

Sager, John E - DNR

From: Sager, John E - DNR
Sent: Monday, December 10, 2018 9:36 AM
To: 'Wright, Clifford C.'
Subject: RE: SRC T25 Basin HC Investigation Update and Request 12/7/18

Cliff,

The plan below appears acceptable to address the direct contact risk associated with the remaining contamination found during the geoprobe investigation. If this action does address the direct contact risk we can assess whether this site can be incorporated into the Facility Wide ERP site. If additional sampling is not feasible to the NW because of structural impediments associated with the tank berm and piping rack NW of the road we can use the PID and analytical data available to determine if additional action is needed.

Thanks.

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John Sager
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From: Wright, Clifford C. <cwright@GFNET.com>
Sent: Friday, December 7, 2018 10:43 AM
To: Sager, John E - DNR <John.Sager@wisconsin.gov>
Subject: SRC T25 Basin HC Investigation Update and Request 12/7/18

John- Four pdfs related to the BRTTS #02-16-580801 site are attached.

1. *Tab1_soil-data* summarizes the PVOC/naphthalene (N) soil analytical results from our May 2018 Tank 25 (T25) basin historical contamination (HC) investigation report for Superior Refining Company LLC (SRC). The NR 720 industrial direct contact RCL for N decreased from 26 to 24.1 mg/kg since the T27 investigation was conducted in Dec 2015. Consequently, the 25.7 mg/kg N in GP-15 0-1 at T25 is above its direct contact RCL and needs to be excavated, like at Tank 27 to the southwest.
2. *Fig1_Location-map* shows SRC property boundaries. Note that the property line is relatively close to T25.
3. *Fig2_Site-plan* includes the 30 soil boring locations, etc. from the March 2018 HC investigation.
4. *Tab2_PID-rdgs* is an internal reference document that I prepared on Dec 4. Given that PID readings at GP-26 and GP-28 were not <10 parts per million, volume (ppmv), one could argue that the lateral extent of impacted soil has not yet been completely defined **to the NW** (see *Fig2_Site-plan*), as you and I discussed on Dec 3. Digging test pit TP-1 as shown on Figure 2 is one option. According to Matt Turner at SRC though, TP-1 would be located on the slope of the tank berm and may be difficult to mechanically excavate. Using a hand auger would be a second option but might be difficult to get started with frost in the ground, etc. In addition, note that the vertical extent of the HC has been defined.

To remove the shallow-soil N hot spot, SRC proposes to:

- Excavate an area around GP-15 (e.g., 20 feet square and 4 feet deep).
- Field screen soil samples at 0-2 and 2-4 ft below ground surface from each of the four sidewalls.
 - If PID readings are <10 ppmv, then backfill with clean material, etc.
 - If a PID reading is >10 ppmv, then either collect a soil sample to document that the residual HC is below NR 720 industrial direct contact RCLs for PVOCs and N or resume excavation activities if necessary.

Please call me ASAP to discuss. Matt would like to excavate the remaining hotspot the week of Dec 10 if schedules permit. I left you a voicemail recently about this too.

Cliff Wright, PE, PG | Project Engineer/Geologist

Gannett Fleming, Inc. | 8025 Excelsior Drive, Madison, WI 53717-1900

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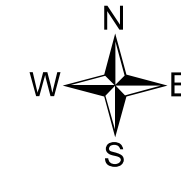
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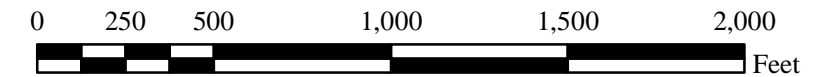



Legend

-  Monitoring Well
-  Monitoring Well\Piezometer Pair
-  Approximate SRC Property Boundary

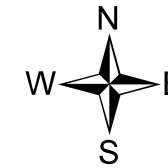
Note:

Well\Piezometer locations based on 02/06/15 survey by TKDA using a Trimble GNSS RTK GPS R8 Model 3



Facility-Wide Groundwater Monitoring Network			
SUPERIOR REFINING COMPANY LLC SUPERIOR REFINERY SUPERIOR, WISCONSIN			
		Gannett Fleming, Inc. 8025 Excelsior Drive Madison WI 53717-1900 (608) 836-1500 www.gannettfleming.com	
Project No.	34265.003	Date	02/16/16
Figure	1		

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Legend

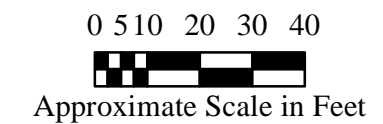
- Soil Boring Location That Screened Above 10ppmv and Had Detected Concentrations Above Applicable Direct Contact Limits
- Soil Boring Location That Screened Above 10ppmv and Had Detected Concentrations Below Applicable Direct Contact Limits
- Soil Boring Location That Screened Below 10ppmv

Estimated Horizontal Extent Of Hydrocarbon-Impacted Soil

Structural Impediments In Investigation Area

Notes:

- 1) Tank 25 is currently being used to store crude oil.
- 2) Not all boring locations that screened above 10ppmv were analyzed for PVOCs/Naphthalene.



Tank 25 Basin Hydrocarbon-Impacted Soil Investigation (March 2018)

CALUMET SUPERIOR, LLC
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Project No.	34265.003	Date	4/17/18	Figure	2
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TABLE 1

TANK 25 BASIN HISTORICAL CONTAMINATION INVESTIGATION SOIL ANALYTICAL RESULTS

Boring ID	Sample		Final Grade ⁽¹⁾ (ft bgs)	PID (ppmv)	Benzene (mg/kg)	Ethyl- benzene (mg/kg)	Toluene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	1,2,4- TMB (mg/kg)	1,3,5- TMB (mg/kg)	TMBs combined (mg/kg)	Naph- thalene (mg/kg)	Shallow Soil Multiple Contaminant Cumulative ⁽²⁾					
	Interval ⁽¹⁾ (ft bgs)	Date												Hazard Index	Cancer Risk				
NR 720 RCL soil to groundwater pathway					0.0051	1.57	1.1072	3.96	0.027	NS	NS	1.3787	0.6582	Hazard Index	Cancer Risk				
NR 720 RCL for industrial direct contact					7.07	35.4	818	260	282	219	182	NS	24.1						
GP-1	0-2	03/19/18	0-2	69	<0.025	0.0756	<0.025	0.176	U	<0.025	0.302	0.200	0.502	0.570	0.001	2.6E-08			
GP-11	0-1	03/20/18	1-2	36.2	<0.025	<0.025	<0.025	0.075	U	<0.025	0.025	U	0.025	U	0.050	U	<0.025	--	--
GP-12 ⁽³⁾	1-3	"	2-4	26.2	<0.100	0.363	<0.100	0.830	J	<0.100	1.580	1.060	2.640	3.500	0.0056	1.6E-07			
GP-13 ⁽³⁾	0-1	"	1-2	50.3	<0.100	0.230	J	<0.100	0.673	J	<0.100	2.250	1.290	3.540	4.420	0.0071	1.9E-07		
GP-14 ⁽³⁾	1-3	"	2-4	33.9	<0.0625	0.373	<0.0625	0.768	J	<0.0625	2.130	1.140	3.270	2.490	0.0047	1.1E-07			
GP-15	0-1	"	1-2	241	4.590	22.000	<0.500	26.060		<0.500	70.800	19.500	90.300	25.700	0.086	2.3E-06			
GP-16 ⁽³⁾	1-3	"	2-4	151	0.211	1.330	<0.0500	2.037		<0.0500	5.870	2.240	8.110	2.710	0.0077	1.8E-07			
GP-19 ⁽³⁾	1-3	"	2-4	40	<0.0500	0.692	<0.0500	1.382		<0.0500	2.940	1.530	4.470	2.230	0.0051	1.1E-07			
GP-20 ⁽³⁾	0-1	"	1-2	48	1.940	3.510	<0.100	3.003	J	<0.100	4.240	2.400	6.640	5.470	0.0138	6.0E-07			
GP-23 ⁽³⁾	1-3	"	2-4	52	<0.100	0.679	<0.100	1.305		<0.100	3.130	1.640	4.770	3.930	0.0072	1.8E-07			
GP-27 ⁽³⁾	1-3	"	2-4	38	<0.100	0.196	J	<0.100	0.417	JU	<0.100	0.100	U	0.671	0.771	U	3.580	0.0048	1.5E-07

TABLE 1

TANK 25 BASIN HISTORICAL CONTAMINATION INVESTIGATION SOIL ANALYTICAL RESULTS

NOTES:

Concentrations are in units of milligrams per kilogram (mg/kg) on a dry weight basis.

Detected concentrations at or above an applicable NR 720 industrial direct contact RCL are in red font and bold.

Detected concentrations at or above an applicable NR 720 soil to groundwater pathway RCL are in red font and italicized.

NR 720 residual contaminant level (RCL) standards from WDNR's RR Program Soil RCL Excel workbook updated December 2017.

Samples analyzed for the petroleum volatile organic compounds and naphthalene.

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

MTBE = Methyl tert butyl ether

NS = No standard

PID = Photo-ionization detector reading (with an 11.7-eV lamp) in parts per million, volume (ppmv)

TMBs (combined) = Trimethylbenzenes (1,2,4- and 1,3,5- combined)

U = Compound not detected at or above the detection limit, which is the value shown for all substances except xylenes and TMBs (combined).

-- = Not applicable because only one substance was detected.

FOOTNOTES:

(1) Clean backfill will be placed to restore original grade. *Sample Interval* data & their corresponding *Final Grade* depths (approx.) are in feet below ground surface (ft bgs).

(2) Industrial multiple contaminant cumulative cancer risk (CCR) and hazard index (HI) levels, if applicable (based on detected concentrations only). Thresholds are 1E-5 for CCR and 1 for HI per NR 720.12(1)(b), Wis. Adm. Code.

(3) Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

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TABLE 2

TANK 25 BASIN HISTORICAL CONTAMINATION INVESTIGATION SOIL PID DATA SUMMARY (SAMPLES COLLECTED AND FIELD SCREENED ON MARCH 19, 2018)

Depth (ft bgs)	Borehole/PID Readings (ppmv)																														
	GP-1	GP-2	GP-3	GP-4	GP-5	GP-6	GP-7	GP-8	GP-9	GP-10	GP-11	GP-12	GP-13	GP-14	GP-15	GP-16	GP-17	GP-18	GP-19	GP-20	GP-21	GP-22	GP-23	GP-24	GP-25	GP-26	GP-27	GP-28	GP-29	GP-30	
0.5								0			36.2	0	50.3	46	241	1.4	0	0	0	48	0	0	24.3	0	0	0	0	0	0	0	0
1.0	69	0	0	0	0	0	0	--	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1.5																															
2.0	--	--	--	--	--	--	--	0	--	--	0	26.2	37.2	33.9	131	151	0	0	40	42	7.2	0	52	0.1	15.7	0	38	26.4	0	0	
2.5																															
3.0	0	0	0	0	0	0	0	--	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3.5																															
4.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4.5	0	253	0	630	237	0	0	0	35.7	0	0	44	3.2	3.9	15.8	30	0	0	5.3	16.7	12.0	0	23.7	0	0	13.8	0	0	0	0	
5.0	TD	--	TD	--	--	TD	TD	TD	--	TD	TD	--	TD	TD	--	--	TD	TD	TD	--	--	TD	--	TD	TD	--	TD	TD	TD	TD	
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9.5		262		0	91.4				0		0			0	0				0	0		0			0						
10.0		--		TD	--				TD			TD			TD	TD				TD	TD		TD			TD					
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11.0																															
11.5																															
12.0																															
12.5																															
13.0		--																													
13.5		35																													
14.0		--			--																										
14.5		0			6.6																										
15.0		TD			TD																										

NOTES:

PID readings in red font highlight those intervals shipped to laboratory for analysis of PVOCs/naphthalene. See Table 1 of May 2018 report for summary of lab data.

PID reading in red font and bold highlights the one sample location (GP15/0-1 ft bgs) with detected concentration at or above an applicable NR 720 industrial direct contact RCL (see Table 1 for details).

Depth = Boring depth in feet below ground surface (ft bgs).

PID = Photo-ionization detector reading (with an 11.7-eV lamp) in parts per million, volume (ppmv).

TD = Total depth/end of boring.

-- = top or bottom of sample interval that was field screened. See boring logs in Attachment A to May 2018 report for details.