Monitoring Well Sampling Update

Simplot Grower Solutions, 1800 W 1st Street

Warden , Washington

January 2018

Monitoring Well Sampling Update

Simplot Grower Solutions
1800 W. 1st Street
Warden, Washington 98857

January 2018

Prepared by:

HDR, Inc.
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Project Manager

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Appendix A: Groundwater Sampling Field Forms and Laboratory Report, December 2017

hdrinc.com   River Quarry at Parkcenter, 412 E. Parkcenter Blvd. Suite 100, Boise, ID 83706-6659
(208) 387-7000

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Acronyms

Ecology	Washington Department of Ecology
EDB	ethylene dibromide
HDR	HDR Engineering, Inc.
QA/QC	quality assurance/quality control
RI/FS	remedial investigation/feasibility study
Simplot	J.R. Simplot Company
USEPA	U.S. Environmental Protection Agency

J.R. Simplot Company | Simplot Grower Solutions Warden WA | *Monitoring Well Sampling Update*

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1 Introduction

The J.R. Simplot Company (Simplot) entered into an agreed order (Agreed Order 8241) with the State of Washington, Department of Ecology (Ecology) on May 27, 2011, to address the presence of ethylene dibromide (EDB) in soil and groundwater at Simplot Grower Solution's facility at 1800 W. 1st Street, Warden, Washington (**Figure 1** and **Figure 2**). Specifically, the agreed order requires Simplot to complete a remedial investigation/feasibility study (RI/FS). Simplot submitted an RI/FS work plan (HDR 2011) to Ecology in November 2011 that outlines the study approach, conducted RI/FS activities from November 2011 through October 2013, and submitted an updated draft RI/FS report to Ecology in June 2014. Ecology responded with additional comments to the report in September 2017. Prior to addressing comments and finalizing the RI/FS, Simplot conducted groundwater sampling at the facility monitoring wells in December 2017. Field sampling methods and analytical results from the groundwater monitoring are presented in this monitoring well sampling update report. Refer to the draft RI/FS (HDR 2014) for details on site conditions.

Legend

Simplot Facility

Ellensburg

Warden

Washington

Oregon

Pendleton

Project Location

262

17 170

Warden

Othello

26

Hatton

24

395

Connell

0   2.5   5
Miles
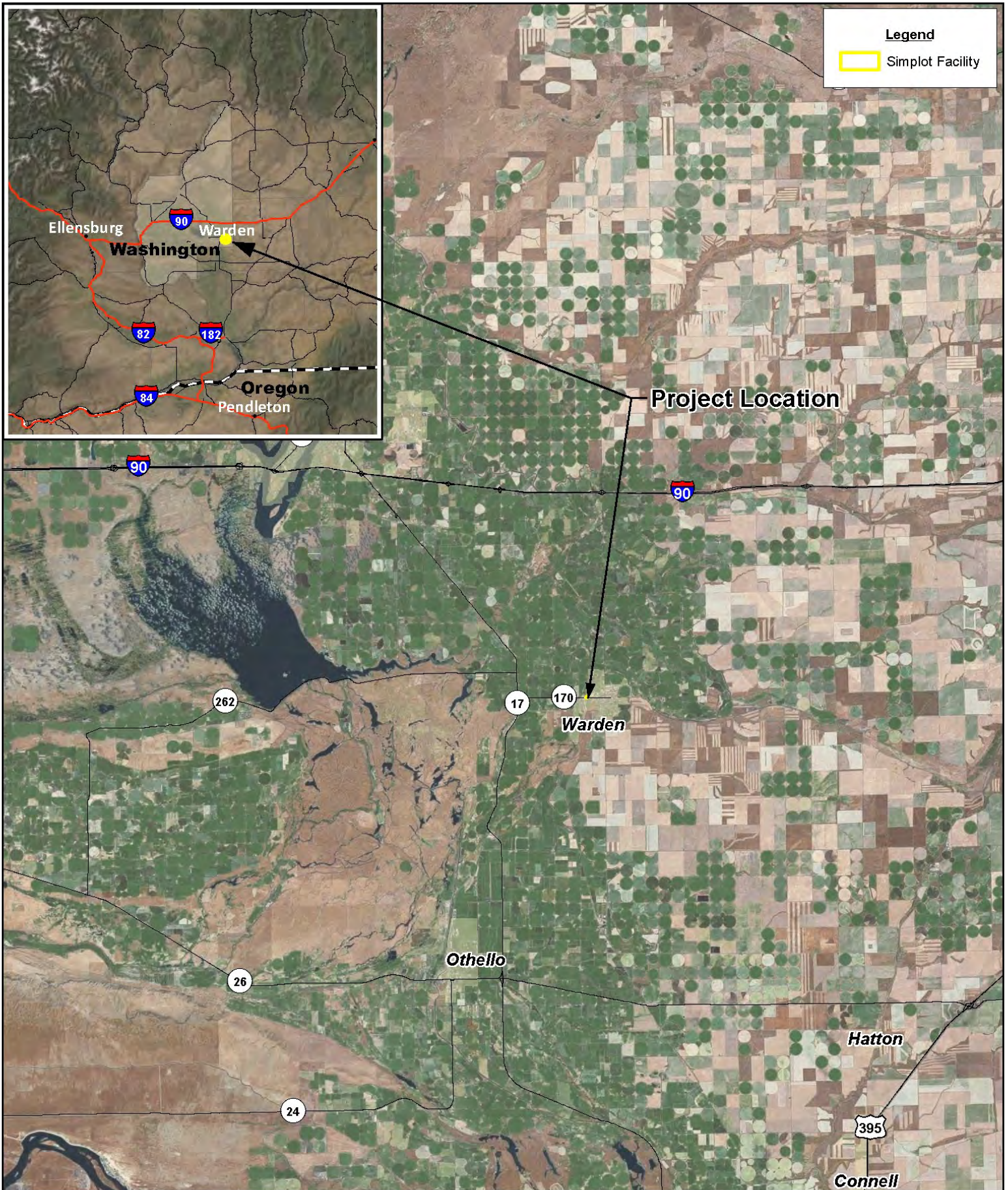
Figure 1. Vicinity Map
Simplot Grower Solutions, City of Warden, WA

Imagery: Bing Imagery Aerial Imagery
Source: (c) 2010 Microsoft Corporation and its data suppliers
Other Data Sources: US Census Bureau; Washington
Department of Transportation; Washington Department of Revenue

Map Date: 7/22/2011
Document: Q:\Simplot\CityofWarden\map_docs\Vicinity.mxd

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Many Solutions℠

Legend
- Simplot Facility
- City Well
- Monitoring Well

MW-2
Rd 6.9 SE
MW-1
Former City Well #4
MW-7S   MW-7D
MW-5D   MW-5S
MW-3
MW-10S
MW-6S
Rd 8 SE
MW-8S
170
City Well #5
MW-4 Decommissioned
MW-9S

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Figure 2. Site Map and Monitoring Well Network
Simplot Grower Solutions, City of Warden, WA

Map Date: 11/12/2013
Document: Q:\Simplot\CityofWarden\map_docs\Site_2012_nograph.mxd

0   150   300
Feet

J.R. Simplot Company | Simplot Grower Solutions Warden WA | *Monitoring Well Sampling Update*
DECEMBER 2017 MONITORING WELL SAMPLING

HDR

2 December 2017 Monitoring Well Sampling

Hydrometrics conducted groundwater sampling on December 4 and 5, 2017, following the sampling and analysis plan that was included in Appendix C of the RI/FS work plan (HDR 2011). Water sampling forms are presented in Appendix A. For each sampling event, Hydrometrics measured depth to groundwater in each monitoring well (**Table 1**). **Figure 3** and **Figure 4** present groundwater contours based on the shallow wells and deep wells, respectively, and are based on well elevations measured in December 2017. Groundwater gradient shows a southerly/southwesterly flow direction based on the shallow wells (**Figure 3**). Groundwater flow for the deeper wells was also southerly in December 2017 (**Figure 4**). The East Low Canal, north of the Simplot facility, did not contain water in December 2017. When this canal is full (during growing season) there is a split in the groundwater flows, where groundwater north of the canal flows northerly, and groundwater south of the canal flows in a southerly (HDR 2014).

After taking static water measurements, and in accordance with the RI/FS work plan, Hydrometrics collected water samples by completing the following:

- Surged and pumped each well with a low-flow sampler.

- Recorded field pH, conductivity, dissolved oxygen, temperature, redox, and turbidity measurements during purging.

- Took samples once field parameters were stable.

- Preserved sample bottles according to U.S. Environmental Protection Agency (USEPA) Method 8011 for EDB.

Field sampling and chain-of-custody forms are in Appendix A.

Groundwater samples were shipped overnight to Pace Analytical (Pace) in Seattle, Washington. Pace is certified in the State of Washington for analysis of air, drinking water, Resource Conservation and Recovery Act (RCRA), underground storage tanks (USTs), and wastewater (Certificate #C1915). Samples were preserved with hydrochloric acid (HCl) and analyzed for EDB per Method USEPA 8011.

Table 2 presents groundwater sampling results for the December 2017 monitoring event and also includes historic sampling results. **Table 3** summarizes the quality assurance/quality control (QA/QC) field sample results. Pace followed appropriate laboratory QA/QC procedures as dictated by the USEPA method and the laboratory's standard operating procedures (SOPs). All data met data quality objectives (see laboratory report in Appendix A).

Table 1. Groundwater Elevation Measurements

Well	Ref. Elev.	1/19/2012		4/10/2012		7/10/2012		10/23/2012		1/22/2013		7/22/2013		10/28/2013		12/4/2017	
		Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
		feet															
MW-1	1245.62	24.38	1,221.24	20.55	1,225.07	14.28	1,231.34	14.53	1,231.09	25	1,220.62	13.86	1,231.76	18.31	1,227.31	22.64	1,222.98
MW-2	1247.09	27.94	1,219.15	23.25	1,223.84	16.98	1,230.11	17.89	1,229.20	28.46	1,218.63	16.91	1,230.18	21.79	1,225.30	25.24	1,221.85
MW-3	1240.88	21.37	1,219.51	21.86	1,219.02	14.31	1,226.57	11.9	1,228.98	21.58	1,219.30	13.05	1,227.83	13.22	1,227.66	18.81	1,222.07
MW-4	1244.72	24.65	1,220.07			20.7	1,224.02	17.44	1,227.28	25.16	1,219.56	18.94	1,225.78	18.15	1,226.57	Decommissioned	
MW-5D	1247.54	27.12	1,220.42	28.89	1,218.65	22.6	1,224.94	22.13	1,225.41	27.6	1,219.94	21.02	1,226.52	20.74	1,226.80	25.84	1,221.70
MW-5S	1247.66	26.98	1,220.68	28.66	1,219.00	22.37	1,225.29	22.32	1,225.34	27.45	1,220.21	20.78	1,226.88	20.6	1,227.06	25.62	1,222.04
MW-6S	1247.86	27.2	1,220.66	29.14	1,218.72	23.43	1,224.43	20.27	1,227.59	27.98	1,219.88	21.82	1,226.04	20.99	1,226.87	26.19	1,221.67
MW-7D	1251.01	30.03	1,220.98	30.76	1,220.25	24.74	1,226.27	19.72	1,231.29	30.65	1,220.36	23.32	1,227.69	24.04	1,226.97	28.79	1,222.22
MW-7S	1250.86	29.89	1,220.97	30.6	1,220.26	24.49	1,226.37	19.52	1,231.34	30.49	1,220.37	23.07	1,227.79	23.88	1,226.98	25.58	1,225.28
MW-8S	1248.84									28.93	1219.91	22.68	1,226.16	22.08	1226.76	27.16	1,221.68
MW-9S	1247.27													Dry		Dry	
MW-10S	1245.32									18.95	1,226.37	18.38	1226.94	23.61	1,221.71

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DECEMBER 2017 MONITORING WELL SAMPLING

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Table 2. Summary of EDB Detected in Groundwater

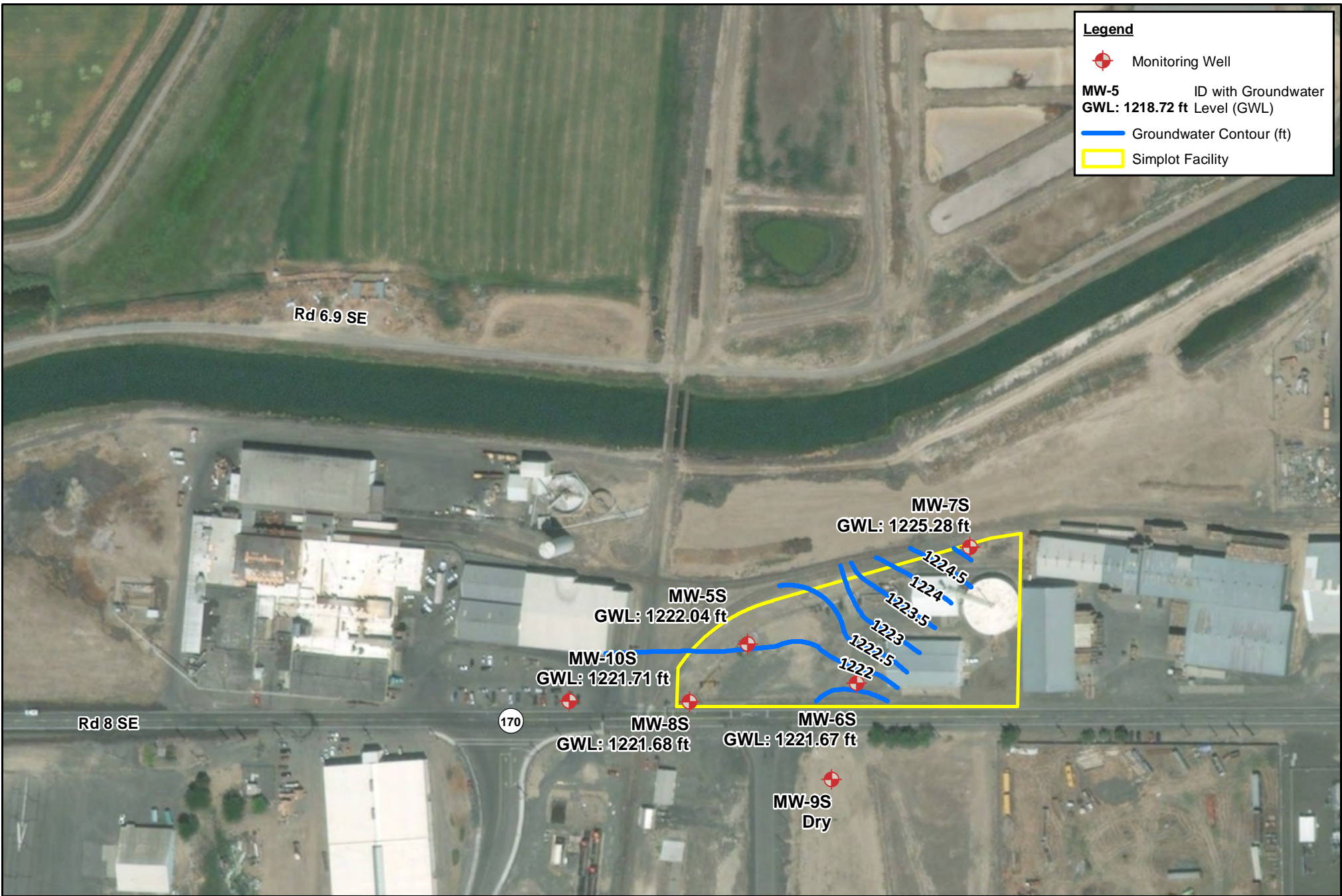| Well	Jan 12	Apr 12	Jul 12	Oct 12	Jan 13	Jul 13	Oct 13	Dec 17
	EDB (µg/L)							
MW-1	ND[1]	ND	ND	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	ND	ND	ND	ND	ND	ND	ND	No Well[1]
MW-5D	0.27	0.01	ND	ND	ND	ND	0.01	ND
MW-5S	234	16.1	9.1	22.3	14.5	5.7	63	151
MW-6S	10.9	8.7	26.8	15.4	4.2	2.0	ND	0.35
MW-7D	ND	0.01[2]	ND	ND	ND	ND	ND	ND
MW-7S	ND	0.01[2]	ND	ND	ND	ND	ND	ND
MW-8S					ND	ND	ND	ND
MW-9S							Dry	Dry
MW-10S							ND	ND

[1] No well = MW-4 was decommissioned in 2015 with Ecology approval.

EDB = ethylene dibromide; µg/L = micrograms per liter; ND = non-detected (see laboratory report for reporting limits)

Table 3. Quality Assurance and Quality Control Field Samples

QA/QC Type	Number of Samples	Result
Duplicate	1 groundwater sample per event	MW-8S EDB = ND MW-8S Duplicate EDB = ND
Trip Blank	1 trip blank per event	EDB = ND

EDB = ethylene dibromide; ND = non-detected (see laboratory report for reporting limits)

Legend

⊕ Monitoring Well

MW-5
GWL: 1218.72 ft ID with Groundwater Level (GWL)

▬▬ Groundwater Contour (ft)

▭ Simplot Facility

Rd 6.9 SE

MW-7S
GWL: 1225.28 ft

1224.5
1224
1223.5
1223
1222.5
1222

MW-5S
GWL: 1222.04 ft

MW-10S
GWL: 1221.71 ft

Rd 8 SE

170

MW-8S
GWL: 1221.68 ft
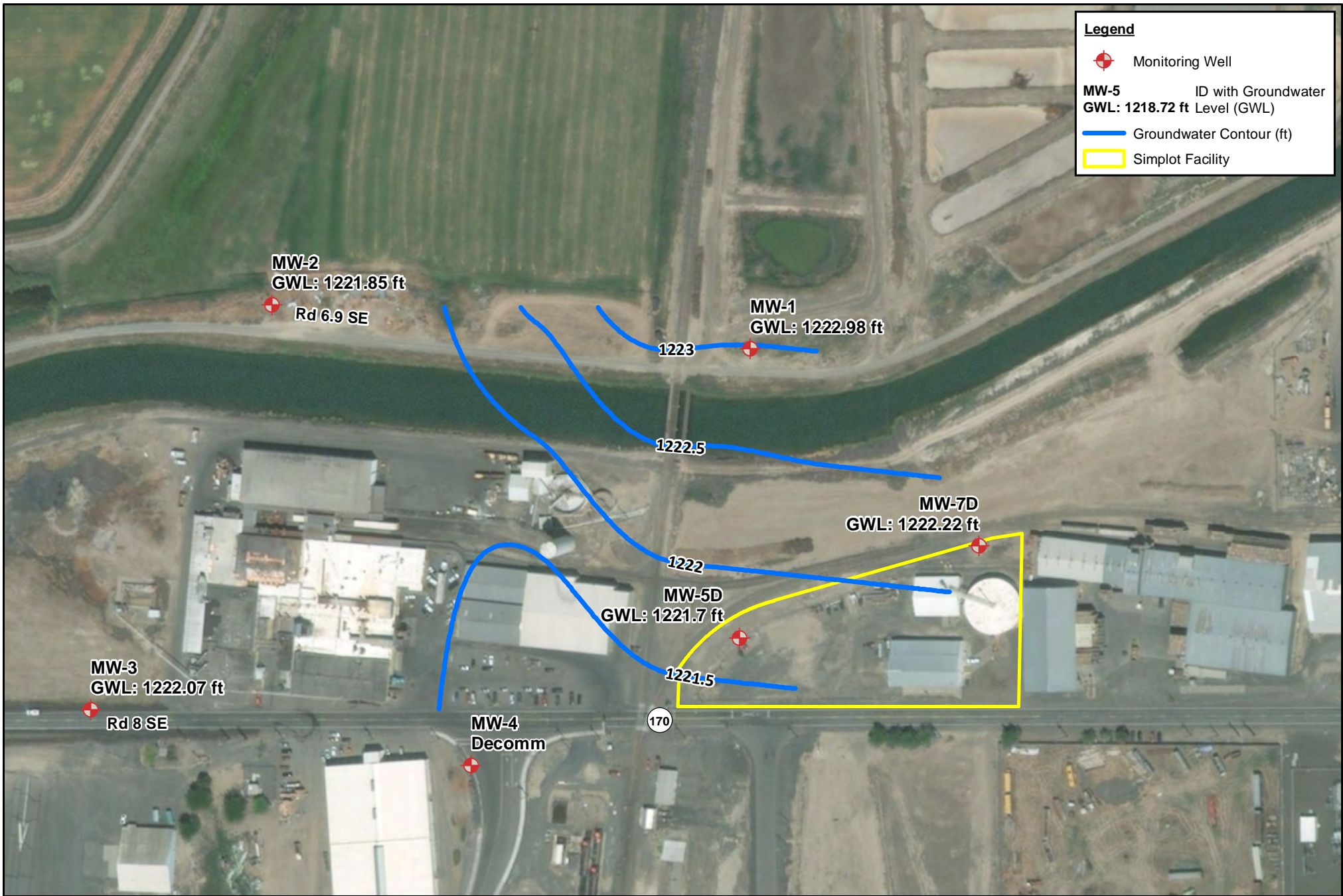
MW-6S
GWL: 1221.67 ft

MW-9S
Dry

Figure 3. December 2017 Groundwater Contour Map, Shallow Wells
Simplot Grower Solutions, City of Warden, WA

Imagery: 2016 ESRI World Imagery
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics,
CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Other Data Sources: US Census Bureau; Washington Department of Transporation;
Washington Department of Revenue; Washington Department of Ecology (WDOE)

0   200   400
Feet

Map Date: 1/9/2018
Document: Q:\Simplot\CityofWarden\map_docs\Site_2017.mxd

Legend

⊕ Monitoring Well

MW-5
GWL: 1218.72 ft   ID with Groundwater Level (GWL)

— Groundwater Contour (ft)

▭ Simplot Facility

MW-2
GWL: 1221.85 ft
Rd 6.9 SE

MW-1
GWL: 1222.98 ft

1223

1222.5

MW-7D
GWL: 1222.22 ft

1222

MW-5D
GWL: 1221.7 ft

MW-3
GWL: 1222.07 ft
Rd 8 SE

1221.5

MW-4
Decomm

170

Figure 4. December 2017 Groundwater Contour Map, Deep Wells
Simplot Grower Solutions, City of Warden, WA

HDR

Imagery: 2016 ESRI World Imagery
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics,
CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Other Data Sources: US Census Bureau; Washington Department of Transporation;
Washington Department of Revenue; Washington Department of Ecology (WDOE)

Map Date: 1/9/2018
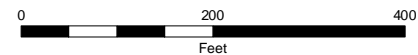Document: Q:\Simplot\CityofWarden\map_docs\Site_2017.mxd

0   200   400
Feet

3 Summary and Recommendations

Simplot conducted groundwater sampling of monitoring wells at the facility in December 2017. Field sampling methods followed the sampling and analysis plan in Appendix C of the RI/FS work plan (HDR 2011). Prior to the December 2017 event, the previous groundwater sampling was conducted in October 2013.

On-site well MW-5S continues to have elevated concentrations of EDB and a trace amount was found in on-site well MW-6S. All other monitoring wells, including downgradient off-site wells, continue to be non-detected for EDB.

The sampling results will aid Simplot in responding to Ecology's September 25, 2017 comments to the June 2014 draft RI/FS and the need for changes in the draft RI/FS. Simplot proposes the following schedule:

- Response to comments by January 25, 2018
- Conference call or meeting with Ecology in February 2018
- Revisions and updates to the RI/FS March 2018

4 References

HDR [HDR, Inc.]

2014. Draft Remedial Investigation and Feasibility Report. Simplot Growers Solutions, 1800 W. 1st Street, Warden, WA 98857. June 2014

2011. *Final Remedial Investigation and Feasibility Study Work Plan, Former Simplot Grower Solutions Facility*.

A

Groundwater Sampling Field Forms and Laboratory Report, December 2017

STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM
HF-FORM-430

Project Name: Simplot Warden

Project Code: __12000__

Sample Team Member(s): __WCrane, RWoods__

Laboratory Used: Pace Analytical

Site Designation: ___MW-2___

Sample Code Number: __SWM-0712 - 100__

Sample Date: __12/ 4 /17__

Sample Time: ___10 : 30___ (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code # _____

Duplicate Sample Time: _____

Site Conditions

New Site: No Photo Taken: No

Site Type:

(monitoring well)

other: _____

Weather Conditions: calm (breeze) windy

(no precip) rain snow

clear (p. cloudy) overcast

Air Temperature _____°C 32°F

For Groundwater Samples

well volume formula: $V = \frac{(TD-SWL) \times (Dia.^2)}{25}$ Comments

TD (ft.) __77.75'__ SWL(ft) __25.24'__ no access/pumping

MP Description __top of PVC__

Casing Diameter (I.D.) __2"__ Pumping Rate __0.6__ lpm

Casing Volume (gal) __8.4__ VX3(gal)= __25.2__

Actual Vol. Removed (Liters.) __12__

Water Level Recovery: (slow) moderate rapid

For Surface Water

25.24' Pre/Post 25.23'

Time (Military)	Temp. (°C)	S.C. (µmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons (Liters) Removed	Pump Rate LPM
10:06	PUMP ON								
10:11	14.7	208	0.31	8.41	149.3	4.1	25.54'	3	0.6
10:16	14.9	203	0.26	8.39	144.7	2.1	25.54'	6	
10:21	15.0	203	0.19	8.41	137.8	2.2	25.54'	9	
10:26	15.1	207	0.20	8.39	138.7	1.3	25.54'	12	
:									
:									
:									

Turbidity (circle): (clear) slight moderate very

Sample Method: (describe) grab pump ~~bailer~~ 2"Grundfos

Field Parameters

	Sample	Duplicate
Temp (°C)	15.1	
S.C. (µmhos/cm)	207	
DO (mg/l)	0.20	
pH	8.39	
ORP (mV)	138.7	
Turbidity (n.t.u.)	1.3	
Color	NONE	
Other: Odor	slight	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
3	40 ml	F or UF	HCL	EDB	

Comments: __pump cycles ~128__

Sample Team Member Signature: _Walter Crane_ Page ____ of ____

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STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM
HF-FORM-430

Project Name: Simplot Warden　　　　　　Site Designation: ___MW- 1___

Project Code: __12000__　　　　　　Sample Code Number: __SWM-0712- 101__ ⁰⁷¹²

Sample Team Member(s): __WCrane, RWoods__　　Sample Date: __12/ 4 /17__

Laboratory Used: Pace Analytical　　　　Sample Time: ᵂᶜ 12:35 11:35 (military)
　　　　　　　　　　　　　　　　　　　　12/4/17

For Groundwater Samples

well volume formula: V=(TD-SWL)x(Dia.²)		
	25	Comments

If Duplicate Sample Collected,
Please Record Below

Duplicate Sample Code # _____

Duplicate Sample Time: ___ : ___

TD (ft.) 57.4′ SWL(ft) 22.60′ no access/pumping

MP Description __top of PVC__

Casing Diameter (I.D.) __2"__ Pumping Rate __0.5__ lpm

Casing Volume (gal) __5.6__ VX3(gal)= __16.8__

Actual Vol. Removed (Liters.) __17.5__

Water Level Recovery: (slow) moderate rapid

Site Conditions

New Site:　No　　Photo Taken:　No

Site Type:

　(monitoring well)

　　other:

Weather Conditions:　calm　(breeze)　windy

　　　　(no precip.)　rain　　snow

　　　　clear　(p. cloudy)　overcast

Air Temperature　　°C　34 °F

For Surface Water

22.60′ Pre / Post 22.64′

Time (Military)	Temp. (°C)	S.C. (µmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons (Liters) Removed	Pump Rate LPM
10:56	PUMP ON								
11:01	13.8	454	1.93	7.68	160.0	16.2	22.86	2.5	0.5
11:06	14.6	589	1.27	7.59	155.1	7.9	22.86	5	
11:11	15.1	637	1.07	7.59	149.6	4.2	22.86	7.5	
11:16	15.2	649	0.98	7.58	145.6	3.2	22.86	10	
11:21	15.3	670	0.93	7.58	143.5	2.9	22.86	12.5	
11:26	15.3	678	0.90	7.58	142.2	2.1	22.86	15	
11:31	15.5	685	0.86	7.57	137.8	1.8	22.86	17.5	

Turbidity (circle)　(clear)　moderate　slight　very

Sample Method: (describe)　grab　pump　bailer　2"Grundfos

Field Parameters

	Sample	Duplicate
Temp (°C)	15.5	
S.C. (µmhos/cm)	685	
DO (mg/l)	0.86	
pH	7.57	
ORP (mV)	137.8	
Turbidity (n.t.u.)	1.8 / 137.8 ᵂᶜ	
Color	None	
Other: Odor	NONE	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
3	40 ml	F or UF	HCL	EDB	

Comments: _____

__Pump cycles ~ 130__

Sample Team Member Signature: __Walter Crane__ Page ___ of ___

Hydrometrics, Inc.   **Consulting Scientists and Engineers**

STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM
HF-FORM-430

Project Name: Simplot Warden   Site Designation: _____ MW- 10 5

Project Code: ___12000___   Sample Code Number: ____ SWM-0713 C712 - 102

Sample Team Member(s): __WCrane, RWoods__   Sample Date: __12/ 4 /17__   Page 1 of 2

Laboratory Used: Pace Analytical   Sample Time: ___13:30___ (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code # _____

Duplicate Sample Time: _____ : _____

Site Conditions

New Site: No   Photo Taken: No

Site Type:

(monitoring well)

other: _____

Weather Conditions: calm (breeze) windy

(no precip.) rain snow

clear (p. cloudy) overcast

Air Temperature _____ °C 37 °F

For Groundwater Samples

well volume formula: $V=(TD-SWL) \times (Dia.^2)$ / 25   Comments

TD (ft.) 35.5'   SWL(ft) 23.61'   no access/pumping

MP Description _top of PVC_

Casing Diameter (I.D.) 2"   Pumping Rate 0.3 lpm

Casing Volume (gal) 1.9   VX3(gal)= 5.7

Actual Vol. Removed (Liters.) 19.5

Water Level Recovery: (slow) moderate rapid

For Surface Water

23.61'   Pre/Post 23.55'

Time (Military)	Temp. (°C)	S.C. (μmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons (Liters) Removed	Pump Rate LPM
12:22	PUMP ON								
12:27	15.1	2283	5.57	7.53	29.6	231.	23.90	1.5	0.3
12:32	16.5	2304	5.31	7.54	33.3	97.2	23.91	3	
12:37	16.6	2336	5.42	7.56	44.8	71.2	23.92	4.5	
12:42	16.9	2337	5.28	7.56	55.6	59.2	23.91	6	
12:47	17.0	2343	5.33	7.55	58.8	49.0	23.90	7.5	
12:52	17.2	2334	5.23	7.56	59.6	40.2	23.90	9	
12:57	17.3	2323	5.37	7.56	64.7	33.5	23.90	10.5	

Turbidity (circle) (clear) slight moderate very   Sample Method: (describe) grab pump ~~bailer~~ 2"Grundfos

Field Parameters

	Sample	Duplicate	Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
Temp (°C)	17.9		3	40 ml	F or UF	HCL	EDB	
S.C. (μmhos/cm)	2306							
DO (mg/l)	5.28							
pH	7.55							
ORP (mV)	77.3							
Turbidity (n.t.u.)	15.9							
Color		NONE						
Other: Odor		NONE						

Bottles Collected

Comments: some ambient dust & odors from traffic and industry when we disconnected the tubing to sample, the turbidity increased

pump cycles - 128

Sample Team Member Signature: _Walter Crane_ Page 1 of 2

J:\Wcrane\Sample Form Warden - Simplot.Doc\\11/27/17\034

11/27/17 11:46 AM

Time (Military)	Temp. (°C)	S.C. (µmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons Liters Removed	Pump Rate GPM LPM
		PUMP ON							
13:02	17.5	2312	5.23	7.56	72.6	25.7	23.90'	12	0.3
13:07	17.6	2313	5.18	7.56	73.1	26.0	23.90'	13.5	
13:12	17.8	2313	5.22	7.56	71.7	21.2	23.90'	15	
13:17	17.7	2311	5.10	7.55	72.8	17.4	23.90'	16.5	
13:22	17.8	2300	5.16	7.55	76.6	16.5	23.90'	18	
13:27	17.9	2306	5.28	7.55	77.3	15.9	23.90'	19.5	

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STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM
HF-FORM-430

Project Name: Simplot Warden   Site Designation: _____ MW-75 _____
Project Code: __12000__   Sample Code Number: SWM-0713-103 (0712)
Sample Team Member(s): _WCrane, RWoods_   Sample Date: _12/4/17_
Laboratory Used: Pace Analytical   Sample Time: __14:55__ (military)

For Groundwater Samples

well volume formula: $V=(TD-SWL)x(Dia.^2)$		
	25	Comments

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code # _____
Duplicate Sample Time: _____

TD (ft.) 39.75' SWL(ft) 28.58' no access/pumping
MP Description __top of PVC__
Casing Diameter (I.D.) _2"_ Pumping Rate _1_ lpm
Casing Volume (gal) _1.8_ VX3(gal)= _5.4_
Actual Vol. Removed (Liters.) _40_
Water Level Recovery: (slow) moderate rapid

Site Conditions

New Site: No   Photo Taken: No
Site Type:
(monitoring well)
other: _____
Weather Conditions: calm (breeze) windy
(no precip.) rain snow
clear (p. cloudy) overcast
Air Temperature __°C ·37 °F

For Surface Water

28.58' Pre/Post 28.57'

Time (Military)	Temp. (°C)	S.C. (μmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons (Liters) Removed	Pump Rate LPM
14:10	PUMP ON								
14:15	15.8	3942	6.32	7.63	196.6	22.5	28.85	5	1
14:20	16.2	3983	6.25	7.64	156.7	18.6	28.86	10	
14:25	16.2	3881	6.18	7.64	138.2	12.0	28.86	15	
14:30	16.3	3792	6.10	7.65	133.2	9.1	28.85	20	
14:35	16.2	3727	6.06	7.65	129.1	6.1	28.85	25	
14:40	16.3	3685	6.02	7.66	127.2	4.9	28.85	30	
14:45	16.3	3649	5.95	7.66	128.2	3.5	28.85	35	
14:50	16.4	3627	5.87	7.66	128.2	2.2	28.85	40	

Turbidity (circle) (clear) slight moderate very   Sample Method: (describe) grab pump bailer   2"Grundfos

Field Parameters   #### Bottles Collected

	Sample	Duplicate		Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
Temp (°C)	16.4			3	40 ml	F or UF	HCL	EDB	
S.C. (μmhos/cm)	3627								
DO (mg/l)	5.87								
pH	7.66								
ORP (mV)	128.2								
Turbidity (n.t.u.)	2.2								
Color	NONE								
Other: Odor	NONE								

Comments: _pump cycles ~ 137_

Sample Team Member Signature: _Walter Crane_   Page ___ of ___

Hydrometrics, Inc.　　　　　　　　　　**Consulting Scientists and Engineers**

STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM
HF-FORM-430

Project Name: Simplot Warden　　　　　　　Site Designation: _____ MW-7 _____

Project Code: ___12000___　　　　　　　　Sample Code Number: ___SWM-~~0713~~ 0713 -104___

Sample Team Member(s): _WCrane, RWoods_　　Sample Date: _12/ 4 /17_

Laboratory Used: Pace Analytical　　　　　　Sample Time: ___16:40___ (military)

For Groundwater Samples　　Page 1 of 2

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code # _____

Duplicate Sample Time: _____

Site Conditions

New Site: No　　Photo Taken: No

Site Type:
(monitoring well)
other: _____

Weather Conditions: calm　(breeze)　windy
(no precip)　rain　snow
clear　(p. cloudy)　overcast

Air Temperature ___°C___ 34 °F

---

well volume formula: $V = \frac{(TD-SWL) \times (Dia.^2)}{25}$　　Comments

TD (ft.) _54.7'_ SWL(ft) _28.79'_ no access/pumping

MP Description _top of PVC_

Casing Diameter (I.D.) _2"_ Pumping Rate _0.6_ lpm

Casing Volume (gal) _4.1_ VX3(gal)= _12.3_

Actual Vol. Removed (Liters.) _39_

Water Level Recovery: (slow) moderate rapid

For Surface Water

28.79' Pre / Post 28.83'

Time (Military) WC 12/4/17	Temp. (°C)	S.C. (µmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons (Liters) Removed	Pump Rate LPM
15 16:32	PUMP ON								
15 16:37	14.5	217	0.33	8.16	217.1	19.0	28.98'	3	0.6
15 16:42	15.7	221	0.19	8.15	190.2	6.2	28.98'	6	
15 16:47	16.0	219	0.14	8.13	178.3	30.	28.98'	9	*
15 16:52	16.1	224	0.10	8.11	169.7	27.3	28.99'	12	
15 15:57	16.0	217	0.10	8.11	166.05	23.2	28.99'	15	
16:02	16.2	220	0.10	8.12	162.6	18.8	28.99'	18	
16:07	16.2	222	0.007	8.13	157.6	10.6	28.99'	21	

Turbidity (circle): (clear) slight moderate very

Sample Method: (describe) grab　pump　~~bailer~~　2"Grundfos

Field Parameters

	Sample	Duplicate
Temp (°C)	16.3	
S.C. (µmhos/cm)	214	
DO (mg/l)	0.09	
pH	8.14	
ORP (mV)	137.6	
Turbidity (n.t.u.)	3.7	
Color	None	
Other: Odor	Yes	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
3	40 ml	F or UF	HCL	EDB	

Comments: _* discharge turned "blackish"_
Pump cycles ~ 134

Sample Team Member Signature: _Walter Crane_ Page 1 of 2

Time (Military)	Temp. (°C)	S.C. (μmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons (Liters) Removed	Pump Rate GPM/LPM
	PUMP ON								
16:12	16.3	218	0.08	8.13	154.3	8.1	29.00'	24	0.6
16:17	16.3	222	0.07	8.14	152.2	7.5	29.00'	27	
16:22	16.3	221	0.07	8.13	149.6	5.8	29.00'	30	
16:27	16.3	215	0.09	8.14	146.4	4.1	29.00'	33	
16:32	16.4	217	0.10	8.14	142.6	4.1	29.00'	36	
16:37	16.3	214	0.09	8.14	137.6	3.7	29.00'	39	

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STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM
HF-FORM-430

Project Name: Simplot Warden   Site Designation: _____ MW- 5 _____

Project Code: ___ 12000 ___   Sample Code Number: SWM-~~0713~~ 0712-105

Sample Team Member(s): WCrane, RWoods   Sample Date: 12/ 4 /17

Laboratory Used: Pace Analytical   Sample Time: 18:00 (military)

For Groundwater Samples

If Duplicate Sample Collected, Please Record Below

well volume formula: $V=(TD-SWL)x(Dia.^2)$
25   Comments

Duplicate Sample Code # _____/_____

Duplicate Sample Time: _____/_____ : _____

TD (ft.) 57.45' SWL(ft) 25.84' no access/pumping

MP Description top of PVC

Casing Diameter (I.D.) 2" Pumping Rate 0.6/0.5 lpm

Casing Volume (gal) 5.1 VX3(gal)= 15.3

Actual Vol. Removed (Liters.) 13.5

Water Level Recovery: (slow) moderate rapid

Site Conditions

New Site: No   Photo Taken: No

Site Type:
(monitoring well)
other: _____

Weather Conditions: (calm) breeze windy
(no precip.) rain snow
(clear) p. cloudy overcast

Air Temperature _____ °C 34 °F

For Surface Water

25.84' Pre / Post 25.83'

Time (Military)	Temp. (°C)	S.C. (µmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons (Liters) Removed	Pump Rate LPM
17:33	PUMP ON								
17:38	14.6	364	0.47	8.05	243.0	9.7	26.16'	3	0.6
17:43	14.7	380	0.37	8.10	233.6	5.9	26.17	6	0.5
17:48	14.8	380	0.34	8.11	226.2	4.9	26.14'	8.5	
17:53	15.1	381	0.29	8.11	220.4	4.2	26.13'	11.0	
17:58	15.0	383	0.24	8.12	216.5	3.9	26.13'	13.5	

Turbidity (circle): (clear) moderate   Sample Method: grab   pump ~~bailer~~
slight very   (describe): 2"Grundfos

Field Parameters

	Sample	Duplicate
Temp (°C)	15.0	
S.C. (µmhos/cm)	383	
DO (mg/l)	0.24	
pH	8.12	
ORP (mV)	216.5	
Turbidity (n.t.u.)	3.9	
Color	NONE	
Other: Odor	NONE	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
3	40 ml	F or UF	HCL	EDB	

Comments: _____ Pump cycles 2/29 _____

Sample Team Member Signature: Walter Crane   Page _____ of _____

Hydrometrics, Inc.   **Consulting Scientists and Engineers**

STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM
HF-FORM-430

Project Name: Simplot Warden   Site Designation: ___ MW- BS

Project Code: __12000__   Sample Code Number: ___ SWM-~~0713~~ 0712-106

Sample Team Member(s): WCrane, RWoods   Sample Date: __12/ 5 /17__

Laboratory Used: Pace Analytical   Sample Time: ___09:40___ (military) *Page 1 of 2*

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code # __SWM-0712-107__

Duplicate Sample Time: ___10:30___

For Groundwater Samples

well volume formula: $V = \dfrac{(TD-SWL) \times (Dia.^2)}{25}$ Comments

TD (ft.) 38.3   SWL(ft) 27.16   no access/pumping

MP Description ~~top of~~ PVC

Casing Diameter (I.D.) 2"   Pumping Rate 0.4/0.3 pm

Casing Volume (gal) 1.8   VX3(gal)= 5.4

Actual Vol. Removed (Liters.) _____

Water Level Recovery: (slow) moderate rapid

Site Conditions

New Site: No   Photo Taken: No

Site Type:

(monitoring well)

other: _____

Weather Conditions: (calm) breeze windy

(no precip.) rain snow

(clear) p. cloudy overcast

Air Temperature ___°C   28 °F

For Surface Water

27.25' Pre / Post 27.21'

Time (Military)	Temp. (°C)	S.C. (µmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons (Liters) Removed	Pump Rate LPM
08:32	PUMP ON								
08:37	12.7	3060	7.91	7.21	257.1	234.	27.57'	2	0.4
08:42	13.4	3056	7.77	7.22	235.0	268.	27.56'	4	
08:47	14.1	3066	7.85	7.22	205.4	176.	27.57'	6	0.35
08:52	13.5	3106	7.57	7.22	162.5	174.	27.46'	7.5	
08:57	13.5	3101	7.79	7.21	138.0	132.	27.50'	9	
09:02	13.7	3100	7.83	7.21	126.9	127.	27.50'	10.5	
09:07	14.0	3094	7.74	7.22	118.0	98.7	27.50'	12	

Turbidity (circle): clear slight (moderate) very

Sample Method: (describe) grab   pump   ~~bailer~~   2"Grundfos

Field Parameters

	Sample	Duplicate
Temp (°C)	14.5	
S.C. (µmhos/cm)	3050 / 3073	
DO (mg/l)	7.73 / 7.60	
pH	7.22 / 7.21	
ORP (mV)	114 / 105.5	
Turbidity (n.t.u.)	61.2 / 61.5	
Color	light grey/tan tint	
Other: Odor	NONE	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
6	40 ml	F or UF	HCL	EDB	

Comments: ___Pump cycles ~ 128___

Sample Team Member Signature: __Walter Crane__   Page __1__ of 2

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11/27/17 11:46 AM

17.25

Time (Military)	Temp. (°C)	S.C. (μmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons Liters Removed	Pump Rate GPM/LPM
	PUMP ON								
09:12	14.5	3096	7.61	7.22	119.1	95.5	27.50'	13.5	0.3
09:17	14.6	3092	7.67	7.22	116.4	91.4	27.50'	15	
09:22	14.5	3084	7.52	7.22	108.4	75.5	27.50'	16.5	
09:27	14.5	3081	7.57	7.22	108.8	67.2 we 12/5/17	27.50'	18.	
09:32	14.5	3071	7.65	7.21	107.6	77 63.9	27.50'	19.5	
09:37	14.5	3073	7.60	7.21	105.5	61.5	27.50'	21	
went to sample & pump came unplugged, restarted pump & will get stabil again									
09:45	restart pump								
09:50	12.5	3058	8.91	7.39	111.6	203	27.50'	22.5	0.3
09:55	14.5	3058	7.73	7.22	114.2	61.2	27.50'	24.	

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STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM
HF-FORM-430

Project Name: Simplot Warden   Site Designation: MW-3

Project Code: 12000   Sample Code Number: SWM-~~0713~~ ~~0712~~-108

Sample Team Member(s): WCrane, RWoods   Sample Date: 12/5/17

Laboratory Used: Pace Analytical   Sample Time: 11:30 (military)

For Groundwater Samples

well volume formula: $V = \frac{(TD-SWL) \times (Dia.^2)}{25}$ Comments

TD (ft.) 59.65' SWL(ft) 18.81' no access/pumping

MP Description top of PVC

Casing Diameter (I.D.) 2" Pumping Rate 0.8 lpm

Casing Volume (gal) 6.5 VX3(gal)= 19.5

Actual Vol. Removed (Liters.) 28

Water Level Recovery: (slow) moderate rapid

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code # ⟋

Duplicate Sample Time: ⟋

Site Conditions

New Site: No   Photo Taken: No

Site Type: (monitoring well) / other: ___

Weather Conditions: (calm) breeze windy

(no precip.) rain snow

(clear) p. cloudy overcast

Air Temperature °C 33°F

For Surface Water

18.92' Pre/Post 18.92'

Time (Military)	Temp. (°C)	S.C. (µmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons (Liters) Removed	Pump Rate LPM
10:50	PUMP ON								
10:55	14.3	1429	0.22	7.16	31.7	25.9	19.20'	4	0.8
11:00	15.0	1423	0.09	7.16	30.2	9.1	19.19'	8	
11:05	15.0	1420	0.09	7.16	25.3	6.1	19.19'	12	
11:10	15.1	1419	0.10	7.16	22.1	7.1	19.19'	16	
11:15	15.3	1418	0.08	7.16	24.2	3.0	19.20'	20	
11:20	15.2	1420	0.08	7.15	17.1	2.8	19.19'	24	
11:25	15.3	1417	0.10	7.15	21.9	2.3	19.19'	28	▽

Turbidity (circle): (clear) moderate / slight very

Sample Method (describe): grab   pump ~~bailer~~ / 2"Grundfos

Field Parameters

	Sample	Duplicate
Temp (°C)	15.3	
S.C. (µmhos/cm)	1417	
DO (mg/l)	0.10	
pH	7.15	
ORP (mV)	21.9	
Turbidity (n.t.u.)	2.3	
Color	NONE	
Other: Odor	NONE	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
3	40 ml	F or UF	HCL	EDB	

Comments: There was some water in flush mount, pumped it out, looked like a little water went down inside of well. Pump Cycles~123

Sample Team Member Signature: Walter Crane   Page ___ of ___

Hydrometrics, Inc.   Consulting Scientists and Engineers

STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM
HF-FORM-430

Project Name: Simplot Warden   Site Designation: ~~MW~~ DI Blank

Project Code: __12000__   Sample Code Number: SWM~~-0713~~ 0712-109

Sample Team Member(s): __WCrane, RWoods__   Sample Date: 12/ 5 /17

Laboratory Used: Pace Analytical   Sample Time: 12:00 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code # _____

Duplicate Sample Time: ___ : ___

For Groundwater Samples

well volume formula: $V=(TD-SWL) \times (Dia.^2)$

             25   Comments

TD (ft.)_____ SWL(ft)_____ no access/pumping

MP Description __top of__

Casing Diameter (I.D.) _____ Pumping Rate _____ lpm

Casing Volume (gal)_____ VX3(gal)= _____

Actual Vol. Removed (Liters.) _____

Water Level Recovery: slow   moderate   rapid

Site Conditions

New Site: No   Photo Taken: No

Site Type:

    monitoring well

(other) QA/QC see comments

Weather Conditions: (calm)   breeze   windy

          (no precip)   rain   snow

          (clear)   p. cloudy   overcast

Air Temperature   °C   33°F

For Surface Water

Time (Military)	Temp. (°C)	S.C. (µmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons Liters Removed (Pre/Post)	Pump Rate LPM
	PUMP ON								
			c		v		e		
	b		c	a	b	f		c	
	b		c	b	p	e		c	
	c		p	c	c	b		c	
	b		c	b	e		c		
	c		c	b	c	6	b		
	c		b	b	b	c			

Turbidity (circle)   clear   moderate | Sample Method: grab   pump   ~~bailer~~
slight   very | (describe) __2"Grundfos__

Field Parameters / Bottles Collected

	Sample	Duplicate		Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
Temp (°C)				3	40 ml	F or UF	HCL	EDB	
S.C. (µmhos/cm)									
DO (mg/l)									
pH									
ORP (mV)									
Turbidity (n.t.u.)									
Color									
Other: Odor									

Comments: Energy Labs organic free lab water (DI) from Helena, MT poured straight from glass liter bottle into vials

Sample Team Member Signature: Walter Crane   Page ___ of ___

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11/27/17 11:46 AM

Hydrometrics, Inc.
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STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM
HF-FORM-430

Project Name: Simplot Warden

Project Code: __12000__

Sample Team Member(s): __WCrane, RWoods__

Laboratory Used: Pace Analytical

Site Designation: __MW-65__

Sample Code Number: __SWM-0713 0712-110__

Sample Date: __12/ 5 /17__

Sample Time: __12 : 35__ (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code # _____

Duplicate Sample Time: ___ : ___

For Groundwater Samples

well volume formula: $V=(TD-SWL)x(Dia.^2)$ / 25   Comments

TD (ft.) 32.9' SWL(ft) 26.19' no access/pumping

MP Description __top of PVC__

Casing Diameter (I.D.) __2"__ Pumping Rate 0.2/0.15 1pm *

Casing Volume (gal) __1.1__ VX3(gal)= 3.3

Actual Vol. Removed (Liters.) 4

Water Level Recovery: (slow) moderate rapid

Site Conditions

New Site: No   Photo Taken: No

Site Type:
(monitoring well)
other: _____

Weather Conditions: (calm) breeze windy
(no precip) rain snow
clear (p. cloudy) overcast

Air Temperature __37__ °F

For Surface Water

26.25' Pre/Post 26.12'

Time (Military)	Temp. (°C)	S.C. (μmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons (Liters) Removed	Pump Rate LPM
12:05	PUMP ON								
12:10	10.0	2424	4.52	7.20	196.8	11.5	26.75	1	0.2/0.15
12:15	12.0	2452	4.09	7.18	189.0	7.4	26.82	1.75	
12:20	12.3	2450	3.94	7.18	184.2	4.8	26.83'	2.25	
12:25	12.4	2457	3.62	7.18	180.1	3.7	26.82	3.25	
12:30	12.3	2470	3.64	7.18	175.9	2.7	26.82	4	
:									
:									

Turbidity (circle): (clear) slight moderate very

Sample Method: grab   pump   bailer
(describe): 2"Grundfos

Field Parameters

	Sample	Duplicate
Temp (°C)	12.3	
S.C. (μmhos/cm)	2470	
DO (mg/l)	3.64	
pH	7.18	
ORP (mV)	175.9	
Turbidity (n.t.u.)	2.7	
Color	NONE	
Other: Odor	NONE	

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
3	40 ml	F or UF	HCL	EDB	

Comments: * well exceeds 0.3' drawdown even @ 0.15 LPM
~126 Pump cycles
_____

Sample Team Member Signature: Walter Crane   Page ___ of ___

Hydrometrics, Inc.   **Consulting Scientists and Engineers**

STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM
HF-FORM-430

Project Name: Simplot Warden

Project Code: __12000__

Sample Team Member(s): __WCrane, RWoods__

Laboratory Used: Pace Analytical

Site Designation: ~~MW~~ Rinsate Blank

Sample Code Number: SWM-~~0713~~ 0712- 111

Sample Date: 12/ 5 /17

Sample Time: 13:10 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #

Duplicate Sample Time:

For Groundwater Samples

well volume formula $V=\frac{(TD-SWL) \times (Dia.^2)}{25}$ Comments

TD (ft.) _____ SWL(ft) _____ no access/pumping

MP Description ___top of___

Casing Diameter (I.D.) _____ Pumping Rate _____ lpm

Casing Volume (gal) _____ VX3(gal)= _____

Actual Vol. Removed (Liters.) _____

Water Level Recovery: slow / moderate / rapid

Site Conditions

New Site: No   Photo Taken: No

Site Type:

~~monitoring well~~

(other:) QA/QC see remarks

Weather Conditions: (calm) / breeze / windy

(no precip) / rain / snow

clear / (p. cloudy) / overcast

Air Temperature ___°C   37 °F

For Surface Water

Time (Military)	Temp. (°C)	S.C. (μmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet) Pre / Post	Total Gallons Liters Removed	Pump Rate LPM
	PUMP ON								

Turbidity (circle): clear / slight / moderate / very

Sample Method: (describe) grab / pump / ~~bailer~~ / 2"Grundfos

Field Parameters

	Sample	Duplicate
Temp (°C)		
S.C. (μmhos/cm)		
DO (mg/l)		
pH		
ORP (mV)		
Turbidity (n.t.u.)		
Color		
Other: Odor		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
3	40 ml	F or UF	HCL	EDB	

Comments: Energy Labs organic free DI water from Helena, MT run thru Grundfos 2" pump then sampled after pump was decoved

Sample Team Member Signature: Walter Crane   Page ___ of ___

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11/27/17 11:46 AM

Hydrometrics, Inc.   **Consulting Scientists and Engineers**

STANDARD OPERATING PROCEDURE
WATER SAMPLING FORM
HF-FORM-430

Project Name: **Simplot Warden**   Site Designation: _____ MW- **5S** _____

Project Code: _____ **12000** _____   Sample Code Number: _____ SWM-0713 **0712-112** _____

Sample Team Member(s): _**WCrane, RWoods**_   Sample Date: _**12/ 5 /17**_

Laboratory Used: **Pace Analytical**   Sample Time: _____ **14:50** _____ (military)

For Groundwater Samples   Page 1 of 2

If Duplicate Sample Collected,
Please Record Below S, MS, MSD

Duplicate Sample Code # _**SWM-0712-112**_

Duplicate Sample Time: _____ **14:50** _____

well volume formula:	$V = \dfrac{(TD-SWL) \times (Dia.^2)}{25}$ Comments

TD (ft.) **39.25'** SWL(ft) **25.62'** no access/pumping ⌐ 1215~

MP Description **top of PVC**   W 0.5/0.4

Casing Diameter (I.D.) **2"** Pumping Rate **0.6** lpm

Casing Volume (gal) **2.2** VX3(gal)= **6.6**

Actual Vol. Removed (Liters.) **30.5**

Water Level Recovery: (slow) moderate rapid

Site Conditions

New Site: No   Photo Taken: No

Site Type:
     (monitoring well)
     other: _____

Weather Conditions: (calm)   breeze   windy
     (no precip.)   rain   snow
     (clear)   p. cloudy   overcast

Air Temperature   °C   **40** °F

For Surface Water

25.72' Pre / Post 25.66'

Time (Military)	Temp. (°C)	S.C. (µmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons (Liters) Removed	Pump Rate LPM
13:27	PUMP ON								0.6
13:32	14.4	3996	5.20	7.26	227.0	157.	25.99'	2.5	0.5
13:37	15.1	3956	5.01	7.28	201.0	110.	25.92'	4.5	0.4
13:42	15.8	3942	4.90	7.28	186.4	67.6	25.92'	6.57.5	
13:47	15.8	3951	4.75	7.28	164.7	49.4	25.92'	8.5	
13:52	16.00	3915	4.64	7.28	151.7	37.1	25.92'	10.5	
13:57	16.1	3877	4.57	7.28	143.7	28.2	25.92'	12.5	
14:02	16.3	3823	4.49	7.28	137.5	23.8	25.92'	14.5	

Turbidity (clear) moderate   **Sample Method:**   grab   pump   —bailer—
(circle)   slight   very   (describe) _____ 2"Grundfos _____

Field Parameters   **Bottles Collected**

	Sample	Duplicate	Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
Temp (°C)	16.4		9	40 ml	F or UF	HCL	EDB	
S.C. (µmhos/cm)	3452							
DO (mg/l)	4.06							
pH	7.30							
ORP (mV)	126.9							
Turbidity (n.t.u.)	6.7							
Color		NONE						
Other: Odor		NONE						

Comments: _____ Pump cycles 2/25 _____

Sample Team Member Signature: _**Walter Crane**_   Page _**1**_ of **2**

Time (Military)	Temp. (°C)	S.C. (μmhos/cm)	Dissolved Oxygen (mg/l)	pH	Oxidation Reduction Potential (mV)	Turbidity (n.t.u.)	Water Level (feet)	Total Gallons (Liters) Removed	Pump Rate GPM/LPM
	PUMP ON								
14:07	16.3	3753	4.38	7.28	133.1	18.8	25.92	16.5	0.4
14:12	16.3	3707	4.38	7.29	131.7	15.6	25.92	18.5	
14:17	16.3	3636	4.12	7.29	127.5	13.7	25.92	20.5	
14:22	16.3	3613	4.25	7.29	127.3	9.9	25.92	22.5	
14:27	16.4	3555	4.14	7.29	127.3	7.9	25.92	24.5	
14:32	16.4	3512	4.04	7.29	126.2	6.8	25.92	26.5	
14:37	16.4	3484	4.05	7.29	126.5	6.6	25.92	28.5	
14:42	16.4	3452	4.06	7.30	126.9	6.7	25.92	30.5	

CHAIN-OF-CUSTODY / Analytical Request Document

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The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 2

2134768

Section A
Required Client Information:

Company: HDR Engineering
Address: 412 E Parkcenter Blvd.
Boise, ID 83706
Email To: Mike.Murray@hdrinc.com
Phone: (208) 387-7000 Fax: (208) 367-7100
Requested Due Date/TAT:

Section B
Required Project Information:

Report To: Michael Murray
Copy To:

Purchase Order No.:
Project Name: Simplot Warden WA
Project Number:

Section C
Invoice Information:

Attention: Zelma Miller
Company Name: HDR Engineering
Address: 412 E Parkcenter Blvd.

Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES   ☒ GROUND WATER   ☐ DRINKING WATER
☐ UST   ☐ RCRA   ☐ OTHER

Site Location
STATE: _____

Section D
Required Client Information:

Matrix Codes
MATRIX / CODE
Drinking Water — DW
Water — WT
Waste Water — WW
Product — P
Soil/Solid — SL
Oil — OL
Wipe — WP
Air — AR
Tissue — TS
Other — OT

# ITEM	SAMPLE ID (A-Z, 0-9 /.-) Sample IDs MUST BE UNIQUE	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives HCl	Analysis Test EDB EPA 8011	2ero Headspace checked
1	SWM-0712-100	WT	G	12/4/17	1030		3	X	X	X
2	-101				1135					
3	-102				1330					
4	-103				1455					
5	-104				1640					
6	-105				1800					
7	-106			12/5/17	0940					
8	-107				1030					
9	-108				1130					
10	-109				1200					
11	-110				1235					
12	-111				1310					

Residual Chlorine (Y/N)
Requested Analysis Filtered (Y/N)
Pace Project No./ Lab I.D.

ADDITIONAL COMMENTS
Fed Ex standard overnight
air bill # 7448 1033 0675

③

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Walter Crane / Hydrometrics	12/6/17	14:30			

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Walter Crane, Ray Woods
SIGNATURE of SAMPLER: W.H. Crane   DATE Signed (MM/DD/YY): 12/06/17

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Section A
Required Client Information:

Company:	
Address:	
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	

Section B
Required Project Information:

Report To:	← same as page 1
Copy To:	
Purchase Order No.:	
Project Name:	
Project Number:	

Section C
Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

- ☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER
- ☐ UST ☐ RCRA ☐ OTHER ___

Site Location
STATE: ___

Section D
Required Client Information

Matrix Codes
MATRIX / CODE
- Drinking Water DW
- Water WT
- Waste Water WW
- Product P
- Soil/Solid SL
- Oil OL
- Wipe WP
- Air AR
- Tissue TS
- Other OT

SAMPLE ID
(A-Z, 0-9 /,-)
Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	# OF CONTAINERS	Unpreserved	H₂SO₄	HNO₃	HCl	NaOH	Na₂S₂O₃	Methanol	Other	Analysis Test → EDB EPA 8011	Y/N Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	SWM-0712-112-(x3)	WTG		12/5/17	14:50	3				X							Sample "matrix spiked" as duplicate checked for zero headspace
2	also includes trip blank																
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

Requested Analysis Filtered (Y/N)

Preservatives

SAMPLE TEMP AT COLLECTION

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Same as page 1	Walter Crane/Hydrometrics	12/6/17	14:30				

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Walter Crane, Ray Woods

SIGNATURE of SAMPLER: Walter Crane

DATE Signed (MM/DD/YY): 12/06/17

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

③

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

STANDARD OPERATING PROCEDURE
INSTRUMENT CALIBRATION FORM
HF-FORM-500

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: SIMPLOT – WARDEN

Project Number: 12000

Date: 12/4/17

Personnel: R. WOODS

Weather Conditions:

calm	breeze	windy
no precip	rain	snow
clear	p. cloudy	overcast

Calibration completed inside of lab.

Air Temperature:
°F   °C

pH

Meter Type:	YSI 556		
SN:	070100965		

Time	Buffer	Temperature °C	Reading (Temp Corrected)
07:27	4	9.6 °C	4.00
07:24	7	9.5 °C	7.04
07:30	10	9.8 °C	10.08
Calibration check:			

Dissolved Oxygen

Meter Type: _____
SN: SAME

Time: 07:46
Calibration Results:mg/L 9.95
Barometric Pressure: 739.1 mm Hg

Specific Conductance

Meter Type:	YSI 556	SN: SAME		

Time	Standard	Temperature °C	Reading (Temp Corrected)	Cell Factor
07:33	1413	9.0 °C	1413	1.00
Calibration check:				

Redox Potential (Eh)

Meter Type: _____
SN: SAME

Electrode: Ag/AgCl
                         Other: _____
Time: 07:36
Geotech Solution Potential (mV): 220
CALIBRATED @ 230.0

Temperature: 9.9 °C

Turbidity

Meter Type:	HACH	SN:	

Time	Standard	Reading
07:38	<0.1	0.5
07:39	20	19.2
07:40	100	95.8

Notes/Additional Information:

STANDARD OPERATING PROCEDURE
INSTRUMENT CALIBRATION FORM
HF-FORM-500

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: SIMPLOT - WARDEN

Project Number: 12000

Date: 12/5/17

Personnel: R. WOODS

Weather Conditions:

calm	breeze	windy
no precip	rain	snow
clear	p. cloudy	overcast

Calibration completed inside of lab.

Air Temperature:
°F   °C

pH

Meter Type: YSI 556
SN: 07D100965

Time	Buffer	Temperature °C	Reading (Temp Corrected)
07:46	4	13.6 °C	4.00
07:39	7	13.9 °C	7.04
07:43	10	14.2 °C	10.08
Calibration check:			

Dissolved Oxygen

Meter Type: ____
SN: SAME

Time: 08:01
Calibration Results: mg/L 9.70
Barometric Pressure: 743.3 mm Hg

Specific Conductance

Meter Type: ____   SN: SAME

Time	Standard	Temperature °C	Reading (Temp Corrected)	Cell Factor
07:48	1413	14.0 °C	1413	1.00
Calibration check:				

Redox Potential (Eh)

Meter Type: ____
SN: SAME

Electrode: Ag/AgCl
Other: ____
Time: 07:51
Geotech Solution Potential (mV): 220
CALIBRATED @ 227.6

Temperature: 14.0 °C

Turbidity

Meter Type: HACH   SN:

Time	Standard	Reading
07:47	<0.1	0.3
07:48	20	19.4
07:49	100	95.5

Notes/Additional Information:

Arrived in Moses Lake 12/3/17 @ 2030 hrs. Drove to Warden and arrived @ Simpson @ 07:00. Meet w/ Jeff - Jo site site visit. Walter Crowe & Ray Woods were the Hydrometrics field sampling crew. Weather for 12/4/17 was P. Cloudy, light breeze most of day. Air temp ranged from 32°-37°F no precip.

Site	Date	Time	SWL	
			10/28/13 Previous SWL	Used In-Situ WL meter
MW-6S	12/4/17	07:59	26.19, 20.99' 08:12	(out, "stuck", will come back
MW-7S		08:12	28.58, 23.88' 08:12	
MW-7		08:14	28.79, 24.04'	
MW-5		08:06	46.70 w/20.74, 25.84'	double Ved - switched meters
MW-5S		08:20	25.92, 20.60	
MW-8S		08:18	27.16, 22.08	
MW-3		09:25	18.81, 13.22' *	took awhile to find flush mount buried under dirt
Canal		08:57	DRY, 18.80'	too rusted, top bolts out
MW-2		08:52	25.24, 21.79'	coral "dry", standing water only 19.19' to tg office
MW-1		08:54	22.60, 18.31'	
MW-4		08:29	(Abandoned) 18.15'	
MW-10S		08:30	23.61, 18.38'	took a long time to get T.D, bolts out of flush mount
MW-9S		08:36	26.38' DRY "Dry" TD 20.56'	

* had to go buy special socket to get stuck bolt out, some standing water in flush mount, water in flush mount, looks like some might have leaked down 2" well probably just water in the endcap

Walter
Crowe

Site	Sample Code #	Date	Time	SWL'	TD'
MW-2	SWM-1712-100	12/4/17	10:30	25.24'	77.75'
MW-1	SWM-1712-101	12/4/17	11:35	22.60'	57.4'
MW-10S	SWM-1712-102	12/4/17	13:30	23.61'	35.5'
MW-7S	SWM-1712-103	12/4/17	14:55	28.58'	39.75'

MW-10S note: some ambient dust & odors from traffic & industry when we disconnected the tubing to sample - turbidity increased)

Walter   Crane

Well No. MW-2   Bottle/Pres. 3/40/uf/HCL   Analysis EDB   Remarks   Odor- slight
Temp 15.1 C
SC- 207
DO 0.20 mg/L
pH 8.34
ORP 138.7 mv
Turb- 1.3 NTU
Vol- 12 Gal Liters
GPM/LPM 0.6
Color- None
Names- WC,RW
Purge and Sample
2" Grundfos Pump
pump cycles ~128
Pump Set @ midscreen

Well No. MW-1   Bottle/Pres. 3/40/uf/HCL   Analysis EDB   Remarks   Odor- NONE
Temp 15.5 C
SC- 685
DO 0.86 mg/L
pH 7.57
ORP 137.8 mv
Turb- 1.8 NTU
Vol- 17.5 Gal Liters
GPM/LPM 0.5
Color- NONE
Names- WC,RW
Purge and Sample
2" Grundfos Pump
pump cycles ~130
Pump Set @ mid-screen

Well No. MW-10S   Bottle/Pres. 3/40/uf/HCL   Analysis EDB   Remarks   Odor- NONE
Temp 17.9 C
SC- 2306
DO 5.28 mg/L
pH 7.55
ORP 77.3 mv
Turb- 15.9 NTU
Vol- 19.5 Gal Liters
GPM 0.3
Color- NONE
Names- RW,WC-iW,RW
Purge and Sample
2" Grundfos Pump
pump cycles ~128
Pump Set @ mid screen

Well No. MW-7S   Bottle/Pres. 3/40/uf/HCL   Analysis EDB   Remarks   Odor- None
Temp 16.4 C
SC- 3627
DO 5.87 mg/L
pH 7.66
ORP 126.2 mv
Turb- 2.2 NTU
Vol- 40 Gal Liters
GPM/LPM 1.0
Color- None
Names- WC,RW
Purge and Sample
2" Grundfos Pump
pump cycles ~137
Pump Set @ mid-screen

Site	Sample Code#	Date	Time	SWL	TD
MW-7	SWM-1712-104	12/4/17	16:40	28.79'	54.7'
MW-5	SWM-1712-105	12/4/17	18:00	25.84'	57.45'
MW-8S	SWM-1712-106	12/5/17	09:40	27.16'	38.3'
MW-8S Dup.	SWM-1712-107	12/5/17	10:30	same	

Walter Crane

Well No. MW-7
Bottle/Pres. 3/40/uf/HCL
Analysis EDB
Remarks
Odor- Yes
Vol- 39 Gal Liters
GPM-LPM 0.6
Color- None
Names-RL,CD-WC,RW
Purge and Sample
2" Grundfos Pump
Pump Set @ mid-screen
cycles~134

Temp 16.3 C
SC- 214
DO 0.09 mg/L
pH 8.14
ORP 137.6 mv
Turb- 3.7 NTU

Well No. MW-5
Bottle/Pres. 3/40/uf/HCL
Analysis EDB
Remarks
Odor- None
Vol- 15.5 Gal Liters
GPM-LPM 0.5
Color- None
Names-WC,RW
Purge and Sample
2" Grundfos Pump
Pump Set @ mid-screen
cycles~129

Temp 15.0 C
SC- 382
DO 0.24 mg/L
pH 8.12
ORP 216.5 mv
Turb- 3.9 NTU

Well No. MW-8S
Bottle/Pres. 3/40/uf/HCL
Analysis EDB
Remarks
Odor- None
Vol- 24 Gal Liters
GPM-LPM 0.3
Color-light grey/brown tint
Names-RL,CD-WC,RW
Purge and Sample
2" Grundfos Pump
Pump Set @ mid screen
cycles~128

Temp 14.5 C
SC- 3058
DO 7.73 mg/L
pH 7.22
ORP 114.2 mv
Turb- 61.2 NTU

Well No. MW-8S Duplicate
Bottle/Pres. 3/40/uf/HCL
Analysis EDB
Remarks
Odor-
Vol- Gal
GPM- same
Color-
Names-WC,RW
Purge and Sample
2" Grundfos Pump
Pump Set @ mid-screen
cycles~ same

Temp C
SC-
DO same mg/L
pH
ORP mv
Turb- NTU

Site	Sample Code #	Date	Time	SWL	TD'
MW-3	SWM-1712-108	12/5/17	11:30	18.81'	59.65'
DI Blank	SWM-1712-109	12/5/17	12:00	/	
MW-6S	SWM-1712-110	12/5/17	13:10 (wc 12/5/17) 26.19' 32.9'	12:35	# well exceeds .3' drawdown even at 0.15 LPM
Rinsate Blank	SWM-1712-111	12/5/17	13:10	/	

Well No. MW-3
Bottle/Pres. 3/40/uf/HCL
Analysis EDB
Remarks
Odor- NONE
Vol- 28 6 Liters
GPM LPM 0.8
Color- NONE
Names-RL,CD wc, RW
Purge and Sample
2" Grundfos Pump

Temp 15.3 C
SC- 1417
DO 0.10 mg/L
pH 7.15
ORP 21.9 mv
Turb- 2.3 NTU

cycles ~123
Pump Set @ mid - screen

Well No. DI Blank
Bottle/Pres. 3/40/uf/HCL
Analysis EDB
Remarks
Energy Labs organic free DI water. MT from Helenet, MT poured straight from glass liter bottle into glass vials

Temp ___ C

Well No. MW-6S
Bottle/Pres. 3/40/uf/HCL
Analysis EDB
Remarks
Odor- NONE
Vol- 4 6 Liters
* GPM LPM 0.2/0.15
Color- NONE
Names-WC,RW
Purge and Sample
2" Grundfos Pump

Temp 12.3 C
SC- 2470
DO 3.64 mg/L
pH 7.18
ORP 175.9 mv
Turb- 2.7 NTU

cycles ~126
Pump Set @ mid-screen 25.ft bottom of screen, wc 12/5/17

Well No. Rinsate Blank
Bottle/Pres. 3/40/uf/HCL
Analysis EDB
Remarks
Energy Labs organic free DI water from Helena, MT running 2" Grundfos pump and sampled after pump was decomed.

Names-WC, RW

Walter   Cram

Site | Sample Code#
MW-5SSiWM-
Si,MS, 0712-
MSD 112

Date | Time | SWL' | TD'
12/5/17 | :14 | "SO 25.62' | 39.25'

Also shipped back a trip blank
w/ shipment of samples to lab

Weather - was mostly clear, calm and no
precip. and air temps from 28°F
to 40°F on 12/5/17

Shipped all samples to Pace Lab
in MN. overnight for analysis

Walter

Well No. | Bottle/Pres. | Analysis | Remarks
MW-5S | g/40/uf/HCL | EDB | Odor- NONE
Si,MS,MSD | | | Vol- 30.5 gal/liters
Temp 16.4°C | | | GPM LPM 0.4
SC- 3452 | | | Color- NONE
DO 4.06 mg/L | | | Names-RL,CD,wc,RW
pH 7.30 | | | Purge and Sample
ORP 26.9 mv | | | 2" Grundfos Pump
Turb- 6.7 NTU | | | Purge and Sample
cycles-/25 | | | Pump Set @ mid-screen

Crane

December 15, 2017

Mike Murray
HDR Engineering, Inc.
412 E. Parkcenter Blvd.
Suite 200
Boise, ID 83706
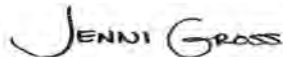
RE: Project: Simplot Warden WA
      Pace Project No.: 10413546

Dear Mike Murray:
Enclosed are the analytical results for sample(s) received by the laboratory on December 07, 2017.
The results relate only to the samples included in this report. Results reported herein conform to the
most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual,
where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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www.pacelabs.com

CERTIFICATIONS

Project: Simplot Warden WA
Pace Project No.:   10413546

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #:MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064

Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Simplot Warden WA
Pace Project No.: 10413546

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10413546001	SWM-0712-100	Water	12/04/17 10:30	12/07/17 10:30
10413546002	SWM-0712-101	Water	12/04/17 11:35	12/07/17 10:30
10413546003	SWM-0712-102	Water	12/04/17 13:30	12/07/17 10:30
10413546004	SWM-0712-103	Water	12/04/17 14:55	12/07/17 10:30
10413546005	SWM-0712-104	Water	12/04/17 16:40	12/07/17 10:30
10413546006	SWM-0712-105	Water	12/04/17 18:00	12/07/17 10:30
10413546007	SWM-0712-106	Water	12/05/17 09:40	12/07/17 10:30
10413546008	SWM-0712-107	Water	12/05/17 10:30	12/07/17 10:30
10413546009	SWM-0712-108	Water	12/05/17 11:30	12/07/17 10:30
10413546010	SWM-0712-109	Water	12/05/17 12:00	12/07/17 10:30
10413546011	SWM-0712-110	Water	12/05/17 12:35	12/07/17 10:30
10413546012	SWM-0712-111	Water	12/05/17 13:10	12/07/17 10:30
10413546013	SWM-0712-112	Water	12/05/17 14:50	12/07/17 10:30
10413546014	HCL TRIP BLANKS	Water	12/04/17 00:00	12/07/17 10:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Simplot Warden WA
Pace Project No.: 10413546

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10413546001	SWM-0712-100	EPA 8011	XV1	2	PASI-M
10413546002	SWM-0712-101	EPA 8011	XV1	2	PASI-M
10413546003	SWM-0712-102	EPA 8011	XV1	2	PASI-M
10413546004	SWM-0712-103	EPA 8011	XV1	2	PASI-M
10413546005	SWM-0712-104	EPA 8011	XV1	2	PASI-M
10413546006	SWM-0712-105	EPA 8011	XV1	2	PASI-M
10413546007	SWM-0712-106	EPA 8011	XV1	2	PASI-M
10413546008	SWM-0712-107	EPA 8011	XV1	2	PASI-M
10413546009	SWM-0712-108	EPA 8011	XV1	2	PASI-M
10413546010	SWM-0712-109	EPA 8011	XV1	2	PASI-M
10413546011	SWM-0712-110	EPA 8011	XV1	2	PASI-M
10413546012	SWM-0712-111	EPA 8011	XV1	2	PASI-M
10413546013	SWM-0712-112	EPA 8011	XV1	2	PASI-M
10413546014	HCL TRIP BLANKS	EPA 8011	XV1	2	PASI-M

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Simplot Warden WA
Pace Project No.: 10413546

Method: **EPA 8011**
Description: 8011 GCS EDB and DBCP
Client: HDR Engineering, Inc.
Date: December 15, 2017

General Information:
14 samples were analyzed for EPA 8011. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 8011 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 513461

> S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.
> - SWM-0712-102 (Lab ID: 10413546003)
>   - 4-Bromofluorobenzene (S)
> - SWM-0712-104 (Lab ID: 10413546005)
>   - 4-Bromofluorobenzene (S)
> - SWM-0712-105 (Lab ID: 10413546006)
>   - 4-Bromofluorobenzene (S)

> S4: Surrogate recovery not evaluated against control limits due to sample dilution.
> - MS (Lab ID: 2791904)
>   - 4-Bromofluorobenzene (S)
> - MSD (Lab ID: 2791905)
>   - 4-Bromofluorobenzene (S)
> - SWM-0712-112 (Lab ID: 10413546013)
>   - 4-Bromofluorobenzene (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Simplot Warden WA

Pace Project No.:   10413546

Method: **EPA 8011**

Description: 8011 GCS EDB and DBCP

Client: HDR Engineering, Inc.

Date: December 15, 2017

QC Batch: 513461

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10413546013

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
   • MS (Lab ID: 2791904)
      • 1,2-Dibromoethane (EDB)
   • MSD (Lab ID: 2791905)
      • 1,2-Dibromoethane (EDB)

R1: RPD value was outside control limits.
   • MSD (Lab ID: 2791905)
      • 1,2-Dibromoethane (EDB)

Additional Comments:

Analyte Comments:

QC Batch: 513461

D4: Sample was diluted due to the presence of high levels of target analytes.
   • MS (Lab ID: 2791904)
      • 4-Bromofluorobenzene (S)
   • MSD (Lab ID: 2791905)
      • 4-Bromofluorobenzene (S)
   • SWM-0712-112 (Lab ID: 10413546013)
      • 4-Bromofluorobenzene (S)

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

ANALYTICAL RESULTS

Project: Simplot Warden WA
Pace Project No.: 10413546

Sample: SWM-0712-100 MW-2 **Lab ID: 10413546001** Collected: 12/04/17 10:30 Received: 12/07/17 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP			Analytical Method: EPA 8011 Preparation Method: EPA 8011					
1,2-Dibromoethane (EDB)	ND	ug/L	0.0098	1	12/13/17 14:49	12/14/17 05:26	106-93-4	
Surrogates								
4-Bromofluorobenzene (S)	85	%.	70-125	1	12/13/17 14:49	12/14/17 05:26	460-00-4	

Sample: SWM-0712-101 MW-1 **Lab ID: 10413546002** Collected: 12/04/17 11:35 Received: 12/07/17 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP			Analytical Method: EPA 8011 Preparation Method: EPA 8011					
1,2-Dibromoethane (EDB)	ND	ug/L	0.0098	1	12/13/17 14:49	12/14/17 05:52	106-93-4	
Surrogates								
4-Bromofluorobenzene (S)	73	%.	70-125	1	12/13/17 14:49	12/14/17 05:52	460-00-4	

Sample: SWM-0712-102 MW-10S **Lab ID: 10413546003** Collected: 12/04/17 13:30 Received: 12/07/17 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP			Analytical Method: EPA 8011 Preparation Method: EPA 8011					
1,2-Dibromoethane (EDB)	ND	ug/L	0.0098	1	12/13/17 14:49	12/14/17 06:18	106-93-4	
Surrogates								
4-Bromofluorobenzene (S)	128	%.	70-125	1	12/13/17 14:49	12/14/17 06:18	460-00-4	S3

Sample: SWM-0712-103 MW-7S **Lab ID: 10413546004** Collected: 12/04/17 14:55 Received: 12/07/17 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP			Analytical Method: EPA 8011 Preparation Method: EPA 8011					
1,2-Dibromoethane (EDB)	ND	ug/L	0.0098	1	12/13/17 14:49	12/14/17 06:44	106-93-4	
Surrogates								
4-Bromofluorobenzene (S)	96	%.	70-125	1	12/13/17 14:49	12/14/17 06:44	460-00-4	

Sample: SWM-0712-104 MW-7 **Lab ID: 10413546005** Collected: 12/04/17 16:40 Received: 12/07/17 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP			Analytical Method: EPA 8011 Preparation Method: EPA 8011					
1,2-Dibromoethane (EDB)	ND	ug/L	0.0096	1	12/13/17 14:49	12/14/17 07:10	106-93-4	
Surrogates								
4-Bromofluorobenzene (S)	152	%.	70-125	1	12/13/17 14:49	12/14/17 07:10	460-00-4	S3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Simplot Warden WA

Pace Project No.: 10413546

Sample: SWM-0712-105 **Lab ID: 10413546006** Collected: 12/04/17 18:00 Received: 12/07/17 10:30 Matrix: Water

MW-5

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP			Analytical Method: EPA 8011 Preparation Method: EPA 8011					
1,2-Dibromoethane (EDB)	ND	ug/L	0.0098	1	12/13/17 14:49	12/14/17 07:35	106-93-4	
Surrogates								
4-Bromofluorobenzene (S)	147	%.	70-125	1	12/13/17 14:49	12/14/17 07:35	460-00-4	S3

Sample: SWM-0712-106 **Lab ID: 10413546007** Collected: 12/05/17 09:40 Received: 12/07/17 10:30 Matrix: Water

MW-8S

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP			Analytical Method: EPA 8011 Preparation Method: EPA 8011					
1,2-Dibromoethane (EDB)	ND	ug/L	0.0098	1	12/13/17 14:49	12/14/17 08:01	106-93-4	
Surrogates								
4-Bromofluorobenzene (S)	97	%.	70-125	1	12/13/17 14:49	12/14/17 08:01	460-00-4	

Sample: SWM-0712-107 **Lab ID: 10413546008** Collected: 12/05/17 10:30 Received: 12/07/17 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP			Analytical Method: EPA 8011 Preparation Method: EPA 8011					
1,2-Dibromoethane (EDB) 8S Dupl	ND	ug/L	0.0098	1	12/13/17 14:49	12/14/17 08:27	106-93-4	
Surrogates								
4-Bromofluorobenzene (S)	99	%.	70-125	1	12/13/17 14:49	12/14/17 08:27	460-00-4	

Sample: SWM-0712-108 **Lab ID: 10413546009** Collected: 12/05/17 11:30 Received: 12/07/17 10:30 Matrix: Water

MW-3

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP			Analytical Method: EPA 8011 Preparation Method: EPA 8011					
1,2-Dibromoethane (EDB)	ND	ug/L	0.0097	1	12/13/17 14:49	12/14/17 08:53	106-93-4	
Surrogates								
4-Bromofluorobenzene (S)	89	%.	70-125	1	12/13/17 14:49	12/14/17 08:53	460-00-4	

Sample: SWM-0712-109 **Lab ID: 10413546010** Collected: 12/05/17 12:00 Received: 12/07/17 10:30 Matrix: Water

DI BLank

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP			Analytical Method: EPA 8011 Preparation Method: EPA 8011					
1,2-Dibromoethane (EDB)	ND	ug/L	0.0097	1	12/13/17 14:49	12/14/17 10:11	106-93-4	
Surrogates								
4-Bromofluorobenzene (S)	86	%.	70-125	1	12/13/17 14:49	12/14/17 10:11	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Simplot Warden WA

Pace Project No.: 10413546

Sample: SWM-0712-110 MW-6S **Lab ID: 10413546011** Collected: 12/05/17 12:35 Received: 12/07/17 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011							
1,2-Dibromoethane (EDB)	0.35	ug/L	0.0097	1	12/13/17 14:49	12/14/17 10:36	106-93-4	
Surrogates								
4-Bromofluorobenzene (S)	92	%.	70-125	1	12/13/17 14:49	12/14/17 10:36	460-00-4	

Sample: SWM-0712-111 Rinsate **Lab ID: 10413546012** Collected: 12/05/17 13:10 Received: 12/07/17 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011							
1,2-Dibromoethane (EDB)	ND	ug/L	0.0099	1	12/13/17 14:49	12/14/17 11:02	106-93-4	
Surrogates								
4-Bromofluorobenzene (S)	89	%.	70-125	1	12/13/17 14:49	12/14/17 11:02	460-00-4	

Sample: SWM-0712-112 MW-5S **Lab ID: 10413546013** Collected: 12/05/17 14:50 Received: 12/07/17 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011							
1,2-Dibromoethane (EDB)	151	ug/L	9.7	1000	12/13/17 14:49	12/14/17 14:16	106-93-4	M6,R1
Surrogates								
4-Bromofluorobenzene (S)	0	%.	70-125	1000	12/13/17 14:49	12/14/17 14:16	460-00-4	D4,S4

Sample: HCL TRIP BLANKS **Lab ID: 10413546014** Collected: 12/04/17 00:00 Received: 12/07/17 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011							
1,2-Dibromoethane (EDB)	ND	ug/L	0.0096	1	12/13/17 14:49	12/14/17 11:28	106-93-4	
Surrogates								
4-Bromofluorobenzene (S)	95	%.	70-125	1	12/13/17 14:49	12/14/17 11:28	460-00-4	

REPORT OF LABORATORY ANALYSIS

Date: 12/15/2017 01:14 PM

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QUALITY CONTROL DATA

Project: Simplot Warden WA

Pace Project No.:   10413546

QC Batch:	513461	Analysis Method:	EPA 8011
QC Batch Method:	EPA 8011	Analysis Description:	GCS 8011 EDB DBCP

Associated Lab Samples: 10413546001, 10413546002, 10413546003, 10413546004, 10413546005, 10413546006, 10413546007, 10413546008, 10413546009, 10413546010, 10413546011, 10413546012, 10413546013, 10413546014

METHOD BLANK: 2791902   Matrix: Water

Associated Lab Samples: 10413546001, 10413546002, 10413546003, 10413546004, 10413546005, 10413546006, 10413546007, 10413546008, 10413546009, 10413546010, 10413546011, 10413546012, 10413546013, 10413546014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.010	12/14/17 02:00	
4-Bromofluorobenzene (S)	%.	104	70-125	12/14/17 02:00	

LABORATORY CONTROL SAMPLE: 2791903

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.11	0.11	99	60-140	
4-Bromofluorobenzene (S)	%.			105	70-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2791904   2791905

Parameter	Units	10413546013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	151	.1	.1	171	135	18800	-15700	60-140	23	20	M6,R1
4-Bromofluorobenzene (S)	%.						0	0	70-125			D4,S4

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Date: 12/15/2017 01:14 PM

QUALIFIERS

Project: Simplot Warden WA

Pace Project No.:   10413546

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M   Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

D4	Sample was diluted due to the presence of high levels of target analytes.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
R1	RPD value was outside control limits.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Simplot Warden WA

Pace Project No.:   10413546

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10413546001	SWM-0712-100	EPA 8011	513461	EPA 8011	513707
10413546002	SWM-0712-101	EPA 8011	513461	EPA 8011	513707
10413546003	SWM-0712-102	EPA 8011	513461	EPA 8011	513707
10413546004	SWM-0712-103	EPA 8011	513461	EPA 8011	513707
10413546005	SWM-0712-104	EPA 8011	513461	EPA 8011	513707
10413546006	SWM-0712-105	EPA 8011	513461	EPA 8011	513707
10413546007	SWM-0712-106	EPA 8011	513461	EPA 8011	513707
10413546008	SWM-0712-107	EPA 8011	513461	EPA 8011	513707
10413546009	SWM-0712-108	EPA 8011	513461	EPA 8011	513707
10413546010	SWM-0712-109	EPA 8011	513461	EPA 8011	513707
10413546011	SWM-0712-110	EPA 8011	513461	EPA 8011	513707
10413546012	SWM-0712-111	EPA 8011	513461	EPA 8011	513707
10413546013	SWM-0712-112	EPA 8011	513461	EPA 8011	513707
10413546014	HCL TRIP BLANKS	EPA 8011	513461	EPA 8011	513707

REPORT OF LABORATORY ANALYSIS

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Page: 1 of 2

2134768

10413554b

Section A — Required Client Information:
Company: HDR Engineering
Address: 412 E Parkcenter Blvd.
Boise, ID 83706
Email To: Mike.Murray@hdrinc.com
Phone: (208)387-7000 Fax: (208)387-7100

Section B — Required Project Information:
Report To: Michael Murray
Copy To:
Purchase Order No.:
Project Name: Simplot Warden WA
Project Number:

Section C — Invoice Information:
Attention: Zelma Miller
Company Name: HDR Engineering
Address: 412 E Parkcenter Blvd.
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY
- ☐ NPDES ☐ GROUND WATER ☒ DRINKING WATER
- ☐ UST ☐ RCRA ☐ OTHER
- Site Location STATE:

Matrix Codes — MATRIX / CODE
Drinking Water DW
Water WT
Waste Water WW
Product P
Soil/Solid SL
Oil OL
Wipe WP
Air AR
Tissue TS
Other OT

Section D — Required Client Information

ITEM #	SAMPLE ID (A-Z, 0-9 /.-) Sample IDs MUST BE UNIQUE	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	# OF CONTAINERS	HCl	EDB EPA 8011	2εℓℓ headspace checked	Pace Project No./ Lab I.D.
1	SWM-0712-100	WT	G	12/4/17	1030	3	X	X	X	001
2	-101				1135					002
3	-102				1330					003
4	-103				1455					004
5	-104				1640					005
6	-105				1800					006
7	-106			12/5/17	0940					007
8	-107				1030					008
9	-108				1130					009
10	-109				1200					010
11	-110				1235					011
12	-111				1310					012

ADDITIONAL COMMENTS
FedEx standard overnight
airbill #
7448 1033 0675

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Walter Crane / Hydrometrics	12/6/17	14:30			
			Pace	12/8/17	1036

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Walter Crane Ray Woods
SIGNATURE of SAMPLER: Walter Crane
DATE Signed (MM/DD/YY): 12/06/17

SAMPLE CONDITIONS
Temp in °C: 4.2
Received on Ice (Y/N): Y
Custody Sealed Cooler (Y/N): Y
Samples Intact (Y/N): Y

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

ORIGINAL

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Section A
Required Client Information:

Company:

Address:

Email To:

Phone: | Fax:

Requested Due Date/TAT:

Section B
Required Project Information:

Report To:

Copy To:

Purchase Order No.:

Project Name:

Project Number:

← same as page 1

Section C
Invoice Information:

Attention:

Company Name:

Address:

Pace Quote Reference:

Pace Project Manager:

Pace Profile #:

REGULATORY AGENCY

NPDES | GROUND WATER X | DRINKING WATER
UST | RCRA | OTHER

Site Location STATE:

Section D
Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes
MATRIX / CODE
Drinking Water DW
Water WT
Waste Water WW
Product P
Soil/Solid SL
Oil OL
Wipe WP
Air AR
Tissue TS
Other OT

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	# OF CONTAINERS	Preservatives: Unpreserved	H₂SO₄	HNO₃	HCl	NaOH	Na₂S₂O₃	Methanol	Other	Analysis Test Y/N	EDB EPA 8011	Residual Chlorine (Y/N)
1	SWM-0712-112(x3)	WTG		3				X						1108	
2															
3															

Requested Analysis Filtered (Y/N)

Matrix codes (see valid codes to left)

COLLECTED
COMPOSITE START: DATE 12/6/17 TIME 14:50
COMPOSITE END/GRAB: DATE | TIME
SAMPLE TEMP AT COLLECTION

Pace Project No./ Lab I.D.
-013
-014

Sample, matrix spike & mstduplicate
checked for zero
headspace

ADDITIONAL COMMENTS
Same as page1

KL Trip - Dec 12-17-17
also includes trip
blank

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Walter Crane /Hydrometrics	12/6/17	14:30			
			[signature] Pace	12/7/17	1030

4.2

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Walter Crane, Ray Woods

SIGNATURE of SAMPLER: [signature] Walter Crane

DATE Signed (MM/DD/YY): 12/06/17

SAMPLE CONDITIONS	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Temp in °C	Y	Y	Y

ORIGINAL

F-ALL-Q-020rev.07, 15-May-2007

Sample Condition Upon Receipt	**Client Name:** HDR Engineering	**Project #:**	WO# 10413546

Courier: ☑Fed Ex ☐UPS ☐USPS ☐Client
☐Commercial ☐Pace ☐SpeeDee ☐Other: _____
Tracking Number: 7448 1033 0675

Custody Seal on Cooler/Box Present? ☑Yes ☐No   **Seals Intact?** ☑Yes ☐No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☑Bubble Wrap ☐Bubble Bags ☐None ☐Other: _____   **Temp Blank?** ☐Yes ☑No

Thermometer Used: ☐151401163 ☑G87A9155100842   **Type of Ice:** ☑Wet ☐Blue ☐None ☐Samples on ice, cooling process has begun

Cooler Temp Read (°C): 4.1   **Cooler Temp Corrected (°C):** 4.2   **Biological Tissue Frozen?** ☐Yes ☐No ☑N/A

Temp should be above freezing to 6°C   **Correction Factor:** +0.1   Date and Initials of Person Examining Contents: ME 12/7/17

USDA Regulated Soil (☑N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No   Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑Yes	☐No		1.
Chain of Custody Filled Out?	☑Yes	☐No		2.
Chain of Custody Relinquished?	☑Yes	☐No		3.
Sampler Name and/or Signature on COC?	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☑Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☑No		6.
Rush Turn Around Time Requested?	☐Yes	☑No		7.
Sufficient Volume?	☑Yes	☐No		8.
Correct Containers Used?	☑Yes	☐No		9.
-Pace Containers Used?	☑Yes	☐No		
Containers Intact?	☑Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☑N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC?	☑Yes	☐No		12.
-Includes Date/Time/ID/Analysis Matrix: wt				

All containers needing acid/base preservation have been checked?	☐Yes	☐No	☑N/A	13. ☐HNO₃ ☐H₂SO₄ ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO₃, H₂SO₄ <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☑N/A	Sample #
Exceptions (VOA, coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin.	☑Yes	☐No	☐N/A	Initial when completed: ____ Lot # of added preservative: ____
Headspace in VOA Vials (>6mm)?	☐Yes	☑No	☐N/A	14.
Trip Blank Present?	☑Yes	☐No	☐N/A	15.
Trip Blank Custody Seals Present?	☑Yes	☐No	☐N/A	
Pace Trip Blank Lot # (if purchased): 132757				

CLIENT NOTIFICATION/RESOLUTION   **Field Data Required?** ☐Yes ☐No

Person Contacted: _____   Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Jenni Gross   **Date:** 12/07/17

Note: Whenever there is a discrepancy affecting North Car hold, incorrect preservative, out of temp, incorrect contain   copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of