MEMORANDUM

July 5, 2023

RE: **2nd Quarter 2023 Status Report, Boeing Field Chevron, 10805 East Marginal Way South, Tukwila, Washington, Agreed Order DE-10947**

To: **Mr. Dale Myers, Washington State Department of Ecology**
cc: Mr. Nathan Blomgren, Chevron Environmental Management and Real Estate Company; Mr. Raj Sandhu, Boeing Field Chevron; and Mr. Russ Shropshire, Leidos

From: **Thomas Cammarata**

This status report is related to the ongoing environmental remediation effort for the Boeing Field Chevron facility at 10805 East Marginal Way South, Tukwila, Washington (facility). The status report is developed to inform stakeholders of project progress in the Second Quarter of 2023 and to comply with reporting requirements for the facility under Agreed Order DE-10947 with the Washington State Department of Ecology. The project progress in the Second Quarter of 2023 was performed in accordance with *Final Pilot Test Workplan, Boeing Field Chevron, 10805 East Marginal Way South, Tukwila, Washington*, prepared by G-Logics and dated June 21, 2022 (the Pilot Test Workplan).

Efforts completed during the Second Quarter of 2023 included a progress groundwater sampling event.

SECOND QUARTER 2023 TASKS AND MILESTONES

Between April 1, 2023, and June 30, 2023, the following efforts were completed and milestones were reached on the project:

G-Logics
40 2nd Avenue SE
Issaquah, WA 98027
T: 425-391-6874
F: 425-313-3074

- On April 24 and 25, 2023, G-Logics performed the three-month post-injection progress groundwater sampling, in accordance with Section 4.3 of the Pilot Test Workplan. Groundwater samples were collected from pilot test target monitoring wells AS-1, IP-3, IP-4, IP-5, IP-7, and TW-1 through TW-5. G-Logics did not collect a groundwater sample from the pilot test target monitoring well SVE-1, as per the Pilot Test Workplan, because the monitoring well was dry. G-Logics measured water levels at all the pilot test target monitoring wells. Using an oil/water interface probe, G-Logics measured product levels in the pilot test target monitoring wells. Product was only observed in the pilot test target monitoring well IP-7. The monitoring well contained approximately 2.23 feet of product. Analytical results for groundwater samples collected from pilot test target monitoring wells are presented in attached Table 1.

PROBLEMS ENCOUNTERED

G-Logics encountered no problems in the Second Quarter regarding the implementation.

SCHEDULE EVALUATION

The provisional schedule for the pilot test program and the remaining tasks under the Agreed Order is included in attached Table 2. G-Logics established June 23, 2022, as "Day Zero" for the attached schedule.

There are no conditions that G-Logics is currently aware of that will require adjustment of the provisional schedule. Tasks in the Second Quarter of 2023 are currently expected to be executed within the parameters of the schedule provided in Table 2.

PLANNED LATE THIRD QUARTER 2023 TASKS AND MILESTONES

The following tasks are expected to be completed in the Third Quarter of 2023. (July 1, 2023, through September 30, 2023):

- July 19, 2023 – Progress Groundwater Monitoring Event #4 (Six Months) per Task 4.3 of the Pilot Test Workplan

Attachments Table 1, Groundwater Sample Analytical Results
Table 2, Project Schedule

Attachments

TABLE 1
Groundwater Sample Analytical Results
Boeing Field Chevron
10805 East Marginal Way
Tukwila, Washington

		Total Petroleum Hydrocarbons (µg/L)			Volatile Organic Compounds (µg/L)				Total Organic Carbon (mg/L)
Sample Identification	**Sample Date**	**Gasoline Range Organics**	**Diesel Range Organics**	**Heavy Oil Range Organics**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes [1]**	
MTCA Method A Cleanup Level [2]		1,000/800 [3]	500	500	5	1,000	700	1,000	NE
AS-1	8/15/2022	**474**	**617**	**478**	**5.98**	<0.750	**31.8**	**26.7**	---
	9/27/2022	**5,780 D**	**3,610**	<93.0	**104 D**	**14.8 D**	**464 D**	**240 D**	---
	2/23/2023	**6,000**	**2,900 M**	**620**	**32**	**36**	**310**	**710**	---
	4/25/2023	**3,000**	<450 M1 Q U1	<220 Q	**16**	**15**	**150**	**350**	---
IP-3	8/15/2022	**4,450 D**	**277**	**612**	**1,080 DE**	**21.9**	**43.1 D**	**92.1 D**	**8.43**
	2/23/2023	**29,000**	**2,100 M**	**480**	**3,100**	**4,700**	**1,200**	**3,410**	---
	4/25/2023	**21,000**	<930 M1 Q U1	<210 Q	**2,100**	**3,700**	**1,200**	**3,720**	---
IP-4	8/15/2022	**126,000 DE**	**9,500**	<1,110	**54.6 D**	**2,140 DE**	**5,100 DE**	**14,500 DE**	---
	9/27/2022	**114,000 D**	**17,300**	<92.7	**47.2 JD**	**2,420 D**	**4,110 D**	**17,600 D**	---
	2/23/2023	**63,000**	**3,300 M**	**530**	**27**	**81**	**1,600**	**6,600**	---
	4/25/2023	**57,000**	<4,500 M1 U1	**320**	**26**	**110**	**3,100**	**10,800**	---
IP-5	8/15/2022	**13,200 D**	**625**	<95.7	**1,940 D**	**346 D**	**358 D**	**916 D**	**7.94**
	2/22/2023	**21,000**	**3,400 M**	**550**	**3,000**	**350**	**1,100**	**2,990**	---
	4/24/2023	**14,000**	<2,000 M1 U1	**460**	**1,700**	**190**	**860**	**2,050**	---
IP-7	8/16/2022	**111,000 D**	**49,300 D**	<93.9	**1,040 D**	**3,620 D**	**2,920 D**	**15,300 D**	**20.7**
	2/23/2023	**82,000**	**16,000 M**	**680**	**850**	**6,700**	**2,600**	**13,600**	---
	4/25/2023	**53,000**	<2,200 M1 U1	**260**	**450**	**4,400**	**3,100**	**10,800**	---
TW-1	2/22/2023	<100	**130**	**350**	<0.20	<1.0	<0.20	<0.40	---
	4/24/2023	<100	<210	<220	<0.20	<1.0	<0.20	<0.40	---
TW-2	2/22/2023	**100**	**110 M**	**310**	**220**	**9**	**8**	**42**	---
	4/24/2023	**330**	<210	<220	<0.40	**7.1**	**6**	**31**	---
TW-3	2/22/2023	**14,000**	**4,800 M**	**620**	**2,800**	<100	**1,500**	**1,200**	---
	4/24/2023	**13,000**	<3,700 M1 U1	**350**	**2,400**	**96**	**1,600**	**1,900**	---
TW-4	8/15/2022	**139**	**561**	<94.7	<0.440	**4.25**	**0.811**	**4.88**	---
	9/27/2022	**133**	**381**	<91.9	<0.440	**6.35**	**0.978**	**4.20**	---
	2/22/2023	<100	<120	**310**	<0.20	**1.1**	**0.30**	**1.28**	---
	4/24/2023	<100	<230	<230	<0.40	<2.0	**0.86**	**4.40**	---
TW-5	8/15/2022	**214,000 DE**	**8,850**	<94.2	**351 D**	**38,400 DE**	**6,000 DE**	**23,800 DE**	---
	9/27/2022	**178,000 D**	**8,520**	<94.2	**258 JD**	**30,600 D**	**3,890 D**	**20,900 D**	---
	2/22/2023	**140,000**	**9,200 MQ**	**540 Q**	**220**	**24,000**	**4,200**	**21,000**	---
	4/24/2023	**150,000**	<4,400 M1 U1	**330**	**220**	**25,000**	**5,400**	**26,700**	---

Notes:

Only those analytes detected or specifically targeted for evaluation are included in the table. Refer to the laboratory reports in Appendix A for full list of analytes and analytical methods.

[1] Results for Xylenes is the sum of m,p-xylenes and o-xylenes, as indicated in the laboratory analytical package.

[2] MTCA Standard Method A Groundwater Cleanup Levels for Unrestricted Land Uses.

[3] Lower cleanup level applies to groundwater with detectable benzene.

mg/L = milligrams per liter

µg/L = micrograms per liter

--- Sample not analyzed.

<5.02 The analyte was not detected at a concentration above the indicated reporting limit.

27.2 Bold value indicates contaminant detected.

3,490 Bold value and yellow shading indicates concentration exceeds applicable cleanup level.

D The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

E Value is above the quantitation range.

J Analyte detected below the Reporting Limit.

M Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 Hydrocarbons in the gasoline range (toulene-naphthalene) are present in the sample.

MTCA Model Toxics Control Act

NE Not established

Q Surrogate recovery is out of the control limits.

Table 2
Project Schedule
ISCO/Total Liquids Extraction Pilot Test and FS/CAP Development
Boeing Field Chevron, 10805 East Marginal Way South
Tukwila, Washington

Task/Milestone	Duration	Week Beginning	Week Ending
ISCO/Total Liquids Extraction Pilot Test			
Workplan approval	Day 0	1	1
Field planning and coordination, health and safety plan development, procurement	3 weeks	1	4
BASELINE CONDITIONS EVALUATION			
Monitoring well installation and initial groundwater monitoring	1 week	4	5
Soil and groundwater sample analysis and results review	2 weeks	5	7
PILOT TEST IMPLEMENTATION AND MONITORING			
Reagent Injection Event #1	2 days	8	8
Progress Groundwater Monitoring Event #1	2 days	11	11
Total Liquids Extraction Event #1	1 day	12	12
Reagent Injection Event #2	1 day	13	13
Total Liquids Extraction Event #2	1 day	16	16
Reagent Injection Event #2	1 day	18	18
Total Liquids Extraction Event #2	1 day	21	21
Progress Groundwater Monitoring Event #2 (One Month)	2 days	25	25
Progress Groundwater Monitoring Event #3 (Three Months)	2 days	34	34
Progress Groundwater Monitoring Event #4 (Six Months)	2 days	47	47
REPORTING			
Report Development and Draft Report Submittal	4 weeks	47	51
Review, Response to Comments, and Final Report Submittal	6 weeks	51	57
Feasibility Study Development			
Development and Agency Review Draft Feasibility Study Report Submittal	6 weeks	57	63
Agency Review and Public Comment Draft Feasibility Study Report Submittal	7 weeks	63	70
Public Review of Draft Feasibility Study Report	5 weeks	70	75
Final Feasibility Study Report Development and Submittal	4 weeks	75	79
Cleanup Action Plan Development			
Development and Agency Review Draft Cleanup Action Plan Submittal	6 weeks	79	85
Agency Review and Public Comment Draft Cleanup Action Plan Submittal	7 weeks	85	92
Public Review of Draft Cleanup Action Plan	5 weeks	92	97
Final Cleanup Action Plan Development and Submittal	4 weeks	97	101

Notes:
FS/CAP = Feasibility Study/Cleanup Action Plan
ISCO = In situ chemical oxidation