



**VIA ELECTRONIC MAIL**

December 17, 2020

Mr. Grant Neitzel  
Hydrogeologist  
Wisconsin Department of Natural Resources  
1701 N 4th Street  
Superior, Wisconsin 54880

**Subject: Project Status Update – November 2020 Sampling Event  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin  
WDNR BRRTS # 02-16-00475**

Dear Mr. Neitzel:

On behalf of Magellan Pipeline Company, L.P. (Magellan), WSP USA Inc. (WSP) is submitting a brief project status update for the Magellan Superior Station (Station). The Station is located near 2301 Winter Street (Figure 1). This letter includes an update on the operational status of the facility and the results of a recent groundwater sampling event.

The Station has been inactive since July 2018 as a result of the cessation of refinery operations at the Husky Energy Refinery. The Station has electrical power available; however, all piping, pumps and assets have been purged with nitrogen. The Station is anticipated to become active when the Husky Energy Refinery resumes operations, which may occur in Fall 2022.

In October 2020, Magellan submitted a closure request to the Wisconsin Department of Natural Resources (WDNR). During the review of the closure request, the WDNR expressed concern about the methyl tert-butyl ether (MTBE) concentrations reported in samples from two wells during late 2017 and 2018. WSP conducted a limited groundwater sampling event on November 30, 2020 to obtain current MTBE concentrations in groundwater.

**SYNOPSIS OF NOVEMBER 2020 GROUNDWATER MONITORING EVENT:**

On November 30, 2020, a WSP sampling technician measured fluid levels and collected groundwater samples from select wells for laboratory analysis. Fluid levels were measured in all wells except for side-gradient wells MW-05 and MW-08, which have been removed from the sampling network with the WDNR's approval. Instrumentation issues were encountered while gauging the water level at MW-02 so a fluid level for this well has not been included in the attached tables and figures. No sheen nor free product was observed in the wells. Historical fluid-level data are summarized on Table 1. A hydrograph (Figure 2) illustrates that the Station's groundwater elevation was at a historically high-level during October 2017. Following the October 2017 sampling event, groundwater fluid-level elevations decreased to

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[wsp.com](http://wsp.com)

elevations within historical values. From the last sampling event in September 2018 to the November 2020 sampling event, the groundwater table elevation increased slightly. The groundwater flow direction has remained consistent with historical flow patterns. A groundwater elevation contour map derived from the November 2020 monitoring event is attached as Figure 3.

Groundwater samples were collected for petroleum volatile organic compounds (PVOC) analysis from monitoring wells MW-04, MW-06 and MW-07 during November 2020. The most recent PVOC analytical data are summarized on Table 2. The analytical report is included in Attachment A. Historical PVOC analytical data are summarized on Table 3. MTBE, toluene, total xylenes and naphthalene were not detected at concentrations above the Preventive Action Limits (PAL) in the groundwater samples collected during the November 2020 sampling event. The groundwater analytical data indicates that the reported benzene concentrations were either non-detect, trending downward, or stable with historical concentrations. A contour map depicting the post-remedial extent of PAL and Enforcement Standard (ES) exceedances is included as Figure 4. Benzene concentration trends are depicted on Figure 5. Ethylbenzene concentrations reported in samples from monitoring wells MW-4 and MW-6 were greater than the PAL but less than the ES and less than or similar to concentrations reported during 2018.

## SUMMARY AND PROPOSED PATH FORWARD:

The results of the November 2020 groundwater monitoring activities indicate the following:

- No observable free product or sheen was observed in the monitoring wells within the sampling program;
- The water table was within the historical range during the monitoring event;
- MTBE was not detected in the monitoring wells that were sampled;
- Recent concentrations of benzene, toluene, ethylbenzene, xylenes, trimethylbenzene and naphthalene are either non-detect, trending downward, or are stable with historical concentrations; and,
- The historical contaminants of concern are within a self-limiting plume with no off-site migration.

Based on the above findings, Magellan requests concurrence from the WDNR that the Case Closure submittal should be modified to include the recent data and resubmitted for the WDNR's consideration.

Kind regards,



Jennifer Shelton, P.E.  
Supervising Environmental Engineer

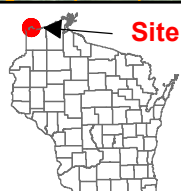
JS  
Encl.  
cc: Heather Tittjung, Magellan (electronic)

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## FIGURES

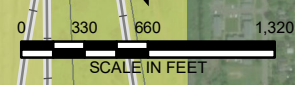


WSP Office: St. Paul, MN, U.S.A. | Source: CUGIS/Maryland/Magellan-Superior/area/0507/SUP011.mxd, 4/11/2018, 2:18:29 PM, MDD, 1083, UTM, Zone 18N



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- Site Boundary
- Magellan - Leased Parcel
- Burlington Northern Parcel Ownership



Drawn: 4/11/2018  
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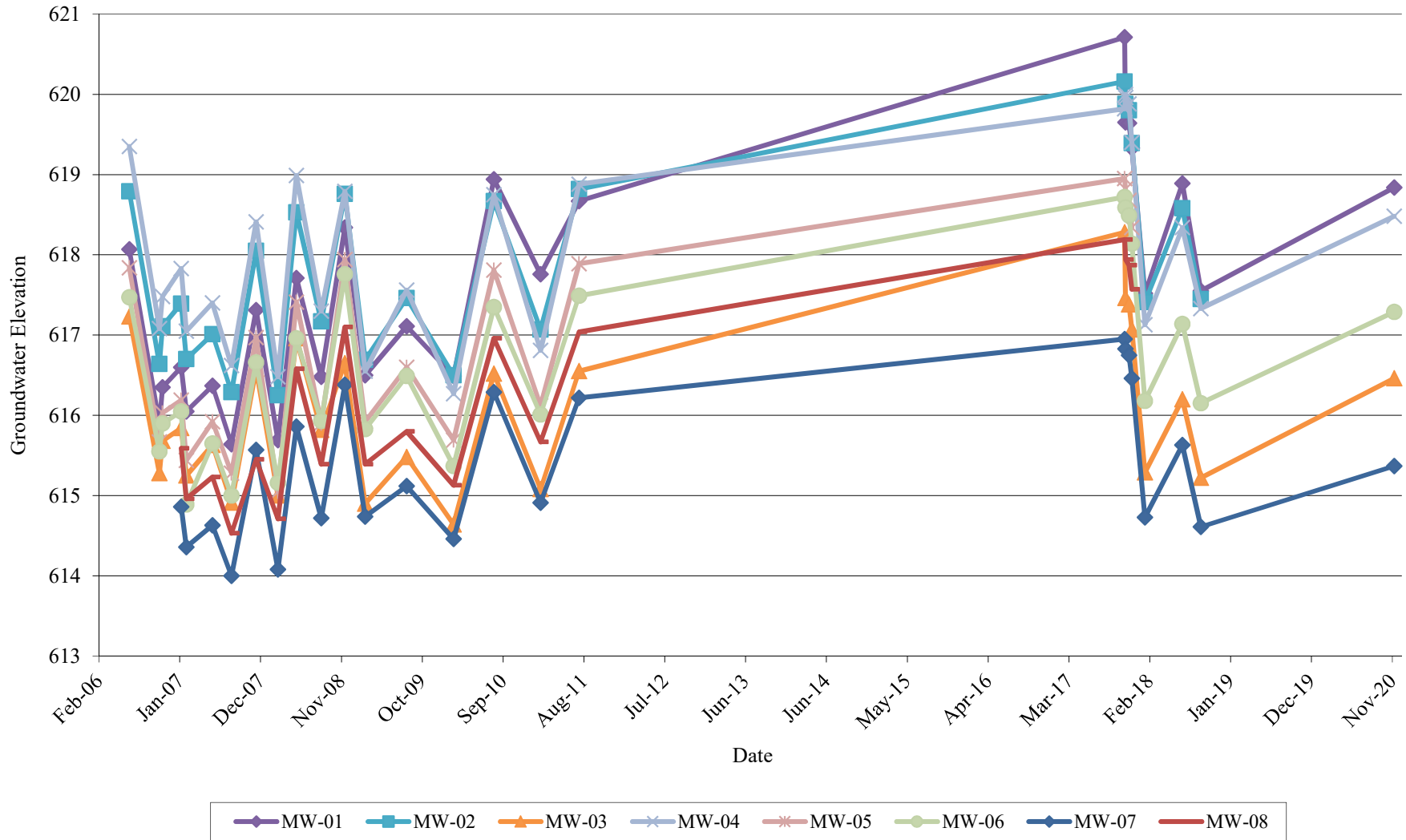


**SUPERIOR STATION  
 SUPERIOR, WISCONSIN**  
 PREPARED FOR  
**MAGELLAN PIPELINE COMPANY, L.P.**

**FIGURE 1**  
**AREA LOCATION**

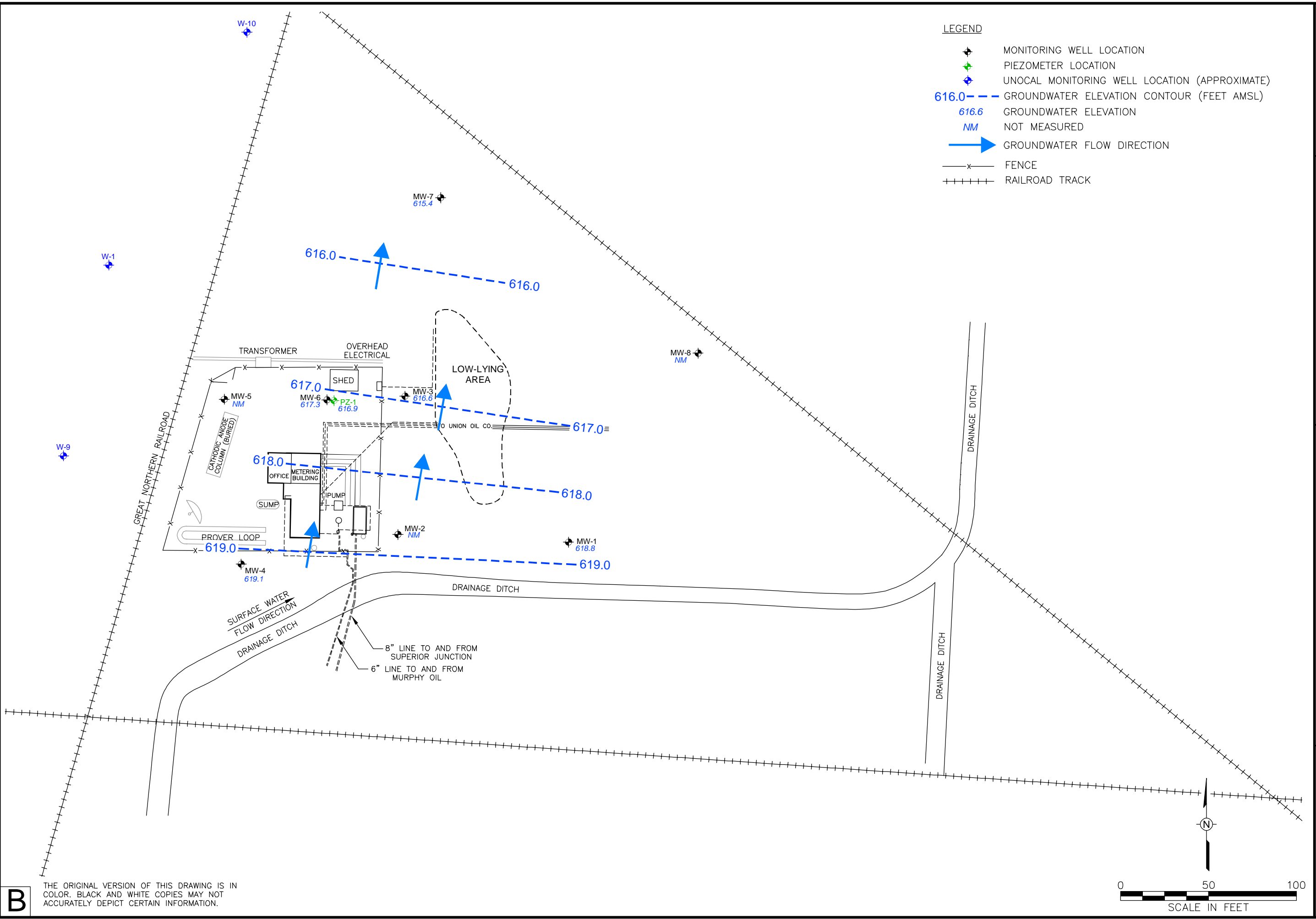
Figure 2

Historical Monitoring Well Hydrograph  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin



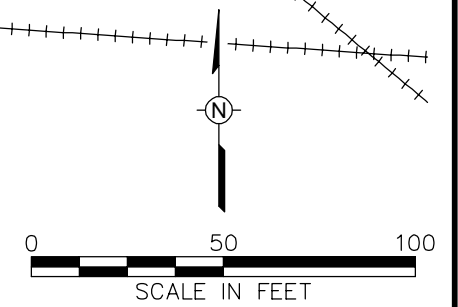
WSP

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- LEGEND**
- ⊕ MONITORING WELL LOCATION
  - ⊕ (green) PIEZOMETER LOCATION
  - ⊕ (blue) UNOCAL MONITORING WELL LOCATION (APPROXIMATE)
  - 616.0 --- GROUNDWATER ELEVATION CONTOUR (FEET AMSL)
  - 616.6 GROUNDWATER ELEVATION
  - NM NOT MEASURED
  - GROUNDWATER FLOW DIRECTION
  - x- FENCE
  - + + + + + RAILROAD TRACK

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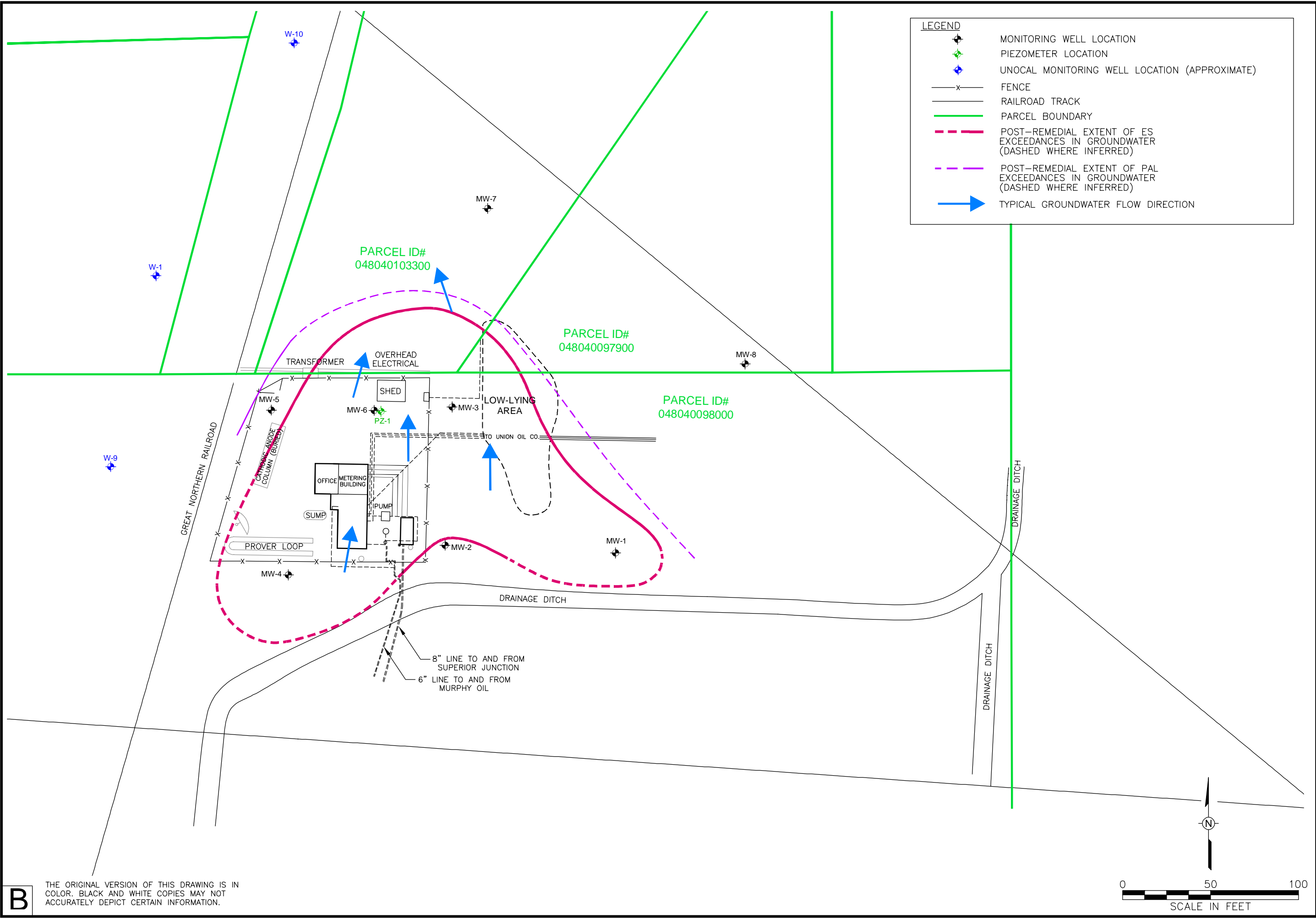
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 Checked: JRG 12/16/2020  
 Approved: JAS 12/16/2020  
 DWG Name: 314MN1067.433-027

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 TULSA, OKLAHOMA

Figure 3  
 GROUNDWATER FLOW DIRECTION  
 NOVEMBER 2020

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 SUITE 7  
 MADISON, WI 53719  
 TEL: +1 608.441.5544

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**LEGEND**

- MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- UNOCAL MONITORING WELL LOCATION (APPROXIMATE)
- FENCE
- RAILROAD TRACK
- PARCEL BOUNDARY
- POST-REMEDIAL EXTENT OF ES EXCEEDANCES IN GROUNDWATER (DASHED WHERE INFERRED)
- POST-REMEDIAL EXTENT OF PAL EXCEEDANCES IN GROUNDWATER (DASHED WHERE INFERRED)
- TYPICAL GROUNDWATER FLOW DIRECTION

Drawn By: LS 12/16/2020  
 Checked: JRG 12/16/2020  
 Approved: JAS 12/16/2020  
 DWG Name: 314MN1067.433-028

SUPERIOR STATION  
 SUPERIOR, WISCONSIN  
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 MAGELLAN PIPELINE COMPANY, L.P.  
 TULSA, OKLAHOMA

Figure 4  
 POST-REMEDIAL EXTENT OF  
 GROUNDWATER EXCEEDANCES  
 (NOVEMBER 2020)

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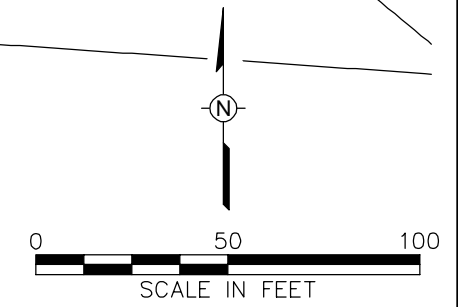
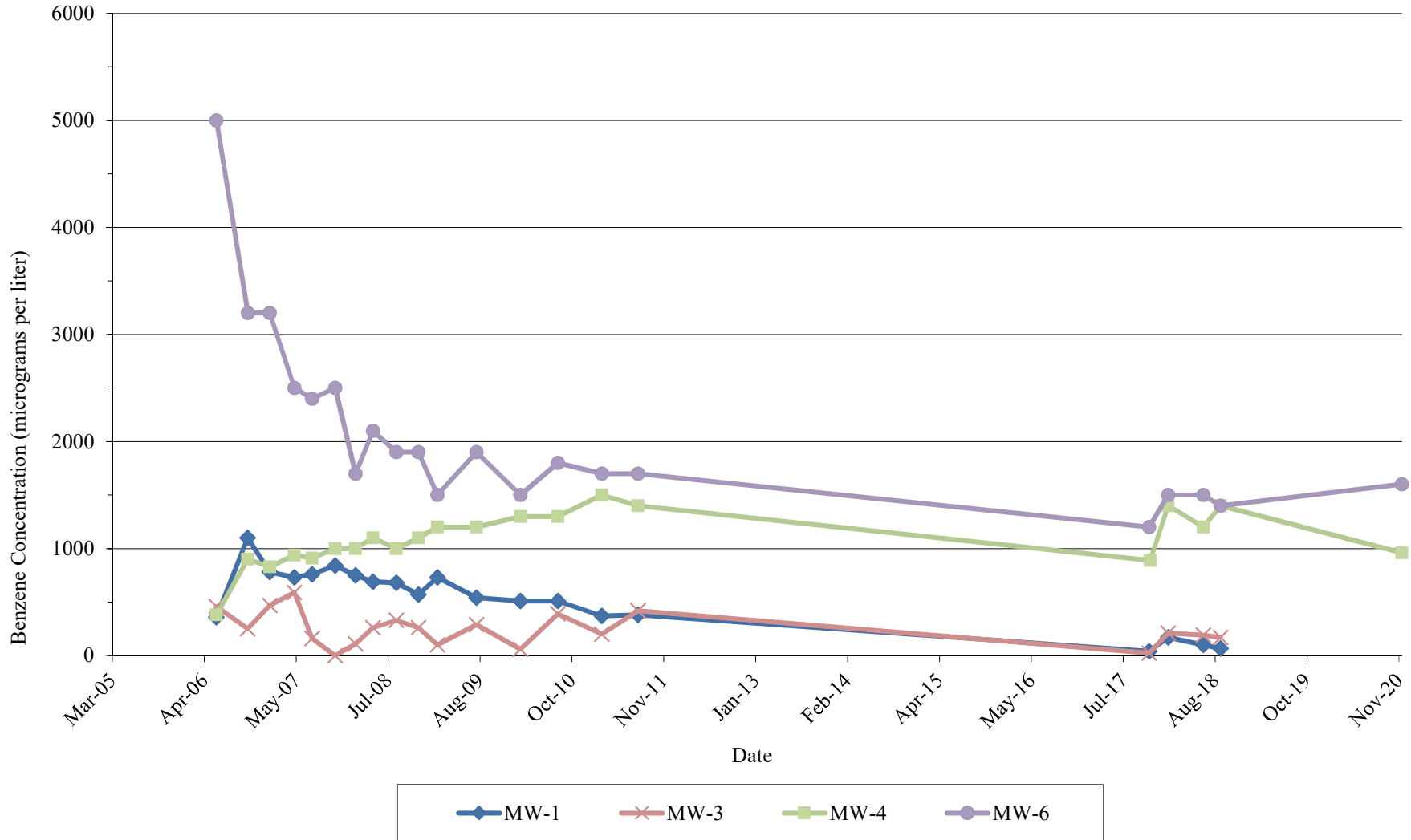


Figure 5

**Benzene Concentrations Trends  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin**





## TABLES

Table 1

**Water Level Elevations  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

Well Number	Date	Well Depth (b)	TOC Elevation (c)	Depth to Product	Depth to Water	Product Thickness	Corrected Water Elevation (d)
MW-01	06/08/06	33.00	631.35	--	13.28	--	618.07
MW-01	10/12/06	33.00	631.35	--	15.46	--	615.89
MW-01	10/25/06	33.00	631.35	--	15.00	--	616.35
MW-01	01/11/07	33.00	631.35	--	14.75	--	616.60
MW-01	02/01/07	33.00	631.35	--	15.30	--	616.05
MW-01	05/22/07	33.00	631.35	--	14.98	--	616.37
MW-01	08/09/07	33.00	631.35	--	15.71	--	615.64
MW-01	11/20/07	33.00	631.35	--	14.04	--	617.31
MW-01	02/19/08	33.00	631.35	--	15.66	--	615.69
MW-01	05/07/08	33.00	631.35	--	13.64	--	617.71
MW-01	08/19/08	33.00	631.35	--	14.87	--	616.48
MW-01	11/25/08	33.00	631.35	--	13.01	--	618.34
MW-01	02/18/09	33.00	631.35	--	14.85	--	616.50
MW-01	08/11/09	33.00	631.35	--	14.24	--	617.11
MW-01	02/23/10	33.00	631.35	--	14.86	--	616.49
MW-01	08/10/10	33.00	631.35	--	12.41	--	618.94
MW-01	02/22/11	33.00	631.35	--	13.59	--	617.76
MW-01	08/02/11	33.00	631.35	--	12.68	--	618.67
MW-01	10/30/17	33.00	631.35	--	10.64	--	620.71
MW-01	11/02/17	33.00	631.35	--	11.70	--	619.65
MW-01	11/17/17	33.00	631.35	--	11.71	--	619.64
MW-01	11/29/17	33.00	631.35	--	12.02	--	619.33
MW-01	01/23/18	33.00	631.35	--	13.83	--	617.52
MW-01	06/28/18	33.00	631.35	--	12.46	--	618.89
MW-01	09/13/18	33.00	631.35	--	13.80	--	617.55
MW-01	11/30/20	33.00	631.35	--	12.51	--	618.84
MW-02	06/08/06	32.00	632.01	--	13.22	--	618.79
MW-02	10/12/06	32.00	632.01	--	15.37	--	616.64
MW-02	10/25/06	32.00	632.01	--	14.90	--	617.11
MW-02	01/11/07	32.00	632.01	--	14.62	--	617.39
MW-02	02/01/07	32.00	632.01	--	15.31	--	616.70
MW-02	05/22/07	32.00	632.01	--	15.00	--	617.01
MW-02	08/09/07	32.00	632.01	--	15.72	--	616.29
MW-02	11/20/07	32.00	632.01	--	13.96	--	618.05
MW-02	02/19/08	32.00	632.01	--	15.76	--	616.25
MW-02	05/07/08	32.00	632.01	--	13.48	--	618.53
MW-02	08/19/08	32.00	632.01	--	14.84	--	617.17
MW-02	11/25/08	32.00	631.73	--	12.97	--	618.76
MW-02	02/18/09	32.00	631.73	--	15.04	--	616.69
MW-02	08/11/09	32.00	631.73	--	14.27	--	617.46
MW-02	02/23/10	32.00	631.73	--	15.23	--	616.50
MW-02	08/10/10	32.00	631.73	--	13.06	--	618.67
MW-02	02/22/11	32.00	631.73	--	14.66	--	617.07
MW-02	08/02/11	32.00	631.73	--	12.91	--	618.82
MW-02	10/30/17	32.00	631.73	--	11.57	--	620.16
MW-02	11/02/17	32.00	631.73	--	11.85	--	619.88
MW-02	11/17/17	32.00	631.73	--	11.93	--	619.80
MW-02	11/29/17	32.00	631.73	--	12.34	--	619.39
MW-02	01/23/18	32.00	631.73	--	14.32	--	617.41
MW-02	06/28/18	32.00	631.73	--	13.15	--	618.58

Table 1

**Water Level Elevations  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

Well Number	Date	Well Depth (b)	TOC Elevation (c)	Depth to Product	Depth to Water	Product Thickness	Corrected Water Elevation (d)
MW-02	09/13/18	32.00	631.73	--	14.28	--	617.45
MW-03	06/08/06	28.00	631.59	--	14.36	--	617.23
MW-03	10/12/06	28.00	631.59	--	16.31	--	615.28
MW-03	10/25/06	28.00	631.59	--	15.91	--	615.68
MW-03	01/11/07	28.00	631.59	--	15.75	--	615.84
MW-03	02/01/07	28.00	631.59	--	16.34	--	615.25
MW-03	05/22/07	28.00	631.59	--	15.96	--	615.63
MW-03	08/09/07	28.00	631.59	--	16.68	--	614.91
MW-03	11/20/07	28.00	631.59	--	15.01	--	616.58
MW-03	02/19/08	28.00	631.59	--	16.59	--	615.00
MW-03	05/07/08	28.00	631.59	--	14.63	--	616.96
MW-03	08/19/08	28.00	631.59	--	15.77	--	615.82
MW-03	11/25/08	28.00	631.47	--	14.82	--	616.65
MW-03	02/18/09	28.00	631.47	--	16.57	--	614.90
MW-03	08/11/09	28.00	631.47	--	15.99	--	615.48
MW-03	02/23/10	28.00	631.47	--	16.83	--	614.64
MW-03	08/10/10	28.00	631.47	--	14.95	--	616.52
MW-03	02/22/11	28.00	631.47	--	16.39	--	615.08
MW-03	08/02/11	28.00	631.47	--	14.92	--	616.55
MW-03	10/30/17	28.00	631.47	--	13.19	--	618.28
MW-03	11/02/17	28.00	631.47	--	14.01	--	617.46
MW-03	11/17/17	28.00	631.47	--	14.09	--	617.38
MW-03	11/29/17	28.00	631.47	--	14.40	--	617.07
MW-03	01/23/18	28.00	631.47	--	16.18	--	615.29
MW-03	06/28/18	28.00	631.47	--	15.27	--	616.20
MW-03	09/13/18	28.00	631.47	--	16.25	--	615.22
MW-03	11/30/20	28.00	631.47	--	15.01	--	616.46
MW-04	06/08/06	28.00	632.89	--	13.54	--	619.35
MW-04	10/12/06	28.00	632.89	--	15.81	--	617.08
MW-04	10/25/06	28.00	632.89	--	15.41	--	617.48
MW-04	01/11/07	28.00	632.89	--	15.06	--	617.83
MW-04	02/01/07	28.00	632.89	--	15.84	--	617.05
MW-04	05/22/07	28.00	632.89	--	15.49	--	617.40
MW-04	08/09/07	28.00	632.89	--	16.27	--	616.62
MW-04	11/20/07	28.00	632.89	--	14.48	--	618.41
MW-04	02/19/08	28.00	632.89	--	16.41	--	616.48
MW-04	05/07/08	28.00	632.89	--	13.90	--	618.99
MW-04	08/19/08	28.00	632.89	--	15.59	--	617.30
MW-04	11/25/08	28.00	632.29	--	13.50	--	618.79
MW-04	02/18/09	28.00	632.29	--	15.74	--	616.55
MW-04	08/11/09	28.00	632.29	--	14.73	--	617.56
MW-04	02/23/10	28.00	632.29	--	16.02	--	616.27
MW-04	08/10/10	28.00	632.29	--	13.54	--	618.75
MW-04	02/22/11	28.00	632.29	--	15.48	--	616.81
MW-04	08/02/11	28.00	632.29	--	13.41	--	618.88
MW-04	10/30/17	28.00	632.29	FP	12.47	NM	619.82
MW-04	11/02/17	28.00	632.29	12.29	12.30	0.01	620.00
MW-04	11/03/17	28.00	632.29	12.33	12.33	Sheen	619.96
MW-04	11/17/17	28.00	632.29	--	12.41	--	619.88

Table 1

**Water Level Elevations  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

Well Number	Date	Well Depth (b)	TOC Elevation (c)	Depth to Product	Depth to Water	Product Thickness	Corrected Water Elevation (d)
MW-04	11/29/17	28.00	632.29	--	12.89	--	619.40
MW-04	01/23/18	28.00	632.29	--	15.16	--	617.13
MW-04	06/28/18	28.00	632.29	--	13.95	--	618.34
MW-04	09/13/18	28.00	632.29	--	14.96	--	617.33
MW-04	11/30/20	28.00	632.29	--	13.81	--	618.48
MW-05	06/08/06	27.00	633.19	--	15.35	--	617.84
MW-05	10/12/06	27.00	633.19	--	17.52	--	615.67
MW-05	10/25/06	27.00	633.19	--	17.16	--	616.03
MW-05	01/11/07	27.00	633.19	--	17.00	--	616.19
MW-05	02/01/07	27.00	633.19	--	17.75	--	615.44
MW-05	05/22/07	27.00	633.19	--	17.27	--	615.92
MW-05	08/09/07	27.00	633.19	--	17.91	--	615.28
MW-05	11/20/07	27.00	633.19	--	16.22	--	616.97
MW-05	02/19/08	27.00	633.19	--	18.14	--	615.05
MW-05	05/07/08	27.00	633.19	--	15.78	--	617.41
MW-05	08/19/08	27.00	633.19	--	17.29	--	615.90
MW-05	11/25/08	27.00	633.19	--	15.25	--	617.94
MW-05	02/18/09	27.00	633.19	--	17.27	--	615.92
MW-05	08/11/09	27.00	633.19	--	16.59	--	616.60
MW-05	02/23/10	27.00	633.19	--	17.50	--	615.69
MW-05	08/10/10	27.00	633.19	--	15.38	--	617.81
MW-05	02/22/11	27.00	633.19	--	17.07	--	616.12
MW-05	08/02/11	27.00	633.19	--	15.30	--	617.89
MW-05	10/30/17	27.00	633.19	--	14.24	--	618.95
MW-05	11/02/17	27.00	633.19	--	14.37	--	618.82
MW-05	11/17/17	27.00	633.19	--	14.51	--	618.68
MW-05	11/29/17	27.00	633.19	--	14.85	--	618.34
MW-05	01/23/18	27.00	633.19	--	NM	--	--
MW-05	06/28/18	27.00	633.19	--	NM	--	--
MW-05	09/13/18	27.00	633.19	--	NM	--	--
MW-05	11/30/20	27.00	633.19	--	NM	--	--
MW-06	06/08/06	28.00	632.57	--	15.10	--	617.47
MW-06	10/12/06	28.00	632.57	--	17.02	--	615.55
MW-06	10/25/06	28.00	632.57	--	16.67	--	615.90
MW-06	01/11/07	28.00	632.57	--	16.52	--	616.05
MW-06	02/01/07	28.00	632.57	--	17.68	--	614.89
MW-06	05/22/07	28.00	632.57	--	16.92	--	615.65
MW-06	08/09/07	28.00	632.57	--	17.57	--	615.00
MW-06	11/20/07	28.00	632.57	--	15.91	--	616.66
MW-06	02/19/08	28.00	632.57	--	17.41	--	615.16
MW-06	05/07/08	28.00	632.57	--	15.61	--	616.96
MW-06	08/19/08	28.00	632.57	--	16.64	--	615.93
MW-06	11/25/08	28.00	632.57	--	14.81	--	617.76
MW-06	02/18/09	28.00	632.57	--	16.74	--	615.83
MW-06	08/11/09	28.00	632.57	--	16.08	--	616.49
MW-06	02/23/10	28.00	632.57	--	17.20	--	615.37
MW-06	08/10/10	28.00	632.57	--	15.22	--	617.35
MW-06	02/22/11	28.00	632.57	--	16.56	--	616.01
MW-06	08/02/11	28.00	632.57	--	15.08	--	617.49
MW-06	10/30/17	28.00	632.57	--	13.85	--	618.72

Table 1

**Water Level Elevations  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

Well Number	Date	Well Depth (b)	TOC Elevation (c)	Depth to Product	Depth to Water	Product Thickness	Corrected Water Elevation (d)
MW-06	11/02/17	28.00	632.57	--	13.98	--	618.59
MW-06	11/17/17	28.00	632.57	--	14.08	--	618.49
MW-06	11/29/17	28.00	632.57	--	14.43	--	618.14
MW-06	01/23/18	28.00	632.57	--	16.39	--	616.18
MW-06	06/28/18	28.00	632.57	--	15.43	--	617.14
MW-06	09/13/18	28.00	632.57	--	16.42	--	616.15
MW-06	11/30/20	28.00	632.57	--	15.28	--	617.29
MW-07	01/11/07	28.00	628.59	--	13.73	--	614.86
MW-07	02/01/07	28.00	628.59	--	14.23	--	614.36
MW-07	05/22/07	28.00	628.59	--	13.96	--	614.63
MW-07	08/09/07	28.00	628.59	--	14.59	--	614.00
MW-07	11/20/07	28.00	628.59	--	13.02	--	615.57
MW-07	02/19/08	28.00	628.59	--	14.51	--	614.08
MW-07	05/07/08	28.00	628.59	--	12.73	--	615.86
MW-07	08/19/08	28.00	628.59	--	13.87	--	614.72
MW-07	11/25/08	28.00	628.59	--	12.21	--	616.38
MW-07	02/18/09	28.00	628.59	--	13.85	--	614.74
MW-07	08/11/09	28.00	628.59	--	13.47	--	615.12
MW-07	02/23/10	28.00	628.59	--	14.13	--	614.46
MW-07	08/10/10	28.00	628.59	--	12.30	--	616.29
MW-07	02/22/11	28.00	628.59	--	13.68	--	614.91
MW-07	08/02/11	28.00	628.59	--	12.37	--	616.22
MW-07	10/30/17	28.00	628.59	--	11.64	--	616.95
MW-07	11/02/17	28.00	628.59	--	11.76	--	616.83
MW-07	11/17/17	28.00	628.59	--	11.84	--	616.75
MW-07	11/29/17	28.00	628.59	--	12.13	--	616.46
MW-07	01/23/18	28.00	628.59	--	13.86	--	614.73
MW-07	06/28/18	28.00	628.59	--	12.96	--	615.63
MW-07	09/13/18	28.00	628.59	--	13.98	--	614.61
MW-07	11/30/20	28.00	628.59	--	13.22	--	615.37
MW-08	01/11/07	29.00	629.41	--	13.82	--	615.59
MW-08	02/01/07	29.00	629.41	--	14.45	--	614.96
MW-08	05/22/07	29.00	629.41	--	14.18	--	615.23
MW-08	08/09/07	29.00	629.41	--	14.88	--	614.53
MW-08	11/20/07	29.00	629.41	--	13.96	--	615.45
MW-08	02/19/08	29.00	629.41	--	14.70	--	614.71
MW-08	05/07/08	29.00	629.41	--	12.83	--	616.58
MW-08	08/19/08	29.00	629.41	--	14.02	--	615.39
MW-08	11/25/08	29.00	629.41	--	12.31	--	617.10
MW-08	02/18/09	29.00	629.41	--	14.02	--	615.39
MW-08	08/11/09	29.00	629.41	--	13.61	--	615.80
MW-08	02/23/10	29.00	629.41	--	14.28	--	615.13
MW-08	08/10/10	29.00	629.41	--	12.45	--	616.96
MW-08	02/22/11	29.00	629.41	--	13.74	--	615.67
MW-08	08/02/11	29.00	629.41	--	12.37	--	617.04
MW-08	10/30/17	29.00	629.41	--	11.22	--	618.19
MW-08	11/03/17	29.00	629.41	--	11.47	--	617.94
MW-08	11/17/17	29.00	629.41	--	11.54	--	617.87
MW-08	11/29/17	29.00	629.41	--	11.84	--	617.57
MW-08	01/23/18	29.00	629.41	--	NM	--	--

**Table 1**

**Water Level Elevations  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

<b>Well Number</b>	<b>Date</b>	<b>Well Depth (b)</b>	<b>TOC Elevation (c)</b>	<b>Depth to Product</b>	<b>Depth to Water</b>	<b>Product Thickness</b>	<b>Corrected Water Elevation (d)</b>
MW-08	06/28/18	29.00	629.41	--	NM	--	--
MW-08	09/13/18	29.00	629.41	--	NM	--	--
MW-08	11/30/20	29.00	629.41	--	NM	--	--
PZ-01	06/08/06	45.00	632.50	--	15.25	--	617.25
PZ-01	10/12/06	45.00	632.50	--	NM	--	--
PZ-01	10/25/06	45.00	632.50	--	16.78	--	615.72
PZ-01	01/11/07	45.00	632.50	--	16.67	--	615.83
PZ-01	02/01/07	45.00	632.50	--	17.21	--	615.29
PZ-01	05/22/07	45.00	632.50	--	16.87	--	615.63
PZ-01	08/09/07	45.00	632.50	--	17.45	--	615.05
PZ-01	11/20/07	45.00	632.50	--	15.92	--	616.58
PZ-01	02/19/08	45.00	632.50	--	17.41	--	615.09
PZ-01	05/07/08	45.00	632.50	--	15.54	--	616.96
PZ-01	08/19/08	45.00	632.50	--	16.61	--	615.89
PZ-01	11/25/08	45.00	632.50	--	14.96	--	617.54
PZ-01	02/18/09	45.00	632.50	--	16.97	--	615.53
PZ-01	08/11/09	45.00	632.50	--	16.24	--	616.26
PZ-01	02/23/10	45.00	632.50	--	16.99	--	615.51
PZ-01	08/10/10	45.00	632.50	--	15.12	--	617.38
PZ-01	02/22/11	45.00	632.50	--	16.53	--	615.97
PZ-01	08/02/11	45.00	632.50	--	15.02	--	617.48
PZ-01	10/30/17	45.00	632.50	--	14.04	--	618.46
PZ-01	11/02/17	45.00	632.50	--	14.16	--	618.34
PZ-01	11/17/17	45.00	632.50	--	14.27	--	618.23
PZ-01	11/29/17	45.00	632.50	--	14.61	--	617.89
PZ-01	01/23/18	45.00	632.50	--	16.37	--	616.13
PZ-01	06/28/18	45.00	632.50	--	15.46	--	617.04
PZ-01	09/13/18	45.00	632.50	--	16.42	--	616.08
PZ-01	11/30/20	45.00	632.50	--	15.65	--	616.85

- a/ All measurements are in feet.
- b/ Well depth is measured from the ground surface.
- c/ TOC elevation is in feet above the National Geodetic Vertical Datum. Elevations for MW-2, MW-3 and MW-4 were re-surveyed in January 2009 after the top of the well casings were removed to accommodate the October 2008 excavation.
- d/ The corrected water level elevation is calculated based on a free-phase hydrocarbon specific gravity of 0.79.
  - 619.82 Italicized water level elevation is approximate (it is not corrected for product thickness).
  - NM = not measured.
  - FP = free product observed.
  - = no product.

**Table 2**  
**Groundwater Results - PVOCs**  
**Superior Station**  
**Magellan Pipeline Company, L.P.**  
**Superior, Wisconsin (a)**

Sampling Location	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Methyl tert-butyl ether	Naphthalene
WAC NR 140 ES		<b>5</b>	<b>800</b>	<b>700</b>	<b>2,000</b>	<b>480 *</b>	<b>480 *</b>	<b>60</b>	<b>100</b>
WAC NR 140 PAL		<b>0.5</b>	<b>160</b>	<b>140</b>	<b>400</b>	<b>96 *</b>	<b>96 *</b>	<b>12</b>	<b>10</b>
MW-4	11/30/20	<b>960</b>	32	240	79	140	28	< 2.0	9.2
MW-6	11/30/20	<b>1,600</b>	19	350	80	9.1	7.4	< 2.0	3.7 J
MW-7	11/30/20	< 0.15	< 0.15	< 0.18	< 0.22	< 0.36	< 0.25	< 0.39	< 0.34
Trip Blank	11/30/20	< 0.15	< 0.15	< 0.18	< 0.22	< 0.36	< 0.25	< 0.39	< 0.34

a/ Results are in micrograms per liter (ug/L)

PVOCs = Petroleum volatile organic compounds.

1,2,4-TMB = 1,2,4-Trimethylbenzene.

1,3,5-TMB = 1,3,5-Trimethylbenzene.

WAC NR 140 ES = Wisconsin Administrative Code Chapter NR 140, Enforcement Standards, revised February 2017.

WAC NR 140 PAL = Wisconsin Administrative Code Chapter NR 140, Preventive Action Limits, revised February 2017.

\* = Wisconsin NR 140 standards are for the combined concentration of 1,2,4- and 1,3,5- TMB.

< = Not detected above laboratory method detection limit.

**Bold** text indicates an exceedance of the WAC NR 140 ES.

*Italicized* text indicates an exceedance of the WAC NR 140 PAL.

Table 3

**Historical Groundwater Results - PVOCs  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

Sampling Location	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Methyl tert-butyl ether	Naphthalene
WAC NR 140 ES		5	800	700	2,000	480 *	480 *	60	100
WAC NR 140 PAL		0.5	160	140	400	96 *	96 *	12	10
MW-1	06/08/06	360	1.9	89	14	1.4	1.0	<0.50	2.1
MW-1	10/25/06	1,100	37	140	89	15	7.9	<0.23	4.3
MW-1	02/01/07	780	3.8	100	25	7.1 J	2.9 J	<2.3	2.8
MW-1	05/22/07	730	8.2	100	21	4.8	0.70	<0.23	3.2
MW-1	08/09/07	760	4.1	98	19	3.9 J	<1.9	<2.3	10
MW-1	11/20/07	840	4.4	110	20	5.5 J	<1.9	<2.3	3.0
MW-1	02/19/08	750	2.3 J	87	7.6 J	3.7 J	<1.9	<2.3	2.5
MW-1	05/07/08	690	5.4	91	18.0	6.5 J	<1.9	<2.3	2.8
MW-1	08/19/08	680	<2.5	65	6.9 J	5.6 J	<1.9	<2.3	1.7
MW-1	October 2008 Soil Excavation								
MW-1	11/25/08	570	3.1	48	9.4	5.8	0.83	<0.23	1.3 J
MW-1	02/18/09	730	2.4 J	43	11.0	5.0	1.0 J	<1.2	1.2 J
MW-1 Dup	02/18/09	700	<1.2	40	10.0	4.6	1.0 J	<1.2	1.0 J
MW-1	08/11/09	540	1.2 J	18	5.0 J	5.9	1.8 J	<1.2	<0.40
MW-1	02/23/10	510	<2.3	16	<3.9	<2.5	<1.9	<2.3	<0.40
MW-1	08/10/10	510	<2.0	19	5.3 J	2.2 J	<1.5	<1.8	<0.40
MW-1	02/22/11	370	<0.25	17	3.1 Ja	0.99 Ja	0.37 Ja	<0.23	0.105 J
MW-1	08/02/11	380	1.4 Ja	27	10.0	NA	NA	<0.23	0.0895 J
MW-1 Dup	08/02/11	390	1.5 Ja	27	10.0	NA	NA	NA	NA
MW-1	10/30/17	41	< 0.33	1.5	< 0.58	< 0.30	< 0.30	1.0	< 0.23
MW-1	01/23/18	170	2.8	22	19	2.0	3.00	2.3	0.32 J
MW-1	06/28/18	99	1	12	3.5	0.47 J	<0.30	1.9	<0.23
MW-1	09/13/18	67	0.71	7.2	0.93 J	< 0.30	< 0.30	1.6	< 0.23
MW-2	06/08/06	<0.20	<0.20	<0.50	1.6 J	0.97	0.55 J	<0.50	<0.25
MW-2	10/25/06	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-2	02/01/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.41
MW-2	05/22/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-2	08/09/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	1.5
MW-2	11/20/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-2 Dup	11/20/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40

WSP



Table 3

**Historical Groundwater Results - PVOCs  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

Sampling Location	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Methyl tert-butyl ether	Naphthalene
WAC NR 140 ES		5	800	700	2,000	480 *	480 *	60	100
WAC NR 140 PAL		0.5	160	140	400	96 *	96 *	12	10
MW-2	02/19/08	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<1.0
MW-2	05/07/08	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-2 Dup	05/07/08	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-2	08/19/08	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-2	October 2008 Soil Excavation								
MW-2	11/25/08	0.25 J	<0.25	0.91	1.9	3.0	1.2	<0.23	<0.91
MW-2	02/18/09	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-2	08/11/09	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-2	02/23/10	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-2	08/10/10	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-2	02/22/11	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.0329
MW-2	08/02/11	<0.25	<0.25	<0.22	<0.39	NA	NA	<0.23	<0.0460
MW-2	10/30/17	< 0.36	< 0.33	< 0.37	< 0.58	< 0.30	< 0.30	< 0.24	< 0.23
MW-2	01/23/18	< 0.36	< 0.33	< 0.37	< 0.58	0.42 J	< 0.30	0.43 J	< 0.23
MW-2	06/28/18	< 0.36	< 0.33	< 0.37	< 0.58	< 0.30	< 0.30	< 0.24	< 0.24
MW-2	09/13/18	< 0.36	< 0.33	< 0.37	< 0.58	< 0.30	< 0.30	< 0.24	< 0.23
MW-3	06/08/06	460	26	160	110	49	23	1.9	10
MW-3 Dup	06/08/06	450	26	150	99	43	20	1.6 J	8.9
MW-3	10/25/06	250	6.6	67	120	160	61	<8.4 RL1	46
MW-3 Dup	10/25/06	260	8.7	99	170	240	88	<11 RL1	9.2
MW-3	02/01/07	470	<8.6	110	210	400	150	<2.3	24
MW-3	05/22/07	590	<1.1	72	120	150	62	<2.3	12
MW-3	08/09/07	160	1.3 J	22	28	46	23	<2.3	5
MW-3 Dup	08/09/07	160	1.3 J	26	32	52	26	<2.3	3.7
MW-3	11/20/07	350 P	2.6 P	82 P	20 P	29 P	13 P	<0.46 P	1.4
MW-3	02/19/08	110	0.54 J	12	10	23	9.9	<0.46	3.4
MW-3 Dup	02/19/08	100	0.60 J	12	11	23	10	<0.46	2.8
MW-3	05/07/08	260	5.5	100	49	120	40	<0.92	7.5
MW-3	08/19/08	330	3.4 J	70	32	39	10	<1.2	3.2
MW-3 Dup	08/19/08	330	3.0 J	68	29	34	8.1	<2.3	3.7

WSP

Table 3

**Historical Groundwater Results - PVOCs  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

Sampling Location	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Methyl tert-butyl ether	Naphthalene
WAC NR 140 ES		5	800	700	2,000	480 *	480 *	60	100
WAC NR 140 PAL		0.5	160	140	400	96 *	96 *	12	10
MW-3	October 2008 Soil Excavation								
MW-3	11/25/08	260	3.1 J	81	22	48	16	<0.92	0.55 J
MW-3	02/18/09	100	0.82 J	11	9.6	22	6.5	<0.23	0.99 J
MW-3	08/11/09	290	3.9	66	40	57	15	<0.23	2.7
MW-3	02/23/10	59	<0.25	7.1	7	34	7.0	<0.23	0.73 J
MW-3	08/10/10	390	2.9	120	27	28	<0.19	<0.23	<0.80
MW-3	02/22/11	200	1.2 J	20	11 J	27	<0.76	<0.92	0.585
MW-3	08/02/11	420	4.3	90	10	NA	NA	<0.23	0.365
MW-3	10/30/17	23	0.36 J	3.6	0.90 J	0.89	0.45 J	2.9	< 0.23
MW-3	01/23/18	210	3.1	18	3	0.47 J	0.49 J	7.3	< 0.23
MW-3	06/28/18	190	2.4	28	2.3	1.1	0.82	8.1	< 0.23
MW-3	09/13/18	170	2.7	13	< 0.58	0.40 J	< 0.30	6.1	< 0.23
MW-4	06/08/06	380	53	130	70	51	17	<0.50	27
MW-4	10/25/06	900	76	320	120	91	51	<2.3	46
MW-4	02/01/07	830	62	260	82	62	36	<1.2	36
MW-4 Dup	02/01/07	820	60	260	81	60	35	<1.2	39
MW-4	05/22/07	940	60	300	82	92	52	<2.3	38
MW-4	08/09/07	910	71	310	130	200	76	<2.3	71
MW-4	11/20/07	1,000	62	310	76	53	45	<2.3	34
MW-4	02/19/08	1,000	60	320	85	78	59	<4.6	34
MW-4	05/07/08	1,100	71	390	160	350	130	<2.3	30
MW-4	08/19/08	1,000	63	350	180	360	120	<4.6	26
MW-4	October 2008 Soil Excavation								
MW-4	11/25/08	1,100	110	470	300	580	180	<2.3	73
MW-4 Dup	11/25/08	1,100	83	370	200	380	120	<4.6	56
MW-4	02/18/09	1,200	74	370	160	300	100	<2.3	37
MW-4	08/11/09	1,200	73	360	140	310	110	<2.3	19
MW-4	02/23/10	1,300	55	370	170	350	110	<4.6	53
MW-4 Dup	02/23/10	1,300	54	370	160	370	120	<4.6	NA
MW-4	08/10/10	1,300	59	440	210	630	190	<4.6	81

WSP

Table 3

**Historical Groundwater Results - PVOCs  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

Sampling Location	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Methyl tert-butyl ether	Naphthalene
WAC NR 140 ES		5	800	700	2,000	480 *	480 *	60	100
WAC NR 140 PAL		0.5	160	140	400	96 *	96 *	12	10
MW-4 Dup	08/10/10	1,200	46	280	100 J	250	70	<4.6	44
MW-4	02/22/11	1,500	70	500	210	630	190	<4.6	19.7
MW-4 Dup	02/22/11	1,500	68	490	220	660	200	<4.6	NA
MW-4	08/02/11	1,400	70	430	150	NA	NA	<4.6	4.32
MW-4	11/03/17	890	23	150	33	70	40	53	8.3
MW-4	01/23/18	1,400	52	280	84	79	40	76	2.5
MW-4 Dup	01/23/18	1,400	54	280	93	97	49	59	NA
MW-4	06/28/18	1,200	44	260	47	50	29	50	2.2
MW-4	09/13/18	1,400	54	320	61	62	40	79	2.4
MW-4	11/30/20	960	32	240	79	140	28	< 2.0	9.2
MW-5	06/08/06	9.1	0.22 J	130	100	79	33	<0.50	28
MW-5	10/26/06	5.1	0.11 J	32	3.1	2.9	<0.19	<1.3 RL1	1.4
MW-5	02/01/07	3.5	<0.11	3.0	<0.39	0.52 J	<0.19	0.74 J	<0.41
MW-5	05/22/07	3.5	0.12 J	0.76	<0.39	0.59 J	<0.19	0.93	<0.40
MW-5	08/09/07	2.2	<0.11	<0.22	<0.39	<0.25	<0.19	0.68 J	<0.40
MW-5	11/20/07	2.1	<0.11	0.35 J	<0.39	<0.25	<0.19	<0.23	<0.40
MW-5	02/19/08	1.5	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-5	05/07/08	1.4	<0.11	<0.22	<0.39	<0.25	<0.19	0.56 J	<0.40
MW-5	08/19/08	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	0.64 J	<0.40
MW-5		October 2008 Soil Excavation							
MW-5	11/25/08	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	0.49 J	<0.41
MW-5	02/18/09	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	0.60 J	<0.40
MW-5	08/11/09	0.028 J	<0.25	<0.22	<0.39	<0.25	<0.19	0.58 J	<0.40
MW-5	02/23/10	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	0.55 J	<0.40
MW-5	08/10/10	0.29 J	<0.25	<0.22	<0.39	<0.25	<0.19	0.36 J	<0.40
MW-5	02/22/11	0.34 Ja, P	<0.25 P	<0.22 P	<0.39 P	<0.25 P	<0.19 P	0.80 Ja, P	<0.0329
MW-5	08/02/11	0.98 Ja	<0.25	<0.22	<0.39	-	-	1.9 Ja	<0.0460
MW-5	10/30/17	1.1	<0.33	<0.37	<0.58	<0.30	<0.30	2.0	<0.23
MW-5	01/23/18	NA	NA	NA	NA	NA	NA	NA	NA
MW-5	06/28/18	NA	NA	NA	NA	NA	NA	NA	NA

WSP

Table 3

**Historical Groundwater Results - PVOCs  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

Sampling Location	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Methyl tert-butyl ether	Naphthalene
WAC NR 140 ES		5	800	700	2,000	480 *	480 *	60	100
WAC NR 140 PAL		0.5	160	140	400	96 *	96 *	12	10
MW-5	09/13/18	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	06/08/06	5,000	48	690	280	110	84	<0.50	44
MW-6	10/26/06	3,200	32	460	180	40	63	<9.2	38
MW-6	02/01/07	3,200	35	570	180	36 J	80	<12	45
MW-6	05/22/07	2,500	19	410	86	19 J	52	<9.2	21
MW-6	08/09/07	2,400	19	480	94	88	110	<9.2	25
MW-6	11/20/07	2,500	19	430	73	18 J	57	<9.2	12
MW-6	02/19/08	1,700	10 J	350	36 J	22 J	46	<9.2	24
MW-6	05/07/08	2,100	22	500	80	19 J	63	<9.2	22
MW-6	08/19/08	1,900	15 J	410	110	34	66	<9.2	23
MW-6	October 2008 Soil Excavation								
MW-6	11/25/08	1,900	17	460	120	26	58	<4.6	45
MW-6	02/18/09	1,500	11 J	340	65	32	62	<4.6	13
MW-6	08/11/09	1,900	24	540	200	47	81	<4.6	29
MW-6	02/23/10	1,500	7.8 J	410	100	36	78	<4.6	13
MW-6	08/10/10	1,800	11 J	650	250	90	170	<4.6	46
MW-6	02/22/11	1,700	9.2 J	560	130	49	83	<4.6	8.96
MW-6	08/02/11	1,700	20 Ja	570	180	NA	NA	<4.6	11.5
MW-6	10/30/17	1,200	17	260	13 J	3.8 J	5.5	68	2.7
MW-6 Dup	10/30/17	1,200	16	250	12 J	4.0 J	5.3	60	-
MW-6	01/23/18	1,500	21	270	20	7.1	10	48	0.8
MW-6	06/28/18	1,500	18	350	31	4.9 J	8.7	110	<0.23
MW-6 Dup	06/28/18	1,500	28	360	36	8.1	11	110	NA
MW-6	09/13/18	1,400	23	330	17	< 3.0	6.9	66	0.79
MW-6 Dup	09/13/18	1,300	16	320	23	5.0	7.8	57	NA
MW-6	11/30/20	1,600	19	350	80	9.1	7.4	< 2.0	3.7 J
MW-7	02/01/07	<0.20	<0.20	<0.50	<0.50	<0.20	<0.20	<0.50	<0.25
MW-7	05/22/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	0.34 J	<0.40
MW-7 Dup	05/22/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	0.33 J	<0.40
MW-7	08/09/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<1.0

WSP

Table 3

**Historical Groundwater Results - PVOCs  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

Sampling Location	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Methyl tert-butyl ether	Naphthalene
WAC NR 140 ES		5	800	700	2,000	480 *	480 *	60	100
WAC NR 140 PAL		0.5	160	140	400	96 *	96 *	12	10
MW-7	11/20/07	<0.25	<0.11	<0.22	<0.39	0.59 J	<0.19	<0.23	<0.40
MW-7	02/19/08	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-7	05/07/08	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-7	08/19/08	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-7	October 2008 Soil Excavation								
MW-7	11/25/08	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-7	02/18/09	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-7	08/11/09	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-7 Dup	08/11/09	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-7	02/23/10	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-7	08/10/10	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-7	02/22/11	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.0329
MW-7	08/02/11	0.37 Ja	<0.25	<0.22	<0.39	NA	NA	<0.23	<0.0460
MW-7	10/30/17	< 0.36	< 0.33	< 0.37	< 0.58	< 0.30	< 0.30	1.0	< 0.23
MW-7	01/23/18	< 0.36	< 0.33	< 0.37	< 0.58	< 0.30	< 0.30	0.5	< 0.23
MW-7	06/28/18	< 0.36	< 0.33	< 0.37	< 0.58	< 0.30	< 0.30	0.61	< 0.23
MW-7	09/13/18	< 0.36	< 0.33	< 0.37	< 0.58	< 0.30	< 0.30	0.35 J	<0.23
MW-7	11/30/20	< 0.15	< 0.15	< 0.18	< 0.22	< 0.36	< 0.25	< 0.39	< 0.34
MW-8	02/01/07	<0.20	<0.20	<0.50	<0.50	<0.20	<0.20	<0.50	<0.25
MW-8	05/22/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-8	08/09/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-8	11/20/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-8	02/19/08	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-8	05/07/08	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-8	08/19/08	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-8	October 2008 Soil Excavation								
MW-8	11/25/08	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-8	02/18/09	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-8	08/11/09	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-8	02/23/10	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40

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Table 3

**Historical Groundwater Results - PVOCs  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

Sampling Location	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Methyl tert-butyl ether	Naphthalene
WAC NR 140 ES		5	800	700	2,000	480 *	480 *	60	100
WAC NR 140 PAL		0.5	160	140	400	96 *	96 *	12	10
MW-8	08/10/10	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
MW-8	02/22/11	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.0329
MW-8	08/02/11	<0.25	<0.25	<0.22	<0.39	-	-	<0.23	<0.0460
MW-8	10/30/17	<0.36	<0.33	<0.37	<0.58	<0.30	<0.30	<0.24	<0.23
MW-8	01/23/18	NA	NA	NA	NA	NA	NA	NA	NA
MW-8	06/28/18	NA	NA	NA	NA	NA	NA	NA	NA
MW-8	09/13/18	NA	NA	NA	NA	NA	NA	NA	NA
PZ-1	06/08/06	1.3	0.36 J	0.97 J	1.8	0.49 J	0.36 J	<0.50	<0.25
PZ-1	10/26/06	<0.25	0.12 J	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
PZ-1	02/01/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.41
PZ-1	05/22/07	<0.25	0.11 J	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
PZ-1	08/09/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
PZ-1	11/20/07	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
PZ-1	02/19/08	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
PZ-1	05/07/08	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
PZ-1	08/19/08	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
PZ-1	October 2008 Soil Excavation								
PZ-1	11/25/08	<0.25	0.84	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
PZ-1	02/18/09	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
PZ-1	08/11/09	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<1.0
PZ-1	02/23/10	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<1.0
PZ-1	08/10/10	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.40
PZ-1	02/22/11	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	<0.0329
PZ-1	08/02/11	<0.25	<0.25	<0.22	<0.39	NA	NA	<0.23	<0.0460
PZ-1	10/30/17	< 0.36	< 0.33	< 0.37	< 0.58	< 0.30	< 0.30	< 0.24	< 0.23
PZ-1	01/23/18	< 0.36	< 0.33	< 0.37	< 0.58	< 0.30	< 0.30	< 0.24	< 0.24
PZ-1	06/28/18	< 0.36	< 0.33	< 0.37	< 0.58	< 0.30	< 0.30	< 0.24	< 0.24
PZ-1	09/13/18	< 0.36	< 0.33	< 0.37	< 0.58	< 0.30	< 0.30	< 0.24	< 0.23
Equipment Blank	06/08/06	<0.20	<0.20	<0.50	<0.50	<0.20	<0.20	<0.50	<0.25
Field Blank	10/25/06	<0.25	0.15 J	<0.22	<0.39	<0.25	<0.19	NA	NA

WSP

Table 3

**Historical Groundwater Results - PVOCs  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

Sampling Location	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Methyl tert-butyl ether	Naphthalene
WAC NR 140 ES		5	800	700	2,000	480 *	480 *	60	100
WAC NR 140 PAL		0.5	160	140	400	96 *	96 *	12	10
Equipment Blank	02/01/07	<0.25	0.11 J	<0.22	<0.39	<0.25	<0.19	NA	NA
Equipment Blank	05/22/07	<0.25	9.0	0.48 J	0.80 J	<0.25	<0.19	<0.23	<0.40
Equipment Blank	08/09/07	<0.25	0.82	<0.22	0.45 J	<0.25	<0.19	<0.23	<0.40
Equipment Blank	11/20/07	<0.25	0.27 J	<0.22	<0.39	<0.25	<0.19	<0.23	NA
Equipment Blank	02/19/08	<0.25	0.41	<0.22	<0.39	<0.25	<0.19	<0.23	NA
Equipment Blank	05/07/08	<0.25	<0.11	<0.22	<0.39	<0.25	<0.19	<0.23	NA
Equipment Blank	08/19/08	<0.25	0.3	<0.22	<0.39	<0.25	<0.19	<0.23	NA
Equipment Blank	02/18/09	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	NA
Equipment Blank	08/11/09	0.25 CF6, J	0.81 CF6, J	0.30 CF6, J	0.58 CF6, J	<0.25	<0.19	<0.23	NA
Equipment Blank	08/10/10	0.30 J	2.4	<0.22	<0.39	<0.25	<0.19	<0.23	NA
Equipment Blank	02/22/11	<0.25	<0.25	<0.22	<0.39	<0.25	<0.19	<0.23	NA
Equipment Blank	08/02/11	<0.25	0.52 Ja	0.27 Ja	0.52 Ja	NA	NA	NA	NA
Trip Blank	10/30/17	< 0.36	< 0.33	< 0.37	< 0.58	< 0.30	< 0.30	< 0.24	NA
Trip Blank	01/23/18	< 0.36	< 0.33	< 0.37	< 0.58	NA	NA	NA	NA
Equipment Blank	06/28/18	< 0.36	10	< 0.37	< 0.58	< 0.30	< 0.30	< 0.24	NA
Equipment Blank	09/13/18	< 0.36	0.45 J	< 0.37	< 0.58	< 0.30	< 0.30	< 0.24	NA
Trip Blank	09/13/18	< 0.36	< 0.33	< 0.37	< 0.58	< 0.30	< 0.30	< 0.24	NA
Trip Blank	11/30/20	<0.15	<0.15	<0.18	<0.22	<0.36	<0.25	<0.39	<0.34
SB-1	08/26/03	5	<2	4	23	26	11	7	NA
SB-2	08/26/03	<2	<2	<2	<4	<3	<2	<2	<5
SB-3	08/26/03	2	<2	<2	<4	<3	<2	<2	<5
SB-4	08/27/03	<2	<2	<2	<4	<3	<2	<2	<5
SB-6**	08/27/03	1,200	21	150	252	89	49	40	30
SB-6***	08/27/03	7	3	41	104	69	45	2	28
SB-9	08/28/03	150	12	68	239	110	49	4	27
SB-10	08/28/03	430	<2	<2	2	<3	<2	<2	<5
SB-21	01/10/07	<0.25	0.19 J	<0.22	<0.39	<0.25	<0.19	<0.23	<0.42
SB-22	01/10/07	3.6	0.20 J	1.7	2	0.82 J	0.29 J	<0.23	NA

a/ Results are in micrograms per liter (ug/L)

WSP

Table 3

**Historical Groundwater Results - PVOCs  
Superior Station  
Magellan Pipeline Company, L.P.  
Superior, Wisconsin (a)**

Sampling Location	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	1,2,4-TMB	1,3,5-TMB	Methyl tert-butyl ether	Naphthalene
WAC NR 140 ES		<b>5</b>	<b>800</b>	<b>700</b>	<b>2,000</b>	<b>480 *</b>	<b>480 *</b>	<b>60</b>	<b>100</b>
WAC NR 140 PAL		<b>0.5</b>	<b>160</b>	<b>140</b>	<b>400</b>	<b>96 *</b>	<b>96 *</b>	<b>12</b>	<b>10</b>

PVOCs = Petroleum volatile organic compounds.

GRO = gasoline range organics.

DRO = diesel range organics.

TPH = total petroleum hydrocarbons.

1,2,4-TMB = 1,2,4-Trimethylbenzene.

1,3,5-TMB = 1,3,5-Trimethylbenzene.

WAC NR 140 ES = Wisconsin Administrative Code Chapter NR 140, Enforcement Standards, revised February 2017.

WAC NR 140 PAL = Wisconsin Administrative Code Chapter NR 140, Preventive Action Limits, revised February 2017.

\* = Wisconsin NR 140 standards are for the combined concentration of 1,2,4- and 1,3,5- TMB.

< = Not detected above laboratory method detection limit.

NA = constituent not analyzed.

J/Ja = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

RL1 = Reporting limit raised due to sample matrix effects.

P = The sample, as received, was not preserved in accordance to the referenced analytical method.

CF6 = Results confirmed by reanalysis.

\*\* = Sample collected at 16-20 feet.

\*\*\* = Sample was collected at 21-25 feet.

**Bold** text indicates an exceedance of the WAC NR 140 ES.

*Italicized* text indicates an exceedance of the WAC NR 140 PAL.



## ATTACHMENT A : ANALYTICAL REPORT

## ANALYTICAL REPORT

Eurofins TestAmerica, Chicago  
2417 Bond Street  
University Park, IL 60484  
Tel: (708)534-5200

Laboratory Job ID: 500-191751-1  
Client Project/Site: Magellan Superior Station

For:  
WSP USA Inc (formerly LB&G)  
5957 McKee Road,  
Suite 7  
Madison, Wisconsin 53719

Attn: Jennifer Shelton



Authorized for release by:  
12/7/2020 12:47:07 PM

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandra.fredrick@eurofinset.com](mailto:sandra.fredrick@eurofinset.com)

### LINKS

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results through  
**TotalAccess**

Have a Question?



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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Case Narrative

Client: WSP USA Inc (formerly LB&G)  
Project/Site: Magellan Superior Station

Job ID: 500-191751-1

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## Job ID: 500-191751-1

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Laboratory: Eurofins TestAmerica, Chicago

### Narrative

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#### Job Narrative 500-191751-1

### Comments

No additional comments.

### Receipt

The samples were received on 12/1/2020 10:15 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.2° C.

### Receipt Exceptions

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC). Added to COC and logged in.

### GC/MS VOA

Method 8260B: The following samples were diluted due to the abundance of target and non-target analytes: MW-4 (500-191751-1) and MW-6 (500-191751-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: WSP USA Inc (formerly LB&G)  
Project/Site: Magellan Superior Station

Job ID: 500-191751-1

## Client Sample ID: MW-4

Lab Sample ID: 500-191751-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	140		5.0	1.8	ug/L	5		8260B	Total/NA
1,3,5-Trimethylbenzene	28		5.0	1.3	ug/L	5		8260B	Total/NA
Benzene	960		2.5	0.73	ug/L	5		8260B	Total/NA
Ethylbenzene	240		2.5	0.92	ug/L	5		8260B	Total/NA
Naphthalene	9.2		5.0	1.7	ug/L	5		8260B	Total/NA
Toluene	32		2.5	0.76	ug/L	5		8260B	Total/NA
Xylenes, Total	79		5.0	1.1	ug/L	5		8260B	Total/NA

## Client Sample ID: MW-6

Lab Sample ID: 500-191751-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	9.1		5.0	1.8	ug/L	5		8260B	Total/NA
1,3,5-Trimethylbenzene	7.4		5.0	1.3	ug/L	5		8260B	Total/NA
Ethylbenzene	350		2.5	0.92	ug/L	5		8260B	Total/NA
Naphthalene	3.7	J	5.0	1.7	ug/L	5		8260B	Total/NA
Toluene	19		2.5	0.76	ug/L	5		8260B	Total/NA
Xylenes, Total	80		5.0	1.1	ug/L	5		8260B	Total/NA
Benzene - DL	1600		25	7.3	ug/L	50		8260B	Total/NA

## Client Sample ID: MW-7

Lab Sample ID: 500-191751-3

No Detections.

## Client Sample ID: Trip Blank

Lab Sample ID: 500-191751-4

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

# Method Summary

Client: WSP USA Inc (formerly LB&G)  
Project/Site: Magellan Superior Station

Job ID: 500-191751-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200



# Sample Summary

Client: WSP USA Inc (formerly LB&G)  
Project/Site: Magellan Superior Station

Job ID: 500-191751-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-191751-1	MW-4	Water	11/30/20 16:15	12/01/20 10:15	
500-191751-2	MW-6	Water	11/30/20 15:35	12/01/20 10:15	
500-191751-3	MW-7	Water	11/30/20 15:20	12/01/20 10:15	
500-191751-4	Trip Blank	Water	11/30/20 00:00	12/01/20 10:15	

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# Client Sample Results

Client: WSP USA Inc (formerly LB&G)  
 Project/Site: Magellan Superior Station

Job ID: 500-191751-1

**Client Sample ID: MW-4**

**Lab Sample ID: 500-191751-1**

Date Collected: 11/30/20 16:15

Matrix: Water

Date Received: 12/01/20 10:15

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	140		5.0	1.8	ug/L			12/06/20 16:45	5
1,3,5-Trimethylbenzene	28		5.0	1.3	ug/L			12/06/20 16:45	5
Benzene	960		2.5	0.73	ug/L			12/06/20 16:45	5
Ethylbenzene	240		2.5	0.92	ug/L			12/06/20 16:45	5
Methyl tert-butyl ether	<2.0		5.0	2.0	ug/L			12/06/20 16:45	5
Naphthalene	9.2		5.0	1.7	ug/L			12/06/20 16:45	5
Toluene	32		2.5	0.76	ug/L			12/06/20 16:45	5
Xylenes, Total	79		5.0	1.1	ug/L			12/06/20 16:45	5
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	116		75 - 126					12/06/20 16:45	5
4-Bromofluorobenzene (Surr)	86		72 - 124					12/06/20 16:45	5
Dibromofluoromethane	109		75 - 120					12/06/20 16:45	5
Toluene-d8 (Surr)	92		75 - 120					12/06/20 16:45	5



# Client Sample Results

Client: WSP USA Inc (formerly LB&G)  
 Project/Site: Magellan Superior Station

Job ID: 500-191751-1

**Client Sample ID: MW-6**

**Lab Sample ID: 500-191751-2**

Date Collected: 11/30/20 15:35

Matrix: Water

Date Received: 12/01/20 10:15

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	9.1		5.0	1.8	ug/L			12/06/20 17:41	5
1,3,5-Trimethylbenzene	7.4		5.0	1.3	ug/L			12/06/20 17:41	5
Ethylbenzene	350		2.5	0.92	ug/L			12/06/20 17:41	5
Methyl tert-butyl ether	<2.0		5.0	2.0	ug/L			12/06/20 17:41	5
Naphthalene	3.7	J	5.0	1.7	ug/L			12/06/20 17:41	5
Toluene	19		2.5	0.76	ug/L			12/06/20 17:41	5
Xylenes, Total	80		5.0	1.1	ug/L			12/06/20 17:41	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		75 - 126		12/06/20 17:41	5
4-Bromofluorobenzene (Surr)	88		72 - 124		12/06/20 17:41	5
Dibromofluoromethane	111		75 - 120		12/06/20 17:41	5
Toluene-d8 (Surr)	92		75 - 120		12/06/20 17:41	5

**Method: 8260B - Volatile Organic Compounds (GC/MS) - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1600		25	7.3	ug/L			12/06/20 18:10	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		75 - 126		12/06/20 18:10	50
4-Bromofluorobenzene (Surr)	88		72 - 124		12/06/20 18:10	50
Dibromofluoromethane	113		75 - 120		12/06/20 18:10	50
Toluene-d8 (Surr)	93		75 - 120		12/06/20 18:10	50

# Client Sample Results

Client: WSP USA Inc (formerly LB&G)  
 Project/Site: Magellan Superior Station

Job ID: 500-191751-1

**Client Sample ID: MW-7**

**Lab Sample ID: 500-191751-3**

**Date Collected: 11/30/20 15:20**

**Matrix: Water**

**Date Received: 12/01/20 10:15**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			12/06/20 16:16	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			12/06/20 16:16	1
Benzene	<0.15		0.50	0.15	ug/L			12/06/20 16:16	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			12/06/20 16:16	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			12/06/20 16:16	1
Naphthalene	<0.34		1.0	0.34	ug/L			12/06/20 16:16	1
Toluene	<0.15		0.50	0.15	ug/L			12/06/20 16:16	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			12/06/20 16:16	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	121		75 - 126					12/06/20 16:16	1
4-Bromofluorobenzene (Surr)	87		72 - 124					12/06/20 16:16	1
Dibromofluoromethane	116		75 - 120					12/06/20 16:16	1
Toluene-d8 (Surr)	90		75 - 120					12/06/20 16:16	1

# Client Sample Results

Client: WSP USA Inc (formerly LB&G)  
 Project/Site: Magellan Superior Station

Job ID: 500-191751-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 500-191751-4**

**Date Collected: 11/30/20 00:00**

**Matrix: Water**

**Date Received: 12/01/20 10:15**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			12/06/20 15:48	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			12/06/20 15:48	1
Benzene	<0.15		0.50	0.15	ug/L			12/06/20 15:48	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			12/06/20 15:48	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			12/06/20 15:48	1
Naphthalene	<0.34		1.0	0.34	ug/L			12/06/20 15:48	1
Toluene	<0.15		0.50	0.15	ug/L			12/06/20 15:48	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			12/06/20 15:48	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	120		75 - 126					12/06/20 15:48	1
4-Bromofluorobenzene (Surr)	88		72 - 124					12/06/20 15:48	1
Dibromofluoromethane	114		75 - 120					12/06/20 15:48	1
Toluene-d8 (Surr)	93		75 - 120					12/06/20 15:48	1

# Definitions/Glossary

Client: WSP USA Inc (formerly LB&G)  
Project/Site: Magellan Superior Station

Job ID: 500-191751-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# QC Association Summary

Client: WSP USA Inc (formerly LB&G)  
Project/Site: Magellan Superior Station

Job ID: 500-191751-1

## GC/MS VOA

### Analysis Batch: 575524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-191751-1	MW-4	Total/NA	Water	8260B	
500-191751-2	MW-6	Total/NA	Water	8260B	
500-191751-2 - DL	MW-6	Total/NA	Water	8260B	
500-191751-3	MW-7	Total/NA	Water	8260B	
500-191751-4	Trip Blank	Total/NA	Water	8260B	
MB 500-575524/7	Method Blank	Total/NA	Water	8260B	
LCS 500-575524/5	Lab Control Sample	Total/NA	Water	8260B	

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# Surrogate Summary

Client: WSP USA Inc (formerly LB&G)  
Project/Site: Magellan Superior Station

Job ID: 500-191751-1

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA	BFB	DBFM	TOL
		(75-126)	(72-124)	(75-120)	(75-120)
500-191751-1	MW-4	116	86	109	92
500-191751-2	MW-6	116	88	111	92
500-191751-2 - DL	MW-6	117	88	113	93
500-191751-3	MW-7	121	87	116	90
500-191751-4	Trip Blank	120	88	114	93
LCS 500-575524/5	Lab Control Sample	114	87	109	92
MB 500-575524/7	Method Blank	118	88	114	92

### Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: WSP USA Inc (formerly LB&G)  
 Project/Site: Magellan Superior Station

Job ID: 500-191751-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 500-575524/7**  
**Matrix: Water**  
**Analysis Batch: 575524**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			12/06/20 13:26	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			12/06/20 13:26	1
Benzene	<0.15		0.50	0.15	ug/L			12/06/20 13:26	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			12/06/20 13:26	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			12/06/20 13:26	1
Naphthalene	<0.34		1.0	0.34	ug/L			12/06/20 13:26	1
Toluene	<0.15		0.50	0.15	ug/L			12/06/20 13:26	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			12/06/20 13:26	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	118		75 - 126		12/06/20 13:26	1
4-Bromofluorobenzene (Surr)	88		72 - 124		12/06/20 13:26	1
Dibromofluoromethane	114		75 - 120		12/06/20 13:26	1
Toluene-d8 (Surr)	92		75 - 120		12/06/20 13:26	1

**Lab Sample ID: LCS 500-575524/5**  
**Matrix: Water**  
**Analysis Batch: 575524**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,2,4-Trimethylbenzene	50.0	50.9		ug/L		102	70 - 123
1,3,5-Trimethylbenzene	50.0	51.2		ug/L		102	70 - 123
Benzene	50.0	51.0		ug/L		102	70 - 120
Ethylbenzene	50.0	50.1		ug/L		100	70 - 123
Methyl tert-butyl ether	50.0	50.5		ug/L		101	55 - 123
Naphthalene	50.0	41.9		ug/L		84	53 - 144
Toluene	50.0	49.3		ug/L		99	70 - 125
Xylenes, Total	100	100		ug/L		100	70 - 125

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	114		75 - 126
4-Bromofluorobenzene (Surr)	87		72 - 124
Dibromofluoromethane	109		75 - 120
Toluene-d8 (Surr)	92		75 - 120

# Lab Chronicle

Client: WSP USA Inc (formerly LB&G)  
Project/Site: Magellan Superior Station

Job ID: 500-191751-1

## Client Sample ID: MW-4

Date Collected: 11/30/20 16:15

Date Received: 12/01/20 10:15

Lab Sample ID: 500-191751-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	575524	12/06/20 16:45	PMF	TAL CHI

## Client Sample ID: MW-6

Date Collected: 11/30/20 15:35

Date Received: 12/01/20 10:15

Lab Sample ID: 500-191751-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	575524	12/06/20 17:41	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	50	575524	12/06/20 18:10	PMF	TAL CHI

## Client Sample ID: MW-7

Date Collected: 11/30/20 15:20

Date Received: 12/01/20 10:15

Lab Sample ID: 500-191751-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	575524	12/06/20 16:16	PMF	TAL CHI

## Client Sample ID: Trip Blank

Date Collected: 11/30/20 00:00

Date Received: 12/01/20 10:15

Lab Sample ID: 500-191751-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	575524	12/06/20 15:48	PMF	TAL CHI

### Laboratory References:

TAL CHI = Eurofins TestAmerica, Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200



# Accreditation/Certification Summary

Client: WSP USA Inc (formerly LB&G)  
Project/Site: Magellan Superior Station

Job ID: 500-191751-1

## Laboratory: Eurofins TestAmerica, Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

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**Eurofins TestAmerica, Chicago**

2417 Bond Street  
University Park, IL 60484  
Phone: 708-534-5200 Fax: 708-534-5211

**Chain of Custody Record**

eurofins  
Environmental Testing  
America

<b>Client Information</b>					Sampler: <u>Mike Peterson</u>		Lab PM: <u>Fredrick, Sandie</u>		Carrier Tracking No(s):		COC No.: <u>500-87637-39375.1</u>																				
Client Contact: <u>Jennifer Shelton</u>					Phone: <u>218-830-9698</u>		E-Mail: <u>sandra.fredrick@eurofinset.com</u>		State of Origin: <u>WI</u>		Page: <u>Page 1 of 1</u>																				
Company: <u>WSP USA Inc (formerly LB&amp;G)</u>					Due Date Requested:		<b>Analysis Requested</b>					Job #: <u>500-191751</u>																			
Address: <u>5957 McKee Road, Suite 7</u> City: <u>Madison</u> State, Zip: <u>WI, 53719</u> Phone: <u>500-191751 COC</u>					TAT Requested (days): <u>5 Days</u>							Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)		Other:																	
Project Name: <u>Magellan Superior Station</u>					Project #: <u>50007002</u>		Field Filtered Sample (Yes or No)		<table border="1"> <tr> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>BT</th> <th>STEX</th> <th>TMB</th> <th>MTBE</th> <th>Total Number of containers</th> </tr> <tr> <td>X</td> <td>X</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td></td> </tr> </table>					Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	BT	STEX	TMB	MTBE	Total Number of containers	X	X		X	X	X		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		Special Instructions/Note:	
Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	BT	STEX	TMB	MTBE	Total Number of containers																									
X	X		X	X	X																										
Sample Identification					Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)																				
									Preservation Code:																						
<u>MW-4</u>					<u>11/30/20</u>		<u>1615</u>		<u>C</u>		<u>Water</u>																				
<u>MW-6</u>					<u>11/30/20</u>		<u>1535</u>		<u>G</u>		<u>Water</u>																				
<u>MW-7</u>					<u>11/30/20</u>		<u>1520</u>		<u>G</u>		<u>Water</u>																				
<u>Trip Blank</u>																															
<b>Possible Hazard Identification</b>					<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>																										
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																										
Deliverable Requested: I, II, III, IV, Other (specify)					Special Instructions/QC Requirements:																										
Empty Kit Relinquished by:					Date:		Time:		Method of Shipment:																						
Relinquished by: <u>Jennifer Shelton</u>					Date/Time: <u>11/30/20 1700</u>		Company: <u>WSP</u>		Received by: <u>Mike Scott</u>		Date/Time: <u>12/1/20 1015</u>		Company: <u>ETA-C/O</u>																		
Relinquished by:					Date/Time:		Company:		Received by:		Date/Time:		Company:																		
Relinquished by:					Date/Time:		Company:		Received by:		Date/Time:		Company:																		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No					Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <u>44 → 2.2</u>																								

# Login Sample Receipt Checklist

Client: WSP USA Inc (formerly LB&G)

Job Number: 500-191751-1

**Login Number: 191751**

**List Source: Eurofins TestAmerica, Chicago**

**List Number: 1**

**Creator: Scott, Sherri L**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

