



Oregon

John A. Kitzhaber, MD, Governor

RECEIVED

NOV 19 2014

Deschutes County CDD

Department of Environmental Quality
Eastern Region Bend Office
475 NE Bellevue Drive, Suite 110
Bend, OR 97701
(541) 388-6146
FAX (541) 388-8283
TTY 711

November 14, 2014

Greg Daniels
The Daniels Group, LLC
1111 Main Street, Suite 700
Vancouver, WA 98660

Re: DEQ/OHA Comments on Remedial Investigation Work Plan, Lower Bridge Site (Deschutes Valley Sanitation/Oremite Mine), ECSI #4950, Terrebonne, Oregon

The Oregon Department of Environmental Quality (DEQ) and the Oregon Health Authority (OHA) has reviewed the Remedial Investigation Work Plan for the East Parcel of the Lower Bridge Site in Terrebonne, Oregon. DEQ's and OHA's comments are presented below.

OHA specific comments include:

"Groundwater sampling -- Groundwater sampling work plans described in Task 3 of the Work Plan are acceptable to the Oregon Health Authority (OHA) and meet the requirements laid out in OHA's February 2013 Scope of work document (attached section IID). OHA's only caution is to make explicit the intention to collect the samples during a different season (i.e., different groundwater flow conditions) than those present during the 2008 Newton Consulting Group groundwater sampling.

Dust suppression -- Because nuisance dust has historically been such a problematic issue for this site, the Work Plan needs to explicitly and thoroughly address dust suppression in planning any activity (including site assessment and sampling) that could potentially disturb soil on any portion of the site. OHA's February 2013 Scope of Work document (attached) included a requirement for a dust suppression plan and a method to evaluate the effectiveness of dust suppression (sections IIB and IIC). Although no work is currently planned on the larger Western 410 acres of the site, that portion of the site has been a significant source of nuisances dust to the entire area and would likely affect the Eastern parcel currently under consideration for development. Therefore, OHA requests that the Work Plan include a method to verify that nuisance dust blowing over from the western 410 acre parcel is not currently affecting or will not affect the eastern 160 acres.

OHA also requests that the Work Plan include a dust suppression plan for any demolition, excavation, drilling, grading, movement of materials, or otherwise disturbing the soil on the Eastern 160-acre parcel related to site assessment work. Deschutes County has ordinances for construction-dust control, which the county applies to road and utility projects and which the applicant may consider adopting or adapting for any soil-disturbing activities on the Eastern Parcel including those related to site assessment:

17.48.400. Construction Dust Control.

A. The work shall consist of the furnishing and applying of water for the alleviation or prevention of dust nuisance in accordance with section 00280 of the current ODOT/APWA Oregon Standard Specifications for Construction.

B. Responsibility for dust abatement will be the contractor's.

- C. Watering will be done when ordered by the Road Department Director.
- D. The contractor shall supply the applicant's own water source.'

Project Management and Data Reporting – The project management and data reporting elements described in the Work Plan meet OHA's requirements."

DEQ specific comments include:

Section 3

It may be helpful to reference one other name associated with the site; Deschutes Valley Sanitation, ECSI #35, a 1987 EPA PA/SI recommended no further action (NFA) for the site and DEQ issued an NFA in 1988. The NFA was based on continued industrial use of the property.

Section 5/6

It would be helpful to add a table of soil, groundwater and QA/QC samples.

Section 5 - Task 2

DEQ recommends 3 or 4 soil samples be analyzed for silica content.

Section 5 – Task 2

TPH-Dx is specified in the work plan, but not follow-up VOC sampling, which may be warranted to determine underlying constituents.

Section 5 – Task 6

I would state that the expectation is that the any piles or waste will be solid waste not hazardous waste and would be removed and disposed of at a lined Subtitle D landfill. I would further state that all solid waste piles, irrespective of sampling will be managed and disposed of accordingly. This may include the asphalt piles, etc., which could be beneficially reused on-site or elsewhere.

Section 2.0/Section 5, Task 7

DEQ expects that the RI Reporting will include and summarize past investigations, conditions, zoning, beneficial uses, receptor pathways, etc., as they relate to DEQ's evaluation and determination of a residential NFA for this parcel.

Fugitive Dust

Consistent with OHA's concerns, the Work Plan needs to outline how the contractor will take reasonable precautions to control fugitive emissions (dust). See the rules outlined below from Division 208.

DIVISION 208, VISIBLE EMISSIONS AND NUISANCE REQUIREMENTS, OAR 340-208-0010

Definitions

The definitions in OAR 340-200-0020 and this rule apply to this division. If the same term is defined in this rule and OAR 340-200-0020, the definition in this rule applies to this division.

(1) "Abate" means to eliminate the nuisance or suspected nuisance by reducing or managing the emissions using reasonably available practices. The degree of abatement will depend on an evaluation of all of the circumstances of each case and does not necessarily mean completely eliminating the emissions.

(2) "Air Contaminant" means a dust, fume, gas, mist, odor, smoke, pollen, vapor, soot, carbon, acid or particulate matter, or any combination thereof.

(3) "Emission" means a release into the outdoor atmosphere of air contaminants.

(4) "Fuel Burning Equipment" means a boiler or process heater that burns a solid, liquid, or gaseous fuel, the principal purpose of which is to produce heat or power by indirect heat transfer.

(5) "Fugitive Emissions" means emissions of any air contaminant that escape to the atmosphere from any point or area not identifiable as a stack, vent, duct, or equivalent opening.

(6) "New source" means, for purposes of OAR 340-208-0110, any air contaminant source installed, constructed, or modified after June 1, 1970.

(7) "Nuisance" means a substantial and unreasonable interference with another's use and enjoyment of real property, or the substantial and unreasonable invasion of a right common to members of the general public.

Fugitive Emission Requirements, OAR 340-208-0200

Applicability

OAR 340-208-0200 through 340-208-0210 apply:

(1) Within Special Control Areas, designated in OAR 340-204-0070; and

(2) In other areas when the department determines a nuisance exists and should be controlled, and the control measures are practicable.

[NOTE: This rule is included in the State of Oregon Clean Air Act Implementation Plan as adopted by the Environmental Quality Commission under OAR 340-200-0040.]

Stat. Auth.: ORS 468 & ORS 468A

Stats. Implemented: ORS 468A.025

Hist.: DEQ 37, f. 2-15-72, ef. 3-1-72; DEQ 4-1993, f. & cert. ef. 3-10-93; DEQ 14-1999, f. & cert. ef. 10-14-99, Renumbered from 340-021-0055; DEQ 2-2001, f. & cert. ef. 2-5-01

340-208-0210

Requirements

(1) When fugitive emissions escape from a building or equipment in such a manner and amount as to create a nuisance or to violate any regulation, the department may order the owner or operator to abate the nuisance or to bring the facility into compliance. In addition to other means of obtaining compliance the department may order that the building or equipment in which processing, handling and storage are done be tightly closed and ventilated in such a way that air contaminants are controlled or removed before being emitted to the open air.

(2) No person may cause or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired or demolished; or any equipment to be operated, without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions may include, but not be limited to the following:

(a) Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land;

(b) Application of asphalt, oil, water, or other suitable chemicals on unpaved roads, materials stockpiles, and other surfaces which can create airborne dusts;

(c) Full or partial enclosure of materials stockpiles in cases where application of oil, water, or chemicals are not sufficient to prevent particulate matter from becoming airborne;

(d) Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;

(e) Adequate containment during sandblasting or other similar operations;

(f) Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne;

(g) The prompt removal from paved streets of earth or other material that does or may become airborne.

If you have any questions or need clarification of any of the issues addressed in this letter, please do not hesitate to call or email me at (541) 633-2012 or anderson.david@deq.state.or.us or David Farrer at 971-673-0971 or via email at david.g.farrer@state.or.us.

Sincerely,

A handwritten signature in black ink, appearing to read 'David Anderson', with a long horizontal flourish extending to the right.

David Anderson
Eastern Region Cleanup Program Manager

Attachments (1)

cc: Site File
David Farrer, Oregon Health Authority
William Groves, Deschutes County
Scott Wallace, The Wallace Group
Frank Messina, DEQ
Susan Christensen, DEQ



Memorandum

To: Tia Lewis, Attorney Schwabe, Williamson and Wyatt 549 SW Mill View Way Suite 101 Bend, OR 97702	Date: May 8, 2008 From: Dick Nichols, P.E. Project Name: Lower Bridge
Subject: Response to Paul Dewey Comments/Submittals at April 22, 2008 hearing.	Project No.: 1047-101

Background

At the April 22, 2008, hearing concerning a proposed zone change to allow rural residential development at Lower Bridge (Project), Paul Dewey provided testimony and written submittals concerning impact of well pumping associated with the Project on the Deschutes River. Specifically, he was concerned about the impact caused by a well constructed to provide water to an irrigation pivot installed to abate a serious dust problem at the former mine site. In addition, he expressed concern about the impact caused from wells that could ultimately be used to provide domestic water to the Project. As a basis for his concern, he provided a copy of a hydrogeologic analysis entitled: *A Case Study: Thornburgh Resort Water Resources Impact Evaluation, Upper Deschutes Basin, Oregon* produced by Mark Yinger Associates and Northwest Land & Water, Inc, February 2008, hereinafter referred to as the Yinger report. Responses to these concerns are provided below.

Summary of Yinger Report Relative to Deschutes River Impacts

The Yinger report analyzed the impact of groundwater pumping at the proposed Thornburgh resort located south of Cline Butte. In brief, the Yinger report concluded that ground water pumping at Thornburgh would reduce ground water discharge in the Deschutes River and Whychus Creek. This would reduce flow in these streams and would increase stream temperatures because the ground water discharge to these streams is relatively cool water compared to the temperatures of the streams up-stream of the ground water discharge areas.

Response to Concern about Impact of Irrigation Well

The irrigation well has been recently constructed by the mine's owner as part of a dust abatement program that has been ordered by the Oregon Department of Environmental Quality. The dust abatement program must be implemented regardless of the proposed zone change and, therefore, is irrelevant to the consideration of the zone change.

In any case, the Oregon Water Resources Department issued a Final Order on April 24, 2008 for Limited License Application LL-1114 to use ground water to abate dust and to establish vegetation. The license was issued to the mine owners: Franklin S. Nolan Revocable Trust, Robert L. Reimenschneider, and Norman L. Wiegand. To offset impacts to the Deschutes River, the Final Order requires that groundwater pumping from the irrigation well be mitigated with 252 acre feet annually in the Middle Deschutes River.

Response to Concern about Impact of Groundwater Pumping for Domestic Water for the Project

This matter was addressed in the applicant's submittal which included an attachment produced by Newton Consultants, Inc., entitled: *WATER SUPPLY DEVELOPMENT FEASIBILITY REPORT, Proposed Lower Bridge Development Project, Deschutes County, Oregon*. Beginning on page 10 of this report, the impact is addressed as follows:

"The maximum peak daily water need for the project is 0.49ⁱ cubic feet per second. This is worst case and is unlikely to occur. The project site is in a zone of ground water discharge to the Deschutes River and some potential pumping effect on flow could occur. Assuming as a worst case that well pumping on the site has an immediate and direct one-to-one effect in quantity and time on river flow (which is a conservative assumption and not likely to occur), pumping of 0.49ⁱ cfs during the peak water need period could reduce river flows by a maximum of 0.49ⁱ cfs immediately adjacent to the site. Current minimum river flows immediately adjacent to the site during low flow are estimated to be approximately 72 cfs (estimated flow based upon limited flow records at Lower Bridge and discussions with Kyle Gorman, Bend Regional Manager for WRD) near the south site boundary. Pumping at the maximum rate could reduce river flows by about 0.68ⁱⁱ percent in this direct one-to-one impact scenario. This amount is insignificant and would not register on flow gages currently used to measure flow on the river.

"Considering there are two ground water zones reflected in well log data and other information discussed above, it is possible that the potential impact of pumping Project wells could be dispersed over longer reaches of the river through well construction provisions. Wells could be constructed to seal off the entire upper ground water zone and focus water withdrawals from the lower zone. This approach may help distribute pumping effects through a larger area of the lower zone, and into reaches of the river further downstream from the site where the river flow is greater. If the impact to the river were shifted on river mile further downstream, the impact of pumping the maximum rate could be a reduction of approximately 0.32ⁱⁱⁱ percent of the river flow near River Mile 129 (river flow is approximately 155 cfs), assuming an immediate and direct one-to-one response to pumping which represents a worst-case scenario that is not expected to occur. Again, a reduction of 0.32 percent would not register on river flow gages at this flow rate. The concept of deepened well seals to avoid ground water withdrawals directly from the upper zone and focusing withdrawals on the lower zone is a reasonable approach to

supply water for the project while recognizing needs to help mitigate potential impacts on river flows.

"Relative to the potential impact on river temperature, from information available on the Upper Deschutes Watershed Council website, the highest 7 day average maximum temperature in the Deschutes River at Steelhead Falls (approximately 5 river miles downstream from the Project) was 18.3° C for the period July 1 through September 18, 2007. This period of the year tends to show the maximum temperature increases in water bodies due to solar heating and other climatic factors.

"According to Figure 17 of the USGS report on the Ground-Water Hydrology of the Upper Deschutes Basin, Oregon (Report 00-4162), the increase in Deschutes River flow at Steelhead Falls due to ground water discharge in May 1994 and May 1995 is about 166 cfs. The lowest flow in the Deschutes River at Lower Bridge according to the period of record (October, 1994- September, 1997) is 32 cubic feet per second (cfs). According to Kyle Gorman, Regional Manager for the Central Region of the Oregon Water Resources Department, due to revised river management, the low flow in the Deschutes River below Bend has increased by 40 cfs or more. So, based upon this, the likely low flow in the Deschutes River at Steelhead Falls is about 238 cfs (166+32+40).

"There is no information about the temperature of ground water discharge at Steelhead Falls. There is information, however, from Alder Springs (approximately 6 miles to the north of the Project) that is within a mile of the confluence of Whychus Creek and the Deschutes River. The average temperature of Alder Springs water is 11°C. In addition, groundwater temperature is occasionally recorded on well logs and a review of this information indicates that 11°C is a reasonable value for ground water temperature in this area.

"The projected change in temperature can be estimated by calculating the current thermal mass of the river flow at Steelhead Falls and removing or subtracting the thermal mass of the projected ground water recharge. Using this thermal mass balance analysis and the above information, if ground water discharge flow to the Deschutes River is reduced by a maximum daily flow from the Project of 0.49ⁱ cfs (as a result of the worst case scenario presented in the preceding paragraphs) and the temperature of ground water discharge is 11° C, the average increase in river temperature at Steelhead Falls would be expected to be no more than 0.015^{ivo} C.

"Thermistors used by DEQ only record data to the nearest 0.1 degree Celsius. A change of 0.015° C would be insignificant and would not be detected or recorded by DEQ's thermistors.

Summary

In summary, water will be pumped from the recently installed irrigation well to abate the dust problem regardless of the outcome of the zone change. Its impact on Deschutes River flow will be mitigated pursuant to the requirements of the Oregon Water Resources Department. The domestic water use of the Project will not have a measurable impact on the Deschutes River as indirectly implied by the Yinger report that was submitted by Mr. Dewey.

ⁱ In the copy of the report submitted on April 22, 2008, this flow figure was reported as 0.35 cfs. It should have been 0.49 cfs.

ⁱⁱ In the copy of the report submitted on April 22, 2008, this percentage value was reported as 0.49 %. It should have been 0.68%

ⁱⁱⁱ In the copy of the report submitted on April 22, 2008, this percentage value was reported as 0.23 %. It should have been 0.32%

^{iv} This increase in temperature is different from the copy of the report submitted on April 22, 2008. Based upon the change in maximum domestic flow from 0.35 cfs to 0.49 cfs, the increase in stream temperature is slightly higher from the 0.01°C value in the report that was submitted on April 22, 2008.