From Russ Shropshire to Dale Myers 12/10/2018
Summarize the results of remedial investigation (RI) activities completed to date at the Newman's Chevron site (the Site

Dale,

On behalf of Chevron Environmental Management Company, Nordic Properties, Inc., and Victory Business Park, LLC (the PLPs), Leidos has prepared this email to summarize the results of remedial investigation (RI) activities completed to date at the Newman's Chevron site (the Site), and outline our expected path forward for completion of RI activities at the Site. This information is being provided prior to, and in anticipation of, our scheduled meeting on Wednesday, December 12, to discuss the status of the RI activities.

Summary of Work Performed to Date

- Utility locate and geophysical investigation completed on 8/22/2018.
- Soil borings, collection and analysis of soil samples, and installation of soil vapor sampling probes SVP-1 through SVP-3 completed 8/23/2018 – 8/31/2018.
- Soil vapor sample collection performed on 9/27/2018.
- Third-party data validation completed by EcoChem on 11/29/2018

Summary of Investigation Activities

Utility Locate/Geophysical Survey

A utility locate and geophysical survey were completed by Geophysical Survey, LLC on 8/22/2018. The geophysical survey included use of ground penetrating radar (GPR) for re-delineation of the suspected undocumented UST locations in the western portion of the Site and a GPR survey of the former service bay area of the station building to look for evidence of former sumps or other infrastructure. During visual inspection of the building interior, Leidos noted two circular patches in the concrete floor. Based on the alignment of these patches with the center of former bay door locations in this portion of the building, the patches are suspected to be associated with former service bay hoists. No evidence of subgrade infrastructure was detected by the GPR survey in the former service bay area.

Undocumented UST Confirmation Borings

On 8/23/2018 the presence of three undocumented USTs was confirmed in the western portion of the Site by air-knife borings to the top of each tank. The top of each tank was encountered at a depth of 3 feet bgs or less at each location. Following confirmation that the USTs were present, air-knife/hand-auger borings were attempted at ten locations to collect soil samples along the sides and ends of each tank. Along the sidewalk, to the west of the tank basin, only one boring was successfully advanced to a depth of 8 feet bgs (the approximate estimated bottom depth of each tank). Therefore, soil samples were successfully collected from eight of the ten attempted sampling locations. Soil sampling results indicate that gasoline-range organics (GRO) were detected above the MTCA Method A cleanup level in two of the boring locations (soil borings UST-2 and UST-4) and diesel-range organics (DRO) were detected above the MTCA Method A cleanup level in one soil boring (UST-2).
Work specified in the Final RI Work Plan to open and evaluate the contents of any undocumented USTs encountered has not been performed to date.

Groundwater Investigation

As proposed in the Final RI Work Plan, one soil boring (SB-1) was advanced beyond 50 feet bgs in order to evaluate the presence of groundwater at the Site. Following advancement of the boring to a depth of 51.5 feet bgs, the boring was sounded for the presence of water using an electronic water level meter, and no water was present. The boring was then allowed to sit for a period of two hours before resounding the well. Again, no water was present in the boring; therefore, the boring was backfilled per the Final RI Work Plan. Because groundwater was not encountered in soil boring SB-1, Leidos has concluded that groundwater is not a media of concern for the Site.

Soil Sampling and Soil Vapor Sampling Probe Installation

In addition to the ten shallow soil borings advanced to investigate the undocumented UST basin (soil borings UST-1 through UST-10), the following nine soil borings were advanced to delineate the extent of previously reported petroleum impacts to soil in the vicinity of the pump islands and eastern (documented) UST basin:

- **SB-1** Soil boring SB-1 was completed to the west of the current pump islands location to delineate the western extent of petroleum impacts previously detected in borings BM-4 through BM-7. As previously discussed, SB-1 was advanced to a depth of 51.5 feet bgs in order to determine whether groundwater is present at the Site at less than 50 feet bgs. Soil samples were collected every two feet between the ground surface and 8 feet bgs using a hand auger. From 8 feet bgs, soil samples were collected continuously using a split-spoon to 25 feet bgs and at an interval of every 5 feet from 25 to 51.5 feet bgs. Field screening results for this boring suggested no evidence of petroleum impacts or elevated PID readings. Five soil samples from this boring were submitted for laboratory analysis. Laboratory results indicate that low levels of GRO and BTEX were detected; however, all concentrations were significantly below MTCA Method A cleanup levels (see draft data summary tables for additional details).
- **SB-2** Soil boring SB-2 was completed to the north of the current pump islands location to delineate the northern extent of petroleum impacts previously detected in borings BM-4 through BM-7. SB-2 was advanced to a depth of approximately 21.5 feet bgs, with split spoon soil samples collected on a continuous basis from 8 to 21.5 feet bgs. Field screening results provided no strong indications of petroleum impacts or elevated PID readings. Five soil samples from this boring were submitted for laboratory analysis. Laboratory results indicate that low levels of GRO, DRO, HRO, and BTEX were detected; however all concentrations were well below MTCA Method A cleanup levels.
- **SB-3** Soil boring SB-3 was completed near the northeast corner of the Site to delineate the northern extent of petroleum impacts previously detected near the eastern end of the current UST basin. This boring was advanced to a depth of approximately 24.5 feet bgs. Split-spoon soil samples were collected on a continuous basis from 8 to 24.5 feet bgs. Field screening results for this boring suggested no evidence of petroleum impacts or elevated PID readings. Four soil samples from SB-3 were submitted for laboratory analysis. Results for all requested analytes were non-detect.
- **SB-4** Soil boring SB-4 was completed along the eastern property boundary to delineate the eastern extent of petroleum impacts previously detected near the eastern end of the current UST basin. This boring was advanced to a depth of approximately 26 feet bgs. Split-spoon soil

samples were collected on a continuous basis from 8 to 26 feet bgs. Field screening results indicate that soil encountered at approximately 12 bgs in this boring exhibited hydrocarbon odor and an elevated PID result of 784 ppm. Otherwise, no strong indications of petroleum impacts were observed. Four soil samples (plus one duplicate sample) were submitted for laboratory analysis. Laboratory results indicate that the sample and duplicate sample collected at 12 bgs contained GRO at concentrations of 550 and 410 mg/kg, respectively. All other results were non-detect or well below MTCA Method A cleanup levels.

- **SB-5** Soil boring SB-5 was completed along the eastern property boundary to delineate the eastern extent of petroleum impacts previously detected near the southeastern end of the current UST basin. This boring was advanced to a depth of approximately 31.5 feet bgs, with split-spoon soil samples collected on a continuous basis from 8 to 31.5 feet bgs. Field screening results indicate that soil encountered from approximately 14 to 19 feet bgs in this boring exhibited hydrocarbon odor and elevated PID readings. Six soil samples were submitted for laboratory analysis. Laboratory results indicate that the samples collected at 14 and 17.5 feet bgs contained GRO at concentrations of 420 and 1,100 mg/kg, respectively. All other results were non-detect or well below MTCA Method A cleanup levels.
- **SB-6** Soil boring SB-6 was intended to delineate the southern extent of petroleum impacts previously detected in borings BM-4 through BM-7; however, due to the presence of a concrete slab or similar structure encountered at approximately 7 feet bgs, this soil boring could not be advanced to a sufficient depth. After initially encountering refusal at 7 feet bgs at the original location for soil boring SB-6, Leidos attempted an alternate boring location approximately 3 feet to the northwest. However, the air-knife and hand auger borehole clearance methods being utilized encountered refusal at the same depth at the alternate location. Soil samples collected from 2 and 6 feet bgs at SB-6 were submitted for laboratory analysis. Laboratory results for all requested analytes were non-detect.
- **SB-7** Soil boring SB-7 was completed to delineate the southwestern extent of petroleum impacts previously detected in soil borings BM-4 through BM-7. This boring was advanced to approximately 29 feet bgs, with continuous split-spoon sampling from 8 to 29 feet bgs. Field screening results indicate the soil encountered from approximately 10 to 24 feet bgs exhibited hydrocarbon odor and/or elevated PID readings. Five soil samples from this boring were selected for laboratory analysis. Laboratory results indicate that the samples collected at 10 and 14 feet bgs contained benzene at concentrations of 0.46 and 0.18 mg/kg, respectively. All other results were non-detect or well below MTCA Method A cleanup levels.
- **SB-8** Soil boring SB-8 was completed at a location not originally proposed in the Final RI work plan. Instead, this is a contingency (step-out) boring that was added to the scope of RI field activities as a field modification to the Work Plan based on field screening results for soil boring SB-7. Soil boring SB-8 was advanced to a depth of approximately 26 feet bgs, with continuous sampling from 8 to 26 feet bgs. Field screening results indicate that slight hydrocarbon odors were noted in samples collected at 2 and 4 feet bgs; however, no elevated PID readings or other indications of petroleum impacts were observed. Four soil samples from this boring were selected for laboratory analysis. Laboratory results indicate that low levels of GRO, HRO and toluene were detected; however, all results were significantly below MTCA Method A cleanup levels.
- **SB-9** Soil boring SB-9 was also a step-out boring. This boring was added as a field modification to the Work Plan due to the inability to advance soil boring SB-6 beyond 7 feet bgs. The intent

of this boring was to collect soil samples at depth from a location to the south of the fuel dispenser islands. Due to the slope of the service station property adjacent to the alley to the south of the property, the hollow-stem auger drill rig could not be used at the SB-9 location. Therefore, this soil boring was completed using a hang auger. The boring could not be advanced beyond 11.8 feet bgs. Field screening results for this boring suggested no evidence of petroleum impacts or elevated PID readings. Two soil samples from this boring were selected for laboratory analysis. Laboratory results indicate that low levels of GRO and HRO were detected; however, all results were significantly below MTCA Method A cleanup levels.

- **SVP-1** Soil boring SVP-1 was completed in the former convenience store portion of the service station building. This boring was completed as a soil vapor sampling probe; however, this location also served to provide data regarding potential impacts to shallow soil below the station building. Soil boring SVP-1 was advanced by air-knife and hand-auger to a depth of approximately 10.5 feet, with samples collected by hand-auger every 2 feet. Field screening results provided no indications of contamination. Soil samples collected from 8 and 10 feet bgs were submitted for laboratory analysis. Laboratory results indicated low level detections of GRO, DRO, HRO, benzene, and toluene; however, all results were significantly below MTCA Method A cleanup levels.
- **SVP-2** Soil boring SVP-2 was completed in the former service bay portion of the station building. This boring was completed as a soil vapor sampling probe; however, this location also served to provide data regarding potential impacts to shallow soil below the station building. Soil boring SVP-2 was advanced by air-knife and hand-auger to a depth of approximately 10.5 feet, with samples collected by hand-auger every 2 feet. Field screening results provided no indications of contamination. Soil samples collected from 8 and 10 feet bgs were submitted for laboratory analysis. Laboratory results for the sample collected from 8 feet bgs indicated low level detections of GRO, and toluene; however, all results were significantly below MTCA Method A cleanup levels. All other laboratory results were non-detect.
- **SVP-3** Soil boring SVP-3 was completed along the eastern property boundary, approximately mid-way between soil borings SB-4 and SB-5. The final location for this boring was decided in the field, with the boring being shifted to the south from its previously proposed location in order to be closer to soil boring SB-5. This decision was made based on the field screening results for SB-5, which indicated strong evidence of petroleum impacts in that area. Soil boring SVP-3 was advanced by air-knife and hand-auger to a depth of approximately 10.5 feet, with samples collected by hand-auger every 2 feet. Field screening results provided no indications of contamination. Soil samples collected from 8 and 10 feet bgs were submitted for laboratory analysis. Laboratory results for the sample collected from 8 feet bgs indicated low level detections of DRO and HRO; however, all results were significantly below MTCA Method A cleanup levels. All other laboratory results were non-detect.

Summary of Petroleum Contamination Extents and Remaining Data Gaps

Based on the work performed to date at the Site, Leidos has developed the following conclusions regarding the extent of petroleum impacts present and remaining data gaps.

- Based on the results of soil boring SB-1, groundwater is not a media of concern for the Site.
- Petroleum impacts to soil in the vicinity of the pump islands and eastern UST basin are bounded to the north based on data provided by borings SB-2, SB-3, B-4 and BM-10.

- Petroleum impacts to soil in the vicinity of the pump islands and eastern UST basin are bounded to the west based on data provided by borings SB-1, BM-13, and SB-8.
- Additional investigation is necessary to the east and south of the Site to delineate the extent of petroleum impacts confirmed in borings SB-4 and SB-5 along the eastern property boundary.
- Additional investigation is necessary to the south of the pump islands to delineate the extent of petroleum impacts previously reported for borings BM-4 through BM-7 and those recently detected in soil boring SB-7. Previously completed soil boring BM-9 was not advanced to a depth sufficient to bound the petroleum impacts to soil recently detected at soil boring SB-7.
- Additional investigation is necessary in the vicinity of the western (undocumented) UST basin in order to delineate the lateral and vertical extent of petroleum impacts to soil in that area and to confirm the contents of the orphaned USTs.
- Soil vapor is not a media of concern for the Site.

Anticipated Path Forward

In order to address the remaining data gaps necessary to complete the RI, the PLPs anticipate that the following additional tasks will be performed.

Soil Sampling Investigation to east and south

In order to further delineate the extent of petroleum impacts to soil in the eastern portion of the property, additional sampling will be necessary off-property to the east and along the City of Bremerton alley right-of-way south of the Site.

Based on the locations of soil borings SB-4 and SB-5 along the eastern boundary of the service station property, three soil boring locations are proposed to the east of the Site on the residential property located at 2005/2007 6th Street (parcel # 3717-002-013-0009). A fourth soil boring would be completed in the alley to the south of the Site, approximately behind the former service bay area. A draft map showing proposed boring locations is attached. However, actual boring locations will be determined following access coordination and a thorough site-walk of the 2005/2007 6th Street property to evaluate drill rig access and operational restrictions present on the property.

One additional soil boring would also be advanced in the vicinity of soil boring SB-9 in order to collect soil samples from sufficient depth to confirm the southern extent of petroleum impacts reported at soil borings BM-4 through BM-7 and soil boring SB-7.

Soil boring activities would be similar to those completed in August 2018, with the exception that a limited-access direct-push sampling rig would be used instead of a full-size truck mounted hollow-stem auger rig. Based on the dense soil conditions previously encountered at the Site and the expected need to advance these borings to depths of 20 or more feet bgs, we anticipate use of a Geoprobe 7822DT or equivalent drilling rig, which offers the capability of soil sampling using both direct-push and hollow-stem auger methodologies. Borehole clearance from the ground surface to at least 8 feet bgs would be the same as described in the Ecology approved RI work plan.

Further Investigation of UST basin

Further investigation is necessary to determine the lateral and vertical extent of soil impacts confirmed in the vicinity of the orphaned UST basin. The contents of the orphaned USTs must also be confirmed in order to evaluate the potential of an on-going or fuel release of petroleum product(s) from these locations.

It is currently expected that further investigation of soil impacts in this vicinity will be completed in conjunction with removal of the three orphaned USTs. However, the PLPs would like to engage Ecology

to discuss the planning of this work, in order to confirm regulatory requirements established by the Agreed Order.

Dale, I look forward to our meeting on Wednesday. Please let me know if you have any questions before that time.

Thank you,

Russ

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