No Laporte Gravel Corp's Objections to Loveland Ready Mix's Section 112 Permit Application

Knox Pit Application

Laporte, Colorado

No Laporte Gravel Corp's Comments

- No Laporte Gravel Corp (NLGC) has submitted the following comment letters with regard to Loveland Ready Mix's (LRM) Knox Pit Section 112 application:
- November 8, 2017 comment letter;
- February 21, 2018 Adequacy Review comment letter; and,
- March 1, 2018 Adequacy Review #3 comment letter.
- March 8, 2018 comment letter.

All comments not addressed here are reserved

- This hearing presentation will not address all of the comments submitted in the 4 comment letters and attachments.
- However, NLG does not waive any comment submitted and all comments in these comment letters and in our Pre-Hearing Conference Statement are reserved.

LRM Bears the Burden of Proof

- As the applicant, LRM bears the burden of proof on its application. Regulation 2.8.1(1).
- The Board may deny the application if "[t]he application is incomplete" C.R.S. 34-32.5-115(4)(a).
- The Board may deny the application if "[a]ny part of the proposed mining operation, the reclamation program, or the proposed future use is contrary to the laws or regulations…" C.R.S. 34-32.5-115(4)(c).
- The Board may deny the application if the reclamation plan does not conform to the requirements of Section 34-32.5-116. C.R.S. 34-32.5-115(4)(g).

Section 116 Reclamation Plan Requirements

- Under Section 116, a reclamation plan shall:
- "be appropriate to the type of reclamation necessary to achieve the proposed postmining land use." C.R.S. 34-32.5-116(2)
- "[g]rading shall be carried on so as to create a final topography appropriate to the final post-extraction land use…" C.R.S. 34-32.5-116(4)(a) and Regulation 3.1.5(1).
- "no unauthorized release of pollutants to ground water shall occur from any materials mined, handled, or disposed of within the permit area." C.R.S. 34-32.5-116(4)(d) and Regulation 3.1.5(11) and 3.1.7.

Section 116 Reclamation Plan Requirements (continued)

- “[s]pecies chosen for revegetation shall be compatible for the proposed post-extraction land use” C.R.S. 34-32.5-116(4)(f).
- “[d]isturbance to the prevailing hydrologic balance of the affected land and the surrounding area and to the quality and quantity of the water in surface and groundwater systems, both during and after the mining operation and during reclamation, shall be minimized.” C.R.S. 34-32.5-116(4)(h) and Regulation 3.1.6(1).
- [t]he affected land is not being restored to slopes commensurate with the proposed land use that shall not be too steep to be traversed by livestock.” C.R.S. 34-32.5-116(4)(n) and Regulation 3.1.5(7) and 3.1.10(3).
- “All aspects of the mining and reclamation plan shall take into account the safety and protection of wildlife…” Regulation 3.1.8 (1)

LRM's Section 112 application should be DENIED Because:

- "[t]he application is incomplete" C.R.S. 34-32.5-115(4)(a).
- "the application "is contrary to the laws or regulations…" C.R.S. 34-32.5-115(4)(c).
- The mining operation will adversely affect the stability of "structures located within two hundred feet of the affected land…" C.R.S. 34-32.5-115(4)(e).
- The proposed reclamation plan does not conform to the requirements of Section 34-32.5-116.

LRM's Section 112 application should be DENIED Because (continued):

- The reclamation plan is not "appropriate to the type of reclamation necessary to achieve the proposed postmining land use." C.R.S. 34-32.5-116(2)
- The grading does "create a final topography appropriate to the final post-extraction land use…" C.R.S. 34-32.5-116(4)(a).
- There will be an unauthorized release of pollutants to ground water from any materials mined, handled, or disposed of within the permit area. C.R.S. 34-32.5-116(4)(d).

LRM's Section 112 application should be DENIED Because (continued):

- The species chosen for re-vegetation is not compatible for the proposed post-extraction land use" C.R.S. 34-32.5-116(4)(f).
- The disturbance to the prevailing hydrologic balance of the affected land and the surrounding area and to the quality and quantity of the water in surface and groundwater systems, both during and after the mining operation and during reclamation, is not minimized. C.R.S. 34-32.5-116(4)(h).
- The affected land is too steep to be traversed by livestock. C.R.S. 34-32.5-116(4)(n).
- The mining plan does not protect wildlife. Regulation 3.1.8 (1).

Order of NLGC Witnesses

- Robert Havis, PhD, PE, Expert witness on hydrology, geochemistry, reclamation.
- Patty McElwaine, M.A., Well Water Survey - 38 Year Resident of Laporte
- Quinn Robinson, M.S. Wildlife Science. Expert witness on wildlife issues.
- [others? Who and what issues]

Summary of Testimony, Robert Havis, PhD, P.E.

- The mining operation will adversely affect the stability of any significant, valuable, and permanent manmade structures located within two hundred feet of the affected land. C.R.S. 34-32.5-115(4)(e) and Regulation 6.4.19.
- The disturbance to the prevailing hydrologic balance in surface and groundwater systems are not minimized. C.R.S. 34-32.5-116(4)(h) and Regulation 3.1.6(1).
- An unauthorized release of pollutants to ground water shall/will occur from materials mined, handled, or disposed of within the permit area. C.R.S. 34-32.5-116(4)(d) and Regulation 3.1.5(11) and 3.1.7.
- The affected land is being restored to slopes that are too steep to be traversed by livestock. C.R.S. 34-32.5-116(4)(n) and Regulation 3.1.5(7) and 3.1.10(3).
- The grading is not appropriate to the final post-extraction land use. C.R.S. 34-32.5-116(4)(a) and Regulation 3.1.5(1).
- The species chosen for revegetation are not compatible for the proposed post-extraction land use. C.R.S. 34-32.5-116(4)(f).

Robert Havis Testimony

Groundwater Mounding

- The second LRM ground water study predicts about 2-3 feet of ground water mounding under structures within 200 feet of the property boundary.
- The depth to ground water, March 8th, is, about 3 feet in the vicinity of these structures.
- Larimer County requires that building footers extend at least 30 inches below ground surface so ground water is only 6 inches from the bottom of the footers. The addition of 2 feet of ground water mounding will surely inundate building footers as well as flooding crawl spaces.
- The effect of soil saturation around building foundations is the reduction of soil bearing capacity. This can be shown in the first term of the Terzachi-Meyerhof equation, Saturation around foundations will affect building stability potentially causing differential settlement and/or lateral movement. Higher saturation levels above the foundation bottom causes greater reduction in soil bearing capacity.

Robert Havis Testimony

Groundwater Mounding (continued)

- Flooding of crawl spaces will occur, leading to **mold and fungus growth, deterioration of utilities**, and other damage.
- High ground water in neighborhoods causes infiltration into the sewer system which is largely composed of older clay sewer pipes, risking **sewer backup in homes**.
- High ground water risks damage and **failure of older septic systems**, floating of septic tanks, and sewer backups into homes. LRM has failed to study impacts to sewer systems and potential contamination from mounding groundwater.
- LRM has failed to meet its burden of proving that the hydrologic balance in surface and groundwater systems have been minimized. C.R.S. 34-32.5-116(4)(h) and Regulation 3.1.6(1).

Robert Havis Testimony

Permanent Man-Made Structures

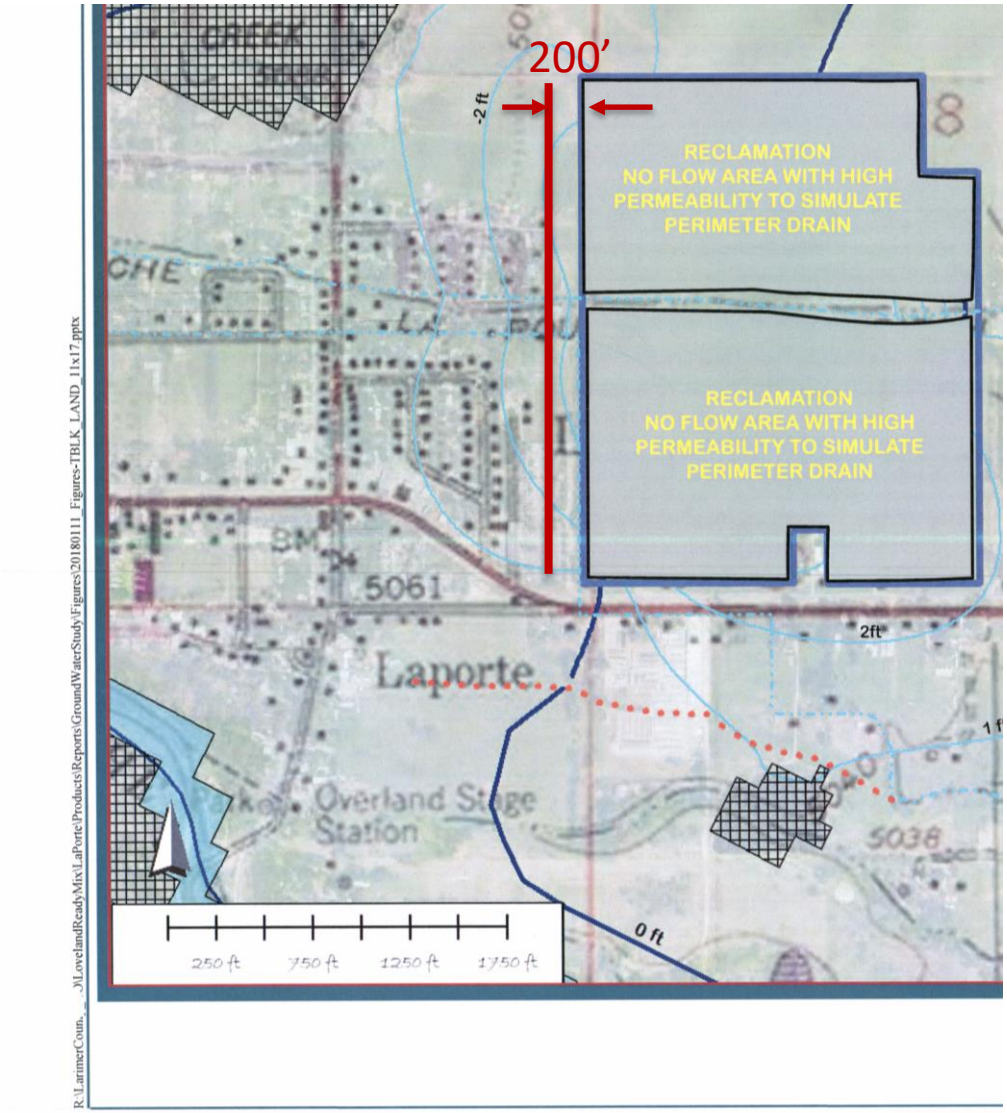
- LRM has not met the requirements of C.R.S. 34-32.5-115(4)(e) and Regulation 6.4.19.
- These provisions require either a signed structure agreement or an engineering study showing damage will not occur to structures within 200’ of the mine site.
- The stability of 2 commercial structures and at least 3 private residential structures are threatened by ground water mounding within 200’ of the mine site and they have NOT signed a structure agreement and LRM has NOT produced the required engineering study.
- LRM has not met its burden of proving it has complied with C.R.S. 34-32.5-115(4)(e) and Regulation 6.4.19.

Threatened Structures < 200’

Larimer County IT, GIS (accessed March 2018)

Ground Water Mound

LRM Ground Water Study, Fig. 21, January 12, 2018



Kintzley Plaza

Kintzley Apartments

3104 Little Cache Lane

3110 Little Cache Lane

The mining operation will adversely affect the stability of any significant, valuable, and permanent manmade structures located within two hundred feet of the affected land. C.R.S. 34-32.5-115(4)(e) and Regulation 6.4.19.

The Application is Incomplete and Should be Denied

Robert Havis Testimony

Groundwater Hydrology

- Drawdown of neighboring water wells is likely.
- In Adequacy Review #3, Comment 37a, the Division stated "*Section 9.1 states LRM may mitigate adverse effects to existing wells by supplementing water supplies or deepening wells. Due to the approximately 1,900 feet of Pierre Shale bedrock underlying the area at a depth of 12-30 feet below ground surface (bgs),* ***deepening the existing wells is unlikely to be a successful mitigation solution****.*
- LRM Response - Note that deepening of neighbors' wells is a viable solution as most wells are shallow (less than 10 feet deep with approximately 5 feet of saturated thickness). Well drawdown required in this aquifer to achieve 20 gpm is less than 1 foot.
- LRM trigger of 5 feet would potentially leave wells dry and unusable well before remediation. May be impossible to remediate any wells having bedrock near 12 feet bgs.
- LRM's has not met its burden of proof to show that disturbance to the prevailing hydrology and to the quantity of the water in groundwater systems has been minimized. C.R.S. 34-32.5-116(4)(h) and Regulation 3.1.6(1).

Resident Water Well Data
2nd Groundwater Study, page 104/165

ID	Owner	Location	Water_Depth (ft)	Stickup (in)	Total_Depth (ft)	Northing	Easting	Elevation (ft)	Water Elevation	Field1
1	M. MORGAN	2532 W County Rd 54G	4.32	0		4497560	489522	5047.9	5043.6	
2	M. MORGAN	2532 W County Rd 54G	5.33	30	-	4497807	489527	5046.6	5043.8	
3	D. Hildred	2403 Brookhill Rd	3.35	0	-	4496687	489433	5038.4	5035.0	
4	R. WALLICK	3000 N Overland Trl	7.62	16.5	-	4497719	488378	5066.9	5060.7	
5	R. WALLICK	2912 N Overland Trl	5.65	0	-	4497626	488472	5064.6	5059.0	
6	T. WATERS	3200 Tharp DR	5.94	13.5	-	4497606	489194	5063.0	5058.2	
7	H. STILL	2801 W County Rd 54G	5.4	0	-	4497174	489193	5049.5	5044.1	
8	J. WEST	2812 W County Rd 54G	5.55	2	-	4497263	489125	5051.8	5046.5	
9	C. CHERRY	2816 W County Rd 54G	4.65	8.25	-	4497277	489086	5052.2	5048.2	
10	J. MAXWELL	2816 Gardner Pl	4.45	0	-	4497503	488485	5062.0	5057.6	
11	D. CHAVEZ	2919 Farview Dr	4.69	1.8	7.1	4497565	490134	5037.4	5032.9	
12	J. SINCAVAGE	2813 Farview Dr	3.33	7	8.45	4497426	490121	5037.1	5034.3	
13	P. BROBST	3010 N OVERLAND TRL	5.55	0	7.75	4497752	488388	5067.3	5061.7	
14	E. STONER	2301 Eddy Ln	4.02	25.2	-	4496806	488733	5049.5	-	
15	E. STONER	2301 Eddy Ln	7.82	17	-	4497277	489086	5047.9	5041.5	
16	E. STONER	2301 Eddy Ln	6.6	21	-	4496766	488948	5044.6	5039.8	
17	E. STONER	2301 Eddy Ln	5.81	24	-	4496704	489037	5044.9	5038.8	
18	M. AMEY	2903 Farview Dr	4.09	9	-	4497523	490140	5037.1	5033.7	
19	M. AMEY	2903 Farview Dr	3.42	3	6.04	4497505	490146	5036.4	5033.2	
20	D.BROWN	2400 W COUNTY ROAD 54G	4.35	10	15.7	4497327	489819	5042.0	5038.5	
21	D.BROWN	2400 W COUNTY ROAD 54G	4.3	0	7.2	4497328	489826	5041.7	5037.4	
22	G. KOMER	2817 W COUNTY ROAD 54G	-	-	-	4496843	489119	5046.6	-	LAKE
23	L. SUTHERLAND	2725 FARVIEW DR	3.9	1	16.1	4497330	490104	5037.1	5033.3	
24	E. WATT	2626 N Overland Trl	4.66	-	-	4497104	488413	5059.7	5055.1	
25	S. GOMEZ	3205 WILSON CT	3.4	-	-	4497626	488536	5064.0	5060.0	

5/7 Wells <= 5‘ Saturated Depth

Water Depth (ft)	Stick Up (in)	Tot. Depth (ft)	Saturated Depth (ft)
2.56	1.8	7.1	4.54
3.33	7	8.45	5.12
5.55	0	7.75	2.2
3.42	3	6.04	2.62
4.35	10	15.7	11.35
4.3	0	7.2	2.9
3.9	1	16.1	12.2

LRM’s has not met its burden of proof to show that disturbance to the prevailing hydrology and to the quantity of the water in groundwater systems has been minimized. C.R.S. 34-32.5-116(4)(h) and Regulation 3.1.6(1).

Impact of Drawdown on Vegetation

Comment 38

Please explain how LRM will prevent groundwater drawdown from impacting adjacent vegetation.

Response 38

LRM is unaware of any vegetation that requires protection as there are no jurisdictional wetlands in the area. The groundwater report shows the anticipated extent of drawdown during each phase of mining. The subsequent figures show the current depth to groundwater (average of 5 feet) and the maximum depth from anticipated drawdown (10 feet). The aerial photograph shows that there are currently no vegetation species in the area of maximum drawdown that could survive on groundwater alone given the current depth-to-water. Ergo, they must be currently irrigated. LRM does not plan on engaging in activities that will inhibit adjacent lands from continued irrigation. As always, LRM is open to discussing potential impacts with its neighbors and providing mitigation as necessary.

NLGC Comment on Response to 38

The max drawdown (10’) occurs mostly on LRM land and on the Hawkeye land. The vegetation survey is irrelevant to LRM’s neighbors where significant drawdown, 5 feet and more, occurs on neighboring properties. There are plenty of life forms on neighboring properties that survive year-round on ground water resources alone. As well as stressing or killing plants by lowering ground water resources LRM dewatering dries up irrigation wells that could be used to augment ground water resources. The LRM trigger to fix wells experiencing drawdown of 5 feet or more leaves many neighbors with dry wells and potentially dead vegetation on their properties. The proposed ground water drawdown on residents property is unacceptable.

Patty McElwaine, M.A.

Well Water Survey

The old saying that you "never miss the water until the well runs dry" remains true;

DUG WELLS

Historically, dug wells were excavated by hand shovel to below the water table until incoming water exceeded the digger's bailing rate. The well was lined with stones, brick, tile, or other material to prevent collapse, and was covered with a cap of wood, stone, or concrete. Dug wells are able to obtain water from less-permeable materials such as very fine sand, silt, or clay. Some disadvantages of this type of well are that they are shallow and lack continuous casing, making them subject to contamination from nearby surface sources, and they go dry during periods of drought if the water table drops below the well bottom.

Patty McElwaine, M.A.

Well Water Survey (continued)

SHALLOW WELLS

The most common "dry well" problem has been with dug wells. Most dug wells are shallow and excavated in poorly permeable material; consequently, they are readily affected by drought or by seasonal declines in the water table.

INCREASED PUMPING IN THE IMMEDIATE AREA

The lowering of the water table by increased pumpage in the immediate area can cause wells to go dry. Another major reason that rural wells "go dry" is the installation of larger capacity wells for municipal, industrial, or mining purposes adjacent to residential areas. The increased withdrawals may cause large widespread cones of depression that intersect one another and cause general water-level declines that affect nearby domestic wells.

Patty McElwaine, M.A.

Well Water Survey (continued)

WATER-LEVEL RISES

The opposite problem, namely a rising water table, has developed in some parts of the country. Rising water tables occur in areas where pumpage has been curtailed after years of large ground-water withdrawals, such as for mine dewatering or municipal water supply, which kept the water table below its natural levels. The curtailment of pumping allows the water table to rise to the previous natural level, which may flood underground structures that were built when the water table was lowered.

In many parts of the country, water levels in shallow aquifers have been lowered artificially over large areas. If the water table then recovers to its natural (higher) level, basement flooding or foundation failures may occur, especially where the natural water level is within 10 feet of the land surface.

The public's first reaction may be that unusually heavy precipitation in the past few months has raised the water table when in fact the situation is much more serious and will remain a problem unless pumping is resumed to maintain a lower water table.

An increasing number of local areas are being dewatered for mining or industrial uses, which could cause serious problems in the future when such pumpage is decreased or ended.

Patty McElwaine, M.A.

Well Water Survey (continued)

QUALITY OF WATER

Some common ground-water quality concerns are excessive hardness (high dissolved magnesium and calcium content), a high concentration of salt or iron, or the presence of hydrogen sulfide (sulfur), methane gas, petroleum or organic compounds, or bacteria. Some are naturally occurring; others are introduced by human activities. In many areas, the homeowner has little recourse other than to use chemical treatment to remove or reduce the level of these constituents or to **abandon the water supply**. Hardness, iron, and sulfur are common constituents that can be treated.

Patty McElwaine, M.A.

Well Water Survey (continued)

Survey Results

We sent out 22 surveys of well owners in the vicinity of the proposed Loveland Ready Mix 123-acre site. The names of the well owners were found on the Larimer County site on documentation provided from Telesto. Any well dug before 1972 is a legal well according to the State of Colorado.

Patty McElwaine, M.A.

Well Water Survey (concluded)

Survey Results (concluded)

We received 11 responses on the survey which is a 50% return.
Most of the neighbors are worried about their ability to continue their agricultural use if their wells run dry.
All respondents are concerned about the location of the gravel pit site.
All respondents are very concerned about the lower water levels in their wells if this gravel pit and batch plant are approved.
All respondents are very concerned about the negative affects this gravel pit will have for their agricultural use.
Most respondents are concerned about depletion of water levels.
Copies of the survey results are included in the following pages.

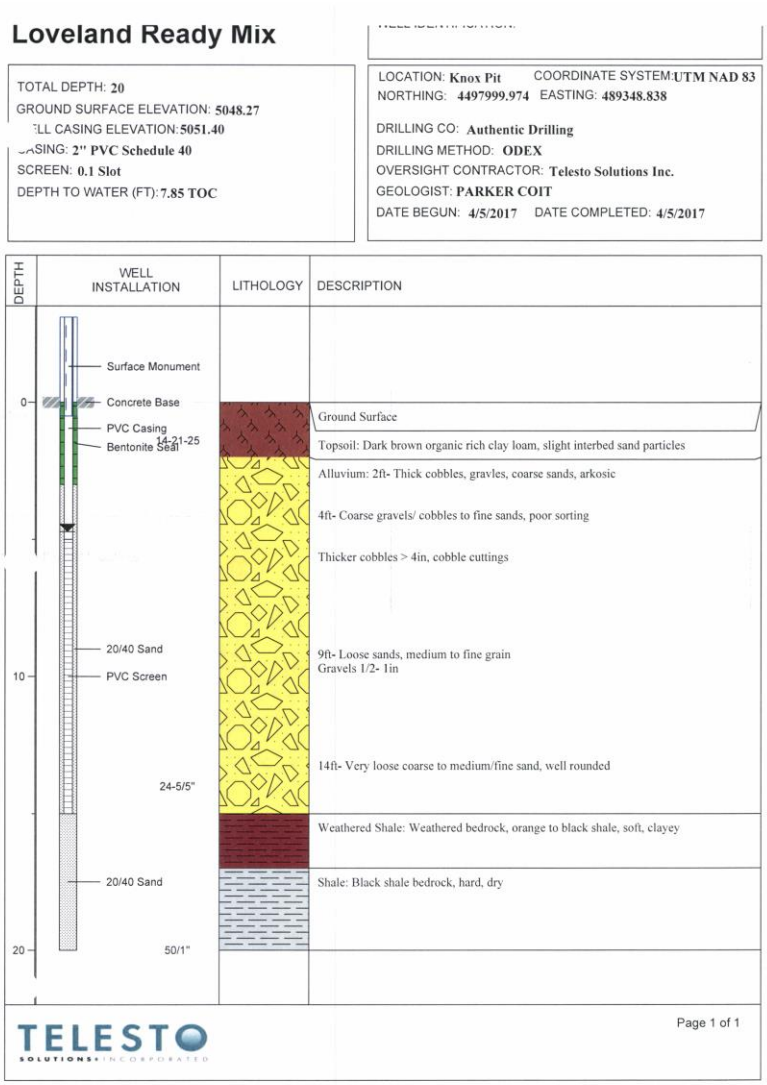
As Leonardo da Vinci said, “ Water is the driving force of all nature.”

Robert Havis Testimony

Geochemistry

- The mining could cause contamination of groundwater. See Havis Report, "**Potential Water Quality Issues from Cretaceous Pierre Shale**" January 2018.
- Pierre Shale could contribute significant concentrations of arsenic, lead, selenium and uranium to water resources. See Table 3 in Havis Report.
- In response to the Division's questions in Adequacy Review #3, Comment 39a concerning groundwater contamination. LRM stated, "there are not wide-spread water quality issues associated with these activities" in other gravel pits on the Poudre River that expose Pierre Shale. However, LRM provides little evidence to support this statement.
- LRM failed to provide monitoring data for any pollutant in the shale other than selenium. Measurements at surface of shale and below weathered shale horizon miss the important shale material subject to excavation and erosion.

Typical Knox Pit Well Logs



Loveland Ready Mix

TOTAL DEPTH: 20
GROUND SURFACE ELEVATION: 5048.27
TOP OF CASING ELEVATION: 5051.40
CASING: 2" PVC Schedule 40
SCREEN: 0.1 Slot
DEPTH TO WATER (FT): 7.85 TOC

LOCATION: Knox Pit COORDINATE SYSTEM: UTM NAD 83
NORTHING: 4497999.974 EASTING: 489348.838

DRILLING CO: Authentic Drilling
DRILLING METHOD: ODEX
OVERSIGHT CONTRACTOR: Telesto Solutions Inc.
GEOLOGIST: PARKER COIT
DATE BEGUN: 4/5/2017 DATE COMPLETED: 4/5/2017

DEPTH	WELL INSTALLATION	LITHOLOGY	DESCRIPTION
0	Surface Monument; Concrete Base; PVC Casing; Bentonite Seal 14-21-25		Ground Surface
			Topsoil: Dark brown organic rich clay loam, slight interbed sand particles
			Alluvium: 2ft- Thick cobbles, gravles, coarse sands, arkosic
			4ft- Coarse gravels/ cobbles to fine sands, poor sorting
			Thicker cobbles > 4in, cobble cuttings
10	20/40 Sand; PVC Screen		9ft- Loose sands, medium to fine grain Gravels 1/2- 1in
	24-5/5"		14ft- Very loose coarse to medium/fine sand, well rounded
			Weathered Shale: Weathered bedrock, orange to black shale, soft, clayey
	20/40 Sand		Shale: Black shale bedrock, hard, dry
20	50/1"		

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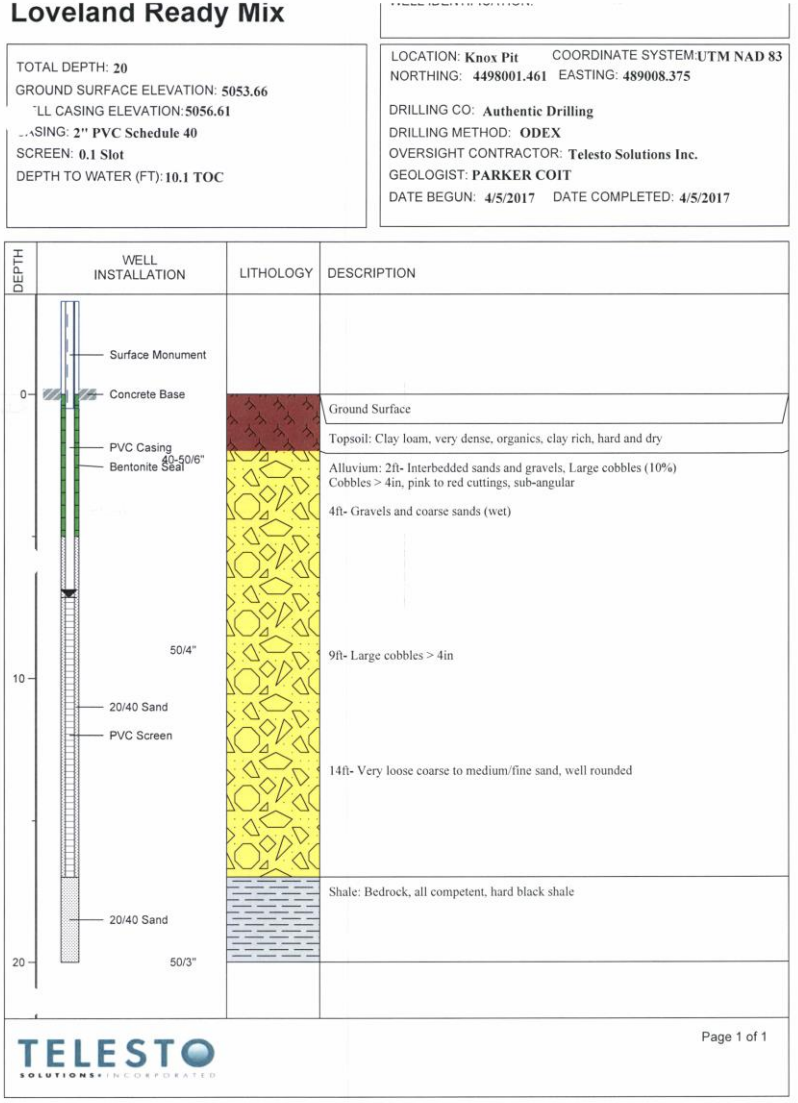

Loveland Ready Mix

TOTAL DEPTH: 20
GROUND SURFACE ELEVATION: 5053.66
TOP OF CASING ELEVATION: 5056.61
CASING: 2" PVC Schedule 40
SCREEN: 0.1 Slot
DEPTH TO WATER (FT): 10.1 TOC

LOCATION: Knox Pit COORDINATE SYSTEM: UTM NAD 83
NORTHING: 4498001.461 EASTING: 489008.375

DRILLING CO: Authentic Drilling
DRILLING METHOD: ODEX
OVERSIGHT CONTRACTOR: Telesto Solutions Inc.
GEOLOGIST: PARKER COIT
DATE BEGUN: 4/5/2017 DATE COMPLETED: 4/5/2017

DEPTH	WELL INSTALLATION	LITHOLOGY	DESCRIPTION
0	Surface Monument; Concrete Base		Ground Surface
	PVC Casing; Bentonite Seal 40-50/6"		Topsoil: Clay loam, very dense, organics, clay rich, hard and dry
			Alluvium: 2ft- Interbedded sands and gravels, Large cobbles (10%) Cobbles > 4in, pink to red cuttings, sub-angular
			4ft- Gravels and coarse sands (wet)
10	50/4"		9ft- Large cobbles > 4in
	20/40 Sand; PVC Screen		
			14ft- Very loose coarse to medium/fine sand, well rounded
			Shale: Bedrock, all competent, hard black shale
20	20/40 Sand; 50/3"		

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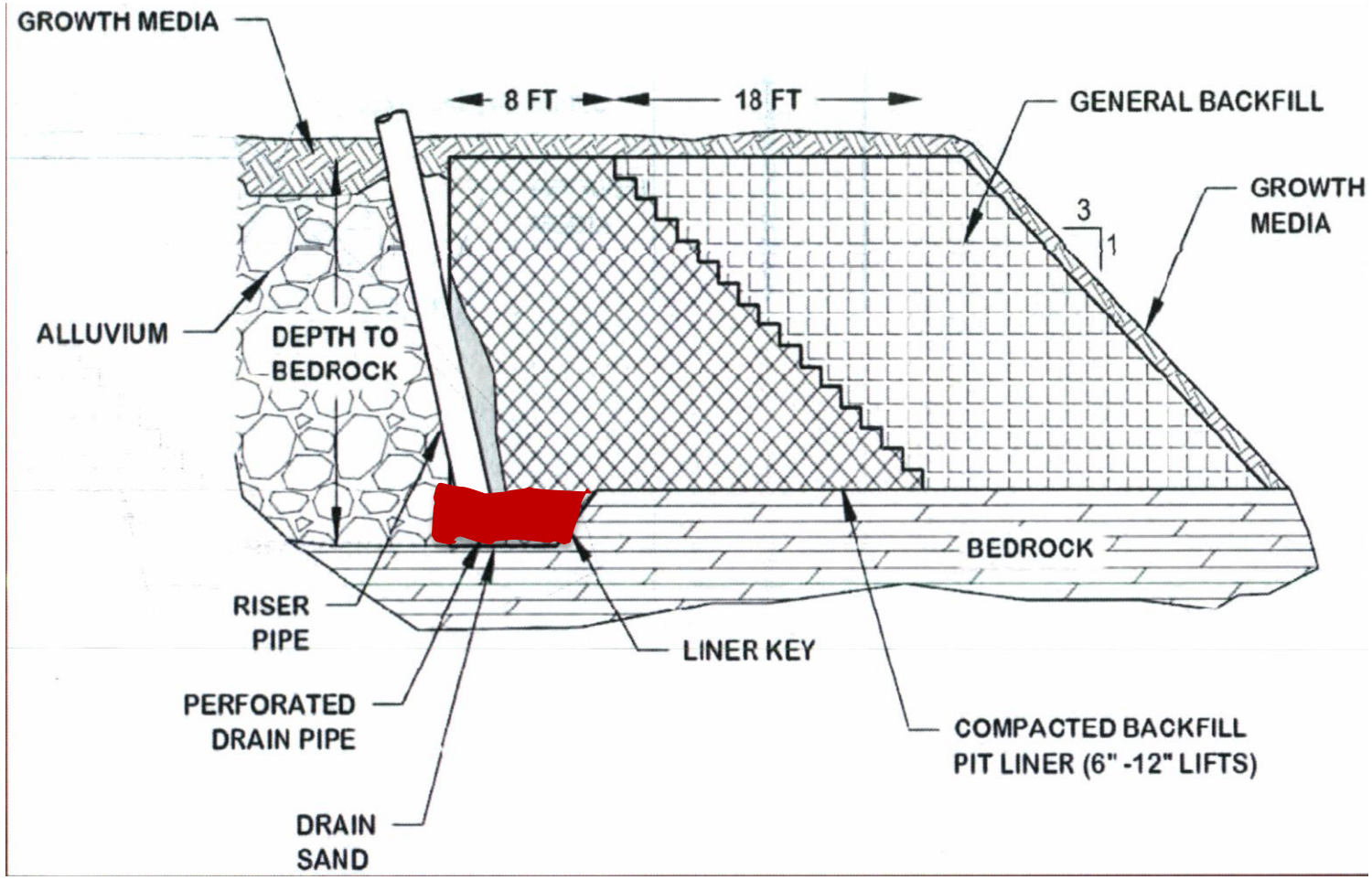
Excavation of Pierre Shale

LRM Pit Design Diagram (red area added to indicate potential excavated Pierre Shale)



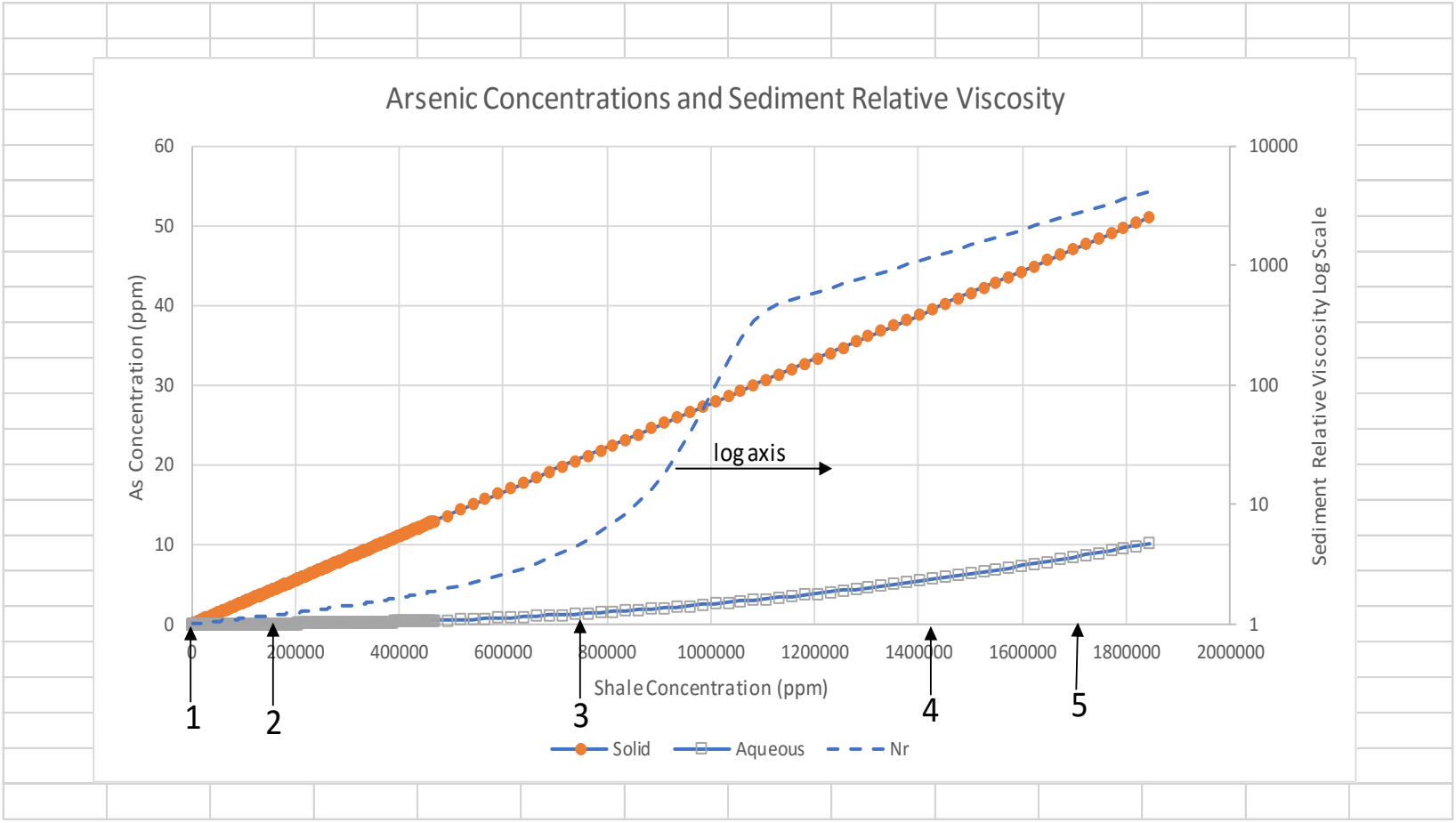
Toxin Content of Pierre Shale

Toxin Contaminants in Regional Outcrops of the Sharon Springs Member, Pierre Shale (mg/kg)

Reference	Arsenic	lead	Selenium	Uranium
Kulp and Pratt (2004)			16.4	12.0
Landis (1959)	30	30	7.5	7.5
Tourtelot (1955)	35	6.7	24	6.7
Schultz et al. (1980)	18	21	4.7	4.8
Average	27.7	19.2	13.1	7.7

Toxin Concentrations

Relative Viscosity (right axis, Nr), and Solid and Aqueous Phase Arsenic Concentrations in Suspensions of Pierre Shale Particles



Potential Toxins - As, Pb, Se, U

Concentrations (mg/l)

Type of Sediment Suspension	Suspended Solids Concentration	Arsenic		Lead	Selenium		Uranium	
		NDWQS = 0.01		NDWQS = .015	NDWQS = 0.05		NDWQS = 0.03	
		Solids	Aqueous	Solids	Solids	Aqueous	Solids	Aqueous
1-Newtonian	3695	0.1024	0.0000	0.0709	0.0484	0.0014	0.0285	0.0024
2-Non-Newtonian Fluid	164820	4.5655	0.0413	3.1645	2.1591	0.0618	1.2691	0.1223
3- High Viscosity Sediment	751530	20.8174	1.3084	14.4294	9.8450	0.2761	5.7868	0.5893
4-Consolidated Sediment	1451400	40.2038	5.8596	27.8669	19.013	0.5203	11.1758	1.1655
5-Weathered Pierre Shale	1722000	47.6994	8.6496	33.0624	22.558	0.6116	13.2594	1.3915

Potential Contamination to NDWQS

Assume 2580’ of Drain, 2580 cubic feet of Shale Excavated

Toxin	As	Pb	Se	U
Vol. acre-ft	15.5		0.2	0.8

Robert Havis Testimony

Geochemistry (continued)

- Excavated and eroded Pierre Shale would likely end up in the water management pond.
- LRM's water management pond will discharge directly to groundwater and the water from the pond will also be land- applied as a dust suppression. This subjects toxins to potential transport off site by air as well as ground water.
- LRM's groundwater sampling plan is insufficient. The proposed single station to represent up gradient water is on-site. The single proposed down gradient station is in a shallowing area, and may miss contaminant plumes.

Robert Havis Testimony

Geochemistry (concluded)

- In response to the Division's question in Adequacy Review #3, Comment 40a requesting *"a rational and any applicable data to substantiate the claim that groundwater quality will not be an issue."* LRM referred the Division to "section 5.5.3 of the revised groundwater report." Section 5.5.3 seemed to be absent in the revised groundwater report. LRM's response is non-responsive.

- LRM's does not have a mitigation plan. Instead, LRM vaguely states, "… LRM commits to monitoring water quality in the water management pond and respond accordingly should discharges be an issue." This is only responsive not a plan. Mitigation - Halt operations? Pump out and treat water management pond water?

Poudre River Quality Threatened

Selenium discharge from the water management pond threatens the Poudre River Selenium-impaired reach No. **COSPCP11, and COSPCP13a** - Mainstem of the Cache la Poudre River from Shields Street in Ft. Collins to a point immediately above the confluence with Boxelder Creek. All tributaries to the Cache la Poudre River, including all wetlands, from the Monroe Gravity Canal to the confluence with the South Platte River.
–5 CCR 1002-93 (CDPHE Regulation 93).

LRM has failed to meet its burden of proving that an unauthorized release of pollutants to ground water will not occur from materials mined, handled, or disposed of within the permit area. C.R.S. 34-32.5-116(4)(d) and Regulation 3.1.5(11) and 3.1.7. 5 CCR 1002-93

Robert Havis Testimony

Reclamation Plan

- NLGC submitted evidence that the 3:1 (33%, 19 degrees, natural angle or repose sand and gravel) slope is not appropriate for livestock. Cattle seldom use areas with greater than 10 percent slope." Slopes greater than 30% receive 60% less grazing capacity. Oberlie and Bishop (209), Lyons and Machen (12/2001).
- Neither the Division nor LRM submitted any evidence to the contrary, only vague statements of past experience.
- LRM has not met is burden of proving that grading is appropriate to the final post-extraction land use. C.R.S. 34-32.5-116(4)(a) and Regulation 3.1.5(1).
- LRM has not met is burden of proving that the slopes are not too steep to be traversed by livestock. C.R.S. 34-32.5-116(4)(n) and Regulation 3.1.5(7) and 3.1.10(3).

Robert Havis

Re-Vegetation

- There is no criteria for what will be considered a successful seeding establishment.
- There is no plan for reseeding if there is a failure due to drought in first or second year post-seeding.
- No seeding rate has been stated (lb or kg/acre or hectare).
- There is no plan for weed control.
- The current presence of Cheatgrass on the site could become a major problem to the site and surrounding areas.
- All seeded species are cool-season (most likely C3s), none are warm-season (C4s), increasing susceptibility to negative impacts of seasonal drought. One species is an exotic even though their text says all are native.

Robert Havis

Re-Vegetation (continued)

- All species are grasses. No forbs or half-shrubs or shrubs. All but one are Stipa.
- All species are bunch grasses which are not as grazing tolerant as sod forming grasses. Sod-grasses with high crown basal cover mitigate erosion/dust storms during drought. This and above indicate low structural and compositional diversity.
- The statement that seed will be drilled AND/OR broadcast sown is unacceptable unless it is "AND". Surface seed is more susceptible to dry surface soil, wind movement, and granivory.
- LRM has not met its burden of proving that the species chosen for re-vegetation are compatible for the proposed post-extraction land use. C.R.S. 34-32.5-116(4)(f) and that the reclamation plan meets the requirements of the regulations.

A 15-year-old seeded grassland after the 2008 dust storms. Only the **sod forming** blue grama (Bouteloua **gracilis**) is present although other seeded species occur under average year conditions. Note elevated crowns due to surface erosion in bare spaces between plants. Basal cover of B. **gracilis** in native, undisturbed grazed grassland averages 80-90% of total grass cover. From:

Milchunas, D. G., and M. W. Vandever. 2014. Grazing effects on plant community succession of early- and mid-seral seeded grassland compared to shortgrass steppe. Journal of Vegetation Science 25:22-35.

Milchunas, D. G., and M. W. Vandever. 2013. Grazing effects on aboveground primary production and root biomass of early- and mid-seral and undisturbed semiarid grassland. Journal of Arid Environments 92:81-88.

Testimony of Quinn Robinson

Inadequate Protection of Wildlife

- Extensive documentation of numerous species of birds, raptors, and mammals utilizing the site.
- Numerous sensitive plants, migratory and threatened and endangered birds and animals are missing from Table 3 of the application that are identified in the City of Fort Collins Checklist of Local Birds.
- LRM purchased property in 2016 but did not perform a bird survey until January 2018, during which seasonal bird populations are low. LRM should conduct additional bird survey in summer and during migratory seasons.
- Impacts to wildlife will be severe-heavy equipment, ground disturbance, air pollution, noise. Wildlife will be displaced with no protections in place.
- No cumulative impact assessment to wildlife from combined mining activities in Laporte.
- LRM has not met its burden of proving that the mining plan protects wildlife. Regulation 3.1.8 (1).

Conclusion

- The Board may deny the application if "[t]he application is incomplete" C.R.S. 34-32.5-115(4)(a).
- The Board may deny the application if "[a]ny part of the proposed mining operation, the reclamation program, or the proposed future use is contrary to the laws or regulations…" C.R.S. 34-32.5-115(4)(c).
- The Board may deny the application if the proposed reclamation plan does not conform to the requirements of Section 34-32.5-116. C.R.S. 34-32.5-115(4)(g).
- LRM has not met its burden of proving that its application, mining and reclamation plans meet the requirements of the statute and regulations.
- For the reasons stated in this hearing and in NLGC's comment letters, LRM's Section 112 permit application should be DENIED.
- NLGC moves to admit all of its comments letters, attachments, and hearing exhibits, including this Power Point presentation into the record as evidence in this proceeding.