Responsiveness Summary

Agreed Order Amendment, State Environmental Policy Act (SEPA) and Determination of Non-Significance (DNS) to Address Infrastructure for a Contingent Groundwater Treatment System

Landsburg Mine Site – Ravensdale, Washington

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Prepared by the Washington State Department of Ecology
Northwest Regional Office, Bellevue, Washington

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Note: *These comments were placed in a random order in this document; there is no rationale for the order.*

Introduction

This document summarizes and responds to public comments received on the proposed Agreed Order Amendment, State Environmental Policy Act (SEPA) Checklist and Determination of Non-Significance for the Landsburg Mine Site located in Ravensdale Washington. The Agreed Order Amendment is a second amendment to the existing 1993 Agreed Order. This Responsiveness Summary is not a summary for a Cleanup Action Plan (CAP) for this site. The Cleanup Action Plan will be the next activity in the cleanup process.

The Washington State Department of Ecology (Ecology) invited the public to comment on the amendment that will require the potentially liable parties (PLPs) to design and build infrastructure components for a contingent groundwater treatment system for the Landsburg Mine site.

Ecology made available the following documents for public review and comments:

- Agreed Order Amendment.
- State Environmental Policy Act (SEPA) Checklist.
- Determination of Non-Significance (DNS)
- Scope of Work Letter

The initial comment period ran from October 20 through November 18, 2005. This comment period was extended through February 15, 2006 in response to requests from members of the public to hold a public meeting.

Ecology held a public meeting at the Tahoma Junior High School on February 7, 2006 to provide information and take comments. Over 35 people attended this meeting. The public meeting included an open question and answer session. The question and answer session was designed to provide immediate responses to the public's questions and concerns. The oral comments are written largely verbatim in this document. Transcribed notes of questions and answers during that public meeting are included in this Responsiveness Summary. (**See Comment 8 below**). Ecology received eight written comment letters from individuals and interested parties by the February 15, 2006 deadline. An additional comment was accepted even though it was sent after the deadline.

Ecology appreciates the input and the time and effort of those who submitted comments. Each comment letter was reviewed and significant comments within each submission were identified. In this document, the written comments are quoted directly and are presented in bold. Each comment letter is divided into sections in order to adequately address significant issues raised in each of the sections. Ecology's response, presented in regular type, follows each comment.

Appendix B contains the original comment letters in their entirety

Summary of Proposed Interim Action

Agreed Order Amendment to Address Contingent Groundwater Treatment System

The Agreed Order Amendment requires the potentially liable parties (PLPs) to design and build infrastructure components needed to pump out, pre-treat and pipe contaminated water to King County sanitary sewer system in case contamination is detected above state cleanup levels. The project includes a concrete pad for the pump house, an electrical connection with transformer and fence, an access gravel drive, parking area and an underground effluent discharge line to the county sewer system. They will also obtain permits or their substantive requirements for the Model Toxic Control Act (MTCA)-exempted permits for the work to be done. A safe and reliable means is needed to dispose of pretreated groundwater if necessary.

In September 2004, the potentially liable parties completed phase one of the project, which identified the structural elements needed to support the contingent groundwater treatment system.

Several discharge alternatives were evaluated. The preferred alternative is on-site pretreatment and discharge to an existing county-owned sewer system to the north of the site. This connection and discharge to the sewer system is not linked to any form of commercial or residential land development.

The second phase of this project is to design the infrastructure components, and obtain the necessary approvals for the construction work. These components will be needed if the groundwater treatment system becomes necessary during the cleanup.

The third phase of the project will be the actual construction and installation. This will prevent undue delays if contamination is detected and the groundwater treatment system is needed.

Summary of Public Involvement Actions

Public Involvement activities related to this public comment period included:

- Distribution of a fact sheet describing the site and the interim action activities through a mailing to approximately 600 people, including the Ravensdale community and other interested parties.
- Publication of paid display ads in *King County Journal* on October 20, 2005 and February 2, 2006.
- Dissemination of Press releases announcing the proposed plan, comment period and public meeting. These press releases were sent to newspapers and broadcasters in King County, Kent/Renton/Auburn reporters, Voice of the Valley, Puget Sound Business Journal, King 5 television, and to subscribers who receive all of the department's news releases.
- Publication of notice in the Washington State Site Register on October 20, November 3, November 17, 2005; and February 9, 2006.

- Posting of the documents on the Washington State Department of Ecology (Ecology) web site: http://www.ecy.wa.gov/programs/tcp/sites/landsburg_mine/landsburg_mine_hp.html
- Distribution of bulletin board fliers in the Ravensdale community before the public meeting.
- Providing copies of the above documents through information repositories at Ecology and at the Maple Valley Library.
- Informal meetings with community stakeholders, King County, Public Health Seattle and King County, and Department of Development and Environmental Services.

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Key Community Concerns Identified

The main concerns expressed during the public comment period and public meeting generally focused on the following:

- Safety issues.
- Water withdrawal and its effects on private wells.
- Potential of land development and impacts.
- Protection of Clark's Spring watershed.
- Capacity of the sewer line.
- Compensation for the use of the sewer line.
- Ecological (wildlife) concerns.
- Proposed location of the line.
- The preferred alternative and community impacts.
- Public participation process.

Summary of Revision to the Documents

Based on comments from the public, Ecology is working with the PLPs to revise the pipeline proposal. These revisions include:

- Modifying the proposed route of discharge line: At present, a route going under or alongside the Summit Landsburg road rather than its original route through Palmer Coking Coal property and easements may be implemented.
- Installing, but not physically connecting, the four-inch effluent pipeline. If monitoring at the site indicates that there is contamination above state cleanup levels, the contingency plan will be implemented and the effluent pipeline will be connected when needed.

Ecology issued a revised SEPA Determination of Nonsignificance (DNS) to recognize these changes. These revisions do not alter the nature of this interim action and are therefore not substantive enough to require an additional 30-day public comment period. Most of the comments received from the public are pertinent to this proposed interim action and have been addressed. Ecology and the PLPs will discuss compensation and capacity issues with the concerned parties and will work with King County in meeting the substantive requirements for the infrastructure proposal and its implementation.

Site Background

The Landsburg Mine site is a former underground coal mine located approximately 1.5 miles northwest of Ravensdale in southeast King County. The site is located directly south of the S.E. Summit-Landsburg Road and north of S.E Kent-Kangley Road.

The Cedar River is approximately 500 feet north of the site. The mine site occupies property currently owned by Palmer Coking Coal Company and formerly by the Plum Creek Timber Company, L.P. Coal mining began along the Landsburg coal seam in the 1930s. In 1959, when the Landsburg seam was exhausted, mining shifted to the Rogers seam and continued there until 1975.

Underground mining methods were used to extract the coal from the Rogers seam. These methods resulted in the ground surface above the abandoned mine sinking down and forming a subsidence trench. This trench is roughly three-quarters of a mile long, 20- to 60- feet deep, and 60- to 100- feet wide.

During the late 1960s and early 1970s, the northern part of the trench was used as a disposal site for a variety of industrial wastes. The wastes either were contained in drums or were drained from tanker trucks. Records indicate that about 4,500 drums and 200,000 gallons of oily waste water and sludge were disposed of in this portion of the trench. A portion of the waste may have been burned during fires in the early 1970s.

Samples taken from recovered drums indicate that this material consisted of a wide range of organic and inorganic industrial waste, including paint waste, polychlorinated biphenyls (PCBs), cyanide, metals, and oily sludge. Disposal of land-clearing debris and construction debris in the trench continued until the early 1980s.

In late 1991, at Ecology's request, four of the potentially liable parties (PLPs) removed the most accessible drums from the trench and constructed a fence to restrict access to the site. Following removal of the drums, Ecology and the PLPs began negotiations for a Remedial Investigation and Feasibility Study. The results of this study were the subject of public review and comment in March 1996.

Overview of Groundwater Sampling Results

In 1996, the Report of Investigation and Feasibility Study (RI/FS) established that the main risk from this site is through the groundwater pathway. As part of this study, extensive sampling of 14 private wells, seven monitoring wells installed in close proximity to the mine site, and water flowing from the two mine portals (the now collapsed north and south entrances to the mine) was also conducted in 1996.
The well water and surface flows were analyzed for a wide variety of pollutants including metals, organic compounds, pesticides, and inorganic compounds. The results of the testing indicated that the wastes disposed of in the mine were not affecting groundwater. Additional rounds of sampling of monitoring wells at the site were conducted to check for contaminants in May 2000 and October 2003. These results and recent sampling results in 2004 to 2006 indicate that no impacts to groundwater exist that can be attributed to the wastes disposed at the site.

Comments Received and Ecology Responses

Comment 1: City of Kent

Key Concerns: Protection of Clark's Spring Watershed

1.1 The City of Kent understands that the project is specifically listed for the remedial action. As such, comments within the SEPA checklist should be limited to that action. There are several inaccurate statements regarding the City of Kent water supply and it is the opinion of the City of Kent that statements regarding specifics of the City's operations are not applicable to the proposed remediation infrastructure. More appropriate language would identify the location of the Clark Springs Water Supply, and would include: some discussion of' how the hydrology of the area is connected to the water supply, and the fact that this source provides up to 65% of the City's municipal water depending on the time of' year, and a brief discussion of how the contamination could impact the City's water supply. The City respectfully requests other statements be removed as they are inaccurate, and the City has, and will continue to operate pursuant to water rights.

Ecology's Response:

Ecology believes that sufficient descriptive information on area hydrology has been incorporated in the context of the SEPA proposal and its attachments. Hydrological background for the site including the City's municipal water supply can be found on Pages 10 – 12 of the SEPA proposal. Further information may be available from the 1996 Remedial Investigation/ Feasibility study (RI/FS) on receptors and the main risk from the site via the groundwater pathway.

1.2 Kent's main concern with this project relates to the lack of any proposed remedial infrastructure at the southern end of the mine.

Ecology's Response:

The current proposal is for a viable means to dispose of pretreated water from the entire site, if necessary. The proposal for the infrastructure for the Contingent Treatment System at the north portal is for disposal of pretreated water. The system will be available to contain and pretreat contaminated water if detected at the south portal wells. The south portal wells continue to be a point of compliance and will continue to be monitored. If contaminated groundwater is detected at the south portal, it will be prevented from further migrating offsite. The water will be pumped out, contained and treated before disposal.

Any pumped-out contaminated groundwater from the south portal area could be initially stored in Baker tanks for transport by tanker trucks to the north portal treatment and disposal infrastructure. Another possibility is to construct a pipe running over the hill slopes of the site to the north portal infrastructure pad. Another option is increased

pumping at the north portal wells to the water level in the mine and bring hydraulic gradients down to a level that flows away from the southern portal area. In any case, capture and containment of water will have occurred. Installation at the north portal remains a higher priority location that will protect both the north and south ends of the site.

The present proposal ties in the pipeline conveyance to a pre-existing connection to the north. There are no zoning parcels, wetlands, or utilities that would prevent expedient construction of the pipeline at the northern end of the site. However, the southern portion of the site contains more 401 wetland areas, and passes through the Clark Springs water supply.

Finally, it is important to state that there is still no consent decree and cleanup action plan, which could formalize such contingency actions for the site, including the south portal. Therefore, it would be in everyone's interest to proceed with finalizing the Draft Cleanup Action Plan and refining it, in order to formalize a contingency plan and address these concerns in the remedial action itself.

1.3 In addition to the City's concern of the lack of infrastructure at the southern end of the mine, the City has the following comments to the SEPA Environmental Checklist for the MTCA Landsburg Mine Site; Installation of Infrastructure Components of the Contingent Groundwater Treatment System Project, Ravensdale, Washington:

Cover Sheet -description of location of proposal State route SR516 ends at SR 169 (Maple Valley Hwy) East of SR169, the road is Kent Kangley Road.

Ecology's Response:

Ecology will remove "*(State Highway 516)*" from the sentence in the revised Determination of Nonsignificance (DNS). The correction has been included in an Errata Sheet attached to the revised DNS.

1.4 The project description should include some conceptual treatment options for various types of contaminants potentially present within the mine.

Ecology's Response:

The second amendment to the Agreed Order and the SEPA checklist is only for the physical infrastructure to dispose of treated groundwater. It does not detail treatment technologies and engineering design for treatment. At this stage, it would be difficult to describe the treatment options because the PLPs do not know what contamination could be found leaving the site.

However, when the draft Cleanup Action Plan (dCAP) is finalized, a more detailed description of potential treatment options will be provided under a Contingency Plan in the draft Cleanup Action Plan and in the Engineering Design Report.

1.5 Should there be secondary containment around the facility in the event of a mechanical malfunction of the treatment system?

Ecology's Response:

Ecology will direct the PLPs to evaluate secondary containment options for the proposal, including the pipeline or mechanisms for detecting potential leaks in the pipeline. Secondary containment for the treatment facility is not part of this proposal, but will be considered when a treatment facility is required. Ecology can include secondary containment with the treatment designs and institute containment or cleanup protocols in the possible event of a mechanical malfunction or physical breaks in the system when the cleanup action plan is finalized and the Contingency Plan is completed.

1.6 Page 2 The City suggests adding the word "illegal" to the first sentence so it reads as follows: "A portion of the trench was used in the late 1960's to the late 1970's for <u>the illegal</u> disposal of various industrial wastes...,"

Ecology's Response:

Ecology does not have enough information or analysis available to alter descriptive language for this proposal into language that may have implications on liabilities and legal issues. This is particularly the case when considering such factors as:

- The Model Toxics Control Act (MTCA) becoming state law much later in 1989.
- The length of elapsed time since the disposal.
- The nature of administrative options for cleanup under MTCA.

It is not necessary to characterize the nature of the disposal for SEPA purposes nor is Ecology required to analyze the legality of prior actions for purposes of MTCA.

1.7 Page 3 item 6 -Proposed timing or schedule. The word "changed" in the third sentence implies that the groundwater quality has been clean. No deep well investigation has previously been conducted to determine the quality of the groundwater deep within the mine. If this statement is true as written, how can something change when comparable data does not exist?

Ecology's Response:

The reference to groundwater quality "change" refers to results from the site wells at the point of compliance and not the deep well or groundwater within the mine interior. The deep well (LMW-11) will be used to analyze the quality of groundwater within the former mine and evaluate risk toward the south end from deep contamination in the mine if it existed.

The analytical results of the groundwater sampled from LMW-11 in February 2006 did not indicate any impacts exist that could be attributed to wastes disposed at the mine.

The 1996 Remedial Investigation/Feasibility Study (RI/FS) determined that a more invasive characterization of the disposed wastes in the trench is impractical, and that the primary mode of potential chemical migration from the mine is through the groundwater pathway. Thus, the remedy at the site will conservatively assume that there is waste in the trench and mine workings. The remedy will require groundwater monitoring along the primary groundwater flow paths from the Rogers coal seam.

To date, no contamination has been detected emanating from the site via groundwater, which is the main risk pathway from the former mine. However, it may be possible to have a scenario where a contaminant plume begins to migrate out of the mine, for example, due to an earthquake that ruptures drums of waste dumped in the mine. If such a plume were to flow through groundwater emanating from the site, it will be detected in the site wells. Therefore, this is in accord with the original approach to monitor the outlets of the system to ensure no receptors are impacted.

1.8 Page 5 item 11 - 3rd sentence states that contamination was confined within the existing mine. What information does DOE and the PLP have to confirm contaminants have not migrated outside of the mine? Can this be confirmed? If so, it should be stated with an explanation where the contamination is located including a discussion of how that was determined.

Ecology's Response:

Results from the following studies have shown no groundwater contamination outside of the site that is attributable to the waste disposed in the trench:

- Department of Health study in 1990.
- Private well and site well groundwater sampling for the Report of Investigation and Feasibility Study from 1993 to 1996.
- Interim groundwater sampling results in 2000, and 2003 to 2006.

Soil sampling in the northern trench and at the portal areas established that soil contamination was limited only to the disposal areas within the northern subsidence trench. The 1996 RI/FS investigation showed that the source of contamination was in various barrels of industrial waste, and disposal of oily wastewater at the northern portion of the trench.

The main risk was determined to be the groundwater pathway, from the trench wastes to the groundwater in the interior of the former coal seam mine, and out through the primary groundwater pathway at the north and south mine portals. The monitoring wells at Landsburg Mine have been situated at the most representative pathways along the ends of the mine that will intercept water coming from the former mine interior beneath the trench wastes.

1.9 Page 6 item 11 -It is mentioned a couple of times that "if groundwater capture and treatment becomes necessary in the future, the treatment system will be specific to the contamination and should be available in a relatively short time." What does a "relatively short time" mean? If contamination is discovered in the southern portal and it seeps to the aquifer where the City holds its water rights for the Clark Spring supply, any time that contamination is entering the aquifer is unacceptable and will cause an emergency situation with the City's water supply.

Ecology's Response:

Ecology agrees that any contamination entering the aquifer above cleanup levels at the points of compliance is unacceptable and must be prevented. Ecology believes that the infrastructure proposal will prevent this scenario from happening by removing permitting delays to have the Contingent Groundwater Treatment System ready if it is needed.

The expected travel time for contaminant transport is an important technical concern. Ecology and the City of Kent are reviewing a travel time memo to assess this risk, and to establish an appropriate frequency of monitoring following the proposed fill in and capping of the trench wastes (preferred remedial alternative).

The PLP group is monitoring groundwater at concentrations for most hazardous substances well below levels of concern. Most groundwater plumes start emanating at a point of compliance initially at very low concentrations and increase with time. Obviously, it is in the interest of all concerned that groundwater capture and treatment is initiated at the appropriate time, and the sequestered groundwater is treated and disposed of safely in a timely manner.

Therefore, if hazardous constituents start emanating from the mine and show an increasing trend, the treatment system design and preparation can be triggered to the specific types of contamination observed before the contamination reaches an unacceptable level.

Although an exact time frame for installing a treatment system cannot be presented now, treatment systems can be installed in a relatively short period (potentially three to four months or less). This is because most systems today are off the shelf modules. A treatment system would be installed on private land and would only require compliance with the substantive requirements of King County building codes. Due to administrative procedures, it is likely to take more time to get approvals than to install the treatment system.

Ecology intends to establish a Cleanup Action Plan, which will select appropriate groundwater cleanup levels at appropriate points of compliance that are consistent with the Model Toxics Control Act.

1.10 Page 6 item 11 -Furthermore, infrastructure is not proposed to be constructed at the southern end of the mine to capture water. Installation of such infrastructure after-the- fact will cause further delay and further contaminate Kent's water supply. As a result of the recent natural disasters in New Orleans and Florida, the City has been informed by some suppliers that standard construction materials such as pipe are already becoming more difficult to obtain. This provides additional justification that a total remedial infrastructure package should be constructed at both ends of the mine. his could include capturing contaminated water at the southern end of the mine and tight- lining to the proposed facility on the northern side of the mine.

Ecology's Response:

Please see response to 1.2 above.

1. 11 Page 6 item 11 - How will waste from the treatment facility be stored and disposed of

Ecology's Response:

If any wastes are generated in the Treatment System in the course of pre-treatment, they will be properly disposed of according to the classification of the wastes. If dangerous wastes are generated, they will also be disposed of in accordance with dangerous waste regulations. (See WAC 173-303).

1.12 Page 6 item 12 - Location of the proposal same comment above for the SR 5 16 notation It should just be Kent Kangley Road.

Ecology's Response:

See response to 1.3 above.

1.13 Page 9 item F. This section says the length of pipe on Palmer Coke and Coal property is 4,200 feet while other sections state 5,200 feet.

Ecology's Response:

Ecology will correct the appropriate sections to state the correct length of pipe to 5,200 feet.

1.14 Page 10 item 3a - Though the answer to the question is technically correct, the southern end of the mine discharges water to an unconfined aquifer with high transmissivity and is near the location where Rock Creek begins perennial flow. One can assume that if contamination surfaces at the southern end of the mine, it would easily reach Rock Creek through the shallow unconfined aquifer. This should be discussed.

Ecology's Response:

This particular section refers only to surface water flows. Discharges from the southern end of the mine into high transmissive surficial aquifers and into Rock Creek as referred to in the comment are captured on page 12 "Site Drainage Features" and in Figure 7 in the SEPA checklist. Further discussion can be referenced in the south portal hydrogeologic investigation or in the 1996 RI/FS.

1. 15 Page 11 last paragraph. While the City moved the natural location of Rock Creek within the Clark Springs property, the City did not divert flows. The City has and will continue to operate this facility in compliance with State approved water rights Dates and flow amounts within the response are incorrect, however this does illustrate that the City of Kent has maintained a municipal water supply to provide for public health and safety for the citizens of Kent. The City continues to rely heavily on Clark Springs to meet municipal water supply needs

Ecology's Response:

The Hart Crowser report, "The Hydrogeology of Rock Creek, Kent, Washington" dated May 1, 2003 and prepared as part of the City of Kent's Biological Assessment (BA) of Clark Springs Water Supply System lists the Rock Creek Surface Water Diversion – Certificate No. 7232-A on page 48. This is one of several other water rights at Clark Springs. The water right would authorize the City to divert water from Rock Creek per the terms of the certificate.

1.16 Page 11 -*Rock Creek* - The first paragraph, second sentence discusses the creek becoming ephemeral when it crosses under Kent Kangley. This is actually a tributary to Rock Creek commonly known as Georgetown Creek. Though perennial flow of Rock Creek begins in this general area, the Rock Creek channel actually flows from the south east, and does not cross Kent Kangley Road in this area.

Ecology's Response:

Ecology appreciates the correction to local stream nomenclature in the area and will be mindful of the name and the nature of Georgetown Creek in future references.

1.17 Page 12 -*Site Drainage Features* - The first paragraph states that the mine has "only ephemeral drainages which discharge during prolonged or intense periods of rainfall" This statement is incorrect. The City of Kent, the DOE and the PLP group have had discussions and came to the understanding that the southern portal (Portal #3) had continual discharge at the southern end of the mine. This was determined in late summer 2003. Furthermore, the fourth paragraph on page 12 discusses the minimum flow occurring in late Summer

with an estimated flow of 2 cfs. This paragraph contradicts the first statement (noted above) as this is not an ephemeral drainage.

Ecology's Response:

The 2003 south portal hydrogeologic study only determined that water table in the mine had a measured gradient towards the south as well as the north at the time of measurement. The south portal #3 appears to have a continual discharge from the mine, but flow from the discharge is variable.

1.18 The hydrologic discussion should state than when water from the southern portal infiltrates, it is seeping into the unconfined outwash aquifer, the same aquifer where the City of Kent holds water rights for the Clark Springs water source.

Ecology's Response:

Ecology believes the description on page 12 of the SEPA checklist captures the necessary elements for site drainage features, including further drainage toward Rock Creek. Specific mention of the watershed surface aquifer and downstream sinks including Clark Springs is captured on page 11 of the SEPA checklist.

1.19 Page 15 items 5a and 5b -The site is located approximately 500 feet from the Cedar River, a river which provides habitat to Chinook salmon, a species listed as threatened by the federal government. This should be mentioned in the response.

Ecology's Response:

These points are mentioned in page 10 and on page 15 of the SEPA checklist.

1.20 The Clark Springs property should be identified on Figure 2.

Ecology's Response:

There is no justification provided for this request. Figure 2 of the SEPA checklist is an area map showing locations of population centers and topography, not public facilities. The location of the Clark Springs property has no bearing on the proposal to install infrastructure at the north portal area of Landsburg Mine.

1. 21 Figure 2 is inaccurate in that it shows the old alignment of Summit Landsburg Road. The old road used to connect directly to 4 corners. The road connection was moved to the east and now it connects with Kent Kangley Road.

Ecology's Response:

The maps used in the SEPA checklist were apparently obtained from the USGS Cumberland and Hobart 7.5 topographic quadrangles. The Cumberland topographic map was made in 1953, photo revised in 1968 and 1973. Ecology is unaware of any updated USGS quadrangle maps that incorporate the road connection change. Ecology will be grateful for updated thematic maps of the area if available and will instruct the PLPs to incorporate them in future references. Maps for this site containing this revision will be incorporated in the future when made available for public distribution.

1.22 Clark Springs should be shown and labeled on Figure 7.

Ecology's Response:

Ecology will instruct the PLPs to incorporate this correction in future documents. This has also been cited in the Errata Sheet for the SEPA checklist.

1.23 Figures 7 and 8 both have SR 516 shown and it is Kent Kangley Road. Further, as stated in 11 above, the alignment of Summit Landsburg road is wrong in both figures.

Ecology's Response:

See Ecology's response to Comment 1.3 and 1.21 above.

1.24 As previously stated by the City of' Kent, any contamination to the Clark Springs Water Supply will have a significant detrimental impact to the City. Kent strongly recommends the Department of Ecology and the Landsburg Mine PLP Group install infrastructure at the southern portal that will immediately capture contaminated mine water if detected during sampling. This should be tight-lined to the proposed treatment facility prior to discharge to the sanitary sewer.

Ecology's Response:

See Ecology's response to Comment 1.2 above.

Comment 2: Tahoma School District No. 409

Key Concerns: Safety, Capacity, and Compensation

2.1 This letter is in response to the proposed groundwater cleanup at the Landsburg Mine Site in Ravensdale, WA. It is our understanding that one of the proposed cleanup options would be to dispose of contaminated groundwater via connection to a sewer "tight line" that serves Tahoma Junior High School, 25600 Summit-Landsburg Road SE, Ravensdale. The Tahoma School Board has discussed this proposed cleanup option and we have questions and concerns about its possible impact.

The sewer line is designed to serve Tahoma Junior High School and a future school on an adjacent, 38-acre site. The line was not designed for usage beyond the schools' needs.

Ecology's Response:

Ecology will meet with school officials and King County Department of Development and Environmental Services (DDES) to get more information with regard to capacity. The PLP, with review by Ecology, will investigate further the feasibility of the connection with this concern in mind.

2.2 While the school board is pleased that discussion is taking place regarding cleanup of the mine site, the board is opposed to any use of the sewer line that would potentially limit or otherwise affect construction of a school on the 38-acre site.

Ecology's Response:

Ecology and the PLP Group understand the School Board's concern about the possible effect of this line for future growth. It is not the intention of Ecology or the PLPs for the proposed hookup to have negative effects to planned future capacity of the School District's sewer line. The PLPs will seek more information from King County Department of Development and Environmental Services (DDES) and the Soos Creek Sewer District to determine whether the proposed connection of the 4-inch line will affect future capacity for the school.

The PLPs will seek more information to fully understand details of possible plans for the line, background information, owner or user rights, fees, and related issues in order to seek adequate and acceptable resolution to this concern. The proposed 4-inch pipeline is not a sewer connection due to its small diameter pipe. This makes it unsuitable for developmental purposes and is against its original design parameters and purpose. The original design parameters and purpose is to convey pretreated groundwater from Landsburg Mine site if groundwater is detected above state cleanup levels.

2.3 A companion issue is whether the school district would receive compensation for use of the line, which was paid for by the district.

Ecology's Response:

The PLPs, under Ecology's review, are investigating the issue of compensation for the proposal.

2.4 Finally, the school board is concerned about the risks of sending toxic effluent through the line that serves more than 1,000 students and staff

Ecology's Response:

The pretreatment process will significantly remove or reduce the concentrations of contaminants before disposing to the discharge line. The pre-treated water will be conveyed through a pipeline into the sewer or publicly owned treatment works (POTW), for secondary and tertiary treatment. It will be pretreated to discharge levels that will follow the substantial requirements of the POTW for conveyance into their sewer treatment system.

Since we do not know what contaminants might be detected due to the fact that no contamination has been found at this site, it is sufficient at this point to say that pretreatment will be to or below acceptable discharge limitations for safe discharge to a POTW. The water quality or concentrations of various contaminants of concern must be reduced to low enough levels for the POTW to effectively apply their own secondary and tertiary treatment; otherwise, it would be expected to provide a strain to such facilities.

Ecology will require the PLPs to ensure that back flow prevention of their discharge water to the school is included in the design for connection to the existing Soos Creek Water and Sewer District's sanitary sewer line.

At present, there is a greater risk at this site due to lack of such infrastructure (treatment pad, access road, and discharge pipeline connection) needed under a contingency plan to address the possibility that contaminated water is detected at the site above cleanup levels at its points of compliance.

Comment 3: Judith Filips and Dale G Backer

Key Concerns: Public Outreach, Well Monitoring, and Safety

3.1 It is a scandal that the Landsburg Mine proposed cleanup has dragged on for several decades without resolution and many of the interested parties have likely died or moved away.

Ecology's Response:

Ecology recognizes that this cleanup process has taken a long time. The Landsburg Mine site is a complex site. Addressing such a site is very time-consuming. The cleanup regulations, while having a good deal of flexibility in approach, also have some very specific criteria to achieve adequate characterization and protective cleanups. These criteria, together with the issues that have been raised about the site by the various stakeholders have combined to make this cleanup a time consuming process. Ecology has made this site a priority and is working as quickly as the process will allow.

In addition, there are many steps involved in deciding what cleanup actions are appropriate, and how to implement the cleanup actions. Some of these include, defining the nature and extent of contamination, and evaluating how to address the contamination in a public process. The various factors, which influence cleanup schedules, include time, personnel constraints, and the process of developing technically sound approaches. Thus, the length of time necessary to address a significant cleanup site is often the result of many circumstances and conditions.

3.2 At minimum, the Department of Ecology should hold at least two public meetings in the Maple Valley area each year to update the community on the status of this project. The meetings should be well advertised at least two weeks in advance in a broad regional interest publication such as the Seattle Times or Seattle P-I, and interested parties who have previously submitted comments should also be notified by mail. These public meetings would be in addition to presentations to other interested groups.

Ecology's Response:

The public involvement activities for this site reflect the high degree of interest of the community. The Model Toxics Control Act (MTCA) provides guidance for the public involvement process to ensure proper notification of public comment periods and public meetings. Ecology's public involvement communication strategy for the Landsburg Mine site reaches beyond the MTCA requirements to meet the needs of the community and stakeholders. See Summary of Public Involvement Actions section above for detailed information.

Ecology regularly updates the community through Fact Sheets, Site Register notices, Media Releases, Display Ads, Bulletin Board Fliers, stakeholder meetings, and Public Meetings.

Ecology wrote a Public Participation Plan in 1993 for this site that identifies key stages where public comment periods and public meetings will be held. This includes the Remedial Investigation/Feasibility Studies, legal agreements, and the Cleanup Action Plan.

Given the high level of interest in this cleanup process, Ecology will continue to hold public meetings or make available sessions where community members can speak directly to agency officials and potentially liable parties when necessary as the cleanup process continues.

3.3 The potentially liable parties should re required to post a bond sufficient for all projected costs of a potential future site cleanup and remediation, and damage to any public or private wells or water sources. Protection of the Cedar River, the fish and wildlife it supports, and the considerable investment of the City of Seattle and King County in the health of the Cedar River basin should also be covered by such a bond.

Ecology's Response:

Ecology agrees with the importance of financial assurances, which are a requirement under the Model Toxics Control Act (MTCA). However, this can only be achieved as part of the final Cleanup Action Plan. In order for this and other practical protective measures to be implemented, a formal legal agreement must be negotiated between Ecology and the Potentially Liable Parties (PLPs) in the form of a Consent Decree for the Cleanup Action Plan.

Ecology will continue to work hard to resolve such issues in the future.

3.4 Monitoring of wells and groundwater has been and remains inadequate. Each public and private well in the vicinity of the Landsburg Mine and Rogers Seam should be monitored at various depths and sufficient frequency so as to ensure the absence of contaminants that would endanger the health of individuals, livestock wildlife, crops, or those who might come in contact with it.

Ecology's Response:

Monitoring at Landsburg Mine has been adequate since the Agreed Order was entered into in 1993. The present monitoring well coverage has been and remains sufficient. Twelve monitoring wells are screened at various depths in the site (both shallow and up to 700 feet) and at the appropriate groundwater pathways throughout the site. These wells and water from the portal areas have been sampled periodically for the full suite of contaminants, and chemical analyses has not shown any groundwater contamination attributable to the wastes.

Sampling of 14 private wells (including the Clark Springs facility) was carried out early in the RI/FS in 1996. Prior to that, the Department of Health sampled 9 wells and the Clark

Springs gallery in 1990 (over 15 years after the coal mine had closed and the disposal of wastes occurred). Ecology finds that there are no technical grounds for such a statement, given lack of any detected contamination of a magnitude or type expected to derive from such wastes as seen from groundwater chemistry studies at this site.

3.5 Due to the largely unknown composition of many of the 4,500 barrels, and unknown quantities of other industrial contaminants dumped down the Landsburg Mine and Rogers Seam, all cleanup, capping, isolation, removal or other disposal of waste products on or likely emanating from this site should be held to the standards of hazardous waste treatment and disposal. The Model Toxics Control Act should not be waived on activities pursuant to resolution of these issues unless it can be adequately demonstrated to be in the public interest, particularly in regards to safety.

Ecology's Response:

Under the Model Toxics Control Act (MTCA) Cleanup Regulation, the standards for cleanup levels of hazardous substances are mandated under state law based on toxicological and/or risk-based calculations or other considerations such as applicable state and federal laws (ARARS). Standards for dangerous waste transport, treatment and disposal are applicable for generators of dangerous waste, not for cleanup of contaminated media (soil, water) at a property. However, dangerous waste standards are automatically adhered to when activities at the site are relevant to this process. The same standards for disposal of dangerous waste are adhered to as a matter of procedure and in collaboration with or under the direction of the appropriate regulating agency, be it state or local government.

For more details on MTCA cleanup standards see WAC 173-340-700 to 760. This provides the background material needed to understand the cleanup standards adhered to under MTCA cleanup in order to protect human health and the environment. These standards for cleanup have always been the benchmark for monitoring and remediation activities for all formal cleanup sites, including Landsburg Mine, under the Toxics Cleanup Program.

3.6 No action should be taken that increases the distribution of contaminants from this site to other waters of the State of Washington, including, ultimately, Puget Sound, by way of effluent discharge to a County sewer line.

Ecology's Response:

At present, Ecology believes there is greater risk to human health and the environment if no action is taken at this site. To eliminate or minimize this risk it is important to install infrastructure for the contingent groundwater treatment system.

If contaminated groundwater is detected at the site, the groundwater will be pumped out to prevent its release to the environment. This groundwater will then be pre-treated. It is important to have the infrastructure available to safely and reliably dispose of the pre-treated groundwater.

The length of time needed to get the appropriate permits or approvals to install the infrastructure could present problems with storing and disposal of the pumped water on-site. The most significant delay will be the procedures to obtain the various permits or approvals to construct infrastructure to house the treatment system, a reliable, robust, and cost-effective way to dispose of the pre-treated groundwater without discharging into the environment.

The purpose of the proposed interim action is to prevent any contaminants that may be present at the site in the future from migrating from the site. If the infrastructure is in place and any contaminated groundwater is detected emanating from the site, the PLPs can respond quickly by installing a treatment system that will pre-treat the identified contaminants to such a level that the groundwater may be safely piped to a POTW for final treatment prior to discharge to waters of the State. If the infrastructure is not installed now, the length of time required to obtain permits and approvals necessary to install the infrastructure could result in contaminants leaving the site.

For more information, see 2.4 above.

Comment 4: Greater Maple Valley Area Council

Key Concerns: Public Safety

4.1 At our November 7, 2005 meeting, Area Council Members listened to public concerns regarding the proposed plan, which includes design and build of an underground effluent discharge line for a contingent groundwater treatment system from an on-site pretreatment facility for the recently completed toxic substance monitoring well to an existing county owned sewer line located north of the site.

After considerable discussion, members of the Greater Maple Valley Area Council voted unanimously to request that the Washington Department of Ecology make no decision regarding the extension of this effluent discharge line until it has determined that contaminants are present and exceed Washington's water standards and until "in community" public meetings are held with all affected parties surrounding the site and King County officials.

Ecology's Response:

Ecology believes that in order to protect human health and the environment, we need to make decisions in order to create contingency plans and protective measures for this site. Regardless of the final remedial alternative chosen, the contingent groundwater treatment system will be an important element in the final cleanup of the site.

In order listen to the community and stakeholder concerns, Ecology extended the public comment period and held community public meetings. As a result, we modified the proposal to install the pipeline as a "dry" line. This line will only be physically connected to the sewer in the event that a threat to human health and the environment is determined to exist based on monitoring at the site.

However, no contamination has been found at the site that can be attributed to the wastes in the subsidence trench. Despite this, the Contingent Groundwater Treatment system is needed in order to safely and reliably dispose of pre-treated groundwater. Therefore, Ecology believes it is necessary to make decisions and plan for contingencies now even though we have not detected contamination.
Given the high level of interest in this cleanup process, Ecology will continue to hold public meetings or make available sessions where community members can speak directly to agency officials and potentially liable parties when necessary as the cleanup process continues.

Comment 5: Joan Burlingame (Ravensdale, Washington)

Key Concerns: Water Withdrawal and Land Use

5.1 Removing Water from the Aquifer: The toxic waste illegally placed in the ground near Landsburg impacts the water owned by the State of Washington of which I have a legal right to by state law. This water is potentially unavailable to me because of the actions of the potentially liable parties (PLP). There are many other water users in this area whose water supply is likely to be depleted because of contamination and the proposed water withdrawals that WA DOE is proposing as a "fix" to the illegal actions of the PLPs. In the last meeting I attended DOE staff said that up to 30 gallons a minute may be removed from the aquifer. Any remediation actions that do not address both the removal of toxins and the FULL replacement of any water taken out of the ground do not address the impact of the illegal actions of the PLP: the other negatively impacted landowners are not made "whole." There is no extra water in the aquifer. WA DOE has already allowed so many wells to go in that my well, that once was very strong, now goes completely dry about five times a year.

Ecology's Response:

Ecology recognizes that water is a valuable resource that must be managed accordingly. The water wells referred to are not in the same local aquifer, nor are they in direct hydraulic communication with the primary groundwater pathways at Landsburg Mine due to their distance from the site, their different hydrogeological setting, and presence of hydraulic boundaries.

The proposed contingency action, if initiated, is to pump out the mine portal wells located in the Rogers seam, a different geological unit or aquifer from that of the private wells. The contingency plan is to pump from portal wells that would primarily withdraw waters coming from the interior of the former mine, and intercept the path of contaminated water out of the portal area when it exits the interior of the mine.

The water well referred to in this area is distant from the former mine and not situated in a direct permeable flow pathway of water from the interior of the former mine. It is located approximately 4,000 feet west of the south portal wells and 7,500 feet west of the north portal wells, and across the strike of the sedimentary beds that underlie the area. The portal wells at Landsburg Mine are situated within the Rogers coal seam, in a mined-out coal unit different from the rock layers tapped into by area wells. Groundwater flow across the intact bedding planes is very slow. Due to this slow movement and the hydraulic sink formed by the discharging water from the Frasier and Landsburg coal seams and mines (which are located between the site and private wells referred to) these wells are outside the zone of influence of north portal wells and flow at Landsburg Mine site.

Many local private wells tap bedrock siltstone, sandstone or small coal units. Groundwater flows more easily and faster along the layering directions in rock then across the rock layers. The layers of sedimentary bedrock are oriented primarily in a north – south direction. It is likely that water from private bedrock wells will be affected from pumping influences from the north or south of their well locations. The pumping wells and the Rogers coal mine are mainly in an east or west direction from private bedrock wells.

Reports of water wells going dry cannot be attributable to Landsburg Mine because there is no infrastructure or any pumping or contingency activities at the site so far. Drying of water wells can be attributed to other extenuating factors, such as area water recharge factors, drought years, and effects from existing public and private groundwater extraction and usage in the area.

Ecology notes that this proposal is designed to protect human health and the environment, and will safeguard the area's groundwater resources preventing contaminated water, if present, from being released and treating and disposing the contaminated water appropriately. Based on the water budget in the area, the proposed pumping rate of 30 gallons per minute is adequate to sequester primarily the water reservoir within Landsburg mine (the contaminated site), and not negatively affect surrounding groundwater. Once remedial actions at the site are completed, it is anticipated that the pumping rate will be much less than 30 gallons per minute possibly as low as 5 gallons per minutes.

The Model Toxics Cleanup Act Regulation is clear about groundwater cleanup actions under its minimum requirements for cleanup actions. It states, "Groundwater containment, including barriers or hydraulic control through groundwater pumping, or both, shall be implemented to the maximum extent practicable to avoid lateral and vertical expansion of the groundwater volume affected by the hazardous substance." Safe, reliable disposal of the pretreated water will not result in a significantly overall threat to human health and the environment than other alternatives that return the water to the site.

For details see WAC 173-340-360(2) (c) (B).

5. 2 Endangered Species Act - Lack of HPA: Chinook salmon are listed as "threatened" under the federal ESA. Low flows from the shallow aquifer in my area (Landsburg Mine area) are listed as a KNOWN factor of decline for Chinook. Low flows in the Cedar are listed as a potential factor of decline for ESA listed Chinook. I have not heard of any portion of the proposed action addressing ESA issues. The groundwater moving through the trench provides over half of the surface flow for Rock Creek just above the Clark Springs Watershed in spring. This is a time that Coho and Chinook fry are moving through Rock Creek. The actions proposed by WA DOE have not adequately addressed the potential to strand Coho in Rock Creek or Georgetown Creek as a direct result of water removal. Any proposed action that does not address potential impact on Chinook is inadequate. Because of the potential impact on groundwater and listed species I believe that WA DOE may need to get special permits from the federal government for "take" of Chinook. I have not heard

of seen any indication that WA DOE even considered an HPA to mitigate the impact of the toxic waste or of the proposed remedial actions. King County Department of Transportation found Chinook in the lower reaches of Rock Creek in July, 2004. There is a good likelihood that Chinook and Coho spend many months of the year in Rock Creek, not just during spawning and hatching.

Correction*:* **I just realized that in my comment letter yesterday under item #2 I should have used "HCP" (habitat conservation plan) instead of HPA.**

Ecology's Response:

Ecology is concerned with protecting the environment, particularly habitat for endangered species. Ecology considers the amount of potential groundwater withdrawal in the proposal to be insignificant compared to the potential benefit.

The statement that "Groundwater from the trench (assumed the Rogers Coal Mine) provides over half of the surface flow for Rock Creek" is not correct. The Landsburg Mine site is hydrologically and geographically a small area compared to the Rock Creek watershed and the Cedar River watershed. The principle source of surface flow for Rock Creek is from precipitation and surficial aquifers, not the Landsburg Mine site. Groundwater discharge from Landsburg Mine is not a significant source of surface flow to Rock Creek.

The combined flow of Rock Creek and the Rock Creek alluvial aquifer have been estimated by the City of Kent to vary between 8,000 and 16,000 gallons per minute. The Cedar River itself typically has a flow between 50,000 to well over 500,000 gallons per minute (average flow is over 200,000 gallons per minutes (gpm), not including the amount of groundwater flow in its alluvial aquifer.

Mine total discharge at the south end of the mine is estimated to be about 15 to 20 gallons per minute and at the north end to be another 15 to 20 gallons per minute. Without remedial actions completed for the site, the expected pumping rate if the contingency is triggered is about 30 gallons per minutes, which is similar to the amount of pumping needed to dewater the mine when it was an active coal mine. Once the remedial actions are completed at the site, the expected groundwater-pumping rate could be as low as 5 gallons per minutes.

It is important to note that the amount of groundwater that would be required to capture contamination emanating from the mine would be much less once the remedial actions are completed. Most of the water currently in the mine comes from surface water overland flows entering the mine trenches and direct precipitation in the trenches. Remedial actions are expected to eliminate surface water overland flow from entering the mine trenches and significantly reduce direct precipitation into the trenches by use of a low permeability cap. The remedial actions will thus significantly reduce the amount of groundwater pumping that would be required to capture and contain contaminated groundwater from reaching the environment.

A Habitat Conservation Plan (HCP) is not relevant for the infrastructure proposal. The proposed contingency plan will not negatively impact the Salmonid species, nor require an HCP because this is not a project involving water user activities or excessive water withdrawal. The overriding benefit of the proposed contingency system will be preventing contaminated water from reaching Cedar River and the ecological receptors within it such as salmonid species.

5.3 Growth Management Act (GMA) and the Toxicity of the Proposed Water to be Removed: The Growth Management Act prohibits the placement of sewers in the rural area in almost all cases with public health needs being one of the accepted reasons. The sewer line that is part of this proposal goes from the treatment facility (located about three miles from the urban growth line), connects to the tight line sewer line at the Tahoma Jr. High School, and then travels to the Metro line at Four Corners. WA DOE says that this line is needed to remove the treated water from the waste site at Landsburg. WA DOE has also told the school district that the water moving through the sewer line on school property should not be a health concern for students because the water will already be treated. If that is the case, why is the treated water required to be removed at all? It would seem to me that if the water quality is not a potential threat to the students (in case of a ruptured line) then it does not meet the threshold of public need as outlined by the state's GMA.

Ecology's Response:

The PLPs and Ecology were aware that the pipeline proposal was outside the Urban Growth Boundary, and sought to contact the appropriate agencies to apply for the appropriate permits for this remedial action. Ecology is presently working with the Department of Development and Environmental Services (DDES) for this purpose, and has been informing stakeholders such as the commenter on these issues. Due to the small diameter of the pipeline (4 inches) and its purpose of conveying water as an emergency measure to protect the public and the environment, it is not considered to be a sewer connection. As the commenter has stated, protection of public health is one of the main reasons why this proposal for the effluent line is justified.

Water moving through the proposed pipeline on the school property should not be a health concern. This is because the water moving through the pipe will already be treated. However, it is important that the treated water be removed through the municipal sewer system for secondary treatment. The pre-treatment will reduce concentration of the yet-unknown contaminants to acceptable levels for standard wastewater disposal. This will prevent a short-term release into the environment, should such a malfunction occur at the treatment site, which will be more protective of human health and the environment.

Present technology for the groundwater treatment system does not guarantee reliable, around-the-clock operation for analyzing contaminants and for pre-treating the water. It is possible that there may be a short-term malfunction in the pre-treatment system, and so to prevent any discharge to the environment, the safest and most cost-effective alternative is to connect the treatment system to the sewer district, which allows for secondary and tertiary treatment of the water. This will prevent a short-term release into the environment should such a malfunction occur at the treatment site.

To date, groundwater emanating from the site has shown no contamination or toxicity. Pretreatment will be expected to reduce concentration of the yet-unknown contaminants to acceptable levels for standard wastewater disposal.

5.4 Proposed sewer line is on the rural side of 4:1 open space lands. King County's GMA policies prohibit sewer lines on the rural side of open space lands created through the 4:1 permit process. The Landsburg Mine is immediately adjacent to 4:1 open space lands. The 4:1 program allows urban density development in the rural area as long as four acres of protected open space are created for every one acre developed at urban densities. I know that the PLP's have offered a letter stating that the line being placed will not ever be used for development. I am unimpressed as the letter is not binding unless someone wanted to take the companies to court. Anything less than a notice on title that the 300 acres around the Landsburg mine had 100% of all the development credits permanently removed is not adequate. King County has a transfer of density program of which the 300 acres around the Landsburg Mine can qualify as a sending site. Removal of the density credits from the land around the mine can generate revenue for the landowner. And, by removing all the density credits from the land around the mine the PLP's are showing that they are serious about guaranteeing that any waste water line placed in that area will never be used for homes - even if the line is upgraded. I know that at least two of the PLPs have participated in the density credit program so this should be nothing new to them.

Ecology's Response:

The comment refers to a sewer line, but the proposed pipeline is not a sewer line, it is a dedicated pipeline for the discharge of treated groundwater. The Model Toxics Control Act does not give Ecology general broad authority to determine how a site may be used in the future, including transactions involving development credits. Instead, Ecology's authority is limited to protecting human health and the environment as implemented by MTCA. Ecology does not have the authority to participate in such transactions.

5.5 Don't Put the Line through our Public Park. The land immediately to the west of the Landsburg Mine is public park/open space created through the 4:1 program. If a pipeline is ever placed it must go along the road (the shortest route!) and not through the public park. If the line were to ever rupture there could be the risk of contamination of a public park if the line went through the park. If the line goes along the road there is less risk to park users and easier to reach in case of an emergency. In addition, the easement through the public park owned by Palmer Coking Coal does up a steep hill and then back down. This road has had erosion failures already in its short history. Taking the line along steep slopes increase the chance of failure and potentially a longer time period before any failure is noticed.

Ecology's Response:

The proposed pipeline route was originally designated as open land with utility easements to Palmer Coke and Coal (one of the PLPs). This area is not a designated park, but is

designated open land that can also be used by the public. Ecology communicated this concern with the PLPs and they will consider this alternative pipeline route.

Ecology is concerned about public safety. The infrastructure system design will include monitoring requirements that identify a disruption in flow caused by a pipeline break for rapid shut-off of flow and repairs. The extracted groundwater will be pre-treated prior to discharge. This effluent discharge will not have high levels of contamination and will meet the sanitary discharge limitations for Publically Owned Treatment Works or POTWs. A short-term release underground is not expected to present a risk to site visitors. If a break did occur, the release to the environment would be evaluated during repairs of the pipeline. We will implement corrective actions, if needed.

5.6 Increased Sewer Line Replacement Costs for School District. The Tahoma School District owns two parcels near Landsburg Mine. One of these parcels is the location of the Tahoma Jr. High School. The second property is held in reserve for future growth. The school district has already paid for the sewer line that extends to the school. This sewer line was always intended to be a tight line that would serve only the two schools. If the PLP's hook up to this line they will pay the school district back for part of the expense of putting in the sewer line. However, in the long run it will cost the school district more if they have to then put another line in because their extra capacity was used by the PLP's. I doubt that the cost per linear foot will be as low as it was when the line first went in so the school district (and all of the taxpayers) will end up paying more so that the PLPs could hook up to an existing line at a reduced cost. If the PLPs do get permission to put in a waste water line I believe that they should have to put in a line all the way to Four Corners and NOT use the tight line paid for by the school district. This is the only way to ensure that the school district does not end up paying for part of the PLP's remediation.

Ecology's Response:

Ecology and the PLPs were aware of the connection issues in the proposal and have been investigating issues of capacity and potential compensation. The PLPs, with Ecology review, will seek to clarify the actual existing and planned capacity for their sewer line to evaluate the feasibility of connection, both technically and economically.

5.7 Critical Area Designation. The County's Permitting Process Requires a Critical Area Designation Prior to Clearing and Grading Permits. The soil types near the proposed treatment plant are soils indicating a forested wetland. It is not unusual for the soils along the trails in that area to be damp in July. Since altered hydrology is already a concern in the area I feel that an appropriate action to take would be to conduct a critical area designation prior to making a decision about the location of the treatment plant. The proposed area has steep slopes, likely erosion hazard, coal mine hazard, potential wild life corridor, and wetlands. There may be enough environmental challenges to building in that location that the treatment plant may need to be placed on the southern portion of the trench, making the current proposal to run the waste water line along Summit Landsburg a wasted effort.

Ecology's Response:

The Landsburg Mine site is a designated contaminated site under state law or statutory authority. Ecology and the PLPs will adhere to county requirements relevant to permitting process for this interim remedial action. However, the department is exempt from the procedural requirements of certain laws, including "any laws requiring or authorizing local government permits or approvals for remedial actions." Although there is exemption from procedural requirements from such permits, the state and the PLPs will incorporate the substantive requirements of the permits as identified by state agencies or local government.

So far, an infrastructure pad at the north portal is the most viable option due to less environmental impact (fewer incursions into wetlands or protected areas, less utility and property access issues). The area to the north is also the more likely area of impact due to the location of waste disposal, groundwater flow and water table inclination to the north portal. The location and topography of the proposed infrastructure has none of the hazards or features (erosion, coal mine, wildlife corridor, wetlands) in the comment.

Refer to the following: Chapter 70.105D RCW and WAC 173-340-710 (9) (b)

Comment 6: Ed Woodriff (Ravensdale, Washington)

Key Concerns: Proposal to Cleanup the Site

6. 1 I AM WRIGHTING CONCERNING THE EVENTUAL SOLUTION TO THE LANDSBURG MINE SITE CLEANUP. SINCE IT EFFECTS A PORTION OF MY PROPERTY AND IS CONTINUEING TO CAVE IN, I FEEL I SHOULD HAVE SOME LITTLE BIT OF PRIORITY IN MY OPINIONS AND CONCERNS.

YOU HAVE DRILLED AND TESTED WATER IN DEEP WELLS AROUND MY HOUSE, BUILT A FENCE AROUND THE CAVE IN AND HELD PLENTY OF FEEL-GOOD TALK SESSIONS ABOUT THE PROBLEM THAT, IN MY OPINION, ONLY HAS ONE PRACTICAL SOLUTION. WHILE I DON'T SEE WHAT GOOD A DEEP WELL PUMPING SYSTEM THAT WOULD DISCHARGE INTO A SEWER COULD DO, SINCE IT IS JUST MOVING A BUNCH OF MUCK THAT IS ENTRAPPED IN A LOCATION WHERE IT CAN DO NO HARM, I WOULD NOT BE AGAINST SUCH A PROJECT. I DO, HOWEVER, BELIEVE IT WOULD BE MORE SENSABLE TO SIMPLY LEAVE IT WHERE IT IS. ENTOMBING SLUDGE IN COAL (CHARCOAL) IS REALLY QUITE AN ADEQUATE SOLUTION.

Ecology's Response:

Ecology believes that this proposal is necessary because it is possible that contaminated groundwater can get out of the mine in the future if there has been a rupture in the buried drums or if some event such as an earthquake causes the drums to shift and/or burst. At this point, groundwater emanating from this site does not contain contamination resulting from the wastes in the trench. Nevertheless, it will be important to have a plan in place, so that if we find contaminated groundwater emanating from the site it would be prevented from moving away from the site and not be delayed by the process of obtaining time-consuming permits. This proposal would prevent any delays in containing and disposing of the water after it has been pre-treated by already having the groundwork in place for setting up treatment equipment and disposal of the groundwater.

6.2 UNTAMITLY, AFTER ALL THE TALKING IS DONE, THE HOLE WILL HAVE TO BE FILLED. WHAT I PROPOSE IS RECOVERING ALL THE MINE TAILINGS (PILES OF DIRT) THAT CAME OUT OF THE MINE IN THE FIRST PLACE AND RECYCLING IT BACK TO THE TOP AND DUMPING IT IN THE HOLE IN SUCH A WAY THAT IT WOULD BE BERMED UP. THIS WOULD CAUSE THE RAIN TO RUN OFF TO THE SIDES AND NOT RUN DOWN INTO THE MINE VOIDS. THERE ARE PLENTY OF PILES OF MINE TAILINGS IN THE AREA THAT COULD CONTRIBUTE TO THIS EFFORT. SINCE I HAVE PLENTY OF EXPERIENCE WITH HEAVY EQUIPMENT AND EARTH MOVING,

HAVING OWNED AN EXCAVATION BUSINESS FOR YEARS, AND SINCE ONE OF THE THREE ACCESSES INTO THE PROPERTY IS THROUGH MY PROPERTY, I PROPOSE THAT YOU LET ME DO THE JOB.

Ecology's Response:

The described activities are similar to the soil capping cleanup alternative in the draft Cleanup Action Plan, which must still be finalized in the future. If this preferred alternative is finalized, the PLPs will be responsible in implementing the plan, including remedial construction work. Once the Cleanup Action Plan is available for public review and comment, this comment will become more relevant.

6.3 I PROPOSE TO SUPPLY MEN AND EQUIPMENT TO RECLAIM FILL MATERIAL FROM THE PORTALS OF MINES IN THE RAVENSDALE AREA AND TRUCK IT TO THE TOP OF THE MINE CAVE IN AND FILL THE HOLE UP TO IT'S ORIGINAL GRADE. AFTER IT IS FILLED AND MOUNDED FOR DRAINAGE, I PROPOSE TO GET CLAY FROM A LOCAL CLAY MINE AND CAP THE BERM WITH A WATER FAST CAP. IF YOU WANT TO DRILL DOWN INTO THE VOIDS AND DYNAMITE THEM TO FURTHER PREVENT ANY VOIDS, I CAN DO THAT ALSO.

Ecology's Response:

Please see response to 6.2 above. Further disturbance in the former mine may serve to trigger release of hazardous substances or cause it to spread. Therefore, the present plan to cap portions of the trench where the wastes are located and to monitor the outputs where groundwater is coming out of the former mine is preferable compared to activities that are more intrusive.

6.4 SINCE I HAVE A LARGE SHOP AND EQUIPMENT STOREAGE SPACE RIGHT ON THE PROPERTY, I AM STRATEGICALLY POSITIONED BOTH PHICALLY AND EXPERIENCE WISE TO DO THE JOB AND PROVIDE SECURITY DURING AND AFTER THE JOB IS DONE. I WOULD WELCOME A VISIT FROM ANY OF YOU FOLKS WHO WANT TO GET PRACTICLE ABOUT A SOLUTION TO THIS LONG TIME PROBLEM.

Ecology's Response:

The Department of Ecology appreciates your interest in the cleanup of this site. We will keep you updated of events as they proceed.

Comment 7: Scott Freed (Ravensdale, Washington)

Key Concerns: Cleanup Solution, Water Resources

7.1 I am in your circle of Danger. You need to address two things, One you do us a good job cleanup. The other you need to get water to every one that is in your circle.

Ecology's Response:

Ecology appreciates your interest in the site and participation in the public meeting. We will provide a cleanup solution that will be protective of human health and the environment under the mandate provided by the Model Toxics Control Act.

This cleanup is being managed by Ecology's Toxic Cleanup Program, which does not have authority to provide publicly supplied water. However, there is no indication that alternate water supplies will need to be provided because groundwater monitoring results have not shown contamination resulting from the wastes disposed of in the trench.

Recent examination shows that the Freed property it is not located in direct hydraulic pathways of the site, therefore, Landsburg Mine site poses little risk of contaminating the groundwater on this property. The property address of the Freed property is located approximately 3,500 feet east of the Landsburg Mine site. This is across regional rock bedding, in a direction up gradient to regional groundwater flow direction to the site. The intervening Landsburg coal seam is between the well location and the Landsburg mine site. Therefore, the well is not located in direct hydraulic pathways from the site and as such, Landsburg Mine site poses little risk if any to this address.

Comment 8: Landsburg Mine Public Meeting - Questions and Answers

Chief Respondents: Jerome Cruz, Department of Ecology; Douglas Morell, Golder Associates

8.1 Question: What is the scope of comments you would like to receive by February 15?

Answer: Comments on the Amendment to the Agreed Order re: Contingent Groundwater System

8.2 Question: The Pad set up that you described seems to be very small. Will it be able to accommodate an adequate treatment system?

Answer: The treatment systems are surprisingly small and compact and would fit on the proposed pad.

8.3 Question: How are you going to filter out PCBs? What kind of treatment system will you use?

Answer: If treatment is required for PCBs, there will likely be a Carbon Unit in the system.

8.4 Question: If you find contamination, how long will it take to create/implement a treatment system?

Answer: The treatment systems are off the shelf and we could order one quickly. It will likely take 2-3 months to have an operational treatment system. This may seem like a long time, but due to the slow rate of groundwater flow, once we anticipate a problem we will have about a year before treatment is needed.

8.5 Question: How long will it take to install the system to capture contamination from the Southern Portal?

Answer: It will take about 3 months to design, construct, and connect Southern Portal to the treatment system at the Northern Portal.

8.6 Question: What is the frequency of monitoring at the Southern Portal?

Answer: Detection Levels for the wells are lower than standards. Frequency of monitoring for the whole site will be a topic of future technical discussion.

8.7 Question: In the school district there is land set aside for future schools. Why will you connect the pipeline to the school property? How will you ensure safety?

Answer: The pipeline will be safely connected to the sewer line. The water will be pre-treated to levels mandated by King County. It is not our intent to impact the schools capacity. There will be negotiations for compensation to the school district.

8.8 Question: Is there any reason why you can't get treated water down to non-detectable levels?

Answer: The short answer is yes; you can treat the water to any level, however the lower the level the more difficult and the less reliable the system is. But it is possible.

8.9 Question: At this time does the sewer line go to the school and stop? Is it a CSO?

Answer: No, the dedicated line goes to the school for sanitary sewer only, it's not a CSO.

8.11 Question: Are there any problems with the monitoring wells now?

Answer. They are all fine. We have only found iron and manganese in the monitoring wells, which is typical for waters in former coal mining areas.

8.12 Question: The mines currently have a lot of water in them. Could that be diluting contaminants? If you are pumping at 35 gallons per minutes, would the contamination be a lot more concentrated?

Answer: The contamination must first be made soluble before it becomes mobilized in liquid form. There can be dilution. What we are talking about though is containing the groundwater plume, not dewatering the mine. We will be focusing on contamination within the capture zone. Pumping groundwater should not cause contamination to become more concentrated.

8.13 Question: Is the drinking water in wells safe today?

Answer: Nothing was found in the 1990's and nothing was found in the most recent round of tests.

8.14 Question: You have not announced any results from the Deep Well to the public. How many samples were taken and what did you find?

Answer: (Referring to the deep north portal well LMW-10) Four initial samples were taken for representative VOC's only. The samples, which were taken before the groundwater in the well, had stabilized. They contained benzene (at 0.5ppb), toluene at about the same level (below drinking standards) and xylene (below drinking standards as well). The detections

were most likely due to rotary air drill that was used to drill the well. The way an air rotary drill works is it blows air at high pressure. The motor burns diesel and uses transmission fluid, which can add benzene and toluene to the compressor air that, goes down the borehole. Subsequent samples from the well are all non-detect for the constituents of concern.

8.15 Question: Before people send their comments in, they would like to know the sampling results from the Deep Well. You haven't provided any data yet.

Answer: (Referring to the recently installed deep southern well LMW-11) We want to do a complete analysis on a whole suite of chemicals and run Quality Assurance/Quality Control so we can share data that we know is right. We will be sampling next week and there will be a Fact Sheet sent out with sampling results.

8.16 Question: Do you have any data on private wells? Will you be re-sampling private wells? Is my well safe?

Answer: Private Wells were most recently monitored in 1996 and no contamination was found. We don't have any justification to resample private wells at this time.

8.17 Question: Because of extraction and preferential flow the seams are keeping water isolated, is that right?

Answer: Yes

8.18 Question: Sampling wells only pull water when you are actively sampling, is that correct?

Answer: Yes

8.19 Question: What is the rate of flow through the seams?

Answer: The rate of groundwater flow in the coal seams is estimated to be about 30 to 40 gallons per minutes

8.20 Question: Are you monitoring in the seams and in the bedrock?

Answer: Yes (except for LMW-11, which is in the former southern interior near the lowest level of the former mine). This is where we are monitoring: At the Southern Portal there is a shallow well, a 250 ft well, and a 50-foot well at the mine. LMW-11 is 700 ft deep well and LMW-9 is between LMW-11 and the portal. It is shallow. At the Northern Portal, there is LMW-4 at 400 ft, LMW-2, which is a shallow well, and LMW-10 at 300 ft. LMW-1 is 150 ft deep located at the water table on the rock ridge between the mines.

8.21 Question: Are the groundwater flows representative of contaminant flow?

Answer: No. Contaminants don't move at the same rate as water. It is called retardation. That is why when we start detecting low levels we should see a slow increasing trend in contaminant concentrations.

8.22 Question: Do private wells get monitoring well reports?

Answer: Yes, they were sent out to the owners in the 90's.

8.23 Comment: No one has ever tested my well.

Answer: The private well sampling during the RI/FS stage in 1996 inventoried all the wells at the time and selected wells for sampling according to criteria that includes plausible hydraulic communication with the site with respect to the primary flow paths from the mine portals, and in bedrock in a direction orthogonal to the Roger seam. Other wells did not meet these criteria and so were not sampled.

8.24 Question: Does a lot of water move through fractures in the coal? Shouldn't there be a lot of water moving? How slow are organic particles moving?

Answer: Contaminant mobility varies. Organics would rather stick to soil particles, than mobilize in the water.

8.25 Question: There have been a lot of private wells put in since 1996. Some are closer to the well and deeper than the ones originally tested.

Answer: There has been no evidence in the 1996 private well sampling that contamination left the mine. Since then we have been monitoring the most likely pathways of the water leaving the mine and we haven't found any contamination in the water leaving the mine. Sampling took place before the 1996 round of sampling and nothing was found then either.

8.26 Comment: I bought property in this area—one of the ones that had sampling done in '96. I sold that property and bought another property and had it tested myself. If you are concerned about your water, just have it tested. It's pretty simple and not that expensive.

8.27 Question: The City of Kent disagrees with the geologic model that you displayed tonight, specifically the role that fractures play, how water is distributed, and movement of potential contaminants.

Answer: Noted. We are working with the City of Kent. We will be splitting the water from the deep well for sampling with the City of Kent. They are concerned with their water source.

8.28 Question: There are about 150 acres that could potentially become developed in the future. That will change the surface hydrology. Is your system going to be ready for build out conditions?

Answer: MTCA does not have authority over the future use of property. However, the comment on surface flow is not directly relevant to the proposal, nor is there any basis provided for such statements.

8.29 Question: Would the water you pump out of the well impact flow of Rock Creek? How will you protect the Chinook?

Answer: We will be pumping a relatively small amount and slow rate of water under the plan to use the north portal wells. This system is not hydraulically connected directly to Rock Creek. It is hard to answer the exact number for the flow rate out of the south portal.

8.30 Question: Where did you get the numbers to determine the 30 gallons per minutes pumping (gallons per minutes) rate?

Answer: This is from surface overland flow, drainage precipitation, water movement through bedrock, and mining records. 30-35 gallons per minutes will be a long-term average without a cap (low permeability soil cap over parts of the subsidence trench). With a cap, that number may go down to about 5 gallons per minutes.

8.31 Question: What are the potential effects on Cedar River with discharge out of the North Portal? What do you expect to see as contaminants?

Answer: We are concerned with Fish Habitat. We are probably looking at VOC contaminants and others. We take the groundwater monitoring results and compare them with the surface water standards to make sure they at a lower than any level of concern. So far there has been nothing detected at any level.

8 .32 Question: How long does it take to install the infrastructure that you are proposing?

Answer: Once the design is set it will take about 1 month to build.

8.33 Question: Why do you need to put the pipeline in now? If it only takes a month to do, why not wait until you detect something?

Answer: We are doing it now to prevent further delays. There is a whole process that we are in now, including public review, permits, etc. We want to hit the ground running and be prepared if we detect contamination.

8.34 Question: What is your long-term plan for this infrastructure? Will this be in place until the problem is solved?

Answer: Once the cleanup action is complete, we will monitor in perpetuity. When we say cleanup, we mean containment. The contamination on this site will not be removed, but rather contained. There will be a 5-year review and 10-year review. We will need the infrastructure and treatment facility as an integral part of the permanent remedy.

8.35 Question: Could we do the plan, design, and review for the infrastructure now, but not build it until it's necessary?

Answer: No, we think it's better to do now than later.

8.36 Comment: What if the PLPs go bankrupt? (made in response to question 8.35)

8.37 Question: Are there other ways to store and truck the water for 1 month as you build the infrastructure?

Answer: Yes, that is possible in the short term.

8.38 Question: Did you ever consider removing contaminants from the site and not just putting a cap on it?

Answer: In 1996, they conducted a Remedial Action/Feasibility Study (RI/FS) which looked at the alternatives for cleanup, including waste removal. We determined that there was no way we could safely remove the contaminants, and be sure that it's all out. The cap is all that will accomplish the cleanup safely and effectively.

8.39 Question: When do you expect the CAP (Cleanup Action Plan) to be available for review?

Answer: There have been several starts and stops since 2004. A draft CAP should be available soon. The public will be invited to comment on that when the CAP is up for review. The PLP wants to do the CAP as soon as possible.

Comment 9: King County

Key Concerns: Pipe Connection and Placement, King County Requirements

King County appreciates the opportunities we have had to meet with you and your staff on the proposed changes to the Agreed Order and the State Environmental Policy Act documents. Several King County staff also attended the public meeting conducted by the Department of Ecology on February 7, 2006 to listen to questions and comments from the community. I have reviewed the proposal with knowledgeable King County staff in our department of Development and Environmental Services (DDES), Natural Resources and Parks (DNFU), and Public Health (DPH). Our comments are as follows:

9.1 King County agrees in concept to allow the dry sewer pipe from the mine site to be placed in the ground, and left unconnected and unused, until monitoring determines that contaminants threaten public health and safety.

Ecology's Response:

Ecology and the PLPs will follow King County's recommendation to install the pipe in the ground and unconnected to the sewer line until monitoring determines there is a threat to public health and safety. This will be based on monitoring at the site and action levels based on monitoring data. The proposed pipeline is a dedicated pipeline for the discharge of treated groundwater, not a sewer line.

The PLPs will work with King County DDES, and the relevant parties including the Tahoma School District to work on other issues relevant to physical connection to the sewer system. This includes drafting an agreement to physically connect the pipeline when conditions warrant it.

9.2 The sewer pipe from the mine to the Tahoma School District's Jr. High School will be a tight line dedicated solely for the disposal of waters from the mine and only upon determination of a threat to public health and safety, as required by the King County Code.

Ecology's Response:

Ecology and the PLPs agree with this statement, as it was always the original intention to use the pipeline solely for the Contingent Groundwater Treatment System. The proposed pipeline is a dedicated pipeline for the discharge of treated groundwater, not a sewer line.

9.3 An amendment to the Soos Creek Sewer District Comprehensive Plan approved by the King County Council will be required prior to the connection from the mine site to the Tahoma School District tightline sewer line. This amendment will address the new tightline sewer to serve the mine site and the

proposed connection to the existing tight line sewer serving the school. Additionally, the Department of Ecology will presumably need to coordinate and obtain approval from Soos Creek and the School District to connect to their facilities.

Ecology's Response:

Ecology and the PLPs agree with this statement, but clarifies that the proposed pipeline is a dedicated pipeline for the discharge of treated groundwater, not a sewer line.

Under the conditions of the second amendment to the Agreed Order, the PLPs will work on the approval and consultation process with King County, with Ecology approval.

9.4 Based on comments raised at the February 7, 2006, public meeting, King County will further analyze placing the sewer pipe under the Summit-Landsburg Road rather than placing the pipe through the King County park land as currently proposed by the Department of' Ecology. We will work with you to develop a schedule to allow for this analysis. It is Ecology's expectation that these changes will be done in a timely fashion to prevent undue delay in implementing the infrastructure proposal.

Ecology's Response:

Ecology agrees with this statement. The proposed pipeline is a dedicated pipeline for the discharge of treated groundwater, not a sewer line.

9.5 Monitoring reports of test wells at the mine site must be routinely sent by either the Department of Ecology or the site trustee to the Environmental Health Division of' Public Health-Seattle and King County, with appropriate staff' as identified by the Division.

Ecology's Response

Ecology, under its oversight of the cleanup under MTCA, receives periodic monitoring reports of wells at the site from the PLPs. Ecology will consult with the PLPs on the request for routine distribution of all test well monitoring reports to appropriate staff of the Environmental Health Division of Public Health-Seattle and King County. This may be carried out by posting monitoring report content at Ecology's web site, or alerts with report submission if monitoring data are above cleanup levels at the site.

At present, the Agreed Order and its amendments do not specify such additional distributions, although these reports are available to the public or local agencies and readily available by request through Central Records (phone: 425-649-7190). Furthermore, Ecology will continue to communicate with the Environmental Health division and any other relevant agency if monitoring conditions change at this site.

9.6 The waste from the mine must be pre-treated to standards established by King County Wastewater Division's Industrial Pre-Treatment Program before it may be discharged into the wastewater system. The PLPs or the trustees are responsible for all fees associated with the permitting for such disposal and the ongoing service costs of sewer disposal.

Ecology's Response:

Ecology shares this position and will continue to make sure that the PLPs meet the requirements.

9.7 We assume that the other institutional controls associated with the cleanup plan will conform to the requirements of the Model Toxics Control Act, including periodic review by the Department of Ecology and consultation with King County as the local and use authority King County's technical review group, comprised of myself and the staff copied below, is ready to work with you and your staff in the coming months to address these issues as the project moves forward.

Ecology's Response:

Ecology shares this position and will continue to work toward ensuring these objectives.

Comment 10: Washington State Department of Fish and Wildlife

Key Concerns: Protection of Wildlife

10.1 WDFW trusts that Ecology will ensure that the water quality treatment facilities will intercept any toxic materials before they are discharged to the sanitary sewer system. Otherwise, that system would not be expected to adequately treat the water prior to its reaching Puget Sound, where it could enter the natural food chain and affect priority species, including Chinook salmon and Orcas, which are listed under the Endangered Species Act.

Ecology's Response:

Ecology shares this position. We will continue to work toward achieving these objectives.

10.2 Also, WDFW has identified an area that is frequented by Roosevelt elk at the trench site. That area's value as elk habitat may be affected if it is capped.

Ecology's Response:

The purpose of this proposal and comment period is for infrastructure at the north portal and not for capping in the trench area. The preferred alternative in the draft Cleanup Action Plan (dCAP) involves capping portions of the north subsidence trench where wastes were disposed of, and landscaping the cap to divert surface flow away from the trench. The dCAP will be finalized in the future and another public comment period is expected for the final Cleanup Action Plan, which will cover any capping activities at the trench. Therefore, the comment is more suited for the draft Cleanup Action Plan.

If capping is implemented, it is not expected to have adverse effects because through capping, wastes will be isolated from outside contact and new land surface will be created rather than the present deep sinkholes/trench areas. The areas where we plan to cap are relatively inaccessible due to the steep slopes and abrupt drop-off. These particular subsided areas are expected to contain hazardous wastes based on records of disposal at the north trench. For these reasons, the areas of concern for cleanup are not expected to be suitable habitat for wildlife and should not be left exposed.

-END OF PUBLIC COMMENTS RECEIVED AND RESPONSES-

Contact Information and Repositories

If you have questions about the site or this summary, please feel free to contact:

Jerome Cruz, Site Manager
WA Department of Ecology
3190 160th Avenue SE
Bellevue, WA 98008
Phone: (425) 649-7094
Email: jcru461@ecy.wa.gov

Justine Asohmbom
Public Involvement Coordinator
Phone: (425) 649-7135
Email: juas461@ecy.wa.gov

Information Repositories

You can review information about the site at the following locations:

- Maple Valley Library, 21844 SE 248th Street Maple Valley 98038 (425) 432-4620
- WA Department of Ecology Central Records, 3190 160th Avenue SE, Bellevue (425) 649-7190(call for an appointment)
- Ecology's web site: http://www.ecy.wa.gov/programs/tcp/sites/landsburg_mine/landsburg_mine_hp.html

Appendix A: Glossary

Agreed Order: A legal agreement between Ecology and a potentially liable person to conduct work toward a cleanup.

Aquifer: A water-bearing layer of rock or sediment that is capable of yielding useable amounts of water. Drinking water and irrigation wells draw water from underlying aquifers.

Cleanup: Actions taken to deal with a release, or threatened release of hazardous substances that could affect public health and/or the environment. The term "cleanup" is often used broadly to describe various response actions or phases of remedial responses such as the remedial investigation/feasibility study.

Cleanup Action Plan (CAP): A document that explains which cleanup alternative(s) will be used at sites for the cleanup. The cleanup action plan is based on information and technical analysis generated during the remedial investigation/feasibility study and consideration of public comments and community concerns.

Comment Period: A time during which the public can review and comment on various documents and proposed actions. For example, a comment period may be provided to allow community members to review and comment on proposed cleanup action alternatives and proposed plans.

Contaminant: Any hazardous substance that does not occur naturally or occurs at greater than natural background levels and could have negative impacts on air, water, or soil.

Feasibility Study: This study is designed to develop and evaluate cleanup options for a given site (also see Remedial Investigation/Feasibility Study).

Groundwater: Water found beneath the earth's surface that fills pores between materials such as sand, soil, or gravel or that fills cracks in bedrock. In some aquifers, groundwater occurs in sufficient quantities that it can be used for drinking water, irrigation and other purposes.

Information Repository: A file containing current information, technical reports, and reference documents available for public review. The information repository is usually located in a public building that is convenient for local residents such as a public school, city hall, or library.

Model Toxics Control Act (MTCA): Legislation passed by citizens of the State of Washington through an initiative in 1988. Its purpose is to identify, investigate, and clean up facilities where hazardous substances have been released. It defines the role of Ecology and encourages public involvement in the decision making process. MTCA regulations became effective March 1, 1989 and are administered by the Washington State Department of Ecology.

Potentially Liable Person (PLP): Any individual(s) or company(s) potentially responsible for, or contributing to, the contamination problems at a site. Whenever

possible, Ecology requires these PLPs, through administrative and legal actions, to clean up sites.

Public Notice: A series of activities that provide adequate notice mailed to all persons who have made a timely request of Ecology and to persons residing in the potentially affected vicinity of the proposed action; mailed to appropriate news media; published in the local (city and county) newspaper of largest circulation; and the opportunity for the interested persons to comment.

Public Participation Plan: A plan prepared to encourage coordinated and effective public involvement designed to the public's needs at a particular site.

Remedial Investigation/Feasibility Study: Two distinct but related studies. They are usually performed at the same time, and together referred to as the "RI/FS." They are intended to:

-Gather the data necessary to determine the type and extent of contamination;
-Establish criteria for cleaning up the site;
-Identify and screen cleanup alternatives for remedial action; and
-Analyze in detail the technology and costs of the alternatives.

Responsiveness Summary: A summary of oral and/or written public comments received by Ecology during a comment period on key documents, and Ecology's responses to those comments. The responsiveness summary is especially valuable during the Cleanup Action Plan phase at a site when it highlights community concerns.

Risk: The chance that a hazardous substance, when released into the environment, will cause an adverse effect in the exposed humans or living organisms.

Site: Any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, vessel, or aircraft; or any site or area where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located.

Toxicity: The degree to which a substance at a particular concentration is capable of causing harm to living organisms, including people, plants and animals.

Appendix B: Copies of Written Comments

Please note: Appendix B will not be available on the website.