction event chronologically with the oldest data first. The results for all events must be provided. Give all elevations as feet Above Sea Level (ASL). Ground surface elevation must be reported to the nearest 0.1 foot. Top of casing elevation, static water elevations, and free product thickness must be reported to the nearest 0.01 foot. Volume of free product and groundwater removed must be reported to the nearest 0.1 gallon. A separate sheet of paper should be used for each recovery well.

Well Number: MW-14	Ground Surface Elevation: 97.62	Top of Casing Elevation: 97.36

Date Sampled	Static Groundwater Level (Feet ASL)	Free Product Thickness (Feet)	Volume of Free Product Removed (Gallons)	Volume of Groundwater Removed (Gallons)
06/24/2019	84.77	0.00	0.00	0.00
03/30/2020	84.71	0.00	0.00	0.00
9/22/2020	92.91	0.00	0.00	0.00
3/11/2021	84.86	0.00	0.00	0.00
9/23/2021	--	MW was dry		
3/10/2022	--	MW was dry		

Free Product Recovery – Site Totals	
Tabulate the total groundwater volume and total free product volume removed from all the recovery wells at the site. Volume of free product and groundwater recovered must be reported to the nearest 0.1 gallon. List the site totals starting with the first month the recovery was initiated. The results for all events must be provided.	
Volume of Water Recovered	**Volume of Free Product Recovered**
03/2020 – 0.6	03/2020 – 0.3
04/2020 – 0.9	04/2020 – 0.2
05/2020 – 0.6	05/2020 – 0.1
06/2020 – 0.7	06/2020 – 0.2
07/2020 – 0.7	07/2020 – 0.2
08/2020 – 0.7	08/2020 – 0.2
09/2020 – 0.4	09/2020 – 0.1
10/2020 – 0.4	10/2020 – 0.1
11/2020 – 0.6	11/2020 – 0.2
12/2020 – 0.8	12/2020 – 0.1
01/2021 – 0.5	01/2021 – 0.1
02/2021 – 0.6	02/2021 – 0.1
03/2021 – 0.7	03/2021 – 0.1
04/2021 – 0.6	04/2021 – 0.1
05/2021 – 0.2	05/2021 – 0.0
06/2021 – 0.5	06/2021 – 0.0
07/2021 – 0.8	07/2021 – 0.1
08/2021 – 0.7	08/2021 – 0.1
09/2021 – 0.7	09/2021 – 0.1
10/2021 – 0.7	10/2021 – 0.1
11/2021 – 0.6	11/2021 – 0.1
12/2021 – 0.5	12/2021 – 0.1
1/2022 – 0.7	1/2022 – 0.0
2/2022 – 0.6	2/2022 – 0.1
3/2022 – 0.7	3/2022 – 0.1