



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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October 18, 2012

Mr. Romeo Gonyea
17600 147th Street SE PMB 22
Monroe, Washington 98275

Re: Opinion pursuant to WAC 173-340-515(5) on Proposed Remedial Action for the following Hazardous Waste Site:

- Name: Hers Industrial Park
- Address: 4403 Russell Road, Mukilteo, WA 98275
- Facility/Site No.: 127256
- VCP No.: NW 1554
- Cleanup Site ID: 3971

Dear Mr. Gonyea:

Thank you for submitting documents regarding your characterization and remedial action for the **Hers Industrial Park** facility (Site) for review by the Washington State Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP). Ecology appreciates your initiative in pursuing this administrative option for cleaning up hazardous waste sites under the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion regarding a review of submitted documents/reports pursuant to requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site:

- Total petroleum hydrocarbons in the gasoline (TPH-g), diesel (TPH-d) and heavy oil (TPH-o) ranges in Soil;
- Tetrachloroethylene (PCE), trichloroethylene (TCE) and related degradation products in Ground Water;

Ecology is providing this advisory opinion under the specific authority of RCW 70.105D.030(1)(i) and WAC 173-340-515(5).

This opinion does not resolve a person's liability to the state under MTCA or protect a person from contribution claims by third parties for matters addressed by the opinion. The state does not have the authority to settle with any person potentially liable under MTCA except in

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accordance with RCW 70.105D.040(4). The opinion is advisory only and not binding on Ecology.

Ecology's Toxics Cleanup Program has reviewed the following information regarding your Site characterization and remediation action(s):

1. The Riley Group, 2012. *Groundwater Sampling Event, 1st Quarter 2012, Russell Road Industrial Park (aka Hers Industrial Park), 4403 Russell Road, Mukilteo, Washington.* February 23.
2. The Riley Group, 2009. *Groundwater Sampling Event – Third Quarter 2009, Russell Road Industrial Park (aka Hers Industrial Park), 4403 Russell Road, Mukilteo, Washington.* October 2.
3. The Riley Group, 2009. *Groundwater Sampling Event – First Quarter 2009, Russell Road Industrial Park (aka Hers Industrial Park), 4403 Russell Road, Mukilteo, Washington.* March 26.
4. The Riley Group, 2008. *Groundwater Sampling Event – Second Quarter 2008, Russell Road Industrial Park (aka Hers Industrial Park), 4403 Russell Road, Mukilteo, Washington.* August 20.
5. The Riley Group, 2005. *Well Installation and Groundwater Sampling Event – Fourth Quarter 2005, HERS Industrial Park, 4403 Russell Road, Mukilteo, Washington.* December 27.
6. The Riley Group, 2005. *Supplemental Phase II Subsurface Investigation, Hers Industrial Park, 4403 Russell Road, Mukilteo, Washington.* June 22.
7. The Riley Group, 2005. *Phase I Environmental Site Assessment, Hers Industrial Park, 4403 Russell Road, Mukilteo, Washington.* June 20.
8. James P. Hurley Company, 1996. *Site Assessment Report, HERS Industrial Park, 4403 to 4493 Russell Road and 4424 to 4480 Chennault Beach Road, Mukilteo, Washington.* September 25.
9. James P. Hurley Company, 1995. *Phase II Environmental Site Assessment Report, 4403 to 4493 Russell Road and 4424 to 4480 Chennault Beach Road, Mukilteo, Washington.* August 3.

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10. James P. Hurley Company, 1995. *Combined UST Removal and Petroleum Contaminated Soil Cleanup Summary Report, 4493 Russell Road, Mukilteo, Washington.* July 24.
11. ATC Environmental, Inc. 1994. *Phase I Environmental Site Assessment, Hers Industrial Park, Mukilteo, Washington.* October 25.

The reports listed above will be kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. Appointments can be made by calling the NWRO resource contact at (425) 649-7235 or sending an email to: nwro_public_request@ecy.wa.gov.

Based on a review of supporting documentation listed above, pursuant to **requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site, Ecology has determined:**

- All previous Site characterization activities should be compiled and described in a Remedial Investigation (RI) summary report. Ecology's suggested outline for a Remedial Investigation report is included as Enclosure A. In addition to the outline, the following comments should be considered during preparation of the RI report.
- The depiction of the Property in Figure 2 of the most recent (2012) ground water monitoring report as well as the 2008 and 2009 ground water monitoring reports is inconsistent with the description in the text of these reports as well as what is provided in the VCP application for this Site.
- The location of the Property line east of Building 4403 shown in Figure 3 of the 2012 ground water monitoring report appears to be incorrect as compared with the Snohomish County parcel map and Figure 2 of the same report. As shown, the figure indicates off-Property migration of the TCE plume, which may not be the case.
- The Site conceptual model is incomplete with regard to geological conditions. A 2005 Supplemental Phase II Subsurface Investigation report states that soils consisting of fine- to medium-grained sand with silt and gravel interpreted as fill materials underlie the Site to a depth of about 12 feet. The report states that a dense glacial till underlies the fill and shallow ground water is perched above the till. The report does not provide borehole logs of the ten direct-push borings that this information is based on. A Well Installation report dated December 27, 2005 contains boring logs for 8 monitoring well drilled to depths of 15 feet below the ground surface that do not match the lithology described in the Phase II report. The

presence, depth and attitude of the top of the dense glacial till horizon is important as it may influence the horizontal migration and/or aid in limiting the vertical migration of chlorinated solvents or DNAPL.

- Ecology's project file for the Site is missing documentation of the installation of injection wells MW-9 through MW-15 which would have occurred between October 2005 and April 2006. The borehole logs and well installation diagrams as well as the analytical results of any soil samples collected in the boreholes should be included in the Remedial Investigation report.
- Based on field screening (photo-ionization detector) results, only 4 out of 22 soil samples collected in 10 direct-push boring locations advanced in 2005 were submitted for laboratory analysis. Ecology does not consider field screening an empirical demonstration of the absence of contamination in soil. However, 11 ground water samples collected in each of the 10 boring locations and analyzed for petroleum hydrocarbons and BTEX suggest that the leaching pathway for petroleum hydrocarbons in soil is incomplete. Ground water samples from the 15 Site monitoring/injection wells should be analyzed for petroleum hydrocarbons and BTEX in order to confirm this as well as rule out other potential sources.
- The source of the chlorinated solvents in ground water on the Site has been attributed to releases via catch basins #34 and #29. Only one soil sample collected on the Site has ever been analyzed for VOCs. To complete the Site conceptual model, the mechanism needs to be established for how the solvents, which were reportedly used and stored in Building 4403 by previous tenants, got into the stormwater system and reached the catch basins. If a VOC source is determined to be present in the subsurface, it should be delineated and removed.
- In 2005, discrete ground water samples were collected from SP10 such that a sample collected at the top of the water table was analyzed for petroleum hydrocarbons and a sample collected just above the glacial till contact was analyzed for VOCs. The sample analyzed for VOCs contained PCE at a concentration of 300 µg/L and TCE at a concentration of 42,000 µg/L. Since the sample was reportedly collected just above the till interface and the concentration of TCE was nearly 4% of the solubility (1,100,000 µg/L), the potential for TCE as a DNAPL exists. The Site conceptual model should take this possibility into account as well as the potential for migration. The vertical extent of the VOC contamination in ground water has not been determined.
- Since the 2006 injections, concentrations of VOCs have generally declined in wells that have been monitored however monitoring and injection wells MW-1 through

MW-15 have been sampled inconsistently. In particular, samples from MW-13 and MW-15 both previously demonstrated exceedences of Method A cleanup for VOCs but were not sampled in 2009 or 2012. These data points are important for defining the current position and maximum levels of the chlorinated solvent plume as these wells are closer to catch basin #29 than MW-1.

- Injection well MW-14 could be located, uncovered and the casing extended and resurveyed in order to restore it as a monitoring and potential injection point.
- Future sampling of monitoring wells MW-3, MW-4 and MW-5 should be included to insure that the delineated west and south lateral boundaries of the plume are maintained and to assess potential impacts to ground water from the former heating oil UST or other potential sources on the Site.
- The Site characterization to date has identified a potential source of chlorinated solvents in ground water resulting in a plume that is approximately coincident with a ground water mound. Ground water flow in the vicinity of the mound is semi-radial, with flow to the northeast, southeast and southwest. The lateral extent of the VOC plume delineated previously appears to be stable however the January 2012 ground water sample collected from MW-1 suggests that the plume may now extend eastward laterally. Future sampling may demonstrate a need to further delineate the plume in that direction.
- One potential source on the Site (former 550-gallon heating oil UST) was identified and removed. Petroleum-contaminated soil associated with the UST was excavated with confirmational sampling indicating soil where the former tank was located is compliant with MTCA.
- Metals in soil and ground water on the Site have not been fully characterized. The historical uses and types of metals in various machining operations conducted on the Site needs to be researched and documented. Based on the likely use and possible disposal of metals, the potential exists for metals to occur in soil however it appears that only one soil sample on the Site has been analyzed for metals.

This opinion does not represent a determination by Ecology that a proposed remedial action will be sufficient to characterize and address the specified contamination at the Site or that no further remedial action will be required at the Site upon completion of the proposed remedial action. To obtain either of these opinions, you must submit appropriate documentation to Ecology and request such an opinion under the VCP. This letter also does not provide an opinion regarding the sufficiency of any other remedial action proposed for or conducted at the Site.

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Please note that this opinion is based solely on the information contained in the documents listed above. Therefore, if any of the information contained in those documents is materially false or misleading, then this opinion will automatically be rendered null and void.

The state, Ecology, and its officers and employees make no guarantees or assurances by providing this opinion, and no cause of action against the state, Ecology, its officers or employees may arise from any act or omission in providing this opinion.

Again, Ecology appreciates your initiative in conducting independent remedial action and requesting technical consultation under the VCP. As the cleanup of the Site progresses, you may request additional consultative services under the VCP, including assistance in identifying applicable regulatory requirements and opinions regarding whether remedial actions proposed for or conducted at the Site meet those requirements.

If you have any questions regarding this opinion, please contact me at (425) 649-7064 or via email at hvic461@ecy.wa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Heather Vick", written in a cursive style.

Heather Vick, LHg
NWRO Toxics Cleanup Program

Enclosures: (1) A – Remedial Investigation Outline

Remedial Investigation Outline

January 2011

The following annotated outline is a suggested schematic for elements to be included in a Remedial Investigation report. It is not intended to replace MTCA's specific requirements as presented in 173-340-350(7) WAC.

The main purpose of the outline is to facilitate the preparation of a document that is clear, comprehensive, and to the point. A secondary, but important, purpose is to make document preparation and review more efficient.

INTRODUCTION

(concise, bulleted if possible)

- Site name, VCP number, Name, address, and phone number of project consultant, Current owner/operator
- Purpose of document *(very brief restatement of what an RI is for, reference the WAC)*

SITE IDENTIFICATION AND LOCATION

(focus on defining the site in the context of its' location)

- Site discovery and regulatory status *(describe how the site was identified and where it is in the MTCA process)*
- Site and property location/definition *(define actual MTCA site location relative to property or study area)*
- Neighborhood setting

Figure – Vicinity Map *(preferably with topography)*

Figure – Property/Site Map *(preferably with topography)*

Appendix – Legal description of property, present owner and operator, chronological listing of past owners and operators

ENVIRONMENTAL INVESTIGATION/INTERIM ACTION SUMMARY

(Concise summary presentation of the investigations that have been done at the site, along with prior remedial actions. Focused mostly on figures and tables. Eliminate the extensive descriptions of prior work commonly put in environmental reports, or put them in an appendix)

- Constituents of Concern *(brief discussion about which specific compounds were chosen for analysis and why)*
- Soil
- Surface water
- Ground water
- Sediment
- Air/soil vapor
- Natural resources/wildlife

- Cultural history/archeology
- Interim actions (*brief intro to prior remediation activities*)

Figure – Soil investigation data points (*show potential source areas*)

Figure – Surface water/groundwater investigation data points (*show potential source areas*)

Figure – Air investigation data points (*show potential source areas*)

Figure – Prior remediation activities

Table – Exploration Summary

Table – Analytical Schedule per media (*include analytical methods and reporting limits, as possible*)

Appendix – Previous Investigations (*detailed discussion goes here*)

Appendix - Exploration and sampling methodology (*may combine with Previous Investigations*)

Appendix – Boring/ Well logs

Appendix - Prior Interim Actions

PROPERTY DEVELOPMENT AND HISTORY

(*this section focuses on the built environment, both current and historical, and presents the sources of contamination and release mechanisms*)

- Past site uses and facilities
- Current site use and facilities
- Proposed or potential future site uses
- Zoning (*if appropriate*)
- Transportation/roads
- Utilities, water supply
- Potential sources of site contamination
- Potential sources of contamination from neighboring properties (*discuss nearby sources if known*)

Figure – Historical site features (*may be combined with Figure 2*)

Figure – Potential contaminant sources

Figure – Utilities (*may be combined with Figure 2*)

Table – Potential Contaminants

NATURAL CONDITIONS

- Physiographic setting/topography
- Geology
(*focus on interpretation*)
 - Regional Setting (*brief*)
 - Property Geologic Conditions (*synthesis, not regurgitation of boring logs, provide cross sections*)

- Physical Properties (*unlikely to need this section, but in some cases may be useful to present data on soil adsorptive capacity, organic content, strength, etc.*)

Figure – Plan view of geologic unit distribution (*if helpful*)

Figure - Cross section A-A' (*show borings, wells, screened intervals, water levels*)

Figure – Cross section B-B' (*if necessary*)

- Surface Water

(*brief description of the surface water system, include elements of the built system as it might relate to contaminant transport*)

- Property drainage (*for storm drains, focus on how deep the drains are relative to ground water*)
- Area surface water/floodplain issues
- Regulatory classifications, if any (*e.g surface water classification*)

Figure – Surface water Conditions (*only if information not already in a prior figure*)

- Ground Water

(*focus on interpretation, show on cross sections*)

- Occurrence (*aquifers, water levels, confinement, geometry, continuity, physical properties*)
- Movement (*directions, gradient if important, seasonal fluctuations, tidal influence*)
- Discharge
- Recharge (*if significant for site*)
- Regulatory classifications, if any (*e.g. sole source aquifer*)

Figure – Cross section with ground water information (*if not already included above*)

Figure – Water table/potentiometric surface maps (*for various seasons or tidal conditions, show surface water*)

Appendix – Ground water elevation data (*a table*)

- Natural Resources and Ecological Receptors

(*preparatory to a TEE*)

- Greenbelts and other natural habitat
- Wildlife
- Other Information required to conduct evaluations under -7491, -7492, or if necessary -7493

Figure – showing natural areas, as appropriate

CONTAMINANT OCCURRENCE AND MOVEMENT

(*very little text, mostly figures and tables, main point is to provide easy-to-understand figures showing the depth and breadth of contamination, relate contaminant distribution to release mechanisms and subsurface geologic/hydrogeologic conditions*)

- Waste Material (*sludges, fluids, stockpiles*)
- Soil
- Surface Water
- Ground Water
- Sediment
- Air/Soil Vapor

Figures – Cross sections showing soil contamination with depth

Figures – Plan views showing soil contamination across site (*relative to releases if known*)

Figures – Cross section showing ground water contamination with depth (*if appropriate*)

Figures – Plan views showing ground water contamination in each aquifer (*relative to soil contamination and P-head map*)

Figures – XY plots of specific contaminants with time (*as appropriate*)

Figures – Others as appropriate to show the distribution of surface water, ground water, or air data

Tables – All of the analytical data against final cleanup levels (*exceedances highlighted, no need to develop screening levels*)

Tables – Summary of exceedances (*if helpful*)

Appendix – QA report

Appendix – Analytical lab reports

CONCEPTUAL MODEL

(*putting the whole story together, graphic illustrations are best*)

- Contaminant release/fate and transport/potential or actual receptors (*re-summarize how the releases occurred and how site physical conditions affected the ultimate distribution of contaminants at the surface and in the subsurface*)
- Data gaps (*is anything missing*)

CLEANUP STANDARDS

(*developing appropriate cleanup standards based on receptors and pathways*)

- Soil
 - Reasonable maximum exposure
 - Cleanup levels protective of contact, ground water, inhalation, terrestrial species, surface water, sediment
 - Points of compliance
 - Regulatory classifications [*classification of soil as dangerous or solid waste*]
- Ground Water
 - Highest beneficial use/reasonable maximum exposure
 - Cleanup levels protective of potable use, inhalation, surface water, sediment
 - Points of compliance
- Other Media as appropriate

- Cleanup levels protective of
- Points of compliance

Table – Cleanup Levels *(all potentially applicable values with final selected cleanup level noted)*

AREAS REQUIRING CLEANUP

(the final story detailing where the contamination exceeds an applicable cleanup standard, brief text, mostly tables, figures)

- Constituents of Concern *(a brief summary of compounds that exceed cleanup levels or “indicator hazardous substances” under MTCA. For most service station sites, the COCs should be the same)*
- Soil – vertical and lateral
- Ground water – vertical and later
- Sediment –
- Surface Water
- Soil Vapor/air

Figures – Plan view and vertical sections of areas requiring cleanup

REFERENCES

